**CIVILIAN FEDERAL AGENCY TASK FORCE**

# GUIDE ON EVALUATING ENVIRONMENTAL LIABILITY FOR PROPERTY TRANSFERS

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## PREFACE

This document summarizes the requirements and process for evaluating potential liability from environmental contamination, and will introduce readers to the larger context of environmental issues associated with real property transfers. The general guidelines set out in this document for conducting an Environmental Due Diligence Audit (EDDA) are intended for use as *baseline* guidance when acquiring, leasing, transferring, or terminating interest in any real property. Additional agency-specific policies and guidelines may apply for particular sites and situations, along with the federal, state, and local regulations.

This document was developed for the Civilian Federal Agency Task Force, Facility Closure Workgroup, under the direction of Maryalice Locke (FAA) and with the assistance of Booz•Allen & Hamilton, Incorporated. The Civilian Federal Agency Task Force provides a forum and resource leveraging opportunities for members to address the unique environmental issues of concern to civilian federal facilities. These concerns and responsibilities are particularly significant for real property transfers given that, as a group, civilian federal agencies control more land than the Department of Defense and Department of Energy combined.

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# CHAPTER 1
# ENVIRONMENTAL LIABILITY

## INTRODUCTION

Federal agencies routinely lease and transfer real property in the course of carrying out their missions. One of the essential steps in modern real property transactions is evaluating candidate properties for potential environmental contamination and liability. This document summarizes the requirements and process for evaluating potential liability from environmental contamination, and will introduce readers to the larger context of environmental issues associated with real property transfers.

The process of evaluating proposed transfer properties for potential environmental contamination and liability is referred to in this document as the Environmental Due Diligence Audit (EDDA) process. Depending on the agency, however, this process may be called a Property Transfer Assessment, Environmental Site Assessment, Environmental Baseline Assessment, Transaction Screen Questionnaire, Preliminary Hazardous Waste Site Survey, and Environmental Due Diligence Process. A list of acronyms relating to property transfer and the EDDA process used in this document is presented in Appendix A.

The general guidelines set out in this document should be used as baseline guidance when acquiring, leasing, transferring, or terminating agency interest in any real property. For specific sites and situations, additional agency policies and guidelines may apply, along with the federal, state, and local regulations. Implementation of agency policies and the EDDA process delineated in this document will help to reduce the agency's environmental risk and liabilities associated with real property transfer.

Ultimately, the purpose of an EDDA and this guidance is to help federal managers understand site liabilities and manage—rather than react to—any associated costs and activities for site cleanup. With the EDDA process, agencies can also go beyond the site contamination aspects and comprehensively look at the proposed property to help identify other environmental concerns. The material result of this process is documentation of the environmental conditions at a site prior to property transfer. This will help to "baseline" the environmental condition of the property at the time of the transaction and serve as a source document if subsequent contamination occurs and questions about site responsibility are raised. The complete EDDA process is described in detail in the following sections and chapters.

## BACKGROUND

Environmental liability may result from a wide range of regulatory requirements affecting federal agencies. Like the private sector, agencies may be held liable for cleanup of site contamination as an owner or operator at a site. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or "Superfund Law" is the primary regulatory driver of the EDDA process and defines what parties must do to exercise "due diligence" in assessing and acting on potential site contamination.

CERCLA Section 120 holds federal agencies strictly liable for cleaning up contamination at sites they either own or operate, or where they have been found to have contributed to site contamination. In many cases, the federal government may be the most viable Potentially Responsible Party (PRP), and therefore, becomes the most accessible "deep pocket" to pay for site cleanups even if its overall contribution has been small.[1] The Community Environmental Response Facilitation Act (CERFA) and CERCLA 120(h) require that—prior to disposing of real property to organizations outside of the federal government—agencies identify hazardous waste used on the property and clean up any site contamination. In accordance with Environmental Protection Agency (EPA) guidance issued June 16, 1998, landholding federal agencies may petition for transactions to occur before a cleanup is completed; however, in all instances the agency remains responsible for the cleanup. (See Appendix B for relevant procedures and guidance.)

For agencies acquiring property, the need to "determine the environmental condition of proposed sites prior to purchase" has been delineated in a General Services Administration (GSA) proposed rule[2] that describes "current real property policies." The language further states that, "sites must be free from contamination, unless it is otherwise determined to be in the best interests of the Government to purchase a contaminated site." The EDDA process can help satisfy these determination requirements.

The need for an EDDA process also arises for agencies that loan money to private parties. If a loan is based on the apparent value of a property without consideration to its environmental condition and contamination is subsequently discovered or occurs, the security value of the property may be greatly reduced, or even eliminated.

Federal agencies are likewise governed by other environmental statutes that impact, and may potentially limit, agency use of a property. Regulations involving wetlands, endangered species, and cultural or historic assets are examples of some statutes that may affect agency use of a property. These regulations and other environmental issues may also affect property transactions. Chapter 2 discusses these issues, including hazardous material and waste management issues, decontamination and disposal of contaminated equipment, and transferring environmental permits and licenses. While all of these issues require consideration and management, site contamination represents the most significant aspect of liability[3] and potential costs, and is the principle focus of the remainder of the document.

The primary focus of the EDDA process is on the risk and associated liabilities from past site use and potential contamination under CERCLA. Prior site contamination results in extremely expensive cleanup actions. For a current or former owner or operator, the extent of liability is determined by the following:

- Their ability to use the "innocent landowner" defense
- The type and magnitude of site contamination
- The number of other PRPs
- Each PRP's ability to pay for site cleanup.

Cleanup work may range from identifying, removing, and cleaning up limited leaking Underground Storage Tank (UST) soil contamination, to engaging in a full-scope site cleanup of

multiple hazardous waste sources, adjacent soils, underlying groundwater, and contaminated surface waters and sediments. In some cases, the contamination and associated liability may extend far beyond the site boundaries affecting neighboring properties and nearby natural resources. In the first instance, the liability for addressing the leaking UST may be limited to tens of thousands of dollars, while the extensive site cleanup can cost tens of millions of dollars. Currently, the average cost at a CERCLA cleanup site is estimated at $30 million dollars. Consequently, it is extremely important that agencies avoid, or fully understand and plan for, the potentially significant cost of site cleanup activities.

The response to potential and existing liabilities will depend on numerous factors, including ownership of the property, type of property transaction, extent of contamination, cost to address site contamination, and the strategic value of the property to the agency. An overriding factor will be the agency's ownership or operation at the property. When the agency is the current owner or is found to have caused site contamination through their use of the property, it will likely bear the responsibility for addressing site contamination. When the agency is not the owner or has not had a previous interest in the property, there are more options and decision points for federal managers. In these cases, managers can assess the value of the liability against the agency's interest in the property and engage in negotiations with landowners for cleanup, or require tenants on agency property to clean up contamination that has resulted from tenant activities. The specific property transaction types and other factors affecting agency liability are discussed later in this chapter and throughout the document.

## OVERVIEW OF THE DUE DILIGENCE PROCESS

EDDA is a systematic procedure to evaluate subject properties for potential environmental contamination and liability. This process is divided into three phases that relate to varying depths of evaluation; they are:

- Phase I–Liability Assessment
- Phase II–Confirmation Sampling
- Phase III–Site Characterization.

The EDDA process was originally developed by private lenders to evaluate potential liability associated with proposed property acquisitions. Private lenders first used the due diligence process as a mechanism to head off CERCLA liabilities for properties in their loan portfolios. As such, the phases were developed in relation to this practical acquisition focus, rather than originating from regulation. Due diligence reviews have subsequently become an industry standard, required by lending institutions, for all loans and investments in real property. With the onset of regulations (i.e., CERFA) that govern federal agency real property disposal, the due diligence process has been expanded to address all types of property transactions.

The primary purpose for each phase of the EDDA process is summarized below and described in more detail in the individual chapters dedicated to each phase of the process.

*Phase I—Liability Assessment* is performed to determine whether environmental contamination is likely to be present at a property which may result in future environmental liability. Phase I

comprises pre-audit activities, site visit, records review, regulatory review, geologic and hydrogeologic review, report preparation, and report review. When an agency is disposing of a property outside of the federal government, the Phase I Liability Assessment may also be performed to satisfy CERFA requirements.

*Phase II—Confirmation Sampling* is performed when Phase I identifies potential areas of contamination. However, unlike the Phase I EDDA that concentrates on a broad range of concerns, the Phase II EDDA is conducted to verify whether a specific on-site environmental issue exists or if a release has occurred. Phase II involves the used of limited site sampling to confirm, or deny, suspected contamination identified in Phase I.

*Phase III—Site Characterization* is a comprehensive study to fully characterize the nature and extent of contamination at a property and any affected populations or environmental receptors. This should only be conducted after the limited Phase II sampling has confirmed contamination at the site and the agency has a continuing interest in the property. (As stated above, if the agency is the owner or operator of the site, parallel regulatory procedures may govern the process.) The elements of Phase III typically include plan development, site characterization, risk assessment, remedial technology recommendations, cost estimation, report preparation, and report review. This phase builds on the information developed in the previous EDDA phases to develop a complete understanding of site contamination issues, a recommended site cleanup plan, and a cost estimate. Thus, the Phase III EDDA serves as a management tool to help agency decision makers determine if the cost of remediation exceeds the benefit for a given property.

The intent of this guidance document is to familiarize the reader with the EDDA process, specifically in addressing potential contamination and managing liability. EDDAs are a necessary component to the agency's real estate and environmental programs; and, by performing them, the agency is protecting itself from costly environmental liabilities in the future.

## PROPERTY TRANSACTIONS

Within the federal government, real property transactions occur between federal agencies, between federal and state or local entities, and between federal and a private entities. There may also be property transfers within an agency which, due to agency policy, are given much of the formality of out-of-agency transfers. Understanding the types of real property transactions is key for the EDDA process since the process and focus of the EDDA can vary with the type of transfer. Types of real property transactions include acquisition, disposal, outgrant or outlease, lease transactions (lease execution or lease termination), right-of-way, easements, land swaps, and special use permits. The type of transaction will greatly influence the agency’s exposure to liability or its responsibility for addressing potential site concerns. Decision makers will need to have a thorough understanding of both the implications of the transaction type and the agency’s specific requirements to focus the extent of the EDDA process and to evaluate the results and recommendations. The relationship between the major types of property transfer and the implementation of the EDDA process is developed in discussion below on each type of real property transfers and in later chapters. These terms and others related to the EDDA process are defined in the glossary in Appendix C.

**Acquisition**

An acquisition is defined as the act of becoming the owner or holder of an interest in certain real property. In the EDDA process, the acquisition of real property is the most challenging category of real property transfers because the federal agency must rely solely on external sources to obtain past and current information on the site. Additionally, new acquisitions present the highest potential for agencies to assume new liabilities associated with previous property use and contamination that occurred before the agency took title to the property. Therefore, it is extremely important to conduct a thorough and detailed liability evaluation to identify and understand the potential for past contamination at the site. Appendix D contains two memoranda governing federal property acquisition, one from the Office of the Under Secretary of Defense and the other from the EPA.

During the acquisition process, Phase II EDDA activities may be required to confirm the presence of environmental contamination. Phase III activities are rare because agencies generally avoid acquiring property known to be contaminated due to cost considerations. In some cases, however, agencies have been obliged to acquire contaminated properties by administration or Congressional decisions. Nonetheless, decisions to proceed to a Phase II or Phase III will be driven by how important the property is to the agency's mission or mandate. Note that even when the agency is mandated to acquire a property, completion of the EDDA process should occur prior to final property transfer so that the full extent of any environmental liability can be factored into the transfer documents and budgeting. (If the EDDA process is not completed before mandated transfer schedules, partial transfers or authorization to operate prior to transfer can be executed.)

An EDDA should also be performed when acquiring property where there is no record of prior occupation or activities performed on the property. In this case, the primary purpose for conducting an EDDA is to document the environmental baseline of the property at the time of acquisition. This can then be used for future reference in the event of an environmental incident or at property disposal. Seemingly pristine and undeveloped properties may be found to have had prior uses or undocumented hazardous waste releases that may be uncovered under the scrutiny of a formal Phase I Liability Assessment.

For property acquisitions, the natural timing of the Phase I EDDA is to conduct it concurrently with the National Environmental Policy Act (NEPA) process. It is particularly important that Phase I Liability Assessment information be provided to decision-makers before formal negotiations for a site occur.

**Lease Transactions**

The environmental liability issues associated with lease transactions vary depending both on whether the agency is either executing or terminating the lease, and whether the agency is in the position of the landlord or the tenant. Legally, lease execution is defined as initializing an action to rent real property from another party.[4] Lease termination is defined as the act of ending a lease rental from another party.[5] For this document, the terms lease execution and lease termination

indicate that the agency is the tenant. Situations in which the agency is the landlord are defined below in the "Outlease and Outgrant" section.

*Lease Execution*

An EDDA should be performed before the agency enters into a new lease to conduct operations or otherwise use property owned by another entity. As with the acquisition process, without an EDDA the agency has no knowledge of prior uses and activities conducted on the property and may be liable for environmental costs if contamination is identified after the agency begins operations. The EDDA performed prior to lease execution will serve as the baseline for comparing environmental conditions of the property prior to agency operations and subsequent to agency operations when the lease is terminated or when contamination is otherwise identified. A Phase I Liability Assessment should be initiated before a final site has been selected and while the NEPA process is being implemented.

*Lease Termination*

In a lease termination the agency is a tenant seeking to end occupancy or use of a property. In this instance, the agency is performing the EDDA to determine the environmental condition of the property at the time the agency vacates it. By leasing property the agency is considered an operator, and can be held liable under the CERCLA for contamination on the property. Without EDDA documentation stating the environmental condition of the property at the time the agency vacated, the agency may be held liable for contamination caused by future owners or operators. Prior to terminating the lease, a Phase I Liability Assessment should be completed and presented to the property owner for acceptance. This documents that the agency tenancy has not contributed to site contamination –or, in the event of suspected site contamination, identifies potential environmental liabilities. Suspected contamination should then be addressed through EDDA Phase II and III activities or equivalent regulatory requirements.

**Outlease and Outgrant**

Outleases and outgrants pose considerable risk to federal agencies. In both scenarios, the federal agency is the property owner or landlord, leasing or granting the use of federally owned property to public or private tenants. In these situations, even if the agency is not otherwise operating on the property, under CERCLA and CERFA the agency retains liability for any contamination. Thus, it is in the agency's interest to conduct an EDDA and baseline the environmental condition of a property prior to tenant occupancy. Further, when a tenant terminates the lease the agency should require that another EDDA be performed to properly document the environmental condition of the property at the time of the tenant's departure, address any environmental issues, and minimize future liability. It is strongly recommended that the EDDA be completed prior to executing or terminating outlease or outgrant agreements.

**Disposal**

Disposal is the transfer of title and ownership of real property to another party. During the disposal process, the scope and depth of the EDDA depends on the past and current operations at

the site. Similar to lease termination, a Phase I EDDA is used to document the baseline condition at the time of disposal. Where no contamination is present, the Phase I document will help to protect the agency from future liability. In situations where contamination is possible, the EDDA process is performed to address any site contamination before the property is disposed. A Phase I Liability Assessment that indicates contamination is likely will serve to focus subsequent site investigation activities; and Phase II and III EDDA activities or their regulatory mandated equivalents may be required to address the environmental liabilities associated with the real property.

Federal agencies entering into contracts for the sale or other transfer of real property are required by CERCLA (42 U.S.C. 9620(h); 40 CFR 373) and by the Federal Property Management Regulations (41 CFR 101) to include notice of certain hazardous substance activities on the property. Specifically, notification that triggering levels of hazardous substances were stored for one year or more—or known to have been disposed of or released on the property. These requirements apply to the entire period of time the property was owned by the United States. Thus, by their nature, these requirements trigger an investigation of past activities on the property, which a Phase I Liability Assessment can help satisfy.

### Other Property Transactions

While the preceding sections discuss the most typical types of property transactions, there are many more types of property transactions that can occur. These transactions can include:

- Land swaps
- Right-of-ways
- Easements
- Special use permits (mining, public recreation, grazing).

An EDDA may be recommended for these transactions, particularly in the case of land swaps and special use permits. Land swaps are comparable to property acquisition since there could be liabilities associated with previous property use and contamination that occurred before the agency took title. Special use permits present the potential for current or future site activities to result in agency liability. The decision to perform an EDDA in these cases is largely based on agency-specific policies or review process.

## OTHER RELATED ISSUES

Assessing potential environmental contamination in the EDDA process is only one component of managing environmental liability. Other environmental issues that are associated with property transfer include assessment of cultural or historical importance and identification of endangered or threatened species. Further, there are property transfer issues that bridge the environmental and occupational safety areas, including lead-based paint, radon, indoor air quality and asbestos. Although the EDDA process is focused on potential environmental contamination and related liability, it can also aid in identifying other environmental issues that need to be considered and addressed. Chapter 2 discusses both property-related and other environmental issues that are not specifically addressed in the EDDA process.

[1] In general, any person owning property on which hazardous substances have come to be located faces potential uncertainty with respect to liability as an "owner" under Section 107(a)(1) of CERCLA, 42 U.S.C. §9607(a)(1), even where such owner has had no participation in the handling of hazardous substances, and has taken no action to exacerbate the release. However, EPA's June 13, 1997, *Policy Toward Landowners and Transferees of Federal Facilities* clarifies EPA's intent "to reduce the effect of potential CERCLA liability on the marketability of (federal) property...." See Appendix E.

[2] August 7, 1997, Federal Register: Volume 62, Number 152; Pages 42444-42456.

[3] The "Government Management Reform Act of 1994" and the "Statement of Federal Financial Accounting Standards (SFFAS) #6" require federal agencies to report cleanup liabilities in their annual financial statements, including a listing of the sites and estimated total cleanup cost for each site.

[4] Black's Law Dictionary, 5th Edition.

[5] Ibid.

# CHAPTER 2
# OTHER ENVIRONMENTAL ISSUES ASSOCIATED WITH PROPERTY TRANSFER

## BACKGROUND

There are both property-related activities and environmental features that should be addressed to effectively manage liabilities associated with real property transfer. As discussed previously, the Environmental Due Diligence Audit (EDDA) process focuses on identifying liabilities related to site contamination. The EDDA process does not directly address property-related activities or environmental responsibilities that are not contaminant-related; however, these activities and responsibilities may be required by environmental regulations or agency property transfer protocols.

Property transfer-related activities can include, but are not limited to,

- Equipment deactivation and decommissioning
- Chemical and hazardous materials removal
- Permit and license transfers and terminations
- Site restoration and improvements
- Building demolition and disposal.

These activities are important regardless of the type of property transaction, and differ mainly in addressing who (i.e., buyer or seller) assumes the responsibility or liability for improperly completed activities.

Environmental regulatory concerns cover a broad range of fields, including:

- Sites or buildings of historical and cultural significance
- Sensitive environments
- Endangered species
- National Environmental Policy Act (NEPA) compliance.

These environmental areas may affect the agency's ability to use a property for its intended purpose or may require specific activities to evaluate or protect a natural resource.

There are a variety of information sources and agency documentation that provide guidance for addressing these other environmental concerns for property transaction. For example, the General Services Administration (GSA) Public Buildings Service, Office of Property Disposal has produced two guidance documents intended to provide a framework for GSA Realty Specialists to achieve "compliance with the environmental laws and regulations that are applicable to the acceptance and disposal of interests in real property." These documents are known as the *Environmental Guidebook* (Appendix F in this document) and the *Environmental Resource Book* Both provide useful information on the types of activities and assessments that GSA uses to evaluate and document environmental issues during property transfer. For a broader resource, GSA's Office of Governmentwide Policy has published a *General Reference Guide for Real Property Policy* (Appendix G in this document). This document provides a "map" to the full

scope of legal authorities relating to real property policies Included in the document are sections on Real Property Disposal, Historic Preservation, and Safety and Environmental Management, as well as an Index of Laws, Federal Property Management Regulations and Executive Orders. Finally, a good source for information on the internet is the *Real Property Clearinghouse*, sponsored by GSA; as of July 1998, the policies page can be found at: http://policyworks.gov/org/main/mp/library/policydocs/agpolicy.htm.

As noted earlier, the EDDA process can help to identify a range of potential environmental issues; however, federal managers should be aware that the EDDA process does not satisfy all assessment and documentation requirements surrounding potential environmental concerns. Managers can use information generated in the EDDA process to address these other environmental and property management issues. Managers should coordinate the EDDA process with other property-related activities to ensure that assessments and data gathering are conducted efficiently.

## EDDA INTERACTION WITH OTHER ENVIRONMENTAL ISSUES

Information gathered during the EDDA process can be used to identify other environmental issues associated with a property. A summary of environmental areas that may affect real property transactions, and the regulatory drivers behind them, are described in this section. A more detailed description of the major environmental statutes and directives is provided in Appendix H.

### National Environmental Policy Act (NEPA)

When executing any major federal action, such as property transfers, NEPA requires that agencies consider a host of potential environmental and socioeconomic issues, including but not limited to wetland preservation, effects of construction, local jobs and traffic concerns, and long- and short-term environmental impacts. NEPA consideration is particularly important when acquiring a property that was previously undeveloped, or when modifying or expanding facilities on developed property. In such cases, an EDDA makes note of the presence of sensitive environments, such as wetlands, and gathers basic site information that can be used in evaluating potential impacts. A separate analysis, however, is needed to meet the NEPA requirements, which can be found at 40 CFR Parts 1500–1508. Agency-specific directives should be consulted for additional information; for example implementation guidance is included as a chapter in the Environmental Protection Agency (EPA) Safety, Health, and Environmental Management (SHEM) Guidelines.

### Environmental Justice

Executive Order (EO) 12892, *Federal Actions to Address Environmental Justice in Minority populations and Low-Income Populations*, requires that agencies consider the effect of disproportionately high and adverse human health and environmental effects to minority and low-income groups along with other socials, economic, legal, and technical issues. This requirement mandates that agencies implement environmental justice strategies and policies and assess the

specific impacts of federal actions against the objectives of the strategy. The directive was amended by EO 12948 (February 1, 1995, Federal Register (Volume 60, Page 6381)).

**Special Hazard Areas**

Special hazard areas include flood-, mud slide-, and erosion-related hazards. Although indications of these special hazards may appear during the EDDA information gathering process, the EDDA process does not specifically address these hazards since they are not directly related to site contamination. Site suitability and other property transfer requirements are separate from the EDDA. Information about identifying and mapping special hazard areas can be found in 44 CFR Part 65. Deed restrictions may apply for both property acquisition and disposal with special hazard areas, and as a result, intended and future use must be considered.

**Endangered Species Act (ESA)**

Information on endangered species may be recorded during the sensitive-environment research component of the EDDA. However, this information typically is superficial and will not include the full species and habitat review that may be required. In the case of an acquisition, the presence of an endangered species could limit the intended agency activities or property use. If an agency is disposing of real property that has endangered species, deed restrictions may be required. The Act requires federal agencies to institute programs that preserve endangered and threatened species; and requires that federally authorized, funded, or executed actions not jeopardize any endangered or threatened species. A consultation with the U.S. Fish and Wildlife Service under Section 7 of ESA is generally required. Additional information on the ESA can be found in 50 CFR Part 17.

**National Historic Preservation Act (NHPA)**

The NHPA requires federal agencies to consider the impact of their actions on historic properties. The EDDA process includes a review of all available records regarding a property. Important information, such as documented archaeological finds or sites of historical significance are included as part of the report, although detailed review is beyond the scope of the EDDA. Before acquiring or leasing a site believed to be historically significant, further investigation may be required. Additional information on the NHPA can be obtained in 36 CFR Parts 600 and 800.

**Removal of Chemicals and Hazardous Materials**

Identifying the presence of chemicals and hazardous materials is central to the EDDA process; however, depending on the type of property transfer, the purpose for identification and the follow-up actions required will vary. For acquisitions or lease arrangements, it is critical for decision makers to know in advance whether materials are (or are not) present that may increase environmental liability. For disposals, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Community Environmental Response Facilitation Act (CERFA) require identifying and documenting the presence or absence of hazardous materials. For outgrants and outleases, the owner-agency is establishing a baseline prior to tenant activities. To facilitate any property transaction, prior to an EDDA, hazardous materials may be

removed and properly disposed of in accordance with Resource Conservation and Recovery Act (RCRA) regulations (40 CFR Part 265).

### Licenses and Permits

Many site operations require operating licenses and permits that must be reviewed to determine whether they may transfer with the property or require special renewal, or whether they should be terminated based on intended future use of the property. Examples of these include environmental licenses and permits for:

- Air emissions (e.g., from boilers or furnaces)
- Water discharges to Publicly Owned Treatment Works (POTW)
- Water discharges to National Pollution Discharge Elimination Systems (NPDES)
- Radioactive material sources and operations
- Underground Storage Tank (UST) and Aboveground Storage Tank (AST) operations.

In addition, approved UST and AST spill and containment plans should be considered. The EDDA should note and document the environmental activities associated with licenses and permits. The EDDA report would not include other non-environmental permits that might also be associated with the property, such as those for:

- General facility operations
- Confined space
- On-site concessions
- Zoning variances and waivers.

Further, the disposition and transfer of any licenses or permits, regardless of the activity, are beyond the scope of the EDDA process. Federal managers will need to negotiate these issues separately to ensure appropriate resolution and closure.

## EDDA INTERACTION WITH OTHER PROPERTY TRANSFER ISSUES

The EDDA process also considers other property transfer issues that may affect real property transactions. These issues are discussed in the next sections.

### Personal Property

Whether initiating or terminating an occupancy, another component associated with property transfer is the management of personal property, including equipment, office materials, furniture, and movable or reusable materials. Managers will need to assess the status, disposition and ownership of personal property and make appropriate arrangements to relocate, dispose or transfer ownership as part of the property transaction. An inventory of personal property is not a component of the EDDA process, nor is the disposition of it. Early coordination of personal property management activities with the EDDA, particularly the on-site investigation, may help facilitate the overall property transfer process.

### Equipment Decommissioning

Many transactions also involve equipment that will require decommissioning, disposal, or relocation consistent with the intended future use of the property. For instance, equipment may include transformers and capacitors that contain Polychlorinated Biphenyls (PCBs); and, if used to support activities that will no longer be conducted at the site, such equipment will need to be formally decommissioned and deactivated in accordance with federal, state and local requirements. The EDDA process should note the presence of the equipment associated with environmental activities, the need for formal decommissioning, and will indicate if contamination from the equipment is suspected or confirmed. The EDDA process, however, does not include equipment decommissioning requirements or the UST closure process. Federal managers, nonetheless, will need to consider the requirements and responsibility for equipment decommissioning as part of the overall property transfer and provide the necessary documentation to demonstrate that the equipment has been appropriately closed. General guidance on issues relating to equipment deactivation and decommissioning is provided in Appendix I. Examples of activities and processes for equipment decommissioning from EPA laboratories are included in Appendix J.

### Property Suitability

The condition and suitability of the property for its intended uses is an important consideration for any property transaction. Prior to transfer, an agency will likely undertake a property or building inspection to assess the condition of the structures and working infrastructure (e.g., heating and cooling, water and wastewater systems) to assess what upgrades, modifications, or rehabilitation will be necessary for the future owner or occupant. Where an agency is intending to occupy a site, the property inspection will assist in identifying the suitability of the property and outline needed improvements to be undertaken by the agency or the owner. In instances where an agency is vacating a property, the new occupant will typically conduct the property inspection. Based on lease agreements and conditions for returning the property to the owner, agencies may also need to review agency-occupied facilities to assess the need to rehabilitate properties. Information from a property assessment can be relevant to the EDDA in identifying property conditions that may potentially result in environmental liabilities (e.g., degraded wastewater treatment systems may have contributed to local soil and groundwater contamination).

## USE OF GENERAL EDDA INFORMATION

The EDDA process provides a significant amount of valuable information on many aspects of property transfer liability. The information can be an indicator that other investigations are required, such as historic site or endangered species searches. However, it is important to realize that the EDDA is one of several tools that identify and manage the full range of liabilities and issues involved in property transfer. Besides managing contaminant liability, the EDDA process provides basic information that can be used as part of related investigations or as indicators to identify other facility or environmental considerations when preparing for property transfer.

# CHAPTER 3
# THE ENVIRONMENTAL DUE DILIGENCE AUDIT PROCESS

## OBJECTIVES

The focus of the Environmental Due Diligence Audit (EDDA) process is to identify and document proposed transfer properties for potential environmental contamination. The agency's objectives in executing the EDDA process include:

- Ensuring that all environmental due diligence requirements are addressed and potential environmental contamination is identified
- Establishing a consistent and defensible approach for addressing necessary environmental actions
- Providing the environmental baseline and assessment of properties to assist in property transaction decision-making
- Avoiding costly litigation and environmental remediation liability under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), or other relevant regulatory statutes.

## PHASES OF THE EDDA

The EDDA process contains three distinct and cumulative phases that are designed to support key decision points. Progress from one EDDA phase to the next is based on the need to further assess property contamination. Thus, the EDDA process ends at any point where the agency deems it has sufficient property contamination and liability information to make a decision regarding the property. If all three phases are necessary, they are as follows:

- Phase I—Liability Assessment
- Phase II—Confirmation Sampling
- Phase III—Site Characterization.

The intent of the Phase I is to evaluate the *potential* for environmental liability at the site. This is done through interviews, a site visit, and by gathering and analyzing information on current and past site uses and activities. If the Phase I report indicates a *potential* for environmental liability from contamination, the Phase II assessment is performed using focused field sampling to confirm or deny the suspected contaminants. Once contamination is confirmed, a Phase III EDDA may be initiated to fully characterize the nature and extent of the contamination and develop cleanup options and recommendations.

The EDDA decision-making process and the integration between the three phases is discussed in Chapters 4 through 6 of this document (also see Figures 3-3 and 3-4). Throughout the process it is important to remember that the EDDA has two overriding objectives: 1) to identify liability from past site uses, and 2) to provide technical information to assist in agency decision making.

**Phase I–Liability Assessment**

Phase I identifies potential areas of contamination and environmental concern, which may result in environmental liability. It consists of:

- Preliminary activities
- Site visit
- Records review
- Regulatory review
- Geologic and hydrogeologic review
- Report development.

All data gathered during this phase are documented in a Phase I report. The activities and process for the Phase I Liability Assessment are discussed in more detail in Chapter 4.

**Phase II–Confirmation Sampling**

If the Phase I Liability Assessment indicates possible contamination and the agency owns, occupies, or has sufficient interest in the property, Phase II (or the regulatory-mandated equivalent) will be conducted. (Note: For agency property designated for disposal, confirmation sampling is also required by the Community Environmental Response Facilitation Act (CERFA).) The Phase II EDDA involves targeted sampling to confirm or deny the presence of suspected contamination identified during liability assessment. The information contained in the Phase I Liability Assessment report is used to develop a strategy for carrying out Phase II. Depending on the findings and recommendations described in the Phase I report, several activities may be performed under Phase II. Typically, these activities consist of:

- Reviewing and evaluating the findings in the Phase I report
- Developing a confirmation Sampling and Analysis Plan (SAP)
- Performing sample collection and analysis
- Evaluating the sampling results against environmental or hazardous waste standards
- Developing the Phase II report.

The activities and process for the Phase II EDDA are discussed in more detail in Chapter 5.

**Phase III–Site Characterization**

A Phase III EDDA may be necessary when contamination has been confirmed by the Phase II EDDA. The purpose of Phase III is to fully characterize and assess the nature (i.e., types) and extent (i.e., magnitude or distribution) of site contamination. In addition, site characterization involves identifying appropriate cleanup technologies based on the nature and extent of contamination, potential cleanup goals, technology applications, and cost. Typically, Phase III activities include:

- Evaluating of prior EDDA reports to develop a site characterization-sampling strategy
- Performing more extensive sampling to assess the full extent of contamination
- Evaluating the contamination risk in relation to future land use
- Evaluating the technological viability and cost of cleanup alternatives
- Developing the Phase III report.

The activities and process for Phase III are discussed in more detail in Chapter 6.

## EDDA SCHEDULE

Depending on the type of property transfer, organizations involved, location importance, environmental condition of the property, and other agency-specific issues, the EDDA process may include one or more phases. Likewise, the schedule for the EDDA may vary. For example, an assessor budgets 60 to 80 working hours to complete a Phase I; however, issues regarding availability and accessibility of information result in delays. Such delays in the schedule are likely to defer the completion date, though they should not unduly increase the overall level of effort. Figure 3-1 provides a conceptual breakout of time allocations and activities for the Phase I Liability Assessment process. Managers should anticipate the complexity of the real property transfer process and the unique nature of the property in determining the time needed to collect information and address site logistics. For all EDDA phases, a flexible schedule is often appropriate.

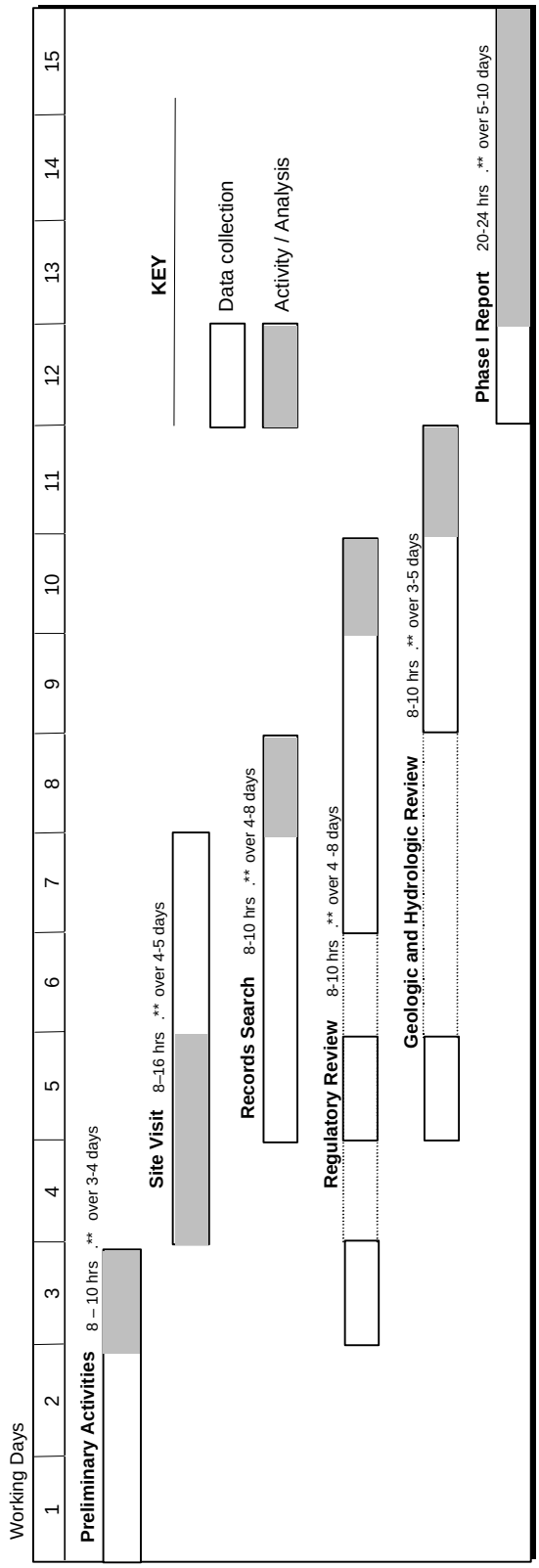
## RISK AND FLEXIBILITY IN THE EDDA PROCESS

Identifying potential risk and liability involved in property transactions is the heart of the EDDA process. As discussed previously, these risks will vary greatly depending on the type of property transaction and the type of property to be transferred. For instance, industrial properties typically have a higher probability for potential contamination than property that is solely used for office space.

Figure 3-2 provides a general risk framework for different transaction and property types. When approaching an EDDA project, it is useful to consider this model—and to plan the EDDA with consideration for the appropriate risk level.

Even though all EDDAs cover a standard set of investigative areas, they are not all equal; and, inherently the EDDA process needs to be flexible to reflect the varying degree of risk associated with the different types of property transactions and property-types. For example, the assessment of a former industrial site will likely require deeper investigation and evaluation than an EDDA for previously undeveloped woodlands in a remote location.

## Figure 3-1
## Time Line for Phase I Liability Assessment Activities*

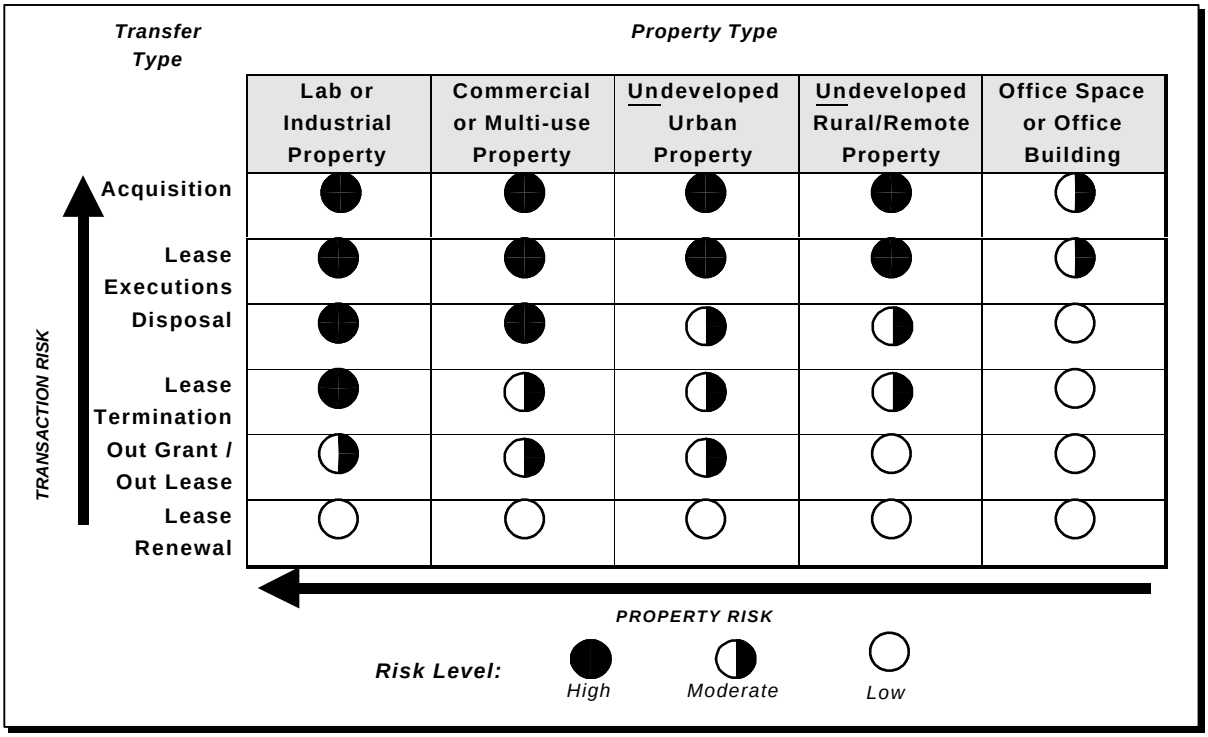



* Minimum times will vary based on property and transaction types.

** Displayed time estimate based on requirement of approximately 60 to 80 hours for a basic Phase I EDDA

| | Preliminary Activities | Site Visit | Records Search | Regulatory Review | Geologic/Hydrologic Review | Phase I Report |
|---|---|---|---|---|---|---|
| **Principal Activities** | • **Obtain basic property use/activities information**<br>• Property map<br>• Contact Owner and establish logistics for site visit<br>• Develop and distribute questionnaire | • Visual survey of the site and neighboring properties<br>• Interview property owners, on-site employees and neighboring owners<br>• Review on-site documentation | • Site ownership and use history (title search, facility records)<br>• Aerial photos, site photos, permits, previous environmental surveys<br>• Fuel storage tanks, hazardous material and waste management, sensitive environments | • Review permit and compliance history for subject and neighboring properties<br>• Access the regulatory databases (IDEA, RCRIS, and CERCLIS) | Obtain basic information on:<br>• Direction of groundwater flow<br>• Depth to groundwater<br>• Water Quality<br>• Soil characteristics<br>• Site topography<br>• Site hydrology | •Draft report<br>•Technical and quality revisions<br>•Publication and delivery |
| **Potential Factors Affecting Schedule** | • Receipt of pre-audit questionnaire and materials | • Site access and security issues<br>• Availability of site personnel<br>• Site size and complexity<br>• Travel time to site | • Availability of records<br>• Proximity to source of records (e.g. county seat) | • Access and responsiveness to local regulators<br>• Document requests (e.g. FOIA) | • Availability of documents | • Revisions and response to comments |

**Figure 3-2**
**General Risk Framework**




Flexibility is built into the EDDA process to allow the assessors to target high-risk areas and allocate resources (and time) appropriately. Particularly in the Phase I Liability Assessment, the EDDA process requires that the assessor investigate a broad range of areas and exercise professional judgement in order to focus on those issues that present the highest likelihood for risk. The assessor's understanding of risk is continuously refined as additional information is gathered and assessed during the EDDA process. Based on this emerging understanding of potential risk, the assessor continues to make adjustments with each step in the process.

Inevitably there will be exceptions to the general risk framework provided in Figure 3-2, and it is the role of assessor to recognize these exceptions and modify the EDDA process accordingly. For instance, the model shows a low risk associated with the disposal of an office building property; however, if an industrial operation located on the site prior to environmental regulation was forgotten, soil contamination may remain. An experienced assessor should see clues when reviewing the title search results and other Phase I material. The example also emphasizes how prior site history and use provide a baseline for evaluating the nature of risk at the site, whether or not the agency owns the property.

Overall, the strength of the EDDA process is in its flexible approach to balancing the agency's need to uncover and define risk areas, to manage liabilities associated with property transactions, and to accomplish due diligence. Readers should keep in mind that the materials, techniques, and information sources presented are to be used as a "guide" in how the process should be applied. The background and experience the assessor and EDDA team bring to the process play a significant roll in successfully managing the flexibility provided by the EDDA process.

## REGULATION OF CONTAMINATED SITES

CERCLA, RCRA, the Toxic Substance Control Act (TSCA), the Clean Water Act (CWA), the Oil Pollution Act (OPA), and state regulations prescribe for responsible parties the procedures to investigate and remediate environmental contamination. Alternately, evaluating for potential environmental contamination and liability was a process originally developed by lenders in reaction to CERCLA. Thus, the EDDA "phases" were developed to provide a practical acquisition focus to property transfer, rather than providing a framework for environmental cleanup. Addressing the CERCLA considerations of "due diligence" and "all appropriate inquiry" for environmental risks are the basis for Phase I Liability Assessment activities. When activities beyond a Phase I are indicated on agency-held property, the agency may be compelled to follow a regulatory-based process for addressing contamination. In such instances, *compliance with applicable CERCLA, RCRA, TSCA, CWA, OPA, or state requirements takes priority over EDDA in dictating the process to address specific types of liabilities or contamination.* When the property is not held by the agency and the agency is not a potentially responsible party, the Phase II and Phase III EDDA processes exist as guidance to confirm and characterize potential contamination and liability.

The statutes and regulations governing the requirement to investigate and remediate environmental contamination will vary depending on the nature of the contamination and when the release occurred. In such situations the Phase II and III sections of this document (Chapters 5 and 6) provide only a broad reference to the parallel regulatory procedures. For additional information on the CERCLA and RCRA processes, refer to Appendix H, Regulatory Overview.

In addition to the regulations on investigation and remediation of environmental contamination, National Environmental Policy Act (NEPA) may also apply. A facility closure or property transfer disposal action will often typically qualify as a "major federal action" under NEPA. As such, the agency's NEPA compliance efforts for this action (environmental impact assessment and public participation process) should also consider the EDDA activities. Depending on the timing, the agency's NEPA documentation may reference the completed EDDA Phase I and II reports, or may mention these as planned activities.

Along this line, NEPA public outreach activities may be sequenced with the evaluation and selection of site cleanup options. Public outreach may involve agency meetings with the community to address their concerns, agency grants to the public for their evaluation of the remedial alternatives, or creating fact sheets for the public on the contamination and remediation at the site.

To determine the applicability of NEPA, CERCLA, RCRA, or state regulations for a given property transaction, refer to the Regulatory Overview in Appendix H, the program offices, and legal counsel before proceeding.

## ROLES AND RESPONSIBILITIES

The EDDA process is typically undertaken by a team of technical and management staff responsible for overseeing and managing the process, conducting the EDDA, performing the technical reviews, and developing a decision based on report findings and input from agency real-estate and legal staff. Roles and responsibilities for conducting the EDDA process and decision-making are determined on an agency-by-agency basis. However, in all cases an agency representative should be identified to manage and oversee the execution of the EDDA.

Regardless of the nature of the property transaction, the EDDA should be performed by qualified individuals who have the relevant technical environmental background, training, and experience (refer to Appendix K for sample qualification requirements). Contractors selected to assist or conduct Phase I activities should also satisfy the contractor specification guidelines presented in Appendix L.

The following description of typical EDDA participants and roles provides a generic interpretation of how agencies may structure an "EDDA team." Depending on internal agency policies, there will be at least three primary team roles carried out during the Phase I: assessors, technical reviewers and agency decision-makers. In addition, there are collaborating roles for real-estate and legal staff. The specific roles of the EDDA team include:

- *Assessors*—Technical environmental staff who conduct the EDDA, develop recommendations, and draft reports. Assessors may be either agency or contractor staff; often Phase II and III EDDAs are performed exclusively by contractor resources.
- *Technical reviewers*—Technically qualified agency personnel who review the EDDA report for technical accuracy in methodology, scope, depth, and findings. A technical reviewer, who concurrently is the project leader, may also work with the assessors up front to determine the scope and work plan—in addition to reviewing and accepting the EDDA report. Technical reviewers should always include, but may not be limited to, agency personnel.
- *Agency decision-makers*. Agency management involved with overseeing the full scope of the property transfer activities and vested with authority to determine the agency's ongoing interest and responsibility for a given property. Agency executive decision-makers are typically briefed throughout the EDDA process to maintain an understanding of site issues, parameters, and implications of the EDDA process. This central role on the EDDA team should be fulfilled by one or more individuals who are collectively vested with the authority for determining the agency's position on the property transaction and committing necessary resources.
- *Real-estate personnel*. Professionals responsible for executing the property transaction on behalf of the agency. In acquisition lease execution situations, real-estate personnel will screen and identify possible candidate sites. During the EDDA process, real-estate staff remain involved facilitating the EDDA process by providing basic site information, executing the title search, and coordinating with property owner and operator.

- *Legal representatives*. Agency staff who participate in property transactions to ensure that the EDDA process is conducted appropriately and the report findings demonstrate due diligence. This offers legal protection to both the agency and the transacting entity. Lawyers typically provide advice on the EDDA process and are involved in the document reviews to ensure that the final report meets legal objectives. In some cases, the EDDA document may be conducted as attorney-directed work to ensure future protection of the documents for future landowners.
- *Site owner and operator*. Whether initiating occupancy (acquisition, lease executions) or vacating a site (disposal, lease termination) it is important to involve the current landowner or operator early in the EDDA process planning. Site owners and operators need to be fully apprised of the scope, intent and specific activities of the EDDA process and understand the implications of assessing and determining environmental liabilities. Owners and operators are typically included in a review capacity for preliminary EDDA report findings and are often a recipient of the final EDDA documents. When the subject property is owned or operated by the agency, there is also a critical role for the facility manager and staff. In such cases, the facility manager needs to identify the relevant personnel to facilitate the interview process, and all must provide accurate information to the EDDA team. Likewise, out-of-agency landowners and operators are excellent sources of basic site information and are an important source of both interview information and current site documentation.

## USE OF EDDA IN DECISION MAKING

The EDDA process is used to document the results of the investigation, document that due diligence has been exercised, and provide a basis to evaluate potential and actual environmental liabilities to aid in property transaction decisions. Professional judgement decisions are an integral part of the EDDA process, from deciding whether a full or partial Phase I Liability Assessment should be conducted, to deciding whether or not to proceed with the property transaction based on EDDA investigation results.

The EDDA process differs significantly from CERCLA in this decision-making aspect. While CERCLA directs a structured process from identifying contamination through site cleanup, the focus of the EDDA process is to manage liability. This is particularly important for property acquisition and lease execution. Figures 3-3 and 3-4 are decision making flowcharts for acquisition and disposal transactions.

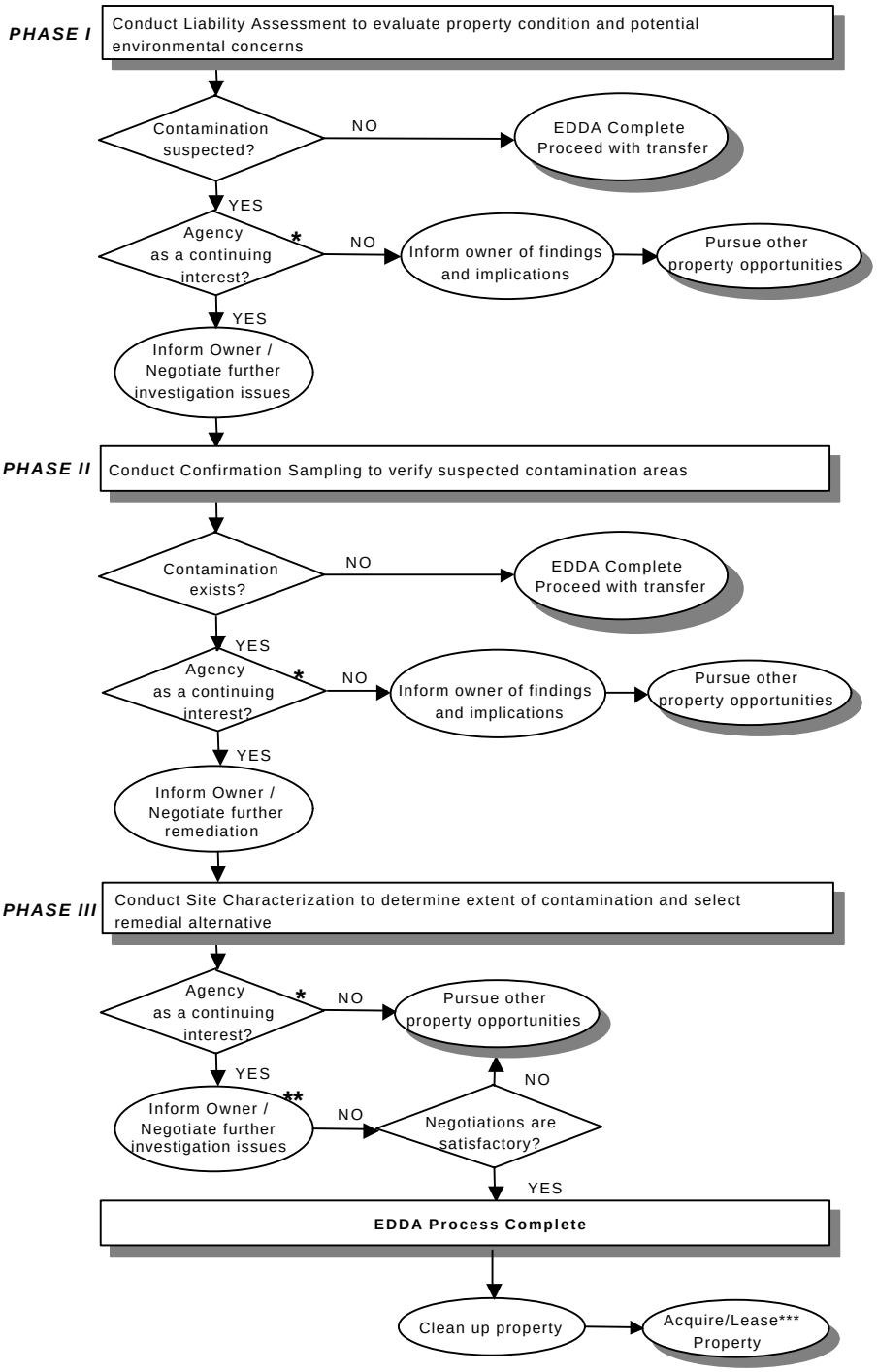
To further illustrate the decision making process, consider that the EDDA Phase I Liability Assessment is conducted for most property transactions. The need for additional EDDA phases for acquisition or lease transactions, however, will depend on the importance or strategic nature of the property. If the location of the property to be acquired or leased is relatively unimportant, then the agency decision-maker choosing to minimize agency liability would pursue a property without suspected contamination. Conversely, if the location of the property to be acquired or leased is important, then the agency may decide to gather additional information from a Phase II EDDA to further assess the likelihood of liabilities before making a decision about acquiring or leasing the property. In some situations, if an EDDA report documents contamination at a

property of strategic interest, the agency may elect to lease the rather than acquire the property. In such a case, the EDDA has allowed the agency to avoid "acquiring the liability" and to structure a "managed approach" to insulate intended operations from known or suspected contamination.

During a Phase II EDDA if contamination is not confirmed, the property transaction can proceed without adding undue risk for environmental liability. If, however, the presence of contamination is confirmed during the Phase II EDDA, decision makers must determine whether the importance of the site outweighs the potential liability that would accompany acquisition of the property. At this point, the agency may enter into negotiations with the owner to address the contamination, or the agency may choose to pursue further assessment of the extent of the contamination on property with a Phase III EDDA. The Phase III EDDA information will allow the agency to make a decision by weighing the potential liability costs against the value of the property. The agency could decide to take on these costs—possibly even using the information to lower the purchase price of the property. If the findings of the Phase II or Phase III EDDA appear significantly adverse, then other acquisition or lease opportunities may become more acceptable. There is no requirement to continue to a Phase II or Phase III for acquisition or lease transactions.

For disposal of federally owned or operated properties the decision-making process is fairly direct. Those properties that the agency releases to organizations outside the federal government are required to be free of contamination or have an authorized remediation in process before the transfer process can be completed. Where the Phase I Liability Assessment indicates a potential for contamination, federal agencies must confirm and, as necessary, characterize and cleanup contaminated property.

**Figure 3-3**
**Decision Process for Acquisition and Lease Execution Actions**

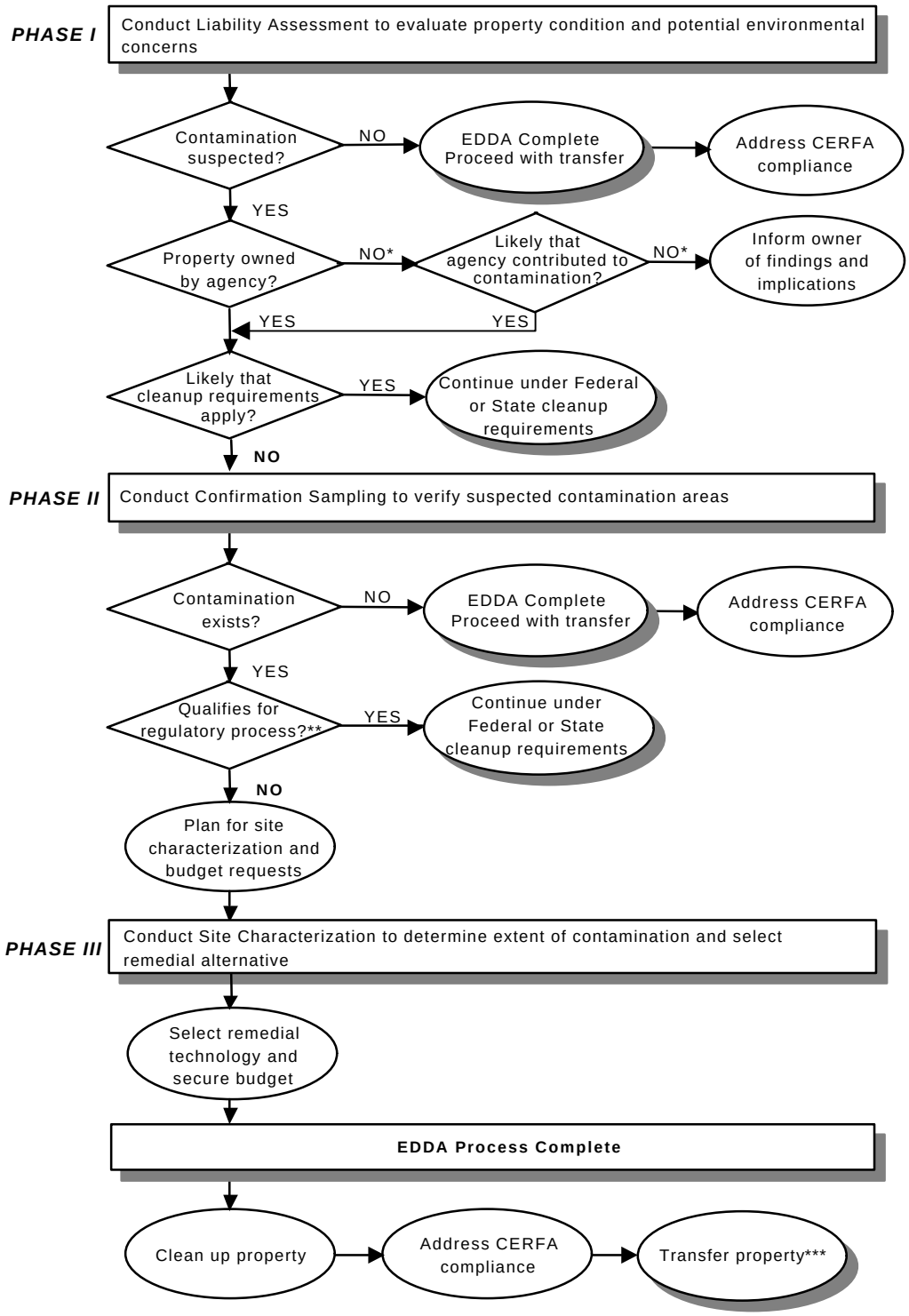



* Value of property to the agency outweighs the scope of potential liability or is of strategic interest.

** Property owners or agency may complete EDDA at their cost, provide for cost offsets against property value, or agree on other cost allocation position as part of negotiated settlement.

*** Acquisition / lease may proceed before cleanup activities are completed.

**Figure 3-4**
**Decision Process for Disposal and Lease Termination Actions**




* Lease termination only
** Consult experts for guidance on regulatory contamination and cleanup requirements
*** Properties may—with regulatory approval—be transferred before cleanup is complete

# CHAPTER 4
# PHASE I–LIABILITY ASSESSMENT

## DESCRIPTION

The purpose of the Phase I Environmental Due Diligence Audit (EDDA) is to identify potential areas of hazardous waste contamination or environmental liability associated with a property to be transferred. This chapter describes in greater detail the EDDA Phase I Liability Assessment, which consists of the following elements.

- *Preliminary activities*. Coordinating site visit logistics, gathering basic information regarding the subject property, and building a rapport with the site owner and site contact.
- *Site visit.* Observing visual signs of contamination and uncovering evidence of potential liabilities and contamination from past and current operations, or from off-site activities.
- *Records review*. Examining applicable documents, records, and aerial photography to supplement site visit findings and to gain additional information regarding prior uses of the property that may indicate a release of hazardous substances has occurred.
- *Regulatory review*. Examining applicable enforcement records to supplement site visit findings and to gain additional information regarding past environmental compliance violations, fines, or outstanding liens.
- *Geologic and hydrogeologic review*. Evaluating potential contaminant migration pathways and exposure routes.
- *Report*. Documenting the results of the EDDA Phase I Liability Assessment; documenting that due diligence has been exercised; and, as necessary, documenting information to initiate Phase II, confirmation sampling.

Sampling is not performed during the liability assessment, all of the information included in the Phase I report is gleaned from existing documents or inferred from observation made during the site visit. The environmental areas that are examined during this process include the following:

- Hazardous substance release on the subject or adjacent property
- Hazardous material and waste handling practices
- Underground and aboveground storage tanks
- Polychlorinated biphenyls (PCBs)
- Pesticides and herbicides
- Sensitive environments (including wetlands) on the subject or adjacent property
- Historic or cultural significance of the subject or adjacent property
- Asbestos
- Lead
- Radon and indoor air
- Ionizing and non-ionizing radiation
- Topographical and natural resource factors.

These elements and areas are covered in further detail in the following discussion of EDDA Phase I Liability Assessment process.

## PRELIMINARY ACTIVITIES

Prior to conducting the site visit, some preliminary activities are necessary, including logistics for the site visit, obtaining basic property information, and contacting the site owner or operator to brief them on the purpose, scope, and process of the EDDA Phase I Liability Assessment.

### Logistics

Identifying a primary point of contact for the subject property will facilitate the entire EDDA process. Negotiate an exact date and time for the site visit with this person, then inform: the property owner and operator; environment, health, and safety manager; other site representatives; and relevant agency officials. As appropriate, invitations to attend the briefing and walk-through should be extended. During this preliminary step it is also necessary to discuss and resolve escort issues, including: access, site security, safety briefings and the need for specialized equipment, such as Personal Protective Equipment (PPE).

### Contact

Preliminary telephone interviews may include the property owner or operator, adjacent property owners, and state and local authorities.

### Questionnaire

A questionnaire can be used as a tool to gather fundamental information from the site owner and operator or lead point of contact. It may be administered by the assessor during the initial phone contact, or it may even be electronically mailed to the property manager when the property is agency-held. In either case, the name, phone number, position, and responsibility of the person answering the questions must be documented to allow for later verification as necessary. In addition to gathering basic information about the property, a questionnaire may help focus the site visit and document search to issues of relevance to the particular property. A sample questionnaire is provided in Appendix M.

### Gather and Review

The assessors should prepare for the site visit by reviewing available site maps and documentation relevant to site activities and environmental issues. Information gathered during this step will give the assessors a general understanding of the property and site activities, in particular:

- The exact location and size of the property
- Identity of current property owners
- A site contact, to provide access to the property during the site visit
- The number of buildings and structures located on the property
- Presence of Aboveground Storage Tank (AST) or Underground Storage Tank (UST)

- Current site activities or operational issues that could have an impact on the site visit.

All of the preliminary activities provide a foundation for conducting the site visit.

## SITE VISIT

The site visit is an essential element of the EDDA Phase I Liability Assessment that allows the assessors to make first hand observations. In general, it consists of the following activities:

- Visual survey of the subject property and neighboring properties
- Interviews with property owners, on-site employees and neighboring property owners
- Review of on-site documentation.

The visual survey portion is intended to identify visible signs of environmental contamination or evidence of suspected contamination from current or past operations, both on and off the property.

The interviews should include discussion of site management and operations with the property owner, manager, or a designated representative. As warranted and reasonably possible, former facility personnel may also be identified and interviewed. They may have information regarding suspected contamination from past activities conducted at the facility. The input and inquiry of as many personnel as possible will help produce valid and defensible information.

The site visit further includes review of on-site records relevant to the environmental management and history of the property. All three aspects of the site visit are discussed in greater detail in the following sections. Appendix N also provides sample questions to consider when performing a site visit.

### Focus

Basic environmental considerations, including the items listed below, should be reviewed as part of the site visit. In addition, an assessor should walk the *entire* perimeter of the property to look for potential site contamination issues, and to note the presence and condition of any sensitive environments. *Any potential or actual hazardous conditions encountered during the site visit should be reported to the owner and operator or facility manager.*

The following is summary of issues to be addressed during the walk-through.

- Former and current uses of the subject and adjacent properties
- Adjacent property characteristics such as zoning, future land use, UST, and past uses
- Sensitive environmental areas
- Surveys or inspections, past and present, including radiological, asbestos, radon, and UST
- National Priorities List (NPL) status of the subject property and properties in the vicinity
- Permits, past and present, including: air; Nuclear Regulatory Commission (NRC); National Pollution Discharge Elimination Systems (NPDES); Publicly Owned Treatment Works (POTW); UST; and hazardous waste Treatment, Storage, or Disposal Facility (TSDF)

- Hazardous releases, including disposal, injection, and discharging
- Hazardous waste handling and storage practices
- Other waste handling practices—solid, sewage, septic, drains, sumps, lagoons, and pits
- USTs or ASTs—operating, closed, leaking, or inactive
- Fuel leaks or releases on both subject and adjacent properties
- Radon
- Potentially hazardous dusts and indoor air quality
- Asbestos-containing materials—use, storage, and research
- Lead-based paints and other lead sources—use, storage, and research
- Ionizing and non-ionizing sources, such as radiological materials and equipment—use, storage, and research
- PCB-containing materials—use, storage, and research
- Pesticides—use, storage, and research

**Observations**

Observations made during the site visit will include obvious signs of current or potential contamination. Many hazardous substances will stain soils or other surfaces and may destroy vegetation, such as grass or plants. The presence of drums may be an indication of hazardous waste contamination. The site owner and operator or representative should be consulted to identify the contents of unlabeled drums. Material Safety Data Sheets (MSDS) on file at the facility site may also be helpful in determining hazardous materials present. Additionally, to determine the potential for contamination, inquiries should be made about past practices, such as the disposal of chemicals in sinks.

In conducting a walk-through, EDDA team members should not engage in any activities that could put themselves or others in jeopardy. Certain activities may require specialized training, procedures, or permits in order to conduct them safely and in compliance with regulatory requirements. Such activities include opening drums of known or suspected hazardous materials, and entering hazardous areas, such as confined spaces, trenches or pits five feet or deeper.

**Hazardous Material and Waste Handling Practices**

The terms “hazardous material,” “hazardous waste,” and “hazardous substance” refer to a wide range of chemical, radioactive, and biological substances or materials.

- *Hazardous material*—Any substance or material that has been determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce (49 CFR Part 172, Table 172.101). This includes hazardous substances and hazardous wastes.

- *Hazardous waste*—Under the Resource Conservation and Recovery Act (RCRA), a waste is considered hazardous if it is listed in, or meets the characteristics described in 40 CFR Part 261, including ignitability, corrosivity, reactivity, or extraction procedure toxicity.
- *Hazardous substance*—Any element, compound, mixture, solution, or substance defined as a hazardous substance the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and listed in 40 CFR Part 302. If released into the environment, hazardous substances may pose substantial harm to human health or the environment.

Hazardous wastes and the potential for past release or mismanagement presents the greatest single area for environmental concern and potential for liability. Details about correct waste handling, storage, and disposal practices should be available from either the owner and operator or from the facility environment, health, and safety manager. If the subject property is owned or operated by the agency and is under review for disposal or lease termination, the review team should be extra vigilant to account for all hazardous materials and wastes and when they will be transferred. Any facility which disposes regulated quantities of hazardous materials will have an Environmental Protection Agency (EPA) waste generation identification number on record.

**Underground Storage Tanks and Aboveground Storage Tanks**

Petroleum products or hazardous substances may be present on-site in USTs or ASTs, as well as associated underground pipelines. A leaking UST or AST system presents a potential risk of contaminating surface soils, surface waters, or groundwater. There may also be a potential fire or explosion hazard from a poorly maintained or leaking UST or AST system containing ignitable or reactive materials. The entire system, including sumps and pits, should be visually inspected where possible to identify potential sources of contamination. The questionnaire in Appendix O may be used as a protocol or guide for obtaining additional information on UST and AST. Federal regulatory requirements for managing USTs are found in 40 CFR Part 280.

**Polychlorinated Biphenyls**

PCBs are organic chemicals that have been determined to be a public health concern. In the United States PCBs have not been manufactured since 1979; however, they remain prevalent in many types of electronic equipment and hydraulic fluids. Examples of equipment that may contain PCBs include transformers, capacitors, and light ballasts. In addition, fluids associated with heat transfer systems, hydraulics and waste oils may also contain PCBs. The regulations under Toxic Substance Control Act (TSCA) cover PCBs and require prominent labeling and management activities. Once introduced into the environment, PCBs are extremely persistent and do not breakdown. The assessor should establish whether PCBs are associated with the property and pose a potential liability. Assessors should also document all equipment that may be PCB-containing. Any suspect equipment that is not marked as “non-PCB equipment” should be considered a potential source. TSCA regulations for PCB management are codified in 40 CFR Part 781.

**Pesticides**

Pesticides are chemical products developed to control plant or animal life. The term "pesticide" includes insecticides, herbicides, rodenticides, fungicides, disinfectants, and plant growth regulators. The most widely used pesticides share some common traits:

- They tend to be chlorinated hydrocarbons
- At sufficient levels, they tend to produce a wide range of adverse effects in humans, such as nerve damage, liver damage, and kidney failure
- They tend to bioaccumulate, meaning that as plants and animals ingest these chemicals and are in turn ingested by other animals, the poisons accumulate up the food chain. Therefore, what starts out as a small, non-harmful release may accumulate into harmful doses for other organisms.

Assessors should document both the use and the management of pesticides at the site.

**Sensitive Environmental Areas**

Sensitive environments encompass a broad spectrum of site characteristics (e.g. wetlands, coastal zone, parks and recreational areas). Certain ecosystems are considered critical when endangered or threatened species are sustained within that ecosystem. As a result, evaluation of a property requires an awareness of floral and faunal environments, wetlands, and endangered species. Though some issues related to the presence of sensitive environments are outside the scope of EDDA, during the site visit the assessor should walk the entire perimeter of the site to identify sensitive environments and note any potential for contamination, either on- or off-site.

In addition to wetlands, all surface water retention ponds, stormwater management units, surface impoundments or pits should be identified. To the most reasonable extent possible, the use, contents, and characterization reports of these ponds, pits, or impoundments should be analyzed to determine if suspected contamination exists.

Other sensitive environments, such as coastal areas, parks and natural preserve areas, or surface waters (e.g. rivers, streams, ponds) may also present future limitations to property use or constitute difficult-to-address receptors for contamination issues. These resources should also be noted and specifically observed during the site visit.

**Historic and Cultural Significance**

The Phase I provides an opportunity to consider historic significance in the property transfer. Districts, sites, buildings, structures and objects that are significant in American history, architecture, archaeology, engineering and culture are to be preserved for present and future generations. Assessors should specifically inquire into the historical and cultural significance of the site and adjacent properties. The EDDA Phase I Liability Assessment should note any potential restrictions to property use or development.

**Asbestos**

Asbestos is a naturally occurring mineral which is a very effective heat and sound insulator. As a consequence, it was used in many buildings as a fire and noise retardant. However, it has been linked to several diseases, including lung cancer; and since 1987 it has not been used in construction materials. Nonetheless, most structures constructed before 1987 have Asbestos-Containing Materials (ACM) in insulation, floor tiles, mastic, pipe-wrap, roofing, and other materials. Sites which manage friable ACMs should have an asbestos operations and management plan on-site that contains a survey of the site ACMs. Assessors should review any site-specific asbestos documentation, assess construction dates, and visually examine building materials to judge whether ACM may be present at the site. Keep in mind that assessors should *never disturb any objects suspected of containing ACM*; doing so requires specialized training and certification, and if done improperly may cause a hazardous situation.

**Lead-Based Paint and Other Lead Sources**

Many buildings and structures contain significant amounts of lead-based paints and other lead sources that may pose an environmental health condition at subject property. Other sources include lead piping and solder that may contribute to high lead content in the drinking water. Lead has been associated with central nervous systems disorders, particularly among children and other sensitive populations. Exposure to lead is usually through *inhalation* during renovations and demolition activities or through *ingestion* of paint chips or lead-contaminated drinking water. Assessors should evaluate the potential for site structures to have lead-based paints and inspect building features and documentation to determine whether lead piping has been used.

**Indoor Air Quality, Radon and Potentially Hazardous Dusts**

Radon, potentially hazardous dusts, and other indoor air issues are not readily observable. Radon is a naturally occurring, invisible, odorless, tasteless, and radioactive gas. Inside enclosed spaces radon and other indoor air quality concerns can accumulate to levels that may pose risks to human health. Assessors should inquire about tests conducted at the subject property, and should review area documentation for the presence of radon in and around the subject property.

**Facility Documentation**

Clues to past and present hazardous material and waste management practices can also be ascertained from facility records and their review is an important aspect of the site visit. Facility records provide an excellent document trail of the environmental history and current management practices at the site. Records on hazardous waste accumulation, storage, treatment, or disposal (e.g., satellite waste accumulation records and manifests) should be reviewed. Other environmental management plans and reports may also provide information on the use and management of hazardous materials and wastes. These include, but are not limited to, Spill Prevention, Control, and Countermeasures (SPCC) plans; Pollution Prevention (P2) plans; and Emergency Planning and Community Right-to-Know Act (EPCRA) plans and reports. Quantities of hazardous materials used and stored, as well as reportable hazardous substance releases, must be accurately identified for compliance with federal and state requirements (e.g., 40 CFR Part

373). Refer to Appendix H for more information on the regulatory requirements and notifications for disposal or lease termination transactions. Finally, assessors should review any previous environmental inspection or audit reports, management plans, National Environmental Policy Act (NEPA) documentation, and any other relevant information to gain a comprehensive understanding of the environmental history of the site.

## RECORDS SEARCH AND REVIEW

A significant element of a Phase I Liability Assessment is the record search and document analysis. EDDA assessors must analyze documents obtained during the site visit, as well as records from federal, state and local regulatory entities. In conjunction with the site visit, an assessor should visit local regulatory and county offices to obtain and review additional records that may shed light on the environmental history of the property, and, to the extent practicable, on contiguous and adjacent properties. For example, chain-of-title documents, aerial photographs, incident reports, and other key documents that might provide information on past site uses and hazardous materials management and disposal activities. Many records can also be obtained without traveling to the site. The following table summarizes target records and their potential sources.

**Table 4-1**
**Target Information/Records and Potential Sources**

| TARGET INFORMATION/RECORDS | POTENTIAL SOURCES |
|---|---|
| Site Ownership History | Title search - local courthouse<br>Agency real estate office<br>Agency historian<br>National Archives and Records Administration (NARA), related regional archives, and state archives |
| Site Use History | Current owner and operator<br>Facility records<br>Previous owner and operator<br>Sanborne Fire Insurance Maps<br>Agency historian<br>Agency facility, architecture, or engineering office<br>Agency reports (budget, A-106, FedPlan, annual, ...)<br>NARA, related regional archives, and state archives<br>Title search |
| Aerial Photographs | Facility records<br>Current owner and operator<br>Previous owner and operator<br>Agency historian<br>Agency regional or area office<br>Agency facility, architecture, or engineering office<br>Agency reports (budget, A-106, FedPlan, annual reports)<br>Local collections, universities or museums<br>Local highway or transportation department<br>United States Geological Survey (USGS) |

**Table 4-1**
**Target Information/Records and Potential Sources (Continued)**

| TARGET INFORMATION/RECORDS | POTENTIAL SOURCES |
|---|---|
| Environmental Permits | Current owner and operator<br>Facility records<br>Agency regional or area office<br>Previous owner and operator<br>State and local regulatory authorities |
| Environmental Surveys | Current owner and operator<br>Facility records<br>Agency regional or area office<br>Previous owner and operator |
| Hazardous Materials and Waste | Facility records<br>Material safety data sheets<br>Facility environmental compliance audit reports<br>Facility hazardous materials management plans<br>EPCRA reports<br>State environmental agency<br>Environment, health, and safety manager<br>Facility engineering manager<br>Facility personnel or service contractors<br>Agency regional or area office<br>Agency facility, architecture, or engineering office<br>Agency reports<br>Product manufacturers |
| Site Contamination per<br>National Priorities List,<br>Federal Facilities Docket, or<br>State Contaminated Site List | LandView (mapped environmental and census data tool)<br>IDEA database (1-888-EPA-IDEA or http://es.inel.gov/oeca/idea)<br>CERCLA Information System (CERCLIS) Hotline (202-260-0056)<br>RCRA/Superfund industry assistance hotline (1-800-424-9346)<br>EPA Regional Offices (web site: http://www.epa.gov/)<br>State environmental agency |
| Fuel Leaks | State environmental agency<br>Local fire and health department<br>Facility records |
| Above and Underground Storage Tanks | State environmental agency<br>Local fire department<br>Facility records<br>Facility environmental compliance audit reports<br>Facility SPCC plans<br>Facility hazardous materials management plans<br>EPCRA reports<br>Material safety data sheets |
| PCB equipment, use, and incidents | Facility PCB log or records<br>Current owner and operator<br>Facility personnel or service contractors<br>Local fire department<br>Agency regional or area office<br>Agency facility, architecture, or engineering office<br>Equipment manufacturer<br>Utility company (large transformers or utility-owned) |

**Table 4-1**
**Target Information/Records and Potential Sources (Continued)**

| TARGET INFORMATION/RECORDS | POTENTIAL SOURCES |
|---|---|
| Wetlands and Environmentally Sensitive Areas | Facility studies<br>Town/county planning and zoning office<br>County soil survey reports<br>Local soil conservation district<br>National/ State Wetland Inventory Maps (available from EPA Regional Offices)<br>United States Army Corps of Engineers<br>Wetlands Protection Hotline (1-800-832-7828) |
| Asbestos | Building age (pre-1987)<br>Asbestos survey reports<br>Facility records<br>Facility as-built drawings and specifications<br>Current owner and operator or manager<br>Environment, health, and safety manager<br>Facility engineering manager<br>Facility personnel or service contractors<br>Agency regional or area office<br>Agency facility, architecture, or engineering office<br>Product manufacturers |
| Lead-Paint and other Lead or Heavy-Metal Sources | Building age<br>Lead survey reports<br>Construction blueprints and specifications<br>Facility Maintenance Records or Procedures<br>Facility personnel or service operators<br>Water utility service |
| Indoor Air Quality, Radon and Potentially Hazardous Dusts | Facility records and survey reports<br>Environment, health, and safety manager<br>Agency regional or area office<br>County/ local health department<br>State Occupational Safety and Health Administration |
| Hydrogeology and geology | Facility soil studies and groundwater test results<br>USGS<br>United States Department of Agriculture (USDA)<br>State water resources control<br>County planning office<br>Local soil conservation district<br>Local county planning office<br>Aerial photographs |

### Adjacent Property

The purpose of the adjacent property records search and review is to identify the issues that may have adversely affected the environmental condition of the subject property. Generally, the adjacent property review effort will be limited and not as extensive as the subject property review. The search radius may be left to the discretion of the environmental professional (i.e., EDDA Phase I Liability Assessment review team). Factors that may be considered when evaluating adjacent properties and determining the search radius include:

- Density of the setting where the facility is located (e.g., rural, urban, or suburban)
- Distance that hazardous substances or petroleum products are likely to migrate based on local geologic or hydrogeologic conditions
- Adjacent NPL or contaminated sites.

**Site History - Ownership and Use**

Prior site ownership and use is typically documented in local property ownership and tax records. A chain-of-title review should be conducted to list continuous ownership and use of the property to the present time. A title search, Sanborne Fire Insurance (SFI) map and special hazard area map review will reveal the past owners, uses of the property, and properties that are subject to flood hazards. The general site history and property owners for the last 50 years should be identified to determine the past property uses and activities.

**Title Search**

Chain-of-title records are maintained at the local courthouse and may be researched with the assistance of agency real-estate specialists or court clerks. The purpose of the title search and review is to fully identify past owners and research any information that might affect the current environmental condition of the subject property.

**Sanborne Fire Insurance Maps**

SFI maps identify past property owners and property uses. Analysis of this information may reveal the types of activities and associated materials that could have been managed at the facility.

**Aerial Photographs**

Aerial photographs are used to reveal past site uses that raise environmental concerns, or may help in documenting the timetable for site improvements and associated activities. Aerial photographs of the subject and surrounding properties should be reviewed for the last 50 years to verify site activities and the activities at neighboring sites. An individual qualified and trained to interpret aerial photographs (such as personnel meeting the criteria provided in Appendix K) should perform this review.

**Environmental Surveys and Audit Reports**

All available environmental survey and audit reports (from current or past owners and operators) should be reviewed to determine if contaminants were or are currently present at the site or adjacent properties. This includes surveys and reports for UST, lead-based paint, air quality, radiological, mercury, PCB, and asbestos contaminants. In addition, beneficial information may be obtained from reviewing reports on multimedia environmental compliance status, management practices, NEPA, and P2.

**Utility Transformer Records - PCBs**

Under 40 CFR Part 761.180, facilities that use or store a total capacity in excess of 45 kilograms of PCBs, one or more PCB transformers, or 50 or more PCB large capacitors are required to maintain an annual PCB log on-site. Records may also be sought from the local utility companies. Note that occasionally more than one utility company will have jurisdiction over a given property.

**Special Hazard Area Maps**

Special hazard areas denote properties that lie within the floodplains and have flood, mudslide or flood-related erosion hazards. The maps identify properties in terms of 10-, 50-, 100-, and 500-year flood discharges. Such designations may limit the type of activity permitted on a property. In addition, understanding the property's location with respect to floodplain areas will assist in interpreting the potential for on- and off-site contamination impacts.

**Nuclear Regulatory Commission (NRC)**

For properties where there have been permitted radiological activities (e.g., laboratories, medical facilities, and some commercial research and development applications), the NRC or facility should have information on the facility's radioactive materials license. The NRC license, license conditions, and notices of violation should be obtained and reviewed to determine the nature and type of materials handled, stored, and disposed. The operating procedures applicable to licensed activities should also be reviewed to determine the potential areas of contamination; equipment and laboratory surface exposure; potential air emissions and Heating, Ventilation, and Air Condition (HVAC) duct contamination; and potential contaminated environmental media (e.g., groundwater, surface water, soil). NRC licenses require monitoring and surveys to be maintained by the facility. These surveys should be reviewed to determine the potential levels and locations of radioactive contamination. A list of the four NRC Regional Offices and their phone numbers are provided in Appendix P.

## REGULATORY REVIEW

The regulatory review is another essential step in the investigative due diligence process. This activity involves reviewing the permit and compliance history for the subject property, as well as neighboring sites that may have an impact on the property (typically a one-mile radius). Otherwise unknown environmental concerns can be revealed, such as a history of fines for spills on the adjacent property. Of course, the regulatory search can only reveal the known compliance history; unreported spills and other activities that could contribute to contamination are not part of an official regulatory record.

Records and files should be obtained for applicable environmental enforcement agencies such as the EPA, state environmental protection department, water control board, local fire department, and the health inspector. Each entity can be contacted independently for a search of the necessary records, or commercial vendors can be used to provide regulatory database search services. Examples of federal, state and local regulatory data sources are provided in the following sections.

**Federal Lists**

Federal regulatory data sources include the following:

- *RCRIS*—The RCRA Information System is an EPA list of permitted hazardous waste facilities and generators.
- *CERCLIS*—The CERCLA Information System is an EPA database with information on "Superfund" sites on the NPL. CERCLIS is a component of idea.
- *SETS*—The Site Enforcement Tracking System is an EPA database listing responsible parties at NPL sites.
- *ERNS*—The Emergency Response Notification System for spill and response activity information, which is maintained by the U.S. Coast Guard.
- *IDEA*—The Integrated Data for Enforcement Analysis database contains data from 15 EPA and EPA-related databases, including RCRIS, CERCLIS, SETS, and ERNS. Information on IDEA can be obtained from the hotline (1-888-EPA- IDEA) or the internet (http://es.inel.gov/oeca/idea).

**State Agency Lists**

The appropriate state environmental agencies should be contacted for information on fuel or other regulated releases that may have occurred on the subject or adjacent property. Many states maintain lists similar to CERCLIS and RCRIS on environmental site contamination, response actions, and small fuel releases. State enforcement inspection reports should be reviewed for information on potential sources of contamination. In addition, state environmental permits should be obtained and reviewed for specific closure requirements. Other permit areas to be considered include UST, AST, air quality, hazardous waste, industrial and domestic wastewaters, radioactive materials, and hazardous materials.

**Local Authorities**

Regulatory records from local authorities should not be overlooked. Local fire and health departments typically conduct enforcement inspections, which could reveal environmental conditions relative to local codes and standards. Fire departments may have information regarding facility hazardous substance use and USTs, as well as past releases or environmental incidents. Health departments may have information on radon levels in the area of the site, as well as site activities that may impact human health and the environment.

All local environmental permits and inspection reports should also be obtained and reviewed, including those for POTW, sanitary sewer, and stormwater discharge. Permits and inspection reports will assist in determining the potential composition of the hazardous materials used and whether there is cause for concern based on the permit parameters and report findings.

### Town and County Planning or Zoning Office

Typically the planning or zoning office is located with the main city or county offices. The applicable entity should be contacted to determine whether the property is zoned for a particular use (e.g., industrial, agricultural, wetland, or sanctuary), and whether the property has any historical or recreational value. The county planning office or the local soil conservation district may also be able to provide a copy of county soil survey reports for the area. This information will be helpful in accurately characterizing the property's features (including wetlands). It will also be useful in determining the limitations of future land use or property transfer. Information obtained regarding the existence and classification of wetlands should be verified with other hotline or national wetlands inventory map data.

## GEOLOGY AND HYDROGEOLOGY REVIEW

The geology and hydrogeology of a property are investigated to provide an understanding of how potential contamination could affect the soil and groundwater of subject or adjacent properties. Both the land and water features of the site will have an impact on the speed and ability for potential contaminants to migrate. Topics to consider in this review are:

- Direction of groundwater flow
- Depth to groundwater
- Floodplain
- Water quality
- Soil characteristics
- Site topography.

The property owner and operator should be contacted for a copy of any previous soil or groundwater studies, which should be reviewed for general geologic and hydrogeologic information as well as data on suspected contamination. The following sections provide a list of other available information sources.

### United States Geological Survey

The USGS maintains information on the soil characteristics and hydrogeology for the United States. Reports for the applicable area should be analyzed to determine the groundwater depth and flow, and surface water flow. The phone number for USGS headquarters is 703-648-6045; other USGS offices and phone numbers are provided in Appendix Q.

### State Water Resources Control

State water resources control boards conduct well surveys of groundwater and drinking water. Information on the aquifer type, depth to groundwater, classification, and use is often found in regional reports. Data from these surveys should also be reviewed to characterize and identify existing or formerly operated wells on the site.

### United States Department of Agriculture and Local Authorities

The USDA and regional Soil Conservation Service (SCS) districts generate soil survey reports on regional geology and soil types. The county planning office or the local soil conservation district may also be able to provide a copy of county soil survey reports for the area. This information is helpful in accurately characterizing the property's features (including wetlands). It will also be useful in determining the limitations of future land use or property transfer. Information obtained regarding the existence and classification of wetlands should be verified with other hotline or national wetlands inventory map data.

## PHASE I REPORT

The EDDA Phase I Liability Assessment report is prepared after all the information gathering activities have been completed. The intent of the report is to document the results of the liability assessment, including the findings, conclusions and recommendations. By its nature, it also documents that due diligence was exercised.

### Report Development

The Phase I report must document all aspects of the site visit, as well as the record, regulatory, geologic, and hydrogeologic reviews. The report must also include statements of conclusion on the possibility and nature of environmental contamination associated with the site and the potential for liability. Further, the report should recommend appropriate next steps based on intended use of the property and the liability conclusion stated. Any limitations should be directly stated to ensure that the reader and decision maker are aware of what information was not available for assessment of potential liability. Back-up documentation should also be provided with the report, including but not limited to inspection notes, property-related reports, completed questionnaires, correspondence with state agencies, and site maps. A suggested outline of the report is provided in Appendix R.

### Phase I Report Review

It is essential for the Phase I report to be reviewed for correctness and completeness. In this role, the technical reviewer ensures that the report is complete and properly worded; but, more importantly, he or she evaluates the assessor's methodology to ensure that the report reflects that due diligence and all appropriate inquiry were applied during the investigation. The reviewer must also ensure that statements of conclusion regarding suspected contamination and liability are correctly derived from, and supported by, the data collected. To do this, the technical reviewer must be qualified, with the relevant technical environmental background, training, and experience (see Appendix K for a list of qualifications). Agency legal council may want to review the draft reports to ensure that the content is consistent with agency policies.

### Use of the Phase I Report

Following the approval and acceptance of the Phase I report by the technical reviewer, it is forwarded to the executive decision maker. This individual or group of individuals evaluates the

findings, conclusions, and recommendations contained in the report and decides how to proceed with a proposed property transfer. General guidance on the decision making process has been provided in Chapter 3 (refer also to Figures 3-3 and 3-4 for separate decision making issues for acquisition and disposal situations).

For all transactions, if the Phase I report indicates no evidence of contamination or liability, then the EDDA process is complete; environmental due diligence has been met and results may be used to satisfy any property disposal obligations under CERCLA Section 120(h)(4).

If the agency is considering an acquisition or lease initiation and the findings of the Phase I indicate there is the potential for contamination or liability, then decision makers must weigh other property options against the importance or strategic value of the subject property (see Figure 3-3). When the agency has continuing interest in the property, a Phase II must be conducted to confirm contamination and liability. If the property transaction is a disposal or lease termination and the findings indicate potential contamination or liability, then a Phase II must also be conducted.

# CHAPTER 5
# PHASE II—CONFIRMATION SAMPLING

## DESCRIPTION

The purpose of the Phase II Environmental Due Diligence Audit (EDDA) process is to confirm the presence or absence of contamination and liability identified in the Phase I Liability Assessment. The Phase II EDDA is accomplished through confirmation-sampling where the suspected areas of concern noted in the Phase I Liability Assessment are physically sampled to determine if actual contamination exists. Phase II procedures are designed specifically to confirm the presence or absence of contamination. This is achieved through targeted field sampling of suspected areas and appropriate laboratory analysis to quantify suspected contaminant compounds. These activities may range from intrusive sampling, such as advancing groundwater monitoring wells, to simple surface soil samples readily taken by hand augers. In some cases, the sampling may consist only of taking asbestos sampling or setting radon canisters. The range of required sampling will influence the scope of the Phase II activities and associated resources to complete the investigation. If Phase II activities show that contamination exists, then Phase III activities may be undertaken to fully characterize site contaminants. However, if Phase II shows that contamination does not exist, the EDDA process is concluded.

Following an indication of possible contamination from a Phase I Liability Assessment, the motivation for proceeding to Phase II differs by property transaction type. For agency property targeted for disposal, any suspected contamination must be further investigated and, as necessary, remediated in accordance with applicable regulations (refer to Figure 3-4). For acquisitions, the agency interest in a given property must out weigh the expense of further investigation and other property alternatives (refer to Figure 3-3). For other transactions, the decision to proceed with confirmation sampling will depend on numerous factors, including:

- The type of transaction
- Level and severity of suspected contamination
- Price and availability of alternate sites
- Cooperation of the subject-property owner for the investigation to continue.

These issues are discussed in Chapter 3 of this guidance and should be fully considered as part of the agency's decision-making process.

Due to the technical requirements and potential liability issues raised by Phase II Confirmation Sampling activities, the use of certified contractors is strongly recommended. The agency is responsible for selecting a *qualified* contractor with a licensed Professional Engineer (PE) or a licensed Professional Geologist/Hydrologist (PG/PH) on staff to supervise and approve the work. Sample specifications for Phase II and Phase III EDDA contractors are provided in Appendix S. When a contractor is engaged to design and perform the Phase II Confirmation Sampling field activities, the agency role in the field will be to provide oversight and logistical support (e.g., site access). Additionally, the agency will oversee the progress of the investigation to ensure that it is completed within budget and on time. Depending on the scope and planned activities, Phase II Confirmation Sampling can address one or more issues and require different levels of field

activities and analytic procedures. Consequently, this can become a very expensive and time-consuming process unless it is properly planned, managed, and controlled. Monitoring and oversight of these activities is paramount and presents the agency with an opportunity to ensure that the Phase II Confirmation Sampling is fully executed.

Agency personnel are responsible for reviewing and accepting the contractor's plans and reports. Accordingly, the personnel involved with the review process should be familiar with the sampling strategy and understand the implications of the sampling results and recommendations of the report. The Phase II EDDA is a critical element in developing specific knowledge about the presence or absence of site contaminants and, if confirmed, generating an initial understanding of potential future site implications. The duration of the Phase II Confirmation Sampling process depends on the specific activities planned and the scope of the confirmation sampling program. Phase II Confirmation Sampling activities consist of the following four steps; a description of each of these activities is provided in the subsequent paragraphs.

- Reviewing and evaluating the findings in the Phase I report
- Developing and implementing a confirmation Sampling and Analysis Plan (SAP)
- Identifying site risk based on the results of the confirmation sampling
- Developing the Phase II report.

## REVIEW AND EVALUATION OF PHASE I REPORT

Prior to initiating any Phase II Confirmation Sampling activities, the Phase I report should be thoroughly reviewed to gain a complete understanding of what is currently known about the site and the suspected contamination. The Phase I report provides valuable information on the environmental condition of the property. Specifically, the conclusions and recommendations section documents the potential areas of concern and provides recommendations for performing Phase II Confirmation Sampling activities. These areas can include the site structures, site grounds, or information on suspected sources on neighboring properties. Several types of surfaces and environmental media may need to be sampled. Additionally, the Phase I report will contain valuable background information that will be pertinent to designing and conducting Phase II Confirmation Sampling. This information should be reviewed to ensure that the Phase II Confirmation Sampling contractor has a full understanding of what is known about the site and the specific areas of suspected contamination. Relevant background information may include:

- Recommended locations of investigation and issues supporting the suspected types of contamination and sources
- Potential sources of contamination based on prior site use
- Past site operations and practices
- Physical characteristics of the site, such as soil types, depths to groundwater, geologic and hydrogeologic features
- Noted background (or ambient) levels of contaminants of potential concern
- Previous hydrologic, testing or assessment report, identified and reviewed in the Phase I that support the recommendations or provide additional site detail and characteristics.

It is important for the Phase II Confirmation Sampling contractor and applicable federal agency staff to become familiar with the contents of the Phase I report. This information forms the basic building blocks for designing, planning, and performing Phase II Confirmation Sampling activities. These activities must address all of the issues raised in the Phase I report. Therefore, the success of the Phase II Confirmation Sampling activities, in part, rests with having a thorough knowledge of the site conditions and areas of concern noted in the Phase I report This information is used to develop the background and understanding as well as to specifically set forth the objectives of a site SAP.

## DEVELOPMENT AND IMPLEMENTATION OF THE SAP

The purpose of the SAP is to establish an agreed-upon sampling strategy that will fully address each potential liability area through confirmation sampling and analysis. The SAP contains two distinct elements. The first is the Field Sampling Plan (FSP) that specifically discusses the sampling activities, scope, analysis, health and safety activities and the rationale for each. The second is the Quality Assurance Project Plan (QAPP) that identifies the Quality Assurance/ Quality Control (QA/QC) procedures used in the field sample collections and analysis to ensure that accuracy and precision of the sampling results. The use of an independent contractor is always encouraged to demonstrate that an objective and defensible Phase II Confirmation Sampling approach is executed and accurate results are obtained. The SAP must be developed by the Phase II contractor and approved by the agency before Phase II Confirmation Sampling commences.

*Element 1*, the FSP, should consist of field sampling and analysis procedures, a safety and health plan, and a project management plan. The FSP must describe the following activities:

- Sampling objectives
- Site background
- Site characteristics
- Potential contaminants of concern
- Type of media being sampled
- Sample type and the location, number, and frequency of samples being taken
- Sample collection, handling, designation, numbering, and preservation techniques
- Field quality assurance and quality control procedures.

A description of each of these activities is provided in Appendix T. A safety and health plan is also developed to ensure that adequate precautions and planning for onsite activities. This portion of the plan must adhere to the Occupational Safety and Health Administration (OSHA) regulations in 29 CFR Parts 1910 (General Industry Standards) and 1926 (Construction Safety).

The safety and health plan delineates the roles and responsibilities of site personnel, site-specific hazards, safety precautions, and regional medical response facilities. Contact the facility's environment, health, and safety manager for additional information. The overall objective of the plan is to ensure the safety and health of workers performing confirmation-sampling activities. The agency must require contractors to have their own OSHA compliant safety program to comply with OSHA multi-employer work-site regulations.

*Element 2*, the QAPP, establishes the quality management system for all environmental programs performed by or for the agency. Specific policies and program requirements involving QA/QC activities will depend on internal agency policies. A program should be in place to define in detail how specific QA/QC activities will be implemented during a specific project. The four general quality assurance elements are:

- Project management
- Measurement and data acquisition, including sampling analysis, data handling, and quality control
- Assessment and oversight
- Data validation and usability.

These elements correspond to planning, implementation, and assessment. QA/QC applied to a project will be commensurate with the following:

- The purpose driving environmental data collection (e.g., enforcement, research and development)
- The type of work to be done (e.g., site characterization, baseline of site conditions)
- The intended use of the results.

The best means of achieving the appropriate content and level of detail in the quality management program may be through having the agency's QA/QC requirements reviewed and confirmed by the agency's project manager and documented through a QAPP.

The QAPP is usually submitted with the FSP; it describes the steps and procedures that will be used to ensure quality information for field sampling and laboratory analysis. The plan usually demonstrates that:

- The project technical and quality objectives are identified, and there is concurrence
- The intended measurements or data acquisition methods are appropriate for achieving project objectives
- Assessment procedures are sufficient for confirming that the type and quality of data needed are obtained
- Any limitations on the use of the data can be identified and documented.

Both the field (e.g. FSP) and quality (e.g. QAPP) components of the SAP are used as a management tool to monitor the field and analytical laboratory performance of the Phase II Confirmation Sampling activities. Typically, a project manager will develop the work-schedule, milestones, and associated costs based on the requirements identified in these documents. Site sampling may begin once the SAP has been developed and accepted.

The Phase II Confirmation Sampling contractor will be responsible for completely executing the field sampling program specified in the SAP and meeting the field, laboratory, and analytic objectives described in the QAPP. Federal agencies will be responsible for providing oversight

during Phase II Confirmation Sampling activities and coordinating with the contractor and the landowner to provide site access as appropriate. Federal managers should not provide field direction to on-site contractors, as this type of activity may compromise the integrity of the approved SAP. Where unexpected field or technical issues arise during the course of the sampling activities, federal oversight managers should work with the contractor to amend and document changes to the SAP and, where necessary, add change orders to the contract.

**PHASE II REPORT**

The Phase II findings, results, and recommendations must be formally documented in a report. Typically, the report includes:

- A summary of the Phase I findings
- The results of the confirmation sampling and analysis
- Discussion of potential risk to human health and the environment
- Discussion of potential remedial alternatives
- Recommendations for performing follow-on Phase III Site Characterization activities or concluding the EDDA.

Appendix U is a sample outline/table of contents for a Phase II report.

The report should clearly document the findings and conclusions of the Phase II Confirmation Sampling. It is essential that the results of the confirmation sampling and analysis be reviewed against the specifications of the QAPP to ensure that the data are accurate and will support drawing meaningful conclusions. Data should also be specifically evaluated against the QA/QC parameters, and the report should show an accounting for all deviations from designated sample quality standards. Additionally, the sample results must be evaluated against established Applicable or Relevant and Appropriate Requirements (ARARs) to compare the contaminants against established permissible levels. ARARs include federal, state and local standards that apply to the contamination compounds and issues at the site. Additionally, contamination areas may be compared against appropriate background samples or information to help determine the source and impacts of the contamination areas.

When contamination is confirmed, the report should document the locations and types of contamination found and provide the specific contamination levels. Information on the steps and types of analysis necessary to further investigate the contamination area is often appropriate at this point and provided in the Phase II report. In the event that the confirmation sampling determines that no contamination is present, the report should fully document the sampling activities, analytic results, and justification for determining the contamination is absent or below levels of concern.

Preliminary identification of remedial alternatives may be included in the Phase II report based on the types and location of noted contamination. Any estimates will necessarily be precursory, and intended only to assist in decision making based on best judgment and potential extent of

contamination confirmed in the Phase II. The full range of contamination will not be known until a comprehensive site investigation (Phase III Site Characterization EDDA) has been completed. The preliminary remedial alternatives are used to make property management decisions, in situations such as acquisition, or to form a basis for refinement if site characterization is required, in situations such as disposal. Examples of some of the more common remediation technologies are listed in Appendix V.

In addition to the fundamental components of a Phase II report, any deviations from the SAP, the rationale for deviations, and a strong justification and supporting information for the conclusions and recommendations are essential. The Phase II report must be reviewed and approved for content and accuracy by oversight personnel. The Phase II Confirmation Sampling report is the decision-making tool to assist agency managers in understanding the actual presence of site contaminants and need to conduct further study through the Phase III. Agency personnel responsible for property transfer, such as the program manager, property transfer manager, safety, health and environmental manager, facility engineering, and legal and real estate representatives, should review the report. Their review must:

- Evaluate the accuracy of the conclusions and recommendations relative to the data gathered
- Determine whether the investigation was actually carried out in accordance with the SAP
- Ensure consistency between field samples and the QA/QC samples
- Evaluate the field data against the appropriate and relevant criteria
- Approve or concur with the conclusions and recommendations in the Phase II report.

# CHAPTER 6
# PHASE III–SITE CHARACTERIZATION

## DESCRIPTION

The Phase III Site Characterization process provides information to agency decision makers regarding the extent and magnitude of contamination liability. This phase is initiated when a subject property is of continuing interest to the agency, and the Phase II Environmental Due Diligence Audit (EDDA) results confirmed contamination at concentration levels equal to or above regulatory limits or risk levels. During Phase III, site contamination is fully characterized and cleanup alternatives are developed. This is the final step in the EDDA process; thus, any subsequent remediation activities follow solely Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or other statutory and regulatory processes.

Continuing a property investigation through Phase III Site Characterization is extremely rare in proposed acquisition or lease initiation transactions. Such actions would be motivated only by steadfast agency interest, probable funding reimbursement, and estimated cost of cleanup to overall property value. Conversely, when the agency owns the property or is otherwise responsible for the contamination, prior to disposal or lease termination the agency will inevitably be required to conduct a Phase III Site Characterization or a regulatory equivalent. (Refer to Figures 3-3 and 3-4 for Phase III decision making for acquisition and disposal scenarios.)

Much like the Phase II Confirmation Sampling process, Phase III Site Characterization consists of numerous activities. The Phase III process builds on previously generated information to develop a comprehensive assessment of all site contamination areas. Appropriate cleanup standards must also be identified, based on the site-specific human health risk, ecological risk, or regulatory requirements. Information on the nature (i.e., type of contaminants found) and the extent (i.e., magnitude across media) of site contamination are also used in the Phase III process to develop and recommend cleanup technology alternatives.

Phase III activities include the following; discussion of each of these activities is provided in subsequent paragraphs.

- Review and evaluation of the Phase II report
- Development and implementation of a Sampling and Analysis Plan (SAP) to fully characterize contamination at the site
- Assessment of risk and future land-use options
- Evaluation and selection of remedial alternatives
- Development of the Phase III report.

Phase III Site Characterization activities are conducted by independent contractors experienced in site characterization and remediation. The selection of Phase III contractors is based on the

contractors' qualifications, experience, and ability to conform to the contractor procurement specifications (see Appendix S for a list of qualifications).

## REVIEW AND EVALUATION

Phase II report information provides the necessary background and building blocks for designing, planning, and performing Phase III Site Characterization activities. As such, it is important for the agency technical reviewers and the Phase III contractors to review and evaluate the contents of the Phase II Confirmation Sampling report.

## DEVELOPMENT AND IMPLEMENTATION OF A FULL CHARACTERIZATION SAP

The Phase III full characterization SAP is similar to the SAP process described for Phase II. Both contain a project management plan, a safety and health plan, sampling and analysis procedures, and Quality Assurance and Quality Control (QA/QC) requirements for the Quality Assurance Project Plan (QAPP). (For the full discussion of these SAP elements, refer to Chapter 5 of this document.)

The major difference between Phase II Confirmation Sampling and the Phase III SAP is the objective. The objective of the Phase II SAP is to confirm the presence of contamination. The objective of the Phase III SAP is to determine the extent and severity of the contamination, and to provide the technical basis for establishing a site cleanup strategy. Due to the expanded objective of the Phase III SAP, the scope and number of samples collected will likely increase during this phase of the EDDA process, and result in higher costs. Additionally, the Phase III SAP will typically call for higher resolution sampling and analytic procedures to evaluate performance limits of potential cleanup technologies. Extreme care and professional judgment must be exercised to ensure excessive sampling is not performed and excessive costs are not incurred. As in Phase II, the QAPP elements in the SAP need to be implemented in proportion to the project.

Contractor-developed SAPs are submitted to the agency for review and approval. Once approved, the contractor initiates site activities, and samples are collected and sent to a laboratory for analysis. Rigorous and documented sampling procedures (refer to Appendix T for a description of the procedures) should be followed to ensure the results of the sampling are accurate and representative of site conditions.

When the analytical results from the sampling are obtained, they are compiled and analyzed. This information is used to determine the nature and extent of site contamination, and to assess the risk posed to human health and the environment from the contamination.

## RISK ASSESSMENT AND FUTURE LAND-USE OPTIONS

The analytical results provide the data needed to assess the risk posed to potential human and ecological receptors. These data, in turn, can be used to develop appropriate risk-based cleanup levels in the absence of specific media criteria. Acceptable risk levels are typically in the $10^{-4}$ to

$10^{-6}$ (one-in-100,000 to one-in-a-million) range for potentially impacted populations. The risk assessment depends on source characterization, exposure assessment, dose-response evaluation, and risk characterization. A description of each of these components is provided in the following list.

- *Source characterization*—Identifies the contaminants of concern and their rates of release.
- *Exposure assessment*—Identifies the potentially exposed populations, pathways of exposure, and the extent of exposure.
- *Dose-response evaluation*—Assesses the type of effects that could occur and the magnitude of the effects.
- *Risk characterization*—Determines the amount of exposure involved, its associated risks, and the relative significance of the risk.

Each of these components must be evaluated to determine the overall risk posed to human and ecological receptors.

Often the CERCLA (or Superfund) process is the applicable regulation for federal site contamination. As such, when assessing risk during Phase III activities it is appropriate to reference the following Environmental Protection Agency (EPA) guidance documents (which can be obtained by calling the Superfund Hotline at 1-800-424-9346 or by contacting the US National Technical Information Service (NTIS)).

- Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Parts A, B and C) provides guidance for developing human health risk information at Superfund sites.
- Risk Assessment Guidance for Superfund, Volume II: Environmental Evaluation Manual provides guidance for developing environmental assessments at Superfund sites.

In addition, EPA recently published the *Revised Guidelines for Ecological Risk Assessment* (NTIS Publication PB98-117849), which provides a framework for evaluating past and future impacts to ecological resources. Effective April 30, 1998, this guidance may be useful in determining ecological-based cleanup goals or assessing the potential impact of selected remedial actions at a site.

Depending on the types of contaminants involved and the information available, risk assessments can be qualitative or quantitative. Although quantitative risk assessments are normally performed, qualitative risk assessments may be required if (1) regulators consider it appropriate, (2) cost and timeliness are an issue, (3) toxicity data on chemicals are not available, or (4) some other phenomena are not quantifiable. When conducting qualitative risk assessments, risk-management decisions must be based on prudence and best professional judgment.

Future land-use options are also considered when determining risk. There are four commonly recognized future land-use options: industrial-commercial, agricultural, recreational, and residential. When considering the impacts of future land-use on the overall risk of the property, the industrial-commercial option is usually the least conservative, whereas the residential option is

the most conservative. Future land-use options must be evaluated in conjunction with risk to determine the appropriate level of risk reduction and cost effectiveness during the cleanup process. Keep in mind that EPA, state and local environmental regulatory agencies often select the most restrictive land-use option—the residential scenario—in setting and approving risk-based cleanup goals.

## REMEDIAL ALTERNATIVES, EVALUATION AND SELECTION

Remedial alternatives are screened against evaluation criteria to reduce the number of remedial alternatives available for selection and implementation. (See Appendix V for a sample listing of remedial technologies.) Only the remedial alternatives most representative of the evaluation criteria should be place on the short-list of alternatives. In general, the evaluation criteria consist of the following:

- Overall protection of human health and the environment
- Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)
- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume through treatment
- Short-term effectiveness
- Ability to implement
- Cost
- State acceptance
- Community acceptance.

Developing and assessing a (simple to complex) range of technically appropriate alternatives is important to evaluate their relative feasibility. The short-list of remedial alternatives may include the following: *no action* (i.e., natural attenuation), *institutional controls* (such as deed restrictions or perpetual federal ownership), *technological solutions* (involving remedial, demolition, or decontamination activities), or some *combination* of these.

Using the preceding criteria, the contractor-proposed short-list of applicable alternatives is evaluated by the agency. The ultimate solution for the site, however, must be selected in coordination with regulators and with consideration to public concerns. (See Chapter 3 for additional discussion on the regulation of contaminated sites.)

## PHASE III REPORT

The Phase III report documents all pertinent site information in one place for agency decision makers, including: the nature and extent of contamination, activities performed, risk assessment results, cleanup goals, remedial alternatives, and recommendations. Specifically, the Phase III Site Characterization report should be a comprehensive statement delineating:

- Prior site activities
- Efforts leading up to site characterization.
- Sampling rational and activities

- Final sampling results, clearly displayed with a complete vertical and horizontal distribution of site contaminants and concentrations
- A comparison of these results to site ARARs, background levels, or risk-based action levels
- Appropriate cleanup goals
- Results from the analysis of applicable cleanup alternatives
- Recommended alternatives and their rational, technical implementation issues, and costs

The Phase III report will constitute the guideline and technical basis for any further (and possibly costly) remediation activity planned at the site, and as such, must be closely reviewed and understood by agency technical staff and decision makers.

Appendix W contains a suggested outline of the Phase III report.

# APPENDIX A

# LIST OF ACRONYMS

# List of Acronyms

| | |
|---|---|
| ACM | Asbestos-Containing Materials |
| ARARs | Applicable or Relevant and Appropriate Requirements |
| AST | Aboveground Storage Tank |
| ASTM | American Society for Testing and Materials |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CERCLIS | Comprehensive Environmental Response, Compensation, and Liability Information System |
| CERFA | Community Environmental Response Facilitation Act |
| CFR | Code of Federal Regulations |
| CWA | Clean Water Act |
| EA | Environmental Assessment |
| EBS | Environmental Baseline Survey |
| EDDA | Environmental Due Diligence Audit |
| EDDP | Environmental Due Diligence Process |
| EO | Executive Order |
| EPA | Environmental Protection Agency |
| EPCRA | Emergency Planning and Community Right-to-Know Act |
| ERNS | Emergency Response Notification System |
| ESA | Endangered Species Act |
| FSP | Field Sampling Plan |
| GSA | General Services Administration |
| IDEA | Integrated Data for Enforcement Analysis |
| MSDS | Material Safety Data Sheet |
| NEPA | National Environmental Policy Act |
| NHPA | National Historic Preservation Act |
| NPDES | National Pollutant Discharge Elimination System |
| NPL | National Priorities List |
| NRC | Nuclear Regulatory Commission |
| NTIS | National Technical Information Service |
| OPA | Oil Pollution Act |
| OSHA | Occupational Safety and Health Administration |

## List of Acronyms (Continued)

| | |
|---|---|
| P2 | Pollution Prevention |
| PCB | Polychlorinated Biphenyl |
| PE | Professional Engineer |
| PG/PH | Professional Geologist / Professional Hydrologist |
| POTW | Publicly Owned Treatment Works |
| PPE | Personal Protective Equipment |
| ppm | Parts Per Million |
| PRP | Potentially Responsible Party |
| QA/QC | Quality Assurance/Quality Control |
| QAPP | Quality Assurance Project Plan |
| RCRA | Resource Conservation and Recovery Act |
| RCRIS | RCRA Information System |
| SAP | Sampling and Analysis Plan |
| SCS | Soil Conservation Service |
| SETS | Site Enforcement Tracking System |
| SFFAS | Statement of Federal Financial Accounting Standards |
| SFI | Sanborne Fire Insurance |
| SHEM | Safety, Health and Environmental Management |
| SPCC | Spill Prevention, Control and Countermeasures |
| TSCA | Toxic Substance Control Act |
| TSDF | Treatment, Storage, or Disposal Facility |
| USDA | United States Department of Agriculture |
| USGS | United States Geological Survey |
| UST | Underground Storage Tank |

# APPENDIX B

# EPA EARLY TRANSFER GUIDANCE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

**JUN 16 1998**

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

MEMORANDUM

SUBJECT: Transmittal of "EPA Guidance on the Transfer of Federal Property by Deed Before All Necessary Remedial Action Has Been Taken Pursuant to CERCLA Section 120(h)(3)"

FROM: Timothy Fields, Jr.
Acting Assistant Administrator

TO: Superfund National Program Managers, Regions I-X
Office of Regional Counsel, Regions I-X

This memorandum transmits the "EPA Guidance on the Transfer of Federal Property by Deed Before All Necessary Remedial Action Has Been Taken Pursuant to CERCLA Section 120(h)(3)," otherwise known as the Early Transfer Guidance. This guidance is for the EPA Regions to use when reviewing requests from federal departments and agencies that are transferring property to defer the CERCLA Section 120(h)(3) covenant that all necessary remedial actions have been taken.

EPA is fully supportive of the early transfer process. When a transferee agrees to conduct the response action, this new authority provides other federal departments and agencies with an opportunity to secure cleanup by having other non-federal parties conduct cleanup. This could yield significant benefits to human health and the environment and savings to the taxpayer. In all instances, however, the landholding federal agency remains responsible for cleanup.

The Early Transfer Guidance benefits from the input of an interagency workgroup composed of EPA, the Department of Defense, the Department of Energy, and the General Services Administration. The interagency workgroup discussed several issues related to early transfer that are covered in this policy. Earlier versions of the guidance were also shared with ASTSWMO. This is, however, an EPA policy, not an interagency product.

The guidance establishes a process by which an EPA regional office should review an early transfer request. This process begins with the transferring federal agency submitting information of a sufficient quality and quantity to EPA which will support its request for a deferral and provide a basis for EPA to make its determination. This information should be submitted to EPA in the form of a Covenant Deferral Request (CDR). At base closure sites where an early transfer is being sought, EPA anticipates that the Base Closure Team, including the EPA representative, will work together in drafting the CDR to expedite the transfer.

Finally it is important to note that states play an important role in this process regardless of whether the parcel under review is on the National Priority List Federal Facility or not. States must also concur on the early transfer.

I believe this Early Transfer Guidance provides useful information to the Regions to assist federal departments and agencies in expediting the early transfer of property. If you have any questions regarding this guidance, please contact the Federal Facilities Restoration and Reuse Office at (202) 260-9924.

Attachment

| | | |
|---|---|---|
| cc: | Craig Hooks, | Federal Facilities Enforcement Office |
| | Lisa Friedman, | Office of General Counsel |
| | Kathy Gorospe, | American Indian Environmental Office |
| | | Federal Facility Leadership Council |
| | | Defense Environmental Restoration Task Force |
| | Sherri W. Goodman, | Department of Defense |
| | Raymond Fatz, | Department of Army |
| | Ellsie Munsell, | Department of Navy |
| | Thomas McCall, Jr., | Department of Air Force |
| | Al Lowas, | Air Force Base Conversion Agency |
| | James Owendoff, | Department of Energy |
| | Jim Fiori, | Department of Energy |
| | Robert DeGrasse, | Department of Energy |
| | Willie Taylor, | Department of Interior |
| | Brian Polly, | General Services Administration |
| | Tom Kennedy, | Association of State and Territorial Solid Waste Management Officials |
| | Stan Phillipe, | Association of State and Territorial Solid Waste Management Officials |
| | Jerry Pardilla, | National Tribal Environmental Council |

**EPA Guidance on the Transfer of Federal Property by Deed Before All Necessary Remedial Action Has Been Taken Pursuant to CERCLA Section 120(h)(3) -- (Early Transfer Authority Guidance)**

## I. PURPOSE

This guidance addresses the transfer by deed, under Section 120(h)(3)(C) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), of real property listed on the National Priorities List (NPL) held by a federal agency (landholding federal agency[1]) where the release or disposal of hazardous substances has occurred, but where all necessary remedial action has not yet been taken. This document provides guidance to the EPA Regions that have received a request from a landholding federal agency for the deferral of the covenant mandated by CERCLA Section 120(h)(3)(A)(ii)(I) that all necessary remedial action has been taken prior to the date of transfer. This guidance establishes EPA's process to determine, with the concurrence of the Governor, that the property is suitable for transfer prior to all necessary remedial action being taken.

## II. EPA's REQUIREMENTS FOR APPROVING A DEFERRAL REQUEST

When a federal agency transfers to another person (i.e., an entity other than another federal agency) real property on which hazardous substances have been stored for one year or more, known to have been released, or disposed of, the deed must contain a covenant warranting that "all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of transfer" (the CERCLA 120(h)(3)(A)(ii)(I) Covenant) and that "any additional remedial action found to be necessary after the date of the transfer shall be conducted by the United States."[2] EPA, with the concurrence of the Governor of the State in which the facility is located, may defer the CERCLA Covenant for parcels of real property at facilities listed on the NPL.[3]

The Agency's general current view is that it will seek the concurrence of federally recognized Indian tribes for purposes of determining whether the covenant requirement under CERCLA 120(h) should be deferred pursuant to CERCLA 120(h)(3)(C) for property located in Indian country within tribal jurisdiction. However, the Agency will only make a final determination as to

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[1] A landholding federal agency is the federal agency that holds custody and accountability for the property on behalf of the United States. 41 CFR 101-47.103.7

[2] CERCLA Section 120(h)(3)(A)(ii) sets forth the two components of the covenant that shall be contained in each deed. For purposes of this policy and the request for deferral, the term "CERCLA Covenant" refers only to the first component contained in Section 120(h)(3)(A)(ii)(I).

[3] For non-NPL sites, the Governor of the State in which the facility is located may defer the CERCLA Covenant.

the appropriate tribal role under CERCLA 120(h)(3)(C) in the context of an actual Covenant Deferral Request made for property located in Indian country within tribal jurisdiction. The Agency's determination should be made in light of the specific facts and circumstances surrounding a particular Covenant Deferral Request. If the EPA Regional office receives a Covenant Deferral Request concerning a transfer of property that is located in Indian country with tribal jurisdiction, the EPA Regional office should contact EPA Headquarters, the American Indian Environmental Office and the Federal Facilities Restoration and Reuse Office, for specific guidance.

In order for EPA to defer the covenant requirement, CERCLA Section 120(h)(3)(C)(I)(I)-(IV) requires that EPA determine that the property is suitable for transfer based on a finding that:

1. the property is suitable for transfer for the use intended by the transferee, and the intended use is consistent with protection of human health and the environment;

2. the deed or other agreement proposed to govern the transfer between the United States and the transferee of the property contains the Response Action Assurances described in section IV of this guidance;

3. the federal agency requesting deferral has provided notice, by publication in a newspaper of general circulation in the vicinity of the property, of the proposed transfer and of the opportunity for the public to submit, within a period of not less than 30 days after the date of the notice, written comments on the suitability of the property for transfer; and

4. the deferral and the transfer of the property will not substantially delay any necessary response action at the property.

These findings are intended to assure that there is a sound basis for the proposed transfer based on the finding that the particular reuse of the property identified by the transferee does not pose an unacceptable risk[4] to human health or the environment. As stated in Section 120(h)(3)(C)(iv), all statutory obligations required of a federal agency remain the same, regardless of whether the property is transferred subject to a covenant deferral.

## III. APPLICABILITY AND SCOPE

This guidance applies to all early transfers by deed under CERCLA Section 120(h) of contaminated real property owned by a federal agency and listed on the National Priorities List

[4] See, 40 CFR 300.430(d)(4) and U.S. EPA 1989a. *Risk Assessment Guidance for Superfund* (RAGS): *Volume 1: Human Health Evaluation Manual* (HHEM), *Part A, Interim Final and Part B, Development of Risk-Based Preliminary Remediation Goals.* Office of Emergency and Remedial Response, Washington, D.C. EPA /540/1-89/002, NTIS PB90-155581/CCE and Publication 9285.7-01B NTIS PB92-963333.

(NPL), regardless of the statutory authority underlying a cleanup, including transfers of property at DoD installations selected for closure or realignment.

This guidance does not apply to federal-to-federal transfers of property or to transfers of uncontaminated property. A federal agency that is sponsoring a public benefit conveyance may use this guidance as a model for obtaining useful information. Under a public benefit conveyance, a sponsoring federal agency acts as a conduit through which title will ultimately pass from the United States to a public benefit recipient. For further information regarding the relationship between a sponsoring federal agency and the Department of Defense (DoD) for Base Realignment and Closure (BRAC) property (a landholding federal agency), please see the Memorandum of Agreement signed by DoD and the federal agencies that sponsor public benefit transfers (dated April 21, 1997).

## IV. GUIDANCE

EPA should generally not consider deferral of the covenant request for real property unless the landholding federal agency submits a Covenant Deferral Request (CDR) containing the information recommended by this guidance.

While the statute does not explicitly require a signed Interagency Agreement (IAG) to be in place as a prerequisite for deferring the covenant requirement, EPA believes that the existence of an IAG will significantly aid the Agency in making the covenant deferral decision.

### A. Covenant Deferral Request

As discussed in Section II, EPA may defer the CERCLA Section 120(h)(3) covenant requirement if EPA determines that a property is suitable for transfer based on certain findings. To commence the process, the landholding federal agency should submit information of a sufficient quality and quantity to EPA to support its request for deferral and provide a basis for EPA to make its determination. This information should be submitted to EPA in the form of a Covenant Deferral Request (CDR). EPA should consider a CDR complete when it includes all of the following components.

1. Property Description

   A legal description of the real property or sufficient information which clearly identifies the property for which the CERCLA Covenant is requested to be deferred.

2. Nature/Extent of Contamination

A description of the nature and a real extent of contamination (with supporting documentation) which affects the property to be transferred and which will not be remediated prior to transfer. There is a presumption that the Covenant Deferral Request should include the results from a completed Remedial Investigation (RI) for the parcel that will be transferred. However, the landholding federal agency should have an opportunity to demonstrate why such data and findings are not necessary before the land is transferred. An example of when this may occur is where the intended use will be very similar to or the same as current use (e.g., airport runways), and there are already appropriate access controls, institutional controls, etc. in place or response actions have mitigated exposure (e.g., removals). In such instances these actions should prevent the creation of new exposure pathways or create conditions already protective.

**Contents of the Covenant Deferral Request (CDR)**

- Property Description
- Nature/Extent of Contamination
- Analysis of Intended Future Land Use
- During the Deferral Period
- Risk Assessment
- Response/Corrective Action Requirements
- Operation and Maintenance Requirements
- Contents of Deed
- Responsiveness Summary
- Transferee Response Action Assurances and Agreements

When determining what information is necessary, the EPA Region should take into consideration, at a minimum, the degree of uncertainty regarding the nature and extent of contamination; the future use of the property prior to completion of the response action; who is to perform future work; and any existing information or data on the parcel under consideration. Generally, the greater the uncertainty about any of these factors, the more information the EPA Region may require to make the determination. As noted below, the landholding Federal agency remains responsible for all necessary response actions including the remedial investigation and the cleanup remains subject to the requirements of Section 120.

3. Analysis of Intended Land Use During the Deferral Period

A description of the intended land use of the property during the deferral period and an analysis of whether the intended use is reasonably expected to result in exposure to CERCLA hazardous substances at sites where response actions have not been completed. This analysis should be based on the environmental condition of the property and should consider the contaminant(s), exposure scenarios, and potential

and actual migration pathways that may occur during the future use. Where a potential or actual unacceptable exposure to hazardous substances is identified, the analysis should identify what response actions should be taken to prevent such exposure. Treatment, engineering controls and use restrictions (see Section 6.d - Response Action Assurances), may be considered as a means of limiting unacceptable exposures to hazardous substances while allowing for property reuse. Any other response actions necessary to protect human health and the environment should be included in the deed (or other agreement governing the transfer) as described in Subsection 6 of this policy. The land use during the deferral period cannot be inconsistent with any necessary response actions.

4. Results From A Risk Assessment

Results from a CERCLA risk assessment, taking into consideration reasonably anticipated future land use assumptions. There is a presumption that the Covenant Deferral Request include the results from a completed risk assessment, as defined in the National Continency Plan (NCP) and EPA guidance. However, the landholding federal agency should have an opportunity to demonstrate why a risk assessment does not have to be completed before the land is transferred.

When determining whether a completed risk assessment is needed before the early transfer, the EPA Region should take into consideration, at a minimum, the degree of uncertainty regarding the potential risks posed by the contamination; existing analyses; certainty about future use; and who is conducting the response. The greater the uncertainty about the risk from the contamination, the more information EPA may require. As noted below, the landholding Federal agency remains responsible for all necessary response actions, including the risk assessment.

In the absence of the completed risk assessment, at a minimum, EPA Regions should examine potential exposure(s) during the deferral period, taking into account any proposed restrictions to ensure the protectiveness of human health and the environment.

5. Response/Corrective Action and Operation and Maintenance Requirements

A description of any ongoing or planned response or corrective action, including a projected milestone date for the selection and completion of the action, and/or projected date for the demonstration that a remedial action is "operating properly and successfully." Also, it will be necessary to provide adequate information regarding ongoing or planned response actions and operation and maintenance of the response or corrective action.

6. Contents of Deed/Transfer Agreement

a. Notice

A copy of the notice to be included in the deed as required by CERCLA Section 120(h)(1) and (3) and in accordance with regulations set forth at 40 CFR Part 373.

b. Covenant

A copy of the covenant warranting that any additional remedial action found to be necessary after the date of transfer shall be conducted by the United States as required by CERCLA Section 120(h)(3)(A)(ii)(II).

c. Access

A copy of the clause which reserves to the United States access to the property in any case in which an investigation, response, or corrective action is found to be necessary after the date of transfer as required by CERCLA Section 120(h)(3)(A)(iii).

d. Response Action Assurances

A copy of the Response Action Assurances that must be included in the deed or other agreement proposed to govern the transfer as required under CERCLA Section 120(h)(3)(C)(ii). As required by statute, these assurances shall:

i. provide for any necessary restrictions on the use of the property to ensure the protection of human health and the environment;

ii. provide that there will be restrictions on the use necessary to ensure that required remedial investigations, response action, and oversight activities will not be disrupted;

iii. provide that all necessary response action will be taken and identify the schedule(s) for investigation(s) and completion of all necessary response action(s) as approved by the appropriate regulatory agency; and

iv. provide that the landholding federal agency has or will obtain sufficient funding through either: (a) submission of a budget request (or budget requests in the event multi-year funding is needed) to the Director of the Office of Management and Budget that adequately addresses schedule for investigation and completion of all necessary response action, subject to congressional authorizations and appropriations; or (b) sufficient current appropriations to accomplish investigation(s) and completion(s) of all necessary response action(s). In addition to (a) or (b), the landholding federal agency may also

have an agreement with the transferee to fund and/or accomplish all or part of the remediation.

The Response Action Assurances should include a description of requirements to assure the protectiveness of the response action and shall specify the mechanisms for assuring that such measures remain effective. These measures should reflect discussions among the reuse entity, the community, the landholding federal agency and any appropriate federal, State, or local government.

7. Responsiveness Summary

The final CDR should include a response to comments document which contains the landholding federal agency's responses to the written comments received during the public comment period under Section 120 (h)(3)(C)(I)(III) and to the written comments received from the regulatory agencies on the draft CDR.

8. Transferee Response Action Assurances and Agreements

A transferee may agree to conduct response actions on the property. However, the landholding Federal agency remains responsible for ensuring that all necessary response actions including, as appropriate, investigations and requirements under an IAG are done.

When property is transferred prior to completion of the cleanup, the landholding federal agency should include in each deed provisions notifying the transferee of the requirement for, and status of, an Interagency Agreement or other enforceable environmental cleanup agreement or order, as appropriate.

The landholding federal agency should also notify the transferee that EPA and the State and their agents, employees and contractors, will have rights of access as necessary to implement response actions and oversight responsibilities at the facility.

Where the transferee has agreed to fund and conduct the cleanup or portions of the cleanup as a condition of the transfer, the landholding federal agency should provide to EPA documentation demonstrating that the transferee has or will become legally obligated to conduct the required response actions in accordance with the existing IAG. Should the transferee become unable or unwilling to complete the cleanup or order under its agreement with the landholding federal agency, EPA expects the landholding federal agency will complete the cleanup. Nothing in this guidance shall be interpreted to affect EPA's or the landholding federal agency's authority or responsibility under CERCLA or any other federal statute to enforce the terms and conditions of an existing IAG or to limit EPA's authority to impose requirements necessary to protect public health and the environment.

If the transferee is expected to perform any response action (e.g., excavation of contaminated soil in an area where facilities are to be constructed), then EPA should receive assurance from the landholding federal agency that the transferee has:

a. the technical capacity (in-house or through appropriate contract management) to perform anticipated investigations and response or corrective actions; and

b. the financial capacity to execute environmental cleanup activity requirements that are known or can reasonably be anticipated, based on current information available.

Financial capacity may be an especially sensitive area for a transferee and/or the landholding federal agency. While the assurance does not need to contain the actual documentation of the financial capacity, the EPA Region may request such information from the landholding federal agency if there are questions in this regard.[5] Any proprietary or confidential business information should be handled as required under Federal regulations.

If the landholding federal agency submits information supporting the technical and financial assurances, but the EPA Region disagrees with the adequacy of such assurances, and they cannot resolve their differences, there will be the opportunity to elevate the disagreement to the federal agency headquarters and EPA Headquarters. The EPA Region should contact the Federal Facilities Restoration and Reuse Office in OSWER and the federal agency should elevate the issue to its headquarters component when resolution cannot be reached at the Senior Manager level. EPA Headquarters and the headquarters of the landholding federal agency will resolve the disagreement in an expeditious fashion so as not to delay transfer.

The transferee should agree to conduct all necessary environmental response actions in accordance with CERCLA and the National Contingency Plan (NCP). In the case where the transferee does not perform cleanup in accordance with CERCLA and the NCP or the terms of a cleanup agreement, then the United States may enter the property and perform any necessary response action.

B. Process for Requesting Covenant Deferral

Before preparing a CDR, the landholding federal agency should notify the Administrator of EPA or designee and the Governor of the State of the intent to request a CERCLA

[5] Financial capacity may be demonstrated through, but not limited to: reasonably anticipated cash flows, existence of appropriate insurance, posting of a construction/ indemnity bond, authority of the transferees to issue revenue bonds for such purpose, or assets, excluding the real property to be transferred. Obtaining a security interest in the transferee's assets may be used as a means of assuring project completion.

Covenant Deferral and invite participation in the development and review of the draft CDR. This notice should allow sufficient time for EPA, and State agencies, to participate in the development and review and comment on a draft CDR.

As required by Section 120(h)(3)(C)(I)(III), the landholding federal agency must provide notice, by publication in a newspaper of general circulation in the vicinity of the property, of the proposed transfer. The notice should include:

1. The identity of the property proposed for transfer, the proposed transferee and the intended use of the property;

2. A statement that the property is listed on the National Priorities List and that the proposed transfer is pursuant to CERCLA 120(h)(3)(C) which allows the transfer of federal property before remedial action is completed when certain conditions are satisfied;

3. An assessment of whether the transfer is consistent with protection of human health and the environment will be made only after a comprehensive evaluation of the environmental condition of the property in consultation with the U.S. EPA and the appropriate State agencies;

4. A summary of the decision-making process, e.g., that the property will not be transferred until U.S. EPA determines, with the Governor's concurrence, that the transfer of the property for use as intended is consistent with protection of human health and the environment and that the federal agency has provided assurance that response actions will be taken;

5. The address and telephone number of the agency office which may be contacted for obtaining a copy of the draft Covenant Deferral Request, site-specific information and the address of the location of the administrative record for the response program; and

6. A statement that interested members of the public may comment on the suitability of the property (the draft Covenant Deferral Request) for transfer and must submit such comments to the agency before a date not less than 30 days from the date of the publication of the notice.

It is also recommended that the draft CDR be made available to any existing Restoration Advisory Boards (RAB), Site Specific Advisory Boards (SSAB), affected local governments, and/or other interested community-based groups. Specific efforts should be made to involve tribes surrounding the property that is to be transferred. As stated in the notice requirement, the public shall be provided with at least a 30 day period in which to submit comments on the suitability of the property for transfer. It may be appropriate under certain circumstances (i.e., large and/or complicated land transfers) to extend the public comment period beyond 30 days.

After the public comment period has expired, the landholding federal agency may then submit the final CDR to the appropriate EPA Regional office and State representative. Property cannot be transferred by deed until the CERCLA Covenant is explicitly deferred by EPA and the State. The request to defer the CERCLA Covenant should be made simultaneously to the EPA and the State. EPA and the State should work closely to assure careful evaluation of the request. EPA Regional offices are encouraged to take steps to streamline the coordination process to avoid unnecessary delay.

C. Completion of Response Actions After Transfer

When all response actions necessary to protect human health and the environment have been taken, e.g., when there has been a demonstration to EPA that the approved remedy is "operating properly and successfully[6]" pursuant to CERCLA Section 120(h)(3)(B) (regardless of whether the landholding federal agency or the transferee has taken the action), the landholding federal agency shall execute and deliver to the transferee an appropriate document containing a warranty that all such response action has been taken. This warranty will satisfy the requirement of CERCLA Section 120(h)(3)(A)(ii)(I).

## V. NOTICE

This guidance and internal procedures adopted for implementation are intended solely as policy for employees of the US EPA. Such guidance and procedures do not constitute rule making by the Agency and do not create legal obligations. The extent to which EPA applies this guidance will depend on the facts of each case.

[6] See, *"Guidance for Evaluation of Federal Agency Demonstrations That Remedial Actions Are Operating Properly and Successfully Under CERCLA Section 120(h)(3),"* August 1996, NTIS PB97-143770; http://www.epa.gov/swerffrr.

# APPENDIX C

# TERMS AND DEFINITIONS

## Terms and Definitions

**Abandonment or Destruction**
A method of disposing of surplus personal property which usually involves leaving the property at its original location and site, or taking action to relocate the property to a public or private dump where it is normally crushed, burned, or buried. This method is not permitted for hazardous materials.

**Aboveground Storage Tank (AST)**
All tanks not classified as underground storage tanks, or tanks and associated piping that are more than 90 percent, by volume, aboveground.

**Acquisition**
The act of becoming the owner or holder of an interest in certain real property.

**Blank Samples**
A sample of distilled, de-ionized, contaminant-free water is collected, containerized, treated, and handled in the same manner as the samples. Blanks are used as an indicator of sample contamination throughout the entire process.

**CERCLIS**
Comprehensive Environmental Response, Compensation, and Liability Information System, EPA's database and management system that inventories and tracks releases addressed or needing to be addressed by the Superfund program.

**Cleanup**
Actions taken to deal with a release or threat of release of a hazardous substance that could affect humans and/or the environment. The term 'cleanup' is sometimes used interchangeably with the terms remedial action, removal action, response action, or corrective action.

**Composite Sample**
A series of samples taken over a period of time or at multiple spots, which are combined and treated as one. Composite samples may give an average concentration or composition.

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended**
Imposes on property owners and operators strict, joint and several liability for environmental damage, and provides a limited defense for innocent landowners. The Act also provides EPA with funding and enforcement authority for responding to hazardous substance spills, and for cleaning up high-risk, non-federal hazardous waste sites in the United States.

**Decommissioning**
The process of removing a facility from operation. It may include decontaminating entombing, dismantling, or converting to another use.

**Terms and Definitions**
**(Continued)**

**Decontamination**
The removal of harmful substances (such as radioactive material or hazardous material residue) from exposed individuals, facilities, furnishings, soils, or equipment by washing, chemical action, mechanical cleaning, or other techniques.

**Disposal**
- *of Wastes*—Final placement or destruction of toxic, radioactive, or other wastes; surplus or banned pesticides or other chemicals; polluted soils; and drums containing hazardous materials from removal actions or accidental releases. Disposal may be accomplished through use of approved secure landfills, surface impoundments, land farming, deep-well injection, ocean dumping, or incineration.
- *of Personal Property*—The act of discarding or relinquishing responsibility and control over excess or surplus property in accordance with appropriate Government regulations through transfer, donation, sale, abandonment or destruction. (Note: generators of hazardous waste can be held liable for improper disposal.)
- *of Real Property*—The transfer of title and ownership of real property to another party.

**Duplicate Samples**
A second sample, collected at the same time from the same location, that is treated the same as the original sample in order to determine the precision of the analytical method.

**Ecological Risk Assessment**
The application of a formal framework, analytical process, or model to estimate the effects of human actions(s) on a natural resource and to interpret the significance of those effects in light of the uncertainties identified in each component of the assessment process. Such analysis includes initial hazard identification, exposure and dose-response assessments, and risk characterization.

**Effluent**
Wastewater—treated or untreated—that flows out of a treatment plant, sewer, or industrial outfall. Generally refers to wastes discharged into surface waters.

**Emergency Planning and Community Right-to-Know Act (EPCRA)**
Title III of the Superfund Amendments and Reauthorization Act (SARA), which calls for facilities to report toxic releases and to submit information to state and local communities the develop chemical emergency plans. The regulations govern planning and notification, emergency notification and community right-to-know.

## Terms and Definitions (Continued)

**Emission**
Pollution discharged into the atmosphere from smokestacks, other vents, and surface areas of commercial or industrial facilities; from residential chimneys; and from motor vehicle, locomotive, or aircraft exhausts.

**Endangered Species**
Animals, birds, fish, plants, or other living organisms threatened with extinction by anthropogenic (man-caused) or other natural changes in their environment. Requirements for declaring a species endangered are contained in the Endangered Species Act (ESA).

**Endangerment Assessment**
A study to determine the nature and extent of contamination at a site on the National Priorities List and the risks posed to public health or the environment. EPA or the state conducts the study when a legal action is to be taken to direct potentially responsible parties to clean up a site or pay for it. An endangerment assessment supplements a remedial investigation.

**Enforcement**
EPA, state, or local legal actions to obtain compliance with environmental laws, rules, regulations, or agreements and/or obtain penalties or criminal sanctions for violations. Enforcement procedures may vary, depending on the requirements of different environmental laws and related implementing regulations. Under CERCLA, for example, EPA will seek to require potentially responsible parties to clean up a Superfund site, or pay for the cleanup, whereas under the Clean Air Act the Agency may invoke sanctions against cities failing to meet ambient air quality standards that could prevent certain types of construction or federal funding. In other situations, if investigations by EPA and state agencies uncover willful violations, criminal trials and penalties are sought.

**Environment**
The sum of all external conditions affecting the life, development and survival of an organism.

**Environmental Assessment**
An environmental analysis prepared pursuant to the National Environmental Policy Act (NEPA) to determine whether a federal action would significantly affect the environment and thus require a more detailed environmental impact statement.

**Environmental Audit**
An independent assessment of the current status of a party's compliance with applicable environmental requirements or of a party's environmental compliance policies, practices, and controls.

**Terms and Definitions**
**(Continued)**

**Environmental Baseline Survey (EBS)**
A Department of Defense process to document environmental conditions for subject property and comply with CERFA requirements. An EBS is used by DoD as a foundation document for base closures, and related cleanup. There are two types of EBSs, base-wide and site-specific. The EBS can facilitate re-use decisions and provide information about parcels that require further investigation.

**Environmental Equity/Justice**
Equal protection from environmental hazards for individuals, groups, or communities regardless of race, ethnicity, or economic status. This applies to the development, implementation, and enforcement of environmental laws, regulations, and policies, and implies that no population of people should be forced to shoulder a disproportionate share of negative environmental impacts of pollution or environmental hazard due to a lack of political or economic strength levels. The requirements for federal agencies to address Environmental Justice issues are stipulated in Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations."

**Environmental Impact Statement**
A document required of federal agencies by the National Environmental Policy Act (NEPA) for major projects or legislative proposals significantly affecting the environment. A tool for decision making, it describes the positive and negative effects of the undertaking and cites alternative actions.

**Environmental Indicator**
A measurement, statistic or value that provides a proximate gauge or evidence of the effects of environmental management programs or of the state or condition of the environment.

**Environmental Site Assessment**
The process of determining whether contamination is present on a parcel of real property.

**Environmental/Ecological Risk**
The potential for adverse effects on living organisms associated with pollution of the environment by effluents, emissions, wastes, or accidental chemical releases; energy use; or the depletion of natural resources.

**Excess Personal Property**
Any personal property under the control of a Federal agency which is not required for its needs and the discharge of its responsibilities.

**Terms and Definitions**
**(Continued)**

**Exposure Pathway**
The path (via, soil, water, or food) from the sources of pollutants to man and other species or settings. (see also Exposure Route)

**Exposure Route**
The way a chemical or pollutant enters an organism after contact; i.e., by ingestion, inhalation, or dermal absorption. (see also Exposure Pathway)

**Exposure**
The process of coming into direct or indirect contact with harmful amounts of radiation or pollutant present in a given environment that represents a potential health threat to living organisms. Exposure is typically through dermal contact (through the skin), inhalation (breathing contaminated air), or ingestion (eating contaminated substances).

**Facility**
As defined by Section 101(9) of CERCLA, a facility means any building, structure, installation, equipment, pipe or pipeline, well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or any site or area where a hazardous substance has been deposited, stored, disposed of, placed, or otherwise located. It does not include any consumer product in consumer use or any vessel.

**Feasibility Study**
- Analysis of the practicability of a proposal; e.g., a description and analysis of potential cleanup alternatives for a site such as one on the National Priorities List. The feasibility study usually recommends selection of a cost-effective alternative. It usually starts as soon as the remedial investigation is underway; together, they are commonly referred to as the "RI/FS"
- A small-scale investigation of a problem to ascertain whether a proposed research approach is likely to provide useful data. (see also Remedial Investigation).

**Federal Property Management Regulations (FPMR)**
The Government regulations (41 CFR 101) issued by the General Services Administration to govern and guide federal agencies relative to management and control of property.

**Field Sampling Plan**
A plan that defines in detail the sampling and data gathering activities to be used at a site (See also Site Analysis Plan.).

**Financial Assurance for Closure**
Documentation or proof that an owner or operator of a facility such as a landfill or other waste repository is capable of paying the projected costs of closing the facility and monitoring it afterwards as provided in RCRA regulations.

**Terms and Definitions**
**(Continued)**

**Finding of No Significant Impact (FONSI)**
A document prepared by a federal agency in accordance with the National Environmental Policy Act (NEPA) showing why a proposed action would not have a significant impact on the environment and thus would not require preparation of an Environmental Impact Statement. A FONSI is based on the results of an environmental assessment.

**Forfeited Property**
Personal property acquired by a Federal agency either by summary process or by order of a court of competent jurisdiction pursuant to any law of the United States.

**Friable Asbestos**
Any material containing more than one-percent asbestos, and that can be crumbled or reduced to powder by hand pressure. (May include previously non-friable material which becomes broken or damaged by mechanical force.) Friable asbestos releases fibers into the environment that may cause health problems.

**General Permit**
A permit applicable to a class or category of dischargers.

**Generator**
- Any person, by site, whose processes or actions produces hazardous waste as listed or defined by RCRA.
- A facility or mobile source that emits pollutants into the air or releases hazardous waste into water or soil.

**Geographic Information System (GIS)**
A computer system designed for storing, manipulating, analyzing, and displaying data in a geographic context.

**Geological Log**
A detailed description of all underground features (depth, thickness, type of formation) discovered and documented during the drilling of a well or similar type of test hole or boring.

**Geophysical Log**
A record of the structure and composition of the earth encountered and documented when drilling a well or similar type of test hole or boring.

**Grab Sample**
A single sample collected at a particular time and place that represents the composition of the water, air, or soil only at that time and place.

**Terms and Definitions**
**(Continued)**

**Graded Approach**
An approach by which the level of analysis, documentation, and actions necessary to comply with a requirement are commensurate with

- the relative importance to safety, safeguards, and security;
- the magnitude of any hazard involved;
- the life cycle stage of a facility;
- the programmatic mission of a facility;
- the particular characteristics of a facility; and
- any other relevant factor.

**Ground Water**
The supply of fresh water found beneath the earth's surface, usually in aquifers, which supply wells and springs. Because ground water is a major source of drinking water, there is growing concern over contamination from leaching agricultural or industrial pollutants or leaking underground storage tanks.

**Hazard Evaluation**
A component of risk evaluation that involves gathering and evaluating data on the types of health injuries or diseases that may be produced by a chemical and on the conditions of exposure under which such health effects are produced.

**Hazardous Chemical**
An EPA designation for any hazardous material requiring an MSDS under OSHA's Hazard Communication Standard. Such substances are capable of producing fires and explosions or adverse health effects like cancer and dermatitis. Hazardous chemicals are distinct from hazardous waste. (see Hazardous Waste)

**Hazardous Material**
As defined by DOT, a designated substance or material that has been determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce.

**Hazardous Ranking System**
The principal screening tool used by EPA to evaluate risks to public health and the environment associated with abandoned or uncontrolled hazardous waste sites. The HRS calculates a score based on the potential of hazardous substances spreading from the site through the air, surface water, or ground water, and on other factors such as density and proximity of human population. This score is the primary factor in deciding if the site should be on the National Priorities List and, if so, what ranking it should have compared to other sites on the list.

**Terms and Definitions**
**(Continued)**

**Hazardous Substance**

- Any material that poses a threat to human health and/or the environment. Typical hazardous substances are toxic, corrosive, ignitable, explosive, or chemically reactive.
- Any substance designated by EPA to be reported if a designated quantity of the substance is spilled in the waters of the United States or is otherwise released into the environment

**Hazardous Waste**
A waste that possesses at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity), or appears on special EPA lists. Hazardous Wastes can pose a substantial or potential hazard to human health or the environment when improperly managed.

**Hazards Analysis**
Procedures used to (1) identify potential sources of release of hazardous materials from fixed facilities or transportation accidents; (2) determine the vulnerability of a geographical area to a release of hazardous materials; and (3) compare hazards to determine which present greater or lesser risks to a community.

**Health and Safety Plan (HASP)**
A site plan that describes the physical and chemical hazards at a site and the measures that will be taken to ensure health and safety of site workers.

**Historical Item**
Property having added value for display purposes because its historical significance is greater than the fair market value of the item for continued use. Items that are commonly available and remain in use for their intended purposes such as military aircraft, still in use by active or reserve units, would not be regarded as historical items.

**Holding Agency**
The executive agency which has accountability for the property involved.

**Household Hazardous Waste**
Hazardous products used and disposed of by residential as opposed to industrial consumers. Includes paints, stains, varnishes, solvents, pesticides, and other materials or products containing volatile chemicals that can catch fire, react or explode, or that are corrosive or toxic.

**Household Waste (Domestic Waste)**
Solid waste, composed of garbage and rubbish, which normally originates in a private home or apartment house. Domestic waste may contain a significant amount of toxic or hazardous waste.

## Terms and Definitions (Continued)

**Innocent Landowner Defense**
In CERCLA, the third-party defense, often called the "innocent landowner" provision, provides a narrow exemption from liability associated with ownership of the land by claiming the landowner made a good faith effort to discover any contamination. The elements of the defense are found in CERCLA Sections 107(b)(3) and 101(35).

**Joint and Several Liability**
A legal concept, under CERCLA, that relates to the liability of more than one potentially responsible party for Superfund site cleanup and related costs. For a site that became contaminated over the years, all current and previous owners, operators, or users could be considered potentially liable for the entire cost of cleaning up the site.

**Land Ban**
Phasing out of land disposal of most untreated hazardous wastes, as mandated by the 1984 RCRA amendments.

**Landfill (Sanitary)**
A disposal site in which non-hazardous solid wastes are spread in layers, compacted to the smallest practical volume, and covered by material applied at the end of each operating day. Sanitary landfills are constructed to prevent leaching of wastes into the environment and are regulated under RCRA

**Leachate**
Water that collects contaminants as it trickles through wastes, pesticides or fertilizers. Leaching may occur in landfills, farming areas, or feedlots, and may result in hazardous substances entering surface water, ground water, or soil.

**Lead (Pb)**
A heavy metal that is hazardous to health if inhaled or ingested. Its use in gasoline, paints, and plumbing compounds has been sharply restricted or eliminated by federal laws and regulations

**Lead-Containing Paint**
Paint or other similar surface coating material that contains lead or lead compounds in excess of 0.06 percent of the weight of the total nonvolatile content of the paint or the weight of the dried paint film.

**Lease Termination**
To end the action of renting real property from another party.

**Terms and Definitions**
**(Continued)**

**Liability**
The state of being obligated according to law. Environmental liability refers to the state of being obligated to address through positive actions environmental factors or issues. This may include requirements to fund site remediation or compliance with environmental regulations.

**Manifest**
A form completed by hazardous waste generators and used by haulers transporting waste and waste disposal facilities that lists EPA identification numbers, type and quantity of waste, the generator it originated from, the transporter that shipped it, and the storage or disposal facility to which it is being shipped. It includes copies for all participants in the shipping process.

**Material Safety Data Sheet (MSDS)**
A compilation of information required under the OSHA Communication Standard on the identity of hazardous chemicals, health, and physical hazards, exposure limits, and precautions. Section 311 of SARA requires facilities to submit MSDSs under certain circumstances.

**Media**
Specific environments--air, water, soil--which are the subject of regulatory concern and activities.

**National Pollutant Discharge Elimination System (NPDES)**
A provision of the Clean Water Act (CWA) which prohibits discharge of pollutants into waters of the United States unless a special permit is issued by EPA, a state, or, where delegated, a tribal government on an Indian reservation.

**National Priorities List (NPL)**
EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under Superfund. The list is based primarily on the score a site receives from the Hazard Ranking System. EPA is required to update the NPL at least once a year.

**National Response Center**
The federal operations center that receives notifications of all releases of oil and hazardous substances into the environment; open 24 hours a day, is operated by the U.S. Coast Guard, which evaluates all reports and notifies the appropriate agency.

**Natural Resource Damage Assessment and Restoration (NRDAR)**
The authorities and requirements included in CERCLA, CWA, and OPA that make entities who are responsible for oil or hazardous substance discharges liable for injuries to natural resources (in addition to the liability associated with protecting human health).

**Terms and Definitions**
**(Continued)**

**Non-Point Sources**
Diffuse pollution sources (i.e., without a single point of origin or not introduced into a receiving stream from a specific outlet). The pollutants are generally carried off the land by storm water. Common non-point sources are agriculture, forestry, urban, mining, construction, dams, channels, land disposal, saltwater intrusion, and city streets.

**Operation and Maintenance (O&M)**
- Activities conducted after a Superfund site action is completed to ensure that the action is effective.
- Actions taken after construction to ensure that facilities constructed to treat waste water will be properly operated and maintained to achieve normative efficiency levels and prescribed effluent limitations in an optimum manner.
- On-going asbestos management plan in a school or other public building, including regular inspections, various methods of maintaining asbestos in place, and removal when necessary.

**Operation and Maintenance Plan**
A plan developed for managing operations and maintenance at a facility.

**Outgrant**
A donation of real property to a subordinate government, corporation, institution, or an individual.

**Outlease**
Initiating an action to rent real property to another party.

**Personal Property**
Any property, except: real property, records of the Federal Government, and naval vessels.

**Pollutant**
Generally, any substance introduced into the environment that adversely affects the usefulness of a resource or the health of humans, animals, or ecosystems.

**Pollution Prevention (P2)**
The reduction or prevention of waste products or pollutants through analysis and subsequent alteration or elimination of a process. P2 techniques may include: substitution of less polluting products, re-use of wastes and residuals, recycling, and engineered efficiencies to industrial and treatment processes.

## Terms and Definitions (Continued)

**Pollution**
Generally, the presence of a substance in the environment that because of its chemical composition or quantity prevents the functioning of natural processes and produces undesirable environmental and health effects.

**Potentially Responsible Party (PRP)**
Any individual or company—including owners, operators, transporters or generators—potentially responsible for, or contributing to a spill or other contamination at a Superfund site. Whenever possible, through administrative and legal actions, EPA requires PRPs to clean up hazardous sites they have contaminated.

**Preliminary Assessment**
The process of collecting, reviewing and reporting available information about a known or suspected hazardous waste site or release, in accordance with CERCLA (42 U.S.C. § 9620).

**Property Transfer**
An act of two or more parties, or the law, by which the title or an interest, benefit, or right to property is conveyed from one person to another. This includes sale, lease, mortgage, escheat, eminent domain, and foreclosure.

**Radon**
A colorless naturally occurring, radioactive, inert gas formed by radioactive decay of radium atoms in soil or rocks. Prolonged exposure to radon concentrations over 4 pico curies per liter have been associated with adverse health effects.

**Real Property**
For federal agencies real property is any interest in land under the control of a Federal agency, together with the improvements, structures, and fixtures located thereon (including prefabricated movable structures, such as quonset huts). Excepted are lands in the public domain, lands reserved or dedicated for national forest or park purposes, minerals in lands, and crops.

**Release**
Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of a hazardous or toxic chemical or extremely hazardous substance.

**Remedial Action (RA)**
The actual construction or implementation phase of a Superfund (CERCLA) site cleanup that follows remedial design.

## Terms and Definitions (Continued)

**Remedial Investigation (RI)**
An in-depth study designed to gather data needed to determine the nature and extent of contamination at a Superfund (CERCLA) site; establish site cleanup criteria; identify preliminary alternatives for remedial action; and support technical and cost analyses of alternatives. The remedial investigation is usually done with the feasibility study. Together they are usually referred to as the "RI/FS" (see also Feasibility Study).

**Remediation**
Actions taken to remove or contain a toxic or hazardous substance release. Activities may include isolating, enclosing, encapsulating, treating or removing site contamination.

**Removal Action**
Short-term immediate actions taken to address releases of hazardous substances that require expedited response.

**Reportable Quantity (RQ)**
Quantity of a hazardous substance that triggers reporting under CERCLA. If a substance exceeds its RQ, the release must be reported to the National Response Center, the State Emergency Response Commission (SERC), and community emergency coordinators for areas likely to be affected.

**Resource Conservation and Recovery Act (RCRA)**
The federal regulation that provides "cradle-to-grave" control of hazardous waste by imposing management requirements on generators and transporters of hazardous wastes and upon owners and operators of treatment, storage, and disposal facilities.

**Response Action**
- Generic term for actions taken in response to actual or potential health-threatening environmental events such as spills, sudden releases, and asbestos abatement/management problems.
- A CERCLA-authorized action involving either a short-term removal action or a long-term removal response. This may include but is not limited to: removing hazardous materials from a site to an EPA-approved hazardous waste facility for treatment, containment or treating the waste on-site, identifying and removing the sources of ground-water contamination and halting further migration of contaminants.

**Restoration**
Measures taken to return a site to pre-violation conditions.

**Terms and Definitions**
**(Continued)**

**Reutilization**
The act of transferring excess personal property within or among federal agencies to fill current or future authorized requirements in lieu of new procurements.

**Risk Assessment**
Qualitative and quantitative evaluation of the risk posed to human health and/or the environment by the actual or potential presence and/or use of specific pollutants. (see also Risk)

**Risk Characterization**
The last phase of the risk assessment process that estimates the potential for adverse health or ecological effects to occur from exposure to a stressor and evaluates the uncertainty involved.

**Risk Factor**
Characteristics (e.g., race, sex, age, obesity) or variables (e.g., smoking, occupational exposure level) associated with increased probability of a toxic effect.

**Risk**
A measure of the probability that damage to life, health, property, and/or the environment will occur as a result of a given hazard.

**Sampling and Analysis Plan (SAP)**
A plan consisting of a quality assurance project plan and a field sampling plan developed during the scoping of a project to guide in sampling. The plan documents the comprehensive field and analytical activities and objectives for conducting the site confirmation sampling (see also Field Sampling Plan).

**Screening Risk Assessment**
A risk assessment performed with few data and many assumptions to identify exposures that should be evaluated more carefully for potential risk.

**Sewer**
A channel or conduit that carries wastewater and storm-water runoff from the source to a treatment plant or receiving stream. “Sanitary” sewers carry household, industrial, and commercial waste. “Storm” sewers carry runoff from rain or snow. “Combined” sewers handle both.

**Terms and Definitions**
**(Continued)**

**Site Inspection (SI)**
The collection of information from a Superfund (CERCLA) site to determine the extent and severity of hazards posed by the site. It follows and is more extensive than a preliminary assessment (PA). The purpose is to gather information necessary to score the site, using the Hazard Ranking System, and to determine if it presents an immediate threat requiring prompt removal.

**Solid Waste**
Non-liquid, non-soluble materials ranging from municipal garbage to industrial wastes that contain complex and sometimes hazardous substances. Solid wastes also include sewage sludge, agricultural refuse, demolition wastes, and mining residues. Technically, solid waste also refers to liquids and gases in containers.

**Source Reduction**
Reducing the amount of materials entering the waste stream from a specific source by redesigning products or patterns of production or consumption (e.g., using returnable beverage containers). Synonymous with waste reduction.

**Spiked Samples**
A laboratory quality assurance technique where known quantity of a particular contaminant has been added in at known concentrations to a sample. This technique is used to determine the accuracy of the analytical method.

**Split Samples**
A sample that has been divided into equal portions and analyzed by anther accepted analytical technique or qualified laboratory in order to compare results. This technique is used to evaluate the representative quality of samples collected in the field and the accuracy of the analytic method.

**Stakeholder**
Any organization, governmental entity, or individual that has an interest (or stake) in or who may be affected by a given approach or issue (such as environmental regulation, pollution prevention, energy conservation, etc.).

**State Emergency Response Commission (SERC)**
Commission appointed by each state governor according to the requirements of SARA Title III. The SERCs designate emergency planning districts, appoint local emergency planning committees, and supervise and coordinate their activities.

**Terms and Definitions**
**(Continued)**

**Superfund**
The program operated under the legislative authority of CERCLA and SARA that provides for liability, compensation, cleanup and emergency response for hazardous substances released into the environment, and the cleanup of hazardous waste disposal sites.

**Thermal Pollution**
Discharge of heated water from industrial processes that can kill or injure aquatic organisms.

**Threshold Planning Quantity**
A quantity designated for each chemical on the list of extremely hazardous substances that triggers notification by facilities to the State Emergency Response Commission (SERC) that such facilities are subject to emergency planning requirements under SARA Title III.

**Toxic Chemical**
Any chemical listed in EPA rules as "Toxic Chemicals Subject to Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986."

**Toxic Pollutants:**
Materials that cause death, disease, or birth defects in organisms that ingest or absorb them. The quantities and exposures necessary to cause these effects can vary widely.

**Toxic Substance Control Act (TSCA)**
The federal regulation that gives EPA the authority to require testing of chemical substances, both new and old, entering the environment and to regulate them where necessary. The Act provides specific requirements for the use and disposal of Polychlorinated biphenyl (PCB) and asbestos.

**Toxic Substance**
A chemical or mixture that may present an unreasonable risk of injury to health or the environment.

**Toxic Waste**
A waste that can produce injury if inhaled, swallowed, or absorbed through the skin.

**Toxicity Assessment**
Characterization of the toxicological properties and effects of a chemical, with special emphasis on establishment of dose-response characteristics.

## Terms and Definitions (Continued)

**Toxicity**
The degree to which a substance or mixture of substances can harm humans or animals.

- *Acute toxicity* involves harmful effects in an organism through a single or short-term exposure.
- *Chronic toxicity* is the ability of a substance or mixture of substances to cause harmful effects over an extended period, usually upon repeated or continuous exposure sometimes lasting for the entire life of the exposed organism.
- *Subchronic toxicity* is the ability of the substance to cause effects for more than one year but less than the lifetime of the exposed organism.

**Treatment, Storage, and Disposal Facility (TSDF)**
A RCRA-regulated facility at which hazardous substance is treated, stored and/or disposed.

**Underground Injection Wells**
Steel- and concrete-encased shafts into which hazardous waste is deposited by force and under pressure.

**Underground Storage Tank (UST)**
A tank and associated piping that are 10 percent or more below the surface of the ground, and which are used for the storage of a regulated substance (e.g., gasoline, petroleum products, chemicals or waste oil). EPA excludes: tanks used for heating purposes, septic tanks, surface impoundments, and stormwater or wastewater collection systems from the federal UST regulation. State regulations, however, vary and may mandate some or all of the tanks excluded by the EPA.

**Waste Characterization**
Identification of chemical and microbiological constituents of a waste material.

**Waste Generation**
The weight or volume of materials and products that enter the waste stream before recycling, composting, landfilling, or combustion takes place. Also can represent the amount of waste generated by a given source or category of sources.

**Waste Minimization**
Measures or techniques that reduce the amount of wastes generated during industrial production processes; term is also applied to recycling and other efforts to reduce the amount of waste going into the waste stream.

**Wastewater**
The spent or used water from a home, community, farm, or industry that contains dissolved or suspended matter.

## Terms and Definitions (Continued)

**Water Pollution**
The presence in water of enough harmful or objectionable material to damage the water's quality.

**Water Quality Criteria**
Levels of water quality expected to render a body of water suitable for its designated use. Criteria are based on specific levels of pollutants that would make the water harmful if used for drinking, swimming, farming, fish production, or industrial processes.

**Water Quality Standards**
State-adopted and EPA-approved ambient standards for water bodies. The standards prescribe the use of the water body and establish the water quality criteria that must be met to protect designated uses.

**Watershed**
The land area that drains into a stream; the watershed for a major river may encompass a number of smaller watersheds that ultimately combine at a common watercourse or body of water.

**Well**
A bored, drilled, or driven shaft, or a dug hole whose depth is greater than the largest surface dimension and whose purpose is to reach underground water supplies or oil, or to store or bury fluids below ground. In the context of environmental investigations, the principle use of wells is to reach subsurface water supply (groundwater or aquifer) to obtain a sample for environmental testing.

**Wellhead Protection Area**
A protected surface and subsurface zone surrounding a well or well field supplying a public water system to keep contaminants from reaching the well water.

**Wetlands**
An area that is saturated by surface or ground water (temporarily or permanently) with vegetation adapted for life under those soil conditions, as swamps, bogs, fens, marshes, and estuaries.

**Whole-Effluent-Toxicity Tests**
Tests to determine the toxicity levels of the total effluent from a single source as opposed to a series of tests for individual contaminants.

# APPENDIX D

## DoD AND SPONSORING FEDERAL AGENCY MEMORANDUM GOVERNING THE ACQUISITION OF FEDERAL FACILITY PROPERTY

*(Material reformatted from original presentation)*

# Appendix D
# DoD and Sponsoring Federal Agency Memorandum Governing the Acquisition of Federal Facility Property

*(Material reformatted from original presentation dated March 7, 1997)*

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON DC 20301-3000

MEMORANDUM FOR DEPUTY ASSISTANT SECRETARY OF THE ARMY
(INSTALLATION AND HOUSING)
DEPUTY ASSISTANT SECRETARY OF THE NAVY
(CONVERSION AND REINVESTMENT)
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE (INSTALLATIONS)
MANAGER FOR FEDERAL LANDS-TO-PARKS PROGRAM, NATIONAL PARK SERVICE, DEPARTMENT OF THE INTERIOR CHIEF OF REAL PROPERTY BRANCH, PUBLIC HEALTH SERVICES, DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIRECTOR OF REAL PROPERTY GROUP, OFFICE OF MANAGEMENT, DEPARTMENT OF EDUCATION, DIRECTOR OF PORTS AND DOMESTIC SHIPPING MARITIME ADMINISTRATION

SUBJECT: Memorandum of Agreement (MOA) for Assigning Real Property to Federal Agencies Sponsoring Public Benefit Conveyances.

An interagency working group comprised of DoD and sponsoring Federal Agency representative has jointly developed an MOA (attached) delineating responsibilities for environmental obligations associated with the assignment of base closure properties approved for public benefit conveyances. This MOA assures sponsoring Agencies that the applicable land-holding Military Department accepts responsibility for the environmental cleanup of base closure property assigned to the sponsoring Agencies for further transfer to approved public benefit recipients.

The MOA signatures are listed as designated by your respective Agencies. I request that you obtain the appropriate and return the executed signature page to my office. My point of contact is Captain Mike Durgin. (703) 604-6021. Thank you for cooperatively working to develop this agreement to improve or process for expeditiously transferring base closure properties for public benefit reuse.

John B. Goodman
Deputy Under Secretary
(Industrial Affairs and Installations)

Attachment:
As Stated

*(Material reformatted from original presentation dated March 7 1997)*

MEMORANDUM OF AGREEMENT
BETWEEN
THE DEPARTMENT OF EDUCATION
THE DEPARTMENT OF HEALTH AND HUMAN SERVICES
THE DEPARTMENT OF THE INTERIOR
THE DEPARTMENT OF TRANSPORTATION
AND
THE DEPARTMENT OF DEFENSE
THE DEPARTMENT OF THE ARMY
THE DEPARTMENT OF THE NAVY
THE DEPARTMENT OF THE AIR FORCE

THIS AGREEMENT is made between the Departments of Education, Health and Human Services, Interior, and Transportation (hereinafter collectively referred to as the "Sponsoring Federal Agencies"), and the Department of Defense (hereinafter "DoD") and the Departments of the Army, Navy, and the Air Force (hereinafter collectively referred to as the "Military Departments).

WITNESSETH, THAT:

WHEREAS, Sponsoring Federal Agencies will evaluate and approve or disapprove an application from a Public Benefit Recipient for certain real property (the "Property") on a military installation, and in so doing will rely upon the Military Department's assessment of the condition of the Property in relation to the specific requirements of the Public Benefit Recipient's approved program, as described in the application; and

WHEREAS, a Sponsoring Federal Agency, acting as a conduit through which title will ultimately pass from the United States to the Public Benefit Recipient, will request assignment of the Property under the authority provided by the Federal Property and Administrative Services Act of 1949, 40 U.S.C. § 484(k), as amended, and regulations promulgated thereunder; and

WHEREAS, the Military Department will assign the Property to a Sponsoring Federal Agency for transfer to a Public Benefit Recipient, in accordance with an appropriate assignment letter under authority vested in the Administrator of General Services, by the Federal Property and Administrative Services Act, and delegated to the Secretary of Defense under Public Law 101-510, and redelegated to the Secretaries of the Military Departments;

NOW, THEREFORE, the parties agree as follows:

a. The Military Department accepts responsibility for the Property as the Federal "holding agency" under the Federal Property Management Regulations, 41 C.F.R. Part 101-47, and is the "disposal agency" for the Property pursuant to delegations of

author from the Administrator of General Services, required by Public Laws 100-526 and 101-510.

b. The environmental remediation of the contaminated portions of the Property will be the sole responsibility of the Military Department, and will be undertaken in cooperation with the Environmental Protection Agency ("EPA") and/or the State environmental regulatory authority, as appropriate, and in compliance with an enforceable agreement or order.

c. If hazardous substances were stored for one year or more, known to have been released, or disposed of on the Property, the Military Department will provide the Sponsoring Federal Agency with a copy of the notice required by the Comprehensive Environmental Response, Compensation and Liability Act ("CERLA") § 120 (h) (1), and the contents of such notice, as required by CERLA § 120 (h) (3) (A) (i), will be included in the transfer document. With respect to such property, and in accordance with CERCLA § 120 (h) (3), the Military Department shall ensure that all remedial action necessary to protect human health and the environment has been taken with respect to any hazardous substance remaining on the Property (including EPA's determination that any ongoing remedy has been demonstrated to be operating properly and successfully). In addition, the Military Department will direct the Sponsoring Federal Agency to include in the deed transferring the Property to the Public Benefit Recipient:

    (1) a covenant warranting that all remedial action necessary to protect human health and the environment with respect to any hazardous substance remaining on the property has been taken;

    (2) a covenant warranting that any additional remedial action found to be necessary after the date of such transfer shall by conducted by the United States, and

    (3) a clause granting the United States access to the property in any case in which remedial action or corrective action is found to be necessary after the date of such transfer.

d. In accordance with CERCLA § 120(h) (4), if the Military Department determines the Property is uncontaminated, and receives concurrence in this determination from either EPA (for NPL sites) or the appropriate State official (for non-NPL sites), the Military Department will direct the Sponsoring Federal Agency to include in the deed transferring the Property to the Public Benefit Recipient:

    (1) a covenant warranting that any response action or corrective action found to be necessary after the date of transfer shall be conducted by the United States; and

(2) a clause granting the United States access to the Property in any case in which a response action or corrective action is found to be necessary on the Property after the date of transfer, or where such access is necessary to carry out a response action or corrective action on adjoining property.

e. The Military Department assumes sole responsibility for the preparation and review of the following documents:

(1) Environmental Baseline Survey

An Environmental Baseline Survey (EBS) of those portions of the military installation for which a Public Benefit Transfer is being considered will be completed and copies will be presented to the Sponsoring Federal Agency and the Public Benefit Recipient at least 60 days prior to assignment. The EBS shall summarize what is presently known of the environmental condition of the property, as required by 40 C.F.R. Part 373.

(2) Finding of Suitability to Transfer

A Finding of Suitability to Transfer (FOST) will be completed in accordance with the "DoD Policy on the Environmental Review Process to Reach a Finding of Suitability to Transfer for Property Where Release or disposal has Occurred" based on the results of the EBS, the Final Environmental Impact, Statement, the Disposal and Reuse Record of the Property. Regulatory agencies shall be provided an opportunity to comment and their comments shall be incorporated where appropriate or attached if unresolved.

f. The Military Department acknowledges that a Public Benefit Recipient may be entitled to indemnification under Section 330 of the National Defense Authorization Act for Fiscal Year 1993, Public Law 102-484, as amended (10 U.S.C. § 2687 Note).

g. The Military Department will determine that the Property is environmentally suitable for transfer in accordance with the Public Benefit Recipient's approved purposes, and in accordance with the "DoD Policy on the Environmental Review Process to Reach a Finding of Suitability to Lease" and "DoD Guidance on the Environmental Review Process to Reach a Finding of Suitability to Transfer." The Sponsoring Federal Agency may rely upon this determination of suitability and is not required to independently inspect the Property prior to transfer.

h. The Military Department will determine that the Property is environmentally suitable for transfer in accordance with the Public Benefit Recipient's approved purposes, and in accordance with the "DoD Policy on the Environmental Review Process to Reach a Finding of Suitability to Lease" an "DoD Guidance on the Environmental Review Process to Reach a Finding of Suitability to Transfer." The Sponsoring Federal Agency may rely upon this determination of suitability and is not required to independently inspect the Property prior to transfer.

i. The Military Department acknowledges that, unless mutually agreed to in the context of a particular proposed public benefit transfer, the Sponsoring Federal Agency has no presence on nor has previously used or occupied the Property in a manner that would make the Sponsoring Federal Agency liable for any costs or claims attributable to existing contamination on or emanating from the Property. Accordingly, nothing in this Agreement not in the public benefit conveyances is to be construed as requiring the Sponsoring Federal Agency to accept responsibility for the payment of any taxes, assessments, public utility charges, or environmental fees becoming due on the Property and attributable to actions taken during the Military Department's use or occupancy of the Property. The Military Department acknowledges that one purpose of this Agreement is to ensure that the Sponsoring Federal Agency does not assume any of the U.S. Government's potential liability or responsibility for contamination no have any obligation to undertake the U.S. Government's defense of any claim or action, whether in existence now or brought in the future, caused by the use, storage, management, release, or disposal of hazardous materials, substances, wastes, or petroleum products or any contamination thereof (including any use, storage, management, release, or disposal of such that occurs during any subsequent environmental remediation) on any portion of the Property prior to its transfer to a Public Benefit Recipient, including any contamination not presently known but subsequently discovered and determined to be attributable to activities on the Property prior to its transfer to a Public Benefit Recipient.

j. This Agreement is intended principally to govern the allocation of responsibility between the Military Department and the Sponsoring Federal Agency for any contamination determined to be attributable to actions taken on the Property prior to its transfer to a Public Benefit Recipient. Nothing in this Agreement shall be construed to prevent the Military Department from bringing a cost recovery, contribution, or other action against third persons or parties the Military Department reasonably believes may have contributed to the contamination prior to the Public Benefit Transfer. This Agreement is intended only to improve the internal management of the Executive Branch and is not intended to, nor does it, create any right or benefit, substantive or procedural, enforceable at law or equity by any party against the United States, it agencies, or it officers.

k. Except as otherwise expressly provided herein, this Agreement constitutes the entire Agreement between the Military Department and the Sponsoring Federal Agency with respect to matters set forth herein and supersedes any documents prepared before this Agreement to the extent those documents may be inconsistent with this Agreement. Nothing in this Agreement precludes the individual parties to this Agreement form agreeing to amendments that apply only as between such parties in the context of a proposed benefit transfer

IN WITNESS WHEREOF, the Sponsoring Federal Agencies, the Military Departments, and DoD have caused this Agreement to be duly executed.

DEPARTMENT OF THE INTERIOR

By: _____ _____
BONNIE R. COHEN Date
Assistant Secretary, Policy,
Management, and Budget

DEPARTMENT OF EDUCATION

By: _____ _____
GARY RASMUSSEN Date
Director of the Office of Management

DEPARTMENT OF HEALTH AND HUMAN SERVICES

By: _____ _____
LYNNDA M. REGAN Date
Director, Program Support Center

MARITIME ADMINISTRATION

By: _____ _____
JOEL C. RICHARD Date
Secretary

# APPENDIX E

# EPA POLICY TOWARDS LANDOWNERS AND TRANSFEREES OF FEDERAL FACILITIES

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

**JUN 13 1997**

**MEMORANDUM**

**SUBJECT:** Transmittal of the Policy Towards Landowners and Transferees of Federal Facilities

**FROM:** Timothy Fields, Jr. **/s/**
Acting Assistant Administrator
Office of Solid Waste and Emergency Response

Steven A. Herman **/s/**
Assistant Administrator
Office of Enforcement and Compliance Assurance

**TO:** Regional Administrator, Regions I-X
Regional Counsel, Office of Regional Counsel, Regions I-X
Director, Office of Site Remediation and Restoration, Region I
Director, Emergency and Remedial Response Division, Region II
Director, Hazardous Waste Management Division, Regions III, IX
Director, Waste Management Division, Region IV
Director, Superfund Division, Regions V, VI, VII
Assistant Regional Administrator, Office of Ecosystems Protection and Remediation, Region VIII
Director, Environmental Cleanup Office, Region X

This memorandum transmits EPA's "Policy Towards Landowners and Transferees of Federal Facilities", (Policy) which addresses potential liability concerns of landowners and transferees (e.g., lessees) who acquire Federal facility property. With the nationwide reduction in the number and size of these facilities, primarily closing military bases, acquisition of such property by non-federal parties has become increasingly common.

The Policy was developed in cooperation with a number of Federal agencies, including the Department of Defense and the Department of Energy, and is intended to alleviate uncertainty regarding potential enforcement by the Agency against such landowners and transferees for contamination existing as of the date of property acquisition. The Policy should also further reduce transaction costs by eliminating the need for the negotiation of prospective purchaser agreements for such property.

The Policy applies only to the transfer of property at federally owned facilities. EPA's existing "Guidance on Agreements with Prospective Purchasers of Contaminated Property", 60 Fed. Reg. 34792 (July 3, 1995), addresses property transfer between private parties where an EPA action has been taken, is anticipated, or is currently underway.

If you have any questions or comments regarding the attached Policy, please have your staff contact Seth Thomas Low of the Federal Facilities Restoration and Reuse Office at (202) 260-8692, Bill Frank in the Federal Facilities Enforcement Office at (202) 564-2584, or Joe Tieger in the Office of Site Remediation Enforcement at (202) 564-4276.

Attachment

cc: Sherri Goodman, DoD
Patricia Rivers, DoD
Robert Taylor, DoD
James Van Ness, DoD
Alvin Alm, DOE
Martha Crosland, DOE
John Mandell, GSA
Steve Rogers, DOJ
Stephen Luftig, OERR
Barry Breen, OSRE
Craig Hooks, FFEO
Jim Woolford, FFRRO
Linda Garczynski, OSPS
Regional BRAC Contacts
Federal Facilities Leadership Council
Seth Low
Bill Frank
Joe Tieger

POLICY TOWARDS LANDOWNERS AND TRANSFEREES OF FEDERAL FACILITIES

## I. PURPOSE

This policy is issued to promote the expeditious transfer and reuse of real property where the United States has ceased Federal government operations. It also implements the President's initiatives to facilitate the redevelopment and reuse of closing military bases and brownfields. Concern over potential environmental liability may have an adverse impact on the ability of local communities to develop or reuse such property. This policy is intended to alleviate those concerns, reduce uncertainty regarding the potential for CERCLA enforcement actions by the Agency, and to reduce transaction costs by precluding the need for the negotiation of prospective purchaser agreements. This policy applies only to the transfer of property at federally owned facilities. EPA's existing "Guidance on Agreements with Prospective Purchasers of Contaminated Property", 60 Fed. Reg. 34792 (July 3, 1995), addresses property transfer between private parties where an EPA action has been taken, is anticipated, or is currently underway.

## II. STATEMENT OF POLICY

It is the Agency's position that where a person or entity acquires property from the United States that is subject to the covenants provided in Sections 120(h)(3) or 120(h)(4) of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), or the indemnity provided in Public Law 102-484, as amended by Public Law 103-160, EPA will not take enforcement action against that person or entity, or its transferees or successors (hereinafter referred to as "landowners or transferees"), to require the performance of response actions or the payment of response costs incurred to respond to contamination existing as of the date that person or entity acquires the property from the United States. However, EPA may take a CERCLA enforcement action against landowners and transferees who cause, contribute to, or exacerbate the release or threat of release of any hazardous substances, through act or omission, and EPA may seek information and access from any person pursuant to CERCLA.

EPA believes that the protections afforded landowners and transferees through the above mechanisms, together with this policy, are sufficient to eliminate the need to enter into prospective purchaser agreements with them.

## III. DISCUSSION

### A. Background

#### 1. CERCLA Liability for Owners

In general, any person owning property on which hazardous substances have come to be located faces potential uncertainty with respect to liability as an "owner" under Section 107(a)(1) of CERCLA, 42 U.S.C. §9607(a)(1), even where such owner has had no participation in the handling of hazardous substances, and has taken no action to exacerbate the release.

2. Closing Military Bases and Other Federal Facilities

With respect to Federal facilities, purchasers receive certain covenants or indemnifications regarding environmental liability from the United States or the Department of Defense. In spite of the deed covenants and indemnifications, however, some prospective purchasers or lenders view the potential for becoming the subject of an EPA CERCLA enforcement action as a significant risk. The Agency is aware that such concerns may impact the ability of local communities to develop or reuse such property.

Pursuant to Congressional mandate, numerous military bases are undergoing realignment or complete closure with the potential for severe economic impacts on the affected local communities. Federal facilities, including such military bases, are frequently the subject of response actions under CERCLA. With the nationwide reduction in the number and size of Federal facilities, primarily closing military bases, transfers of such real property by deed or lease to non-federal parties has become increasingly common.

3. This Policy

EPA is issuing this policy to address potential EPA CERCLA enforcement concerns raised by lenders, prospective purchasers, landowners and transferees who may acquire portions of Federal facilities. The intent of the policy is to reduce the effect of potential CERCLA liability on the marketability of such property by clarifying that EPA, in an exercise of its enforcement discretion, will not take an action under CERCLA against landowners and transferees who meet the conditions described in this policy for contamination existing as of the date of their acquisition of such Federal facilities. Also, EPA expects the policy to reduce transaction costs by eliminating the need to negotiate prospective purchaser agreements for purchasers of Federal facilities.

B. Existing Related Agency Guidance and Policy

As discussed earlier, the Agency has previously published guidance on the issue of prospective purchasers of contaminated property. In addition, in other EPA policies, EPA has asserted its enforcement discretion in determining which parties not to pursue.[1]

[1] See, e.g., Policy Towards Owners of Residential Property at Superfund Sites, OSWER Directive #9834.6, (July 3, 1991) (stating Agency policy not to take enforcement actions against an owner of residential property unless homeowner's activities led to the release); Final Policy Toward Owners of Property Containing Contaminated Aquifers, 60 Fed. Reg. 34790 (July 3, 1995) (stating Agency policy not to take enforcement action against owners of property contaminated solely by migrating groundwater).

C. Basis for the Policy

This policy is based on certain existing statutory protections afforded landowners or transferees of Federal facilities. Consistent with such statutory protections, the Agency will exercise its enforcement discretion and not take enforcement action against landowners and transferees (e.g., lessees) of Federal facilities where the United States or the Department of Defense has provided them certain statutory protections regarding environmental liability. Specifically, this policy applies to landowners or transferees receiving any of the following types of statutory protections.

1. Statutory Covenants for Federal Facilities

a) Contaminated Real Property

Section 120(h)(3) of CERCLA places certain restrictions on the conveyance of United States owned property on which hazardous substances have been stored, released or disposed of.[2] Generally, the United States must take all remedial action necessary to protect human health and the environment with respect to any hazardous substances on a property before it can convey the property by deed to another person. The deed transferring the property must include a covenant that all necessary remedial action "has been taken" before the date of transfer and that the United States will undertake any remedial action found to be necessary after the transfer. A remedial action "has been taken" when an approved remedial design has been constructed and EPA determines it to be operating properly and successfully. The requirement to include a covenant regarding remedial action does not apply where the property is transferred to a person who is a potentially responsible party as to that property.

Under certain circumstances, however, contaminated property may be conveyed by deed before all remedial action has been taken. Section 120(h)(3)(C) of CERCLA sets forth the conditions under which either the EPA Administrator with the concurrence of the Governor (for property on the National Priorities List) or the Governor (for property not on the NPL) may defer the requirement of providing a covenant that all necessary remedial action has been taken prior to the date of transfer. In such cases, once the United States has completed all necessary remedial action, it must issue a warranty that satisfies that covenant requirement. A transferee of property conveyed under Section 120(h)(3)(C) also receives assurances at the time of transfer that all necessary remedial action will be taken in the future. Because of that assurance, and the warranty just described, it is appropriate to include these transfers within the scope of this policy.

b) Uncontaminated Real Property

Section 120(h)(4) of CERCLA provides that where the United States is transferring property on which no hazardous substances and no petroleum products or their derivatives were

[2] Please refer to the Appendix for relevant provisions of Section 120(h)(3) of CERCLA.

known to have been released or disposed of, the deed must contain a covenant warranting that any future cleanup activity will be conducted by the United States.[3]

2. Statutory Indemnification for Closing Bases

In Section 330 of the National Defense Authorization Act for Fiscal Year 1993, Public Law 102-484, Congress provided that the Secretary of Defense shall hold harmless and indemnify persons (including lessees) that acquire ownership or control of any facility at a military installation that is closing or closed pursuant to a base closure law from any claim for personal injury or property damage that results from the release or threatened release of hazardous substances as a result of Department of Defense activities. Section 1002 of the National Defense Authorization Act for Fiscal Year 1994, Public Law 103-160, expanded this provision by including releases or threatened releases of petroleum or petroleum derivatives within the indemnification. The indemnification does not apply to persons and entities that contributed to any release or threatened release.[4]

D. Use of Prospective Purchaser Agreements for Federal Facilities

The Superfund statute assigns liability to parties who acquire property with knowledge of contamination. Parties interested in acquiring contaminated property, therefore, often request some guarantee from EPA that they will not be responsible for cleaning up contamination they did not cause. EPA recognized the environmental benefit from encouraging the purchase, cleanup and redevelopment of contaminated property and so issued its revised "Guidance on Agreements with Prospective Purchasers of Contaminated Property" ("Guidance"). The Guidance describes five criteria that must be met in order for EPA to enter into an administrative order on consent with a prospective purchaser of contaminated property. Such agreements contain a covenant not to sue from EPA for contamination existing at the time of purchase.

To prevent EPA's involvement in purely private real estate transactions, two threshold criteria are used to evaluate the appropriateness of entering into a prospective purchaser agreement: 1) whether information regarding releases or potential releases of hazardous substances at the site indicates that there is a substantial likelihood of EPA response or enforcement action and 2) whether other available avenues may exist to sufficiently alleviate the threat of Superfund liability at the site without the need for EPA involvement. It is EPA's intention to limit the use of such agreements to situations where there is a realistic probability that a prospective purchaser may incur Superfund liability and the covenant not to sue is essential in order for cleanup and productive use of the site to occur.

As previously discussed, landowners and transferees of Federal facilities are protected by statutorily required deed covenants and/or indemnifications. Consequently, such prospective purchasers are not at the same risk for incurring Superfund liability as prospective purchasers of

[3] Please refer to the Appendix for relevant provisions of Section 120(h)(4) of CERCLA.
[4] Please refer to the Appendix for relevant provisions of Public Law 102-484, as amended by Public Law 103-160.

private property. Given these protections, EPA has determined that a prospective purchaser agreement as envisioned by the Guidance is not necessary for landowners and transferees of Federal facilities.

E. Use of the Policy

This policy does not constitute rulemaking by the Agency and does not create any legal obligations and is not intended and cannot be relied upon to create a right or a benefit, substantive or procedural, enforceable at law or in equity, by any person. Furthermore, the Agency may take action at variance with this policy. The extent to which the Agency applies this policy will depend on the facts of each case. On a case-by-case basis, the Agency may take enforcement action to ensure the protection of human health and the environment, such as when development or activity on the property exacerbates the existing contamination, interferes with, or is inconsistent with, a federal response action, or poses a health risk to the community.

For further information concerning this policy, please contact Seth Thomas Low in the Federal Facilities Restoration and Reuse Office at (202) 260-8692, Bill Frank in the Federal Facilities Enforcement Office at (202) 564-2584, or Joe Tieger in the Office of Site Remediation Enforcement at (202) 564-4276.

APPENDIX

Relevant Statutory Provisions

**Footnote 2: Section 120(h)(3) of CERCLA, 42 USC §9620(h)(3), states in relevant part:**

42 USC § 9620 Federal facilities
(h) Property transferred by Federal agencies
(3) Contents of certain deeds
"...in the case of any real property owned by the United States on which any hazardous substance was stored for one year or more, known to have been released, or disposed of, each deed entered into for the transfer of such property by the United States to any other person or entity shall contain-
(A) ...
(B) a covenant warranting that -
(i) all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of such transfer, and
(ii) any additional remedial action found to be necessary after the date of such transfer shall be conducted by the United States; and
(C) ...The requirements of subparagraph (B) shall not apply in any case in which the person or entity to whom the property is transferred is a potentially responsible party with respect to such real property...."

**Footnote 3: Section 120(h)(4) of CERCLA, 42 USC §9620(h)(4), states in relevant part:**

42 USC § 9620 Federal facilities
(h) Property transferred by Federal agencies
(4) Identification of uncontaminated property
(A) In the case of real property to which this paragraph applies ... the head of the department, agency, or instrumentality of the United States with jurisdiction over the property shall identify the real property on which no hazardous substances and no petroleum products or their derivatives were stored for one year or more, known to have been released, or disposed of. ...
(B) ....
(C) ....
(D) In the case of the sale or other transfer of any parcel of real property identified under subparagraph (A), the deed entered into for the sale or transfer of such property by the United States to any other person or entity shall contain -
(i) a covenant warranting that any response action or corrective action found to be necessary after the date of such sale or transfer shall be conducted by the United States; ...."

**Footnote 4: Public Law 102-484, as amended by Public Law 103-160, states in relevant part:**

"Indemnification of Transferees of Closing Defense Property
(a) In general.
(1) Except as provided in paragraph (3) and subject to subsection (b), the Secretary of Defense shall hold harmless, defend, and indemnify in full the person and entities described in paragraph (2) from and against any suit, claim, demand or action, liability, judgment, cost or other fee arising out of any claim for personal injury or property damage (including death, illness, or loss of or damage to property or economic loss) that results from, or is in any manner predicated upon, the release or threatened release of any hazardous substance, pollutant or contaminant, or petroleum or petroleum derivative as a result of Department of Defense activities at any military installation (or portion thereof) that is closed pursuant to a base closure law.
(2) The persons and entities described in this paragraph are the following:
(A) Any State (including any officer, agent, or employee of the State) that acquires ownership or control of any facility at a military installation (or any portion thereof) described in paragraph (1).
(B) Any political subdivision of a State (including any officer, agent, or employee of the State) that acquires such ownership or control.
(C) Any other person or entity that acquires such ownership or control.
(D) Any successor, assignee, transferee, lender, or lessee of a person or entity described in subparagraphs (A) through (C).
(3) To the extent the person and entities described in paragraph (2) contributed to any such release or threatened release, paragraph (1) shall not apply."

# APPENDIX F

# GSA ENVIRONMENTAL GUIDEBOOK

*(Material reformatted from original presentation)*

# Appendix F
# GSA Environmental Guidebook

*(Material reformatted from original presentation)*

**Contents**



## Environmental Guidebook

The Environmental Guidebook is designed to provide the Realty Specialist in the Office of Properly Disposal with an easy to apply framework for achieving compliance with the environmental laws and regulations that are applicable to the acceptance and disposal of interests in real property. The guidebook provides step-by-step direction and can be used as a stand-alone document or as a companion guide to GSA's Environmental Resource Book.

Realty Specialists should physically inspect the property before accepting any property. The environmental checklist provided in the Resource Book should be completed during the inspection.

**Environmental Requirements by Topic for Acceptance and Disposal**

| Topic | Acceptance | Disposal |
|---|---|---|
| National Environmental Policy Act (NEPA) | ☒ ☒ | ☒ |
| Comprehensive Environmental Response, Compensation, & Liability Act (CERCLA) | ☒ ☒ | ☒ ☒ ☒ |
| Underground Storage Tanks (UST) | ☒ ☒ | ☒ ☒ |
| Asbestos | ☒ | ☒ ☒ |
| Lead-Based Paint | ☒ | ☒ ☒ ☒ |
| Polychlorinated Biphenyls (PCB) | ☒ ☒ | ☒ ☒ ☒ |
| Flood Plains | ☒ | ☒ ☒ ☒ |
| Wetlands | ☒ | ☒ ☒ ☒ |
| Coastal Zone Management | ☒ | ☒ ☒ ☒ |
| Endangered Species | ☒ | ☒ ☒ ☒ |
| Historic and Cultural Resources | ☒ ☒ | ☒ ☒ ☒ |

**Acceptance**

☒ Information needed but not required for acceptance.

☒ ☒ Information required; if data not forthcoming, acceptance of property is conditional.

**Disposal**

☒ Information needed in file, but language not required in the Invitation for Bids (IFB), Offer to Purchase, or deed.

☒ ☒ Language required in IFB or Offer to Purchase.

☒ ☒ ☒ Language required in deed.

**National Environmental Policy Act (NEPA)**

**Acceptance**

Did the holding agency comply with NEPA?

| No | Yes |
|---|---|
| GSA should pursue agency NEPA analysis | Accept property and get information from holding agency for file |

**Disposal**

Does the disposal action qualify for a categorical exclusion (CATEX)?

| No | Yes |
|---|---|
| Prepare an Environmental Assessment or Environmental Impact Statement (EIS). | Document with a property disposal CATEX checklist in the Resource Book. |

Are there significant effects on the environment?

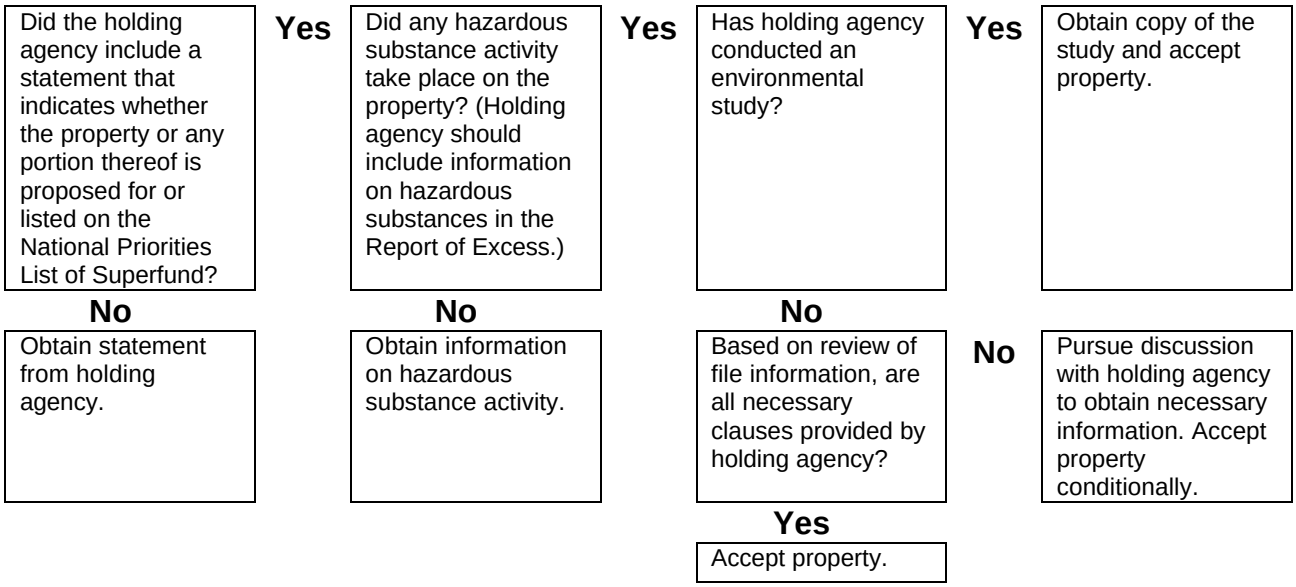
| No | Yes |
|---|---|
| Prepare a Finding of No Significant Impact (FONSI). | Prepare an EIS |

**Yes**

Prepare a Record of Decision (ROD).

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Acceptance**

Before accepting property the following questions should be answered yes in order to accept property:




If the Report of Excess indicates that there was activity involving hazardous substances on the property, the holding agency must include the following:

- Information on the type and quantity of such hazardous substance
- Information on the time at which such storage, release, or disposal took place

And one of the following:

- A statement that all remedial action necessary to protect human health and the environment has taken place before date declared excess or
- A statement that all remedial action is in place and has been determined by EPA that it is operating "properly and successfully" or
- A statement that if such action has not taken place, when it will be completed and why it has not been completed

- If the Report of Excess states that no hazardous substance activity occurred on the property, the holding agency must include the following language:

  [The holding agency] has determined, in accordance with regulations issued by the Environmental Protection Agency at 40 CFR Part 373, that there is no evidence to indicate that hazardous substance activity took place on the property based on a complete search of agency files.

*Note*: Hazardous substance activity is defined as storage of hazardous substances for one year or more or known to have been released or disposed of (40 CFR Part 373).

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Disposal**

| Was hazardous substance activity ever conducted on the property? | **No** | Include generic language for future contamination and responsibility and access. |
|---|---|---|

**Yes**

| Provide specific language relating to contamination. |
|---|

If there was activity involving hazardous substances on the property, the Invitation for Bids or conveyance document must include the following statement:

*Notice regarding hazardous substance activity:*

- The information contained in this notice is required under the authority of regulations promulgated under section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or "Superfund" 42 U.S. C. section 9620(h).

- [*The holding agency*] advises that [*provide information on the type and quantity of hazardous substances; the time at which storage, release, or disposal took place; and a description of the remedial action taken*]. All remedial action necessary to protect human health and the environment with respect to the hazardous substance activity has been taken. Any additional remedial action found to be necessary shall be conducted by the United States. In the event remedial action is found to be necessary after the date of transfer, the United States shall have access to the property for such remedial purposes.

**Underground Storage Tanks (UST)**

**Acceptance**

The Report of Excess from the holding agency should include the following information about any underground storage tanks (UST) currently or formerly located on the property:

- Past or current contents
- In compliance with current UST regulations?
- In use?
- Location
- Capacity
- Number

**Disposal**

Each Invitation for Bids and conveyance document needs:

1. All available information about the presence or USTs (see acceptance chart).

2. Statement from the holding agency that the USTs have been maintained and currently are in compliance with applicable laws as of the date of transfer.

*Note*: The December 1998 deadline for upgrading tanks may affect the compliance status of a tank. New requirements address:

- Spill protection
- Overfill protection
- Corrosion protection.

## Asbestos
## Acceptance

Has the holding agency provided all available information about condition, type, and location of asbestos incorporated in the construction, repair, or alteration of any building or improvement on the property?
Has the holding agency provided a description of any asbestos control measures taken for the property?

**Yes**

Obtain copies of all available information

**No**

Assume that asbestos is likely to be present in building

Accept property.

## Disposal

The Realty Specialist shall incorporate all information from the Report of Excess regarding asbestos in any FB or Offers to Purchase and include the language set forth in FPMR 101-47, 304-13.

*Note*: The appraisal should reflect the cost of abatement only if demolition of the building is anticipated.

## Lead-Based Paint
## Acceptance

1. Does the Report of Excess provide an inventory of all buildings constructed or renovated before 1978?

**Yes**

2. Does the report indicate where lead-based paint is located?

**No**

Obtain Inventory.

**Yes**

3. Is the property residential and built before 1960?.

**No**

Inspect and identify any lead paint hazards in residential housing built before 1978

**Yes**

Accept property and abate the identified lead hazard

**No**

Accept property

## Disposal

- Provide the IFB, notification and disclosure language to alert the bidder to the presence of lead-based paint.
- Each bidder must complete and execute the form entitled *United States of America ("Seller") Disclosure of Information on Lead-Based Paint and/or Lead-Based Paint Hazards* and submit it with the bid.
- A statement of responsibility must go into the deed and the pamphlet entitled "Protect Your Family From Lead In Your Home" for the US Environmental Protection Agency and the US Consumer Product Safety Commission must be provided to the purchaser. The pamphlets and all documents related to lead-based paint must be provided to the purchaser.

* Lead-paint on pre-1960 housing must be abated prior to transfer
** Lead contamination in soils must be addressed prior to transfer

**Polychlorinated Biphenyls (PCB)**
**Acceptance**

| 1. Does the Report of Excess contain certification that the property does or does not contain government-owned PCB transformers or other equipment regulated under 40 CFR 761? | |
|---|---|
| **Yes** | **No** |
| The Report of Excess should provide an inventory of all PCB-containing equipment and an assurance that they are currently and will continue to be maintained by the holding agency in a state of compliance until the date of transfer (or the date of sale?) of the property. (Note: this is the responsibility of the holding agency.) | |
| **Yes** | **No** |
| Accept Property. | Conditionally accept property. Holding agency should provide inventory of all PCB equipment and assurance regarding compliance if property contains government-owned PCB-containing equipment |

**Disposal**

If the property has PCB-containing equipment, the IFB or Offer to Purchase must provide a statement that the property does contain PCB-containing equipment and that the equipment has been maintained in compliance until the date of transfer (or date of sale).

**Flood Plains**
**Acceptance**

Does each Report of Excess include detailed information about any known flood hazards, and a list of citations for all flood-related restrictions on land use under Federal, state, and local regulations?
If the property is located in or adjacent to the 100-year flood plain, GSA must review that information in the Report of Excess to ensure compliance with state and local laws.

| Yes | No |
|---|---|
| Accept Property. | Conditionally accept property and obtain information. |

*Note*: If property is located in a community that is participating in the National Flood Insurance Program, this information should be readily available.

**Disposal**

| | |
|---|---|
| Screening for disposal is an eight-step decision-making process conducted in accordance with GSA ADM 1095.2 and Executive Order (EO) 11988 that determines whether<br>1) the property is in a flood plain;<br>2) the disposal action adversely impacts the flood plain, or indirectly supports development in the flood plain; and,<br>3) if so, is the disposal action the only practicable alternative? | The IFB and conveyance document shall reference the Federal, state, or local land use restrictions and include any other appropriate use restrictions. |
| Has GSA determined that the action is in or affects a flood plain and is the only practicable alternative? | If the property is being disposed of as a public benefit conveyance, when GSA knows the future land use, information about the flood plain must be included in the assignment letter. |
| The Realty Specialist must evaluate known reuse against critical actions and identify all those critical actions. | Note: Realty Specialist determines by completing Flood Impact Assessment checklist (if action is considered categorical exclusion under NEPA). If an EA or EIS is being done by GSA, a Flood Impact Analysis must be done concurrent with the NEPA EA or EIS. |
| Convey property with deed restrictions or withhold property from conveyance. | |

**Flood Plains**

Disposal of real property currently requires following certain procedures to address the requirements of both GSA ADM 1095.2 and the Water Resources Council's Flood Plain Management Guidelines to meet the eight-step screening process required under EO 11988. Actions are being taken to revise the GSA ADM 1095.2.

**Eight-Step Screening Process**

1. Determine whether the property is in a flood plain or whether its disposal would affect a flood plain or indirectly supports development in the flood plain. Use the Federal Emergency Management Agency's (FEMA) flood hazard boundary map (FHBM), a flood insurance rate map (FIRM), or the best available information to determine whether or not the property is located in a flood plain.
2. Solicit early public review and identification of restrictions from agencies, organizations, or parties that have jurisdiction over, expertise about, or interest in flood plain management.
3. Identify and evaluate action alternatives.
4. Identify impacts of the proposed action.
5. Issue the decision.
6. Minimize effects.
7. Publish findings and a public explanation.
8. Implement the proposal.

**Wetlands**
**Acceptance**

| Does the Report of Excess include detailed information regarding any known wetlands including any existing delineations, and a listing of citations to relevant requirement under applicable Federal, state, or local regulations? | |
|---|---|
| **Yes** | **No** |
| Accept Property. | GSA should use existing information, such as the appropriate National Wetland Inventory (NWI) map, or GSA may conduct a field investigation to determine whether wetlands are present on the property. Then accept property. |

**Disposal**

If excess real property located partially or entirely in a wetland is proposed for disposal to nonfederal, public or private parties, the IFB and conveyance document must include information about the locations of any wetlands and specific restrictions on the use of the property.

If the property is disposed of as a public benefit conveyance when GSA knows the future land use, information about the presence of wetlands must be included in the assignment letter.

**Coastal Zone Management**

**Acceptance**

Has the holding agency provided necessary information regarding coastal zone management issues?

| Yes | No |
|---|---|
| Accept Property. | Determine if the property is located in a coastal zone management area. |

**Disposal**

If the property is affected by a coastal zone management area, the following steps must be taken:

Will the activity have reasonably foreseeable effects (including cumulative or secondary) upon any coastal use or resources?

| No | | Yes | |
|---|---|---|---|
| Is a negative determination required? | | Has the state requested a determination of consistency for this type of case, either in an approved plan or by specific request? | |
| **Yes** | **No** | **Yes** | **No** |
| Submit a negative determination at least 90 days before the agency takes action. | GSA may proceed with disposal of the property. | | Undertake a thorough review for consistency and provide to the state initial findings that would be of value to its management effort. |

File a Federal determination of consistency according to the established six-step, 60-day process, at least 90 days before action by the Federal agency. A consistency review should be done when the proposed method of conveyance is determined.

Does the state agree with the determination of consistency?

| No | Yes |
|---|---|
| Attempt to resolve within the remainder of 90-day period. Informal negotiations or Secretarial mediation may be necessary to resolve dispute. | GSA may proceed with disposal of the property. |

*Note:* 1. Designated coastal zones include shorelines of interior lakes (such as the Great Lakes), as well as properties that reside in off-shore ocean waters (such as lighthouses).

2. No action is required unless the state has expressed interest in early participation in the federal program, and cooperates when feasible.

**Endangered Species**

**Acceptance**

| Does the holding agency provide in the Report of Excess information about the presence or likely presence of any Federally designated or state designated threatened or endangered species on the property? | |
|---|---|
| **Yes** | **No** |
| Accept Property. | The Realty Specialist should obtain information available about the consideration of, or adverse effects(s) on such species for documentation as part of the real property case file. (See Note) |

*Note*: A letter is to be sent to the US Fish and Wildlife Service (FWS) to request a list of the endangered species in the vicinity of the property. (Information also may be obtained from state agencies if Federal sources do not provide complete information.)

**Disposal**

| Does the disposal action(s) affect threatened or endangered species? | |
|---|---|
| **Yes** | **No** |
| 1. The Realty Specialist must contact the regional office of the FWS to obtain additional information. | Proceed with disposal. |
| 2. If the FWS indicates that a potential effect on a threatened or endangered species or a designated critical habitat may occur as a result of a disposal action(s), informal or formal consultation with the FWS is to be initiated in accordance with Section 7 of the Endangered Species Act. | |
| 3. In the IFB and deed, GSA must provide notice of restrictions on the property with regard to threatened and endangered species (and include the restrictions in the deed). | |

GSA Realty Specialists must obtain and document any available information regarding consideration of or adverse effects to threatened or endangered species. Where a disposal action might affect such species, the Realty Specialist must contact the regional office of the FWS to obtain additional information. If FWS indicates that there is a potential impact to threatened or endangered species or a designated critical habitat as a result of a disposal action, GSA must initiate informal consultation (concurrence from FWS) or formal consultation (preparation and submission of a Biological Assessment in the case of construction projects) with the FWS in accordance with Section 7 of the Endangered Species Act. In addition, the Realty Specialist must consider threatened or endangered species in the evaluation of disposal alternatives and document this consideration in any NEPA documentation.

## Historic and Cultural Resources

### Acceptance

Does the Report of Excess include:

1. A statement about the historical significance of the property, if any, and whether the property is listed, is eligible, or has been nominated for listing in the National Register of Historic Places, or is in proximity to a property on the National Register?

and

2. Any information available about any effort by the public to have the property listed on the National Register?

| No | Yes |
|---|---|
| Conditionally accept property until the holding agency has secured a formal eligibility determination from the State Historic Preservation Officer (SHPO). | Accept the property. |

### Screening

Has compliance with Section 106 of the National Historic Preservation Act been met?

| Yes | No |
|---|---|
| Property may be disposed. | Property may not be disposed until compliance with Section 106 has been met. |

### Disposal

Each IFB and conveyance document must include a statement that sets forth in detail any and all restrictions or requirements imposed on potential purchasers because of the historic significance or the property.

*Note*: GSA is responsible for conveying properties under historic monument public benefit conveyances.

### Section 106 Process

The Section 106 process is as follows:

1. Identify and evaluate historic properties.
2. Assess effects of government actions on historic property.
   - No effect; the undertaking will not affect historic properties
   - No adverse effect; the undertaking will affect one or more historic properties, but the effect will not be harmful.
   - Adverse effect; the undertaking will affect one or more historic properties

     If an adverse effect is anticipated, consult with SHPO and Advisory Council on Historic Preservation (ACHP) to identify ways to minimize effects of the undertaking. Consultation is designated to result in a Memorandum of Agreement (MOA). If consultation is unproductive, it may be terminated. Agency submits documentation to ACHP to obtain written comments.
3. Provide the ACHP an opportunity to comment.
4. Proceed under the terms of the MOA. In the absence of an MOA, the considers the ACHP's written comments to make its decision about how to proceed.

# APPENDIX G

# GSA GENERAL REFERENCE GUIDE
# FOR
# REAL PROPERTY POLICY

**General Reference Guide for Real Property Policy**
U.S. General Services Administration
Office of Government-wide Policy
Office of Real Property
**April 1998**

*(Reformatted from internet source document found at*
http://policyworks.gov/org/main/mp/library/policydocs/agpolicy.htm)

**Foreword**

The Office of Government-wide Policy is pleased to issue the General Reference Guide for Real Property Policy. I think you will find that it contains valuable information that can be used by all real property professionals.

This Guide was written to provide an easy-to-understand "map" to legal authorities relating to real property policies. It is an additional tool that the Federal real property community can use to keep educated and informed on current issues regarding real property policy.

I want to recognize David L. Bibb whose Office of Real Property researched and compiled the listing of the Guide. Under the leadership of Stanley C. Langfeld, the Real Property Policy Division assumed responsiblity for the planning and completion of this timely document. Deborah Connors researched and wrote the report under Team Leader Sheldon Greenberg's guidance.

I would like to also recognize and thank the General Services Administration's (GSA), Office of General Counsel who assisted in the review of this Guide. Your assistance in dealing with the legal cites and wording in the document has been an integral step in accomplishing what we set out to do: to provide an easy-to-understand reference of legal authorities applicable to GSA and Federal agencies to whom GSA real property management and operations have been delegated.

G. Martin Wagner
Associate Administrator, Office of Governmentwide Policy, U.S. General Services Administration

**Table of Contents**

**Executive Summary**

This General Reference Guide for Real Property Policy consists of a listing, by subject area, of applicable laws, GSA Federal Property Management Regulations (FPMR's) and Executive Orders. The subject areas include: Delegation of Authority; Real Property Acquisition; Facility Management; Real Property Disposal; Design and Construction; Art-in-Architecture; Historic Preservation; Assignment and Utilization of Space; Safety and Environmental Management; Security; and Public Utilities. An index is included at the end of the Guide for cross-reference purposes. This Guide is a listing only, and does not have any recommendations or policy implications for these authorities.

## I. Introduction

The following Guide was written because the Office of Real Property identified a need for an easy-to-understand reference guide to the legal authorities which serve as the basis for the current real property policies applicable to GSA and Federal agencies to whom GSA real property management and operations have been delegated. An additional need was for the user of the document to be able to relate laws, Executive Orders and/or Federal Property Management Regulations (FPMR's) to a specific real property policy area. This General Reference Guide for Real Property Policy will serve these purposes while not providing any policy implications for these authorities.

This Guide consists of a listing, by subject area, of applicable laws, FPMR's and Executive Orders. The subject areas include: Delegation of Authority; Real Property Acquisition; Facility Management; Real Property Disposal; Design and Construction; Art-in-Architecture; Historic Preservation; Assignment and Utilization of Space; Safety and Environmental Management; Security; and Public Utilities. An index is included at the end of the guide for cross-reference purposes. This Guide is a listing only, and does not have any policy implications for these authorities.

This General Reference Guide is available on the Office of Governmentwide Policy Homepage at: http://policyworks.gov/realproperty.

Any additional questions can be answered by contacting the Office of Real Property at (202) 501-0856.

This Reference Guide, and the summaries contained herein, are issued only for the convenience of its users and are not intended: (i) to be a complete listing of all laws, regulations or Executive Orders applicable to GSA or Federal real property policy; (ii) to be cited or relied upon as legal authority for any purpose whatsoever; (iii) to serve as the basis for any suit, claim, right or cause-of-action against GSA or any person; or (iv) to cover any changes in law or policy after the time of its initial issuance.

## II. Delegation of Authority

### A. Laws

1. Federal Property and Administrative Services Act of 1949, as amended, (40 USC§§486(d) and (e)) Authorizes the Administrator of General Services to delegate and to authorize successive redelegation of any authority or function transferred to or vested in the Administrator by this Act to any GSA official or to the head of any other Federal agency.

2. Public Buildings Act of 1959, as amended, (40 USC §614) Provides that the performance, in accordance with standards established by the Administrator of General Services, of the responsibilities and authorities vested in him under this Act shall, except for the authority to alter any public building and to acquire such land as may be necessary to carry out such alteration upon request, be delegated to the appropriate agency where the estimated cost of the project does not exceed $100,000, and may be delegated to the appropriate Federal agency where the Administrator determines that such delegation will promote efficiency and economy.

## III. Real Property Acquisition

### A. Laws

1. Architectural Barriers Act of 1968 (42 USC §§4151-4157) Establishes standards for accessibility by physically disabled persons and requires compliance with the standards in the design, construction and alteration of buildings and facilities leased, in whole or in part, by the Federal Government.

2. Coastal Zone Management Act of 1972 (16 USC §§1451 et seq.) Requires each Federal agency conducting or supporting activities directly affecting a designated coastal zone to conduct or support those activities in a manner which is to the maximum extent practicable, consistent with approved State management programs.

3. Competition in Contracting Act of 1984 (31 USC §§3551-3556 and 41 USC §§251-260) Requires GSA to acquire supplies and services including leased space through the use of full and open competitive procedures.

4. Earthquake Hazards Reduction Act of 1977 (42 USC §§7701-7706) Requires leased buildings to meet seismic safety standards.

5. Energy Policy and Conservation Act (EPACT) (42 USC §§6201 et seq.) Requires Federal agencies to implement programs that reduce energy consumption in Federal facilities. This includes Federally leased space.

6. Federal Water Pollution Control Act of 1972 (Clean Water Act), as amended, (33 USC §§1251-1263, and elsewhere) Requires Federal agencies to develop a comprehensive program for the control of pollutants to water. Federal agencies must consider the environmental impact of their actions so as to avoid water pollution.

7. Federal Property and Administrative Services Act of 1949, as amended, (40 USC §§471 et seq.) Authorizes GSA to: acquire, by purchase, condemnation, or otherwise, real estate and interests therein; and to enter into leases of real property not exceeding 20 years in duration and to repair, alter and improve rented premises, to condemn interests in real estate, and to assign and reassign space in leased buildings to other Federal tenants.

8. Fire Administration Authorization Act of 1992 (15 USC §2227) Requires that an entire building be sprinklered or provide an equivalent level of life safety when Federal funds are used to lease 35,000 square feet

or more of space in a building (under 1 or more leases) and some portion of the leased space is on or above the 6th floor. Also requires that all hazardous areas be sprinklered in all Government leases.

9. Federal Urban Land Use Act (40 USC §§531 et seq.) Requires GSA to consult with planning agencies and local elected officials and to the greatest extent practicable, coordinate Federal projects with development plans and objectives of the State, region, and locality where the project is to be located.

10. National Environmental Policy Act of 1969, as amended, (42 USC §§4321 et seq.) Requires Federal agencies to consider the effects of all actions on the environment, to consider alternatives that reduce impacts, and to prepare detailed statements for public and Federal agency review where significant impacts may occur. Real estate actions such as leasing are among the actions that must be reviewed.

11. National Historic Preservation Act of 1966, as amended, (16 USC §§470 et seq.) Requires Federal agencies to manage historic properties under their jurisdiction or control. Historic properties include buildings, structures, districts, sites, and objects included or eligible for inclusion in the National Register of Historic Places. Requires Federal agencies to consider the effects of their actions, including real estate actions, on such properties regardless of ownership.

12. Occupational Safety and Health Act of 1970 (29 USC §§651-678) Requires GSA to ensure that space leased and assigned to Federal agencies provides safe, healthful working conditions, including building features such as lighting, guard rails, indoor air quality, fire safety features, emergency elevator requirements, etc.

13. Public Buildings Act of 1959, as amended, (40 USC §§601-619) Authorizes GSA to: acquire, by purchase, condemnation, donation, exchange, or otherwise, any building and its site; alter any public building and to acquire such land as may be necessary to carry out such alteration; acquire by purchase, condemnation, donation, exchange, or otherwise such lands or interests in lands as necessary for use as sites for public buildings; and to make such building project surveys (11b reports) as may be requested by resolution of appropriate Congressional committees. Requires submittal of a prospectus to Congressional committees for proposed construction, alteration, purchase, or acquisition of a building to be used as a public building which involves a total expenditure in excess of $1,810,000 (indexed for Fiscal Year 1998) and for lease alteration projects in excess of $905,000 (indexed for Fiscal Year l998). Places limits on GSA's ability to lease space for computers or courtrooms. Imposes certain rules for buildings constructed for lease to the United States, including the use of detailed construction specifications and the use of competitive procedures for lease construction projects.

14. Public Buildings Cooperative Use Act of 1976 (40 USC §§490(a)(16)-(19), 601a and 612a) Authorizes GSA to enter into leases of certain space in public buildings with persons, firms or organizations engaged in commercial, cultural, educational or recreational activities or to make such space available on an occasional (temporary) basis (or by lease) to persons, firms or organizations engaged in cultural, educational or recreational activities. This Act also encourages GSA to acquire and use buildings of historic, architectural and cultural significance.

15. Randolph-Sheppard Act, as amended, (20 USC §§107 et seq.) Requires, with certain exceptions, that blind persons licensed under the provisions of the Act be authorized to operate vending facilities on any Federal property, including leased buildings. Federal agencies must ensure suitable areas for vending facilities in buildings to be acquired.

16. Reorganization Plan No. 18 of 1950 (40 USC §490 note) Transferred to GSA all functions with respect to acquiring space in buildings by lease, and all functions with respect to assigning and reassigning space in buildings.

17. Rural Development Act of 1972 (42 USC §3122) Requires Federal agencies to give first priority to rural areas in locating offices and facilities.

18. Safe Drinking Water Act (42 USC §§300f et seq.) Establishes standards for drinking water quality and regulates activities affecting drinking water supplies.

19. Small Business Act, as amended, (15 USC §§631 et seq.) Requires Federal agencies to utilize small and small disadvantaged (economically or socially disadvantaged) business concerns and to ensure such concerns have the maximum practical opportunity to participate as subcontractors in the performance of Federal contracts. Requires effort by Federal contractors to place subcontracts with small and small disadvantaged business concerns. The Act also requires publication of Federal procurement requirements and further requires large businesses to submit small business subcontracting plans.

20. Telecommunications Act of 1996 (47 USC §332 note) Authorizes, to the extent that it does not interfere with Federal agency programs or missions or security issues, Federal agencies to make available on a fair, reasonable and nondiscriminatory basis, property, rights-of-way, and easements under their control for the placement of new telecommunications services; and authorizes agencies to charge reasonable fees for the use of such property, right-of-way or easements.

21. Toxic Substance Control Act (15 USC §§2601 et seq.) Regulates specific chemical substances, including PCBs and asbestos, and requires labeling, notice and/or remediation if there is a danger to public safety.

22. Treasury, Postal Service and General Government Annual Appropriation Act (P.L. 101-136) November 3, 1989 Enables GSA to have permanent 30 year leasing authority on Government-owned land.

23. Treasury, Postal Service and General Government Annual Appropriation Act (P.L. 104-208) September 26, 1996, and (P.L 104-134) April 26, 1996 Transfers functions of the former Pennsylvania Avenue Development Corporation to the General Services Administration.

24. Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, (42 USC §§4651-4655 and elsewhere) Requires Federal agencies to make every effort to acquire real property by negotiation by initially offering the appraised fair market value for property to be acquired. Requires that eminent domain acquisitions of land or space by formal condemnation proceedings and that the landowner be fairly compensated for any buildings or structures condemned including the fair rental value of Federal holdover tenants.

25. Federal Property Management Regulations, Subchapter D, Public Buildings and Space, Part 101-17, Assignment and Utilization of Space (41 CFR Subchapter D, Appendix, Temp. Reg. D-1) Prescribes the policies and procedures for the assignment, utilization and location of Government-owned or leased space under the authority of the Administrator of General Services.

26. Federal Property Management Regulations Subchapter D, Public Buildings and Space, Part 101-18, Acquisition of Real Property (41 CFR Part 101-18) Prescribes the policies and procedures governing the acquisition of interests in real property.

## B. Real Property Acquisition Executive Orders

1. Executive Order 11988 - Floodplain Management Requires Federal agencies to avoid contributing to development of floodplains unless there is no practicable alternative. Real estate actions are among the kinds of actions that can contribute to such development.

2. Executive Order 11990 - Protection of Wetlands Requires Federal agencies to avoid causing wetlands to be filled (e.g., through lease construction) unless there is no practicable alternative to doing so.

3. Executive Order 12072 - Federal Space Management Requires Federal agencies to give first consideration to the Centralized Community Business Area when locating Federal facilities in urban areas.

4. Executive Order 12699 - Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction Requires new buildings, leased for Federal use, to meet seismic safety standards.

5. Executive Order 12902 - Energy Efficiency and Water Conservation at Federal Facilities Requires that appropriate consideration be given to building efficiencies in the leasing process.

6. Executive Order 12941 - Seismic Safety of Existing Federally Owned or Leased Buildings Requires buildings leased to the Federal Government meet certain seismic safety standards.

7. Executive Order 13006 - Locating Federal Facilities in Historic Properties in Our Nation's Central Cities Encourages Federal agencies to locate Federal facilities on historic properties in our Nation's central cities.

## IV. Facility Management

### A. Laws

1. American Indian Religious Freedom Act of 1978 (42 USC §§1996-1996a) Requires Federal agencies to review their policies and procedures with the aim of protecting Indian religious freedom, to refrain from prohibiting access to native religious and cultural objects or ceremonies, and to consult with Indian organizations concerning proposed Federal agency actions.

2. Archeological Resources Protection Act of 1979, as amended, (16 USC §§470aa-470mm) Prohibits any person from excavating or removing archeological resources (defined as sites or items of archeological interest) from Federal or Indian land without a permit from the appropriate Federal land manager.

3. Coastal Barrier Improvement Act of 1990 (16 USC §§3501 et seq.) Restricts Federal expenditures and financial assistance to projects which have the effect of encouraging development of coastal barriers. However, permits such expenditures in certain exceptions.

4. Coastal Zone Management Act of 1972 (16 USC §§1451 et seq.) Requires each Federal agency activity within or outside a designated coastal zone that affects any land or water use or natural resource of a designated coastal zone to be consistent with the relevant State's management program.

5. Davis-Bacon Act (40 USC §276) Requires the payment of minimum wages for laborers and mechanics employed under Government contracts for the construction, alteration or repair of public buildings or public works. Wages are established by the Department of Labor and are based on the prevailing wage rate in the locality in which the contract is to be performed.

6. Edgar Amendment (40 USC §490c) Prohibits GSA, with certain exceptions, from contracting for guard, elevator operator, messenger, and custodial services, if any permanent veterans preference employee of GSA would be terminated as a result of the procurement of such services.

7. Energy Policy and Conservation Act (EPACT) (42 USC §§6201 et seq.) Requires Federal agencies to implement programs that reduce energy consumption in Federal facilities.

8. Federal Property and Administrative Services Act of 1949, as amended, (40 USC §§471 et seq.) Provides GSA with the authority to procure and supply real and personal property and non-personal services. Specifically, the Act authorizes the Administrator of General Services to maintain, operate, and protect buildings, property or grounds, including the construction, repair, preservation, demolition, furnishing, and equipping of such

buildings (40 USC §490). In addition, the Act authorizes GSA to enter into leases of real property not exceeding 20 years in duration.

9. Federal Urban Land Use Act (40 USC §§531 et seq.) Requires that, before a change of use of any real property situated in an urban area as a site for a public building, GSA must comply with general local government regulations and to consider all objections on the grounds that the change or use would conflict with zoning regulations or planning objectives.

10. Fire Administration Authorization Act of 1992 (15 USC §2227) Requires that an entire building be sprinklered or provide an equivalent level of life safety for Federally owned buildings and when Federal funds are used to lease 35,000 square feet or more of space in a building (under 1 or more leases) and some portion of the leased space is on or above the 6th floor. Also requires that all hazardous areas in all Federally controlled space (owned or leased) be sprinklered.

11. Health Service Programs (5 USC §7901) Authorizes Federal agencies to establish health care facilities.

12. Javits-Wagner-O'Day Act (41 USC §§46-48c) Establishes the Committee for Purchase from the Blind and Other Severely Disabled which regulates the procurement of specified commodities and services from authorized non-profit agencies for the blind and severely disabled.

13. National Environmental Policy Act of 1969, as amended, (42 U.S.C §§4321 et seq.) Requires Federal agencies to consider the effects of all actions on the human environment, to consider alternatives that reduce impacts, and to prepare detailed statements for public and Federal agency review where significant impacts may occur. Facility management can result in environmental impacts that must be reviewed.

14. National Historic Preservation Act of 1966, as amended, (16 USC §§470 et seq.) Requires Federal agencies to manage historic properties under their jurisdiction or control. Historic properties include buildings, structures, districts, sites, and objects included or eligible for inclusion in the National Register of Historic Places. Requires Federal agencies to consider the effects of their actions, including ongoing facility management, on such properties regardless of ownership.

15. Native American Graves Protection and Repatriation Act (23 USC §§3001 et seq.) Clarifies the ownership rights to Native American remains and artifacts found on Federal or Indian land. Establishes rules for the disposition and control of cultural items and establishes penalties for illegally trafficking in Native American remains and cultural items. Requires Federal agencies that have custody and control over such remains or items to inventory them and notify the affected Indian or cultural groups for possible repatriation.

16. Public Buildings Act of 1959, as amended, (40 USC §§ 601-619) Provides that only the Administrator of General Services may construct public buildings, including the repair and alteration of such buildings. Establishes requirements for the acquisition, alteration, and construction of public buildings. A public building means any building, whether for single or multitenant occupancy, its grounds, approaches, and appurtenances, which is generally suitable for office or storage space or both, and for the use of one or more Federal agencies or mixed ownership corporations.

17. Public Buildings Amendments of 1972, as amended, (40 USC §§490(f), (a)(18) and (j)) Establishes a fund (Federal Buildings Fund) in the United States Treasury into which Federal agency rent and certain other moneys are deposited. Moneys deposited into the fund are available, subject to Congressional appropriation, for real property management and related activities.

18. Public Buildings Cooperative Use Act of 1976 (40 USC §§490(a)(16)-(19), 601a and 612a) Authorizes the Administrator of General Services to enter into leases for certain space (pedestrian access levels, rooftops, and courtyards) in public buildings with persons, firms or organizations engaged in commercial, cultural, educational or recreational activities or to make such space available on an occasional (temporary) basis (or by lease) to persons, firms or organizations engaged in cultural, educational or recreational activities where the

Administrator deems the activities to be in the public interest and where the activities will not disrupt the operation of the building. Under this authority, receipts from leases or rentals are credited against appropriations for building operations. The Act also authorizes the Administrator to furnish utilities, maintenance, repair, and other services to persons, firms or organizations leasing space.

19. Randolph-Sheppard Act, as amended, (20 USC §§107 et seq.) Requires that blind persons licensed under the provisions of the Act be authorized to operate vending facilities on any Federal property including leased buildings. Federal agencies must ensure suitable areas for vending facilities in buildings to be acquired.

20. Service Contract Act of 1965 (41 USC §§351-358) Requires the payment of minimum wages for service employees employed under service contracts to which the Government is a party. Wages are established by the Department of Labor and are based on the prevailing wage rate in the locality in which the contract is to be performed.

21. Small Business Act, as amended, (15 USC §§631 et seq.) Requires that a fair proportion of all Federal contracts be awarded to small and small disadvantaged (economically or socially disadvantaged) business concerns.

22. Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (42 USC §§6901 et seq.) and Hazardous and Solid Waste Amendments of 1984 (P.L. 98-616) Regulates hazardous and solid waste activities and underground storage tanks (UST's). GSA must assure that any UST's are in compliance with Federal, State and local laws, including the removal or remediation of any contamination prior to real property disposal.

23. Telecommunications Act of 1996 (47 USC §332 note) Authorizes, to the extent that it does not interfere with Federal agency programs or missions or security issues, Federal agencies to make available on a fair, reasonable and nondiscriminatory basis, property, rights-of-way, and easements under their control for the placement of new telecommunications services; and authorizes agencies to charge reasonable fees for the use of such property, right-of-way or easements.

24. Treasury, Postal Service, and General Government Annual Appropriation Act (P.L. 104-52) November 19, 1995 Requires that the head of each Federal agency shall promulgate regulations that prohibit the sale of tobacco products in vending machines in or around Federal buildings, and the distribution of free samples of tobacco products in or around Federal buildings.

25. Treasury, Postal Service, and General Government Annual Appropriation Act (40 USC §490 (h-l)) September 30, 1996 Authorizes the Administrator of General Services to establish, acquire space for, and equip flexiplace work telecommuting centers for use by employees of Federal agencies, State and local governments, and the private sector. Non-Federal employees may use the center to the extent that it is not being fully used by Federal employees.

26. Trible Amendment (40 USC §490b) Authorizes the provision of space, services and equipment for child care services in Federal facilities without charge for rent or services.

27. Federal Property Management Regulations, Amendment A-52, September 1994, Subpart 101-6.6, Fire Protection (Firesafety) Engineering Requires that an equivalent level of life safety evaluation be performed by a qualified fire protection engineer in buildings covered under the Fire Administration Authorization Act of 1992. After this evaluation is determined to be acceptable, a record should be maintained of the evaluation and appropriate copies given to fire departments or other local authorities for use in developing prefire plans.

28. Federal Property Management Regulations, Subchapter D, Public Buildings and Space, Part 101-19, Construction and Alteration of Public Buildings (41 CFR Part 101-19) Prescribes the policies and procedures for the alteration of public buildings, including standards for the alterations of buildings to ensure, whenever possible, that physically disabled persons will have ready access to and use of such buildings.

29. Federal Property Management Regulations, Subchapter D, Public Buildings and Space, Part 101-20, Management of Buildings and Grounds (41 CFR Part 101-20) Prescribes the policies and procedures for the management, operations, protection, and maintenance of Government-owned and leased properties under the assignment responsibility of GSA.

30. Federal Property Management Regulations, Subchapter H, Utilization and Disposal, Part 101-42, Utilization and Disposal of Hazardous Materials and Certain Categories of Property (41 CFR Part 101-42) Prescribes the special policies and procedures governing the utilization, donation, sale, exchange, or other disposition of hazardous materials, dangerous property, and other categories of property with special utilization and disposal requirements.

## B. Facility Management Executive Orders

1. Executive Order 11988 - Floodplain Management Requires Federal agencies to avoid contributing to development of floodplains unless there is no practicable alternative. Facility management activities that could contribute to such development must be reviewed under this authority.

2. Executive Order 11990 - Protection of Wetlands Requires Federal agencies to avoid causing wetlands to be filled (e.g., through landscaping as part of facility management) unless there is no practicable alternative to doing so.

3. Executive Order 12856 - Federal Compliance With Right-To-Know Laws and Pollution Prevention Requirements Requires Federal agencies that manage facilities to reduce the amount of toxic chemicals entering any waste stream through source reduction, and requires that agencies report any introduction of toxic chemicals into the waste stream to the public.

4. Executive Order 12871 - Labor Management Partnerships Establishes labor-management partnerships throughout the Executive branch for unskilled, skilled, and technical/professional employees.

5. Executive Order 12873 - Federal Acquisition, Recycling, and Waste Prevention Requires each Executive agency to incorporate waste prevention and recycling in its daily operations including the requirement to use printing and writing papers with set minimum content standard of post-consumer materials.

6. Executive Order 12898 - Environmental Justice Requires Federal agencies to take all practicable measures to avoid disproportionately high and adverse environmental impacts on low-income and minority populations.

7. Executive Order 12902 - Energy Efficiency and Water Conservation at Federal Facilities Requires that appropriate consideration be given to efficient buildings in the design and construction process. Increases Federal energy reduction goals to 30 percent by the year 2005, measured relative to 1985 energy use.

8. Executive Order 13007 - Indian Sacred Sites Requires Federal agencies that manage land, to the extent practicable, to avoid impeding the access of American Indians to traditional sacred sites, and to avoid physical impact to such sites.

9. Executive Order 13058 - Protecting Federal Employees and the Public From Exposure to Tobacco Smoke in the Federal Workplace Prohibits, with limited exceptions, the smoking of tobacco products in all interior space owned, rented, or leased by the Executive branch of the Federal Government, and in any outdoor areas under Executive branch control in front of air intake ducts.

## V. Real Property Disposal

## A. Laws

1. American Indian Religious Freedom Act of 1978 (42 USC §§1996-1996a) Requires Federal agencies to review their policies and procedures with the aim of protecting Indian religious freedom, to refrain from prohibiting access to native religious and cultural objects or ceremonies, and to consult with Indian organizations concerning proposed Federal agency actions.

2. Coastal Zone Management Act of 1972 (16 USC §§1451 et seq.) Requires each Federal agency conducting or supporting activities directly affecting a designated coastal zone to conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with approved State management programs.

3. Comprehensive Drug Abuse and Prevention and Control Act (21 USC §881) Provides for the forfeiture to the United States of any real property which is used or intended to be used in illegal drug activities and provides for the disposal of such real property.

4. Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the Community Environmental Response Facilitation Act (CERFA) (42 USC §§9601 et seq.) Regulates the disposal of contaminated real property, requires full disclosure of all known hazardous substance activity, requires the identification of uncontaminated parcels, and specifies covenants to be provided in most deeds for disposal of Federal real property.

5. Defense Authorization Amendments and Base Closure and Realignment Act, as amended, (P.L. 100-526 and P.L. 101-510, 10 USC §2687); Base Closure Community Development and Homeless Assistance Act of 1994 (P.L. 103-421, 10 USC §2687 note) Mandates that the Administrator of General Services delegate his authority under the Act to the Department of Defense (DOD); however, GSA has oversight responsibility and provides technical assistance. These laws set forth the process for recommending the closure of military bases and the requirements for the disposal of real property located at these installations. In addition, these laws modify the process for McKinney Act screening and outreach by requiring specific actions by the disposal agency, local redevelopment authorities, and other entities involved in the disposal of military bases to ensure potential reuses, including homeless needs, are considered in community reuse plans.

6. Disposal of Lands Acquired by Devise (40 USC §304) Authorizes GSA to take custody and dispose of, as excess property, any real property acquired by the United States by devise.

7. Endangered Species Act of 1973 (16 USC §§1531 et seq.) Requires Federal agency consultation with the Department of Interior, where endangered or threatened species are likely to be impacted, to ensure that Federal agency actions do not jeopardize endangered or threatened species.

8. Farmlands Protection Act of 1981 (7 USC §§4201 et seq.) Requires Federal agencies to take into account the adverse impact of its programs on the preservation of farmland and, as appropriate, consider alternatives which could lessen such adverse effects.

9. Federal Property and Administrative Services Act of 1949, as amended, (40 USC §§471 et seq.) Authorizes GSA to dispose of surplus property by sale, exchange, lease, permit, or transfer, for cash, credit, or other property, upon such terms and conditions as deemed appropriate. Pursuant to the provisions of the Act, Federal real property may be transferred to other Federal agencies to promote maximum utilization of real property; conveyed for public uses such as education, health, park and recreation, correction, etc.; or sold by negotiated or public sale. Requires that explanatory statements of negotiated sales be transmitted to the appropriate Congressional committee.

10. Federal Urban Land Use Act (40 USC §§531 et seq.) Requires GSA to give reasonable notice of prospective sales of real property located within an urban area to the unit of local government having jurisdiction over zoning and land-use regulations in the geographic area within which the property is located. This will afford the local government the opportunity to zone the property in accordance with local comprehensive planning.

11. Federal Water Pollution Control Act of 1972 (Clean Water Act), as amended, (33 USC §§1251-1263, and elsewhere) Requires Federal agencies to develop a comprehensive program for the control of pollutants to water. Federal agencies must consider the environmental impact of their actions to avoid water pollution.

12. Gifts for Reduction of the Public Debt (31 USC §3113) Authorizes GSA to accept for the Government a gift of real property made on the condition that it be sold and the proceeds from the sale be used to reduce the public debt. Proceeds from such sale are to be deposited into a specific Treasury account.

13. National Environmental Policy Act of 1969, as amended, (42 USC §§4321) Requires Federal agencies to consider the effects of all actions on the human environment, to consider alternatives that reduce impacts, and to prepare detailed statements for public and Federal agency review where significant impacts may occur. Real property disposal actions are among those that must be reviewed.

14. National Historic Preservation Act of 1966, as amended, (16 USC §§470 et seq.) Requires Federal agencies to manage historic properties under their jurisdiction or control. Historic properties include buildings, structures, districts, sites, and objects included or eligible for inclusion in the National Register of Historic Places. Requires Federal agencies to consider the effects of their actions, including real property disposal actions, on such properties regardless of ownership.

15. Property for Wildlife Conservation Act (16 USC §§667b-d) Allows surplus Federal real property to be conveyed to State agencies for wildlife conservation purposes (other than migratory birds) without reimbursement.

16. Property Transferred in Connection with Debts (40 USC §301) Governs the acceptance and sale of real property conveyed to the United States in payment of debts excepting the internal-revenue laws.

17. Reconveyance of Real Estate on Payment of Debt (40 USC §306) Authorizes GSA to release or otherwise convey real estate to a debtor from whom it was taken upon receipt of full payment of the debt to the United States excepting the internal-revenue laws.

18. Residential Lead-Based Paint Hazard Reduction Act of 1992 (42 USC §§4822 et seq., and §§4851 et seq.) Requires the inspection and abatement and/or notice of possible presence of lead-based paint hazards in the disposition of Federally owned housing.

19. Safe Drinking Water Act (42 USC §§300f et seq.) Establishes standards for drinking water quality and regulates activities affecting drinking water supplies.

20. Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (42 USC §§6901 et seq.) and Hazardous and Solid Waste Amendments of 1984 (P.L. 98-616) Regulates hazardous and solid waste activities and underground storage tanks (UST's). GSA must assure that any UST's are in compliance with Federal, State and local laws, including the removal or remediation of any contamination prior to real property disposal.

21. Stewart B. McKinney Homeless Assistance Act of 1987, as amended, (42 USC §11411) Provides for the use of excess and surplus Federal real property to assist the homeless. Specifies procedures, timeframes and requires coordination with the Department of Housing and Urban Development regarding suitable properties, and with the Department of Health and Human Services regarding review and approval of applications to lease or acquire property pursuant to these provisions.

22. Surplus Property Act of 1944, Airport and Airways Improvement Act of 1946, Federal Aviation Act of 1958, Federal Airport Act, and the Airport and Airway Development Act of 1982 (revised and recodified at Subtitle VII, Aviation Programs, 49 USC §47151) Authorizes GSA to convey surplus Federal real property to States, political subdivisions, or tax-supported institutions for public airport purposes.

23. Toxic Substance Control Act (15 USC §§2601 et seq.) Regulates specific chemical substances, including PCBs and asbestos, and requires labels, notices, and/or remediation if there is a danger to public safety.

24. Wild and Scenic Rivers Act (16 USC §§1271 et seq.) Requires Federal agencies to include consideration of potential impacts on wild and scenic rivers in all planning.

25. Federal Property Management Regulations, Subchapter H, Utilization and Disposal, Part 101-47, Utilization and Disposal of Real Property (41 CFR Part 101-47) Prescribes the policies and procedures for the utilization and disposal of excess and surplus Federal real property and related personal property.

### B. Real Property Disposal Executive Orders

1. Executive Order 12512 - Federal Real Property Management Directs GSA to provide Governmentwide policy oversight and guidance for Federal real property management; to establish standards and procedures for Federal agencies' review of their real property holdings; to conduct utilization surveys; and to provide leadership in the development of property management information systems.

2. Executive Order 12898 - Environmental Justice Requires Federal agencies to take all practicable measures to avoid disproportionately high and adverse environmental impacts on low-income and minority populations.

## VI. Design and Construction

### A. Laws

1. American Indian Religious Freedom Act of 1978 (42 USC §§1996-1996a) Requires Federal agencies to review their policies and procedures with the aim of protecting Indian religious freedom, to refrain from prohibiting access to native religious and cultural objects or ceremonies, and to consult with Indian organizations concerning proposed Federal agency actions.

2. Americans with Disabilities Act of 1990 (P.L. 101-336, 104 Stat. 327) Provides, among other things, accessibility requirements on employment, State and local government services, buildings and facilities.

3. Archeological and Historic Preservation Act of 1974, as amended, (16 USC §§469a-1- 469c-2) Requires any Federal agency, whenever it finds that its actions in connection with any Federal construction project may cause irreparable loss or destruction of significant scientific, prehistoric, historic, or archaeological data, to notify the Secretary of the Department of Interior, and authorizes the agency to use project funds to undertake the recovery, protection and preservation of such data, or to request the Secretary of the Department of Interior to undertake such recovery, protection or preservation.

4. Architectural Barriers Act of 1968 (ABA) (42 USC §§4151-4157) Establishes standards for accessibility by physically disabled persons and requires compliance with the standards in the design, construction and alteration of buildings and facilities owned or leased, in whole or in part, by the Federal Government. The ABA includes certain record keeping and reporting requirements.

5. Earthquake Hazards Reduction Act of 1977 (42 USC §§7701-7706) Requires compliance with Federally established standards for the reduction of seismic hazards in Federally owned or leased buildings (e.g., during

repair and alteration). These standards were adopted by Executive Order 12941 - Seismic Safety of Existing Federally Owned or Leased Buildings.

6. Energy Policy and Conservation Act (EPACT) (42 USC §§6201 et seq.) Requires Federal agencies to implement programs that reduce energy consumption in Federal facilities.

7. National Environmental Policy Act of 1969, as amended, (42 USC §4321 et seq.) Requires Federal agencies to consider the effects of all actions (such as design and construction) on the human environment, to consider alternatives that reduce impacts, and to prepare detailed statements for public and Federal agency review where significant impacts may occur.

8. National Historic Preservation Act of 1966, as amended, (16 USC §§470 et seq.) Requires Federal agencies to manage historic properties under their jurisdiction or control. Historic properties include buildings, structures, districts, sites, and objects included in or eligible for the National Register of Historic Places. Requires Federal agencies to consider the effects of their actions, including design and construction, on such properties regardless of ownership.

9. Native American Graves Protection and Repatriation Act (23 USC §§3001 et seq.) Provides, among other things, that if Native American human remains or other cultural items are found on Federal or Indian land during a construction project, work be halted in the vicinity of the discovery for at least 30 days while efforts are made to consult with the relevant tribe(s) and preserve the items. Regulations at 43 CFR 10 require Federal agencies to consult with tribes during project planning, and to implement plans of action for treating Native American cultural items.

10. Public Buildings Act of 1959, as amended, (40 USC §§601-619) Provides that only the Administrator of General Services may construct public buildings, including the repair and alteration of such public buildings. Establishes requirements for the acquisition, alteration, and construction of public buildings, including design review responsibilities. Provides the authority for the Administrator to delegate his authority to other Federal agencies. Establishes requirements applicable to buildings constructed or altered by GSA and other Federal agencies relating to compliance with nationally recognized building codes and State and local zoning laws. Requires submittal of a prospectus to Congressional committees for proposed construction, alteration, purchase, or acquisition of a building to be used as a public building which involves a total expenditure in excess of $1,810,000 (indexed for Fiscal Year 1998).

11. Public Buildings Amendments of 1988 (P.L. 100-678, 102 Stat. 4049, specifically 40 USC §619) Provides, among other things, the Administrator of General Services with authority to determine the extent to which a building constructed by GSA complies with one of the nationally recognized model building codes.

12. Small Business Act (15 USC §631 et seq.) Requires a positive effort by Federal contractors to place subcontracts with small and small disadvantaged (economically or socially disadvantaged) concerns. The Act also requires publication of Federal procurement requirements and further requires large businesses to submit small business subcontracting plans.

13. Visual Artists Act of 1990 (17 USC §§101, 106A et seq.) Protects the reputations of certain visual artists and the works of visual art they create.

14. Federal Property Management Regulations, Subchapter D, Public Buildings and Space, Part 101-19, Construction and Alteration of Public Buildings (41 CFR Part 101-19) Prescribes the policies and procedures for the construction and alteration of public buildings under the authority of the Administrator of General Services.

## B. Design and Construction Executive Orders

1. Executive Order 11988 - Floodplain Management Requires Federal agencies to avoid contributing to development of floodplains unless there is no practicable alternative to doing so. Design and Construction actions are among the kinds of actions that can contribute to such development.

2. Executive Order 11990 - Protection of Wetlands Requires Federal agencies to avoid causing wetlands to be filled unless there is no practicable alternative to doing so. Design and Construction actions are among the kinds of actions that can contribute to such development.

3. Executive Order 12072 - Federal Space Management Requires Federal agencies to give first consideration to the Centralized Community Business Area (CBA) when locating Federal facilities in urban areas.

4. Executive Order 12770 - Metric Usage in Federal Programs Mandates, with certain exceptions, the metric system of measurement to be implemented in Design and Construction on all new projects starting January 1, 1994, or later.

5. Executive Order 12898 - Environmental Justice Requires Federal agencies to take all practicable measures to avoid disproportionately high and adverse environmental impacts on low-income and minority populations. Such impacts could result from a GSA design and construction project.

6. Executive Order 12902 - Energy Efficiency and Water Conservation in Federal Facilities Requires that appropriate consideration be given to efficient buildings in the design and construction process. Increases Federal energy reduction goals to 30 percent by the year 2005, measured relative to 1985 energy use.

7. Executive Order 13006 - Locating Federal Facilities in Historic Properties in Our Nation's Central Cities Encourages Federal agencies to locate Federal facilities on historic properties in our Nation's central cities.

8. Executive Order 13007 - Indian Sacred Sites Requires Federal agencies that manage land, to the extent practicable, to avoid impeding the access of American Indians to traditional sacred sites, and to avoid physical impact to such sites.

## VII. Art-in-Architecture

### A. Laws

1. Public Buildings Act of 1959, as amended, (40 USC §611(d)) Requires that the Administrator of General Services shall give due consideration to excellence of architecture and design.

2. Public Buildings Cooperative Use Act of 1976 (40 USC §601a) Requires that the Administrator shall encourage the location of cultural facilities and activities within public buildings, and shall provide and maintain space, which encourage public access to, around, into, and through public buildings so that such activities complement and supplement cultural resources in the neighborhood of public buildings. The phrase cultural activities includes fine arts exhibits.

3. Visual Artists Act of 1990 (17 USC §§101, 106A et seq.) Protects the reputations of certain visual artists and the works of visual art they create.

## VIII. Historic Preservation

### A. Laws

1. American Indian Religious Freedom Act of 1978 (42 USC §§1996-1996a) Requires Federal agencies to review their policies and procedures with the aim of protecting Indian religious freedom, to refrain from prohibiting access to native religious and cultural objects or ceremonies, and to consult with Indian organizations concerning proposed Federal agency actions.

2. Archeological Resources Protection Act of 1979, as amended, (16 USC §§470aa-470mm) Requires any person to apply to a Federal land manager for a permit to excavate and remove archaeological resources (i.e. pottery, weapons, tools, structures or portions of structures, or skeletal human remains) located on public or Indian lands.

3. National Historic Preservation Act of 1966, as amended, (16 USC §§470 et seq.) Requires that GSA consider the effects of its actions on all historic properties and districts. In certain circumstances, the Act requires consultation with State Historic Preservation Officers, the National Advisory Council on Historic Preservation and other interested parties prior to the commencement of Federal agency projects (e.g., building construction or repair and alteration projects).

4. Native American Graves Protection and Repatriation Act (23 USC §§3001 et seq.) Clarifies the ownership rights to Native American remains and artifacts found on Federal or Tribal land. Requires Federal agencies that have custody and control over such remains or items to inventory them and notify the affected Indian or cultural groups for possible repatriation.

5. Public Buildings Cooperative Use Act of 1976 (40 USC §§490(a)(16)-(19), 601a and 612a) Authorizes the Administrator of General Services to enter into leases of certain space in public buildings. This Act encourages GSA to acquire and use buildings of historical, architectural and cultural significance.

## B. Historic Preservation Executive Orders

1. Executive Order 12898 - Environmental Justice Requires Federal agencies to take all practicable measures to avoid disproportionately high and adverse environmental impacts on low-income and minority populations.

2. Executive Order 13006 - Locating Federal Facilities in Historic Properties in our Nation's Central Cities Encourages Federal agencies to locate Federal facilities on historic properties in our Nation's central cities.

3. Executive Order 13007 - Indian Sacred Sites Requires Federal agencies that manage land, to the extent practicable, to avoid impeding the access of American Indians to traditional sacred sites, and to avoid physical impact to such sites.

# IX. Assignment and Utilization of Space

## A. Laws

1. Federal Property and Administrative Services Act of 1949, as amended, (40 USC §§471 et seq.) Authorizes the Administrator of General Services to assign and reassign space in Government-owned and leased buildings to Federal agencies and authorizes the Administrator to charge, or exempt agencies from, rent rates which approximate commercial charges for comparable space and services, and to deposit moneys collected in a Federal Buildings Fund established in the Treasury of the United States.

2. Health Service Programs (5 USC §7901) Authorizes Federal agencies to establish health care facilities.

3. Randolph-Sheppard Act, as amended, (20 USC §§107 et seq.) With certain exceptions, the Act requires that blind persons licensed under the provisions of the Act be authorized to operate vending facilities on any Federal property, including leased buildings. The Act imposes a positive obligation on GSA to acquire space in buildings which have suitable sites for vending facilities.

4. Rural Development Act of 1972 (42 USC §3122) Requires Federal agencies to give first consideration to rural areas in locating offices and facilities.

5. Telecommunications Act of 1996 (47 USC §332 note) Authorizes, to the extent that it does not interfere with Federal agency programs or missions or security issues, Federal agencies to make available on a fair, reasonable and nondiscriminatory basis, property, rights-of-way, and easements under their control for the placement of new telecommunications services; and authorizes agencies to charge reasonable fees for the use of such property, right-of-way or easements.

6. Trible Amendment (40 USC §490b) Authorizes the provision of space, services and equipment for child care services in Federal facilities without charge for rent or services.

7. Federal Property Management Regulations, Subchapter D, Public Buildings and Space, Part 101-17, Assignment and Utilization of Space (41 CFR Subchapter D, Appendix, Temp. Reg. D-1) Prescribes the policies and procedures for the assignment, utilization and location of Government-owned or leased space under the authority of the Administrator of General Services.

## B. Assignment and Utilization of Space Executive Orders

1. Executive Order 12072 - Federal Space Management Requires Federal agencies to give first consideration to the Centralized Community Business Area (CBA) when locating Federal facilities in urban areas.

2. Executive Order 12411 - Government Work Space Management Reforms Requires the heads of Federal Executive agencies to establish programs to produce and maintain an inventory of work space and related furnishings, reduce the amount of work space used or held to essential minimums, and report to the Administrator of General Services any holdings not necessary for the mission of the agency. Federal agencies are also responsible for judicious management of funds used for furniture and other office related accouterments. Delegates to the Administrator authority to conduct surveys and establish agencywide objectives for each Executive agency in developing their work space management planning programs.

3. Executive Order 12512 - Federal Real Property Management Directs GSA to provide Governmentwide policy oversight and guidance for Federal real property management; to establish standards and procedures for Federal agencies' review of their real property holdings; to conduct utilization surveys; and to provide leadership in the development of property management information systems.

4. Executive Order 13006 - Locating Federal Facilities in Historic Properties in our Nation's Central Cities Encourages Federal agencies to locate Federal facilities on historic properties in our Nation's central cities.

# X. Safety and Environmental Management

## A. Laws

1. American Indian Religious Freedom Act of 1978 (42 USC §§1996-1996a) Requires Federal agencies with statutory or administrative responsibility for the management of Federal lands to accommodate Indian access to and ceremonial use of Indian sacred sites.

2. Archeological and Historic Preservation Act of 1974, as amended, (16 USC §§469a-1- 469c-2) Requires that when any Federal agency finds that its actions in connection with any Federal construction project, Federally licensed project, or other project may cause irreparable loss or destruction of significant scientific, prehistoric, historic, or archaeological data, to notify the Secretary of the Department of Interior.

3. Archeological Resources Protection Act of 1979, as amended, (16 USC §§470aa-470mm) Requires any person to apply to a Federal land manager for a permit to excavate and remove archaeological resources (i.e. pottery, weapons, tools, structures or portions of structures, or skeletal human remains) located on public or Indian lands.

4. Architectural Barriers Act of 1968 (ABA) (42 USC §§4151-4157) Establishes standards for accessibility by physically disabled persons and requires compliance with the standards in the design, construction and alteration of buildings and facilities owned or leased, in whole or in part, by the Federal Government. The ABA includes certain recording keeping and reporting requirements.

5. Clean Air Act of 1963 (42 USC §§7401 et seq.) Requires each Federal department, agency, and instrumentality of the United States to comply with all Federal, State, interstate, and local requirements regarding the control and abatement of air pollution in the same manner and to the same extent as any non-governmental entity.

6. Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the Community Environmental Response Facilitation Act (CERFA) (42 USC §§9601 et seq.) Requires each Federal department, agency, and instrumentality of the United States to respond to releases or threats of release of hazardous substances, pollutants or contaminants by taking actions to abate a release and contamination. Establishes a compensation and liability scheme for clean-ups.

7. Earthquake Hazards Reduction Act of 1977 (42 USC §§ 7701-7706) Requires compliance with Federally established standards for the reduction of seismic hazards in Federally owned or leased buildings (e.g., during repair and alteration). These standards were adopted by Executive Order 12941 - Seismic Safety of Existing Federally Owned or Leased Buildings.

8. Energy Policy and Conservation Act (EPACT) (42 USC §§6201 et seq.) Requires measures for energy conservation and improved energy efficiency.

9. Fire Administration Authorization Act of 1992 (15 USC §2227) Requires that an entire building be sprinklered or provide an equivalent level of life safety for Federally owned buildings and when Federal funds are used to lease 35,000 square feet or more of space in a building (under 1 or more leases) and some portion of the leased space is on or above the 6th floor. Also requires that all hazardous areas in all Federally controlled space (owned or leased) be sprinklered in all Government leases.

10. National Environmental Policy Act of 1969, as amended, (42 USC §§4321 et seq.) Requires an assessment of the environmental impact of each major Federal action significantly affecting the environment. This may include the preparation of environmental documentation for major acquisition or construction projects, repair and alterations projects, or other major actions.

11. National Historic Preservation Act of 1966, as amended, (16 USC §§470 et seq.) Requires all Federal agencies to preserve historic properties which are owned or controlled by such agency. Prior to acquiring, constructing or leasing buildings, each Federal agency shall use, to the maximum extent feasible, historic properties available to the agency.

12. Native American Graves Protection and Repatriation Act (23 USC §§3001 et seq.) Clarifies the ownership rights to Native American remains and artifacts found on Federal or Tribal land. Requires Federal agencies

that have custody and control over such remains or items to inventory them and notify the affected Indian or cultural groups for possible repatriation.

13. Occupational Safety and Health Act of 1970 (29 USC §§651-678) Requires all Federal agencies to provide safe, healthful working places and conditions, including building features such as lighting, guard rails, indoor air quality, fire safety features, emergency elevator requirements, etc.

14. Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (42 USC §§6901 et seq.) and Hazardous and Solid Waste Amendments of 1984 (P.L. 98-616) Regulates hazardous and solid waste activities including underground storage tanks (42 USC §§6991 et. seq.) All Federal departments, agencies, and instrumentalities must be in compliance with Federal, State and local law. This Act regulates generators, transporters, and treatment, storage and disposal facilities in their treatment of hazardous waste.

15. Toxic Substance Control Act (15 USC §§2601 et seq.) Regulates specific chemical substances, including PCBs, lead, and asbestos. Regulates the manufacturing, processing, and disposal of such substances.

16. Federal Property Management Regulations, Amendment A-52, September 1994, Subpart 101-6.6, Fire Protection (Firesafety) Engineering Requires that an equivalent level of life safety evaluation be performed by a qualified fire protection engineer in buildings covered under the Fire Administration Authorization Act of 1992. After this evaluation is determined to be acceptable, a record should be maintained of the evaluation and appropriate copies given to fire departments or other local authorities for use in developing prefire plans.

17. Federal Property Management Regulations, Subchapter D, Public Buildings and Space, Part 101-19, Construction and Alteration of Public Buildings (41 CFR Part 101-19) Prescribes policies and procedures for the alteration of public buildings, including standards for the alterations of buildings to ensure, whenever possible, that physically disabled persons will have ready access to and use of such buildings.

18. Federal Property Management Regulations, Subchapter D, Public Buildings and Space, Part 101-20, Management of Buildings and Grounds (41 CFR Part 101-20) Prescribes the policies and procedures for the management, operations, protection, and maintenance of Government-owned and leased properties under the assignment responsibility of GSA.

19. Federal Property Management Regulations, Subchapter H, Utilization and Disposal, Part 101-42, Utilization and Disposal of Hazardous Materials and Certain Categories of Property (41 CFR Part 101-42) Prescribes the special policies and procedures governing the utilization, donation, sale, exchange, or other disposition of hazardous materials, dangerous property, and other categories of property with special utilization and disposal requirements.

## B. Safety and Environmental Management Executive Orders

1. Executive Order 11514 - Protection and Enhancement of Environmental Quality Places additional responsibilities on Federal agencies to ensure their activities comply with the National Environmental Policy Act requirements.

2. Executive Order 11988 - Floodplain Management Requires Federal agencies to evaluate the impact of their activity to floodplains in order to protect against flood loss.

3. Executive Order 11990 - Protection of Wetlands Requires Federal agencies to evaluate the impact of their activity to floodplains in order to protect against flood loss.

4. Executive Order 12196 - Occupational Safety and Health Programs for Federal Employees Requires the head of each Federal agency to establish and maintain an effective and comprehensive occupational safety and health program. Requires Federal agencies to furnish safe and healthy places and conditions of employment.

5. Executive Order 12856 - Federal Compliance With Right-To-Know Laws and Pollution Prevention Requirements Requires Federal agencies that manage facilities to reduce the amount of toxic chemicals entering any waste stream through source reduction, and requires that agencies report any introduction of toxic chemicals into the waste stream to the public.

6. Executive Order 12898 - Environmental Justice Requires Federal agencies to take all practicable measures to avoid disproportionately high and adverse environmental impacts on low-income and minority populations.

7. Executive Order 12902 - Energy Efficiency and Water Conservation in Federal Facilities Requires each Federal agency to develop plans and goals to reduce energy consumption.

8. Executive Order 12941 - Seismic Safety of Existing Federally Owned or Leased Buildings In Furtherance of the Earthquake Hazards Reduction Act of 1977 (42 USC §§7701-7706) Requires Federal departments and agencies to meet the Standards of Seismic Safety for Existing Federally Owned or Leased Buildings in order to assess and enhance the seismic safety of existing buildings constructed for or leased by the Federal Government which were designed and constructed without adequate seismic design and construction standards.

9. Executive Order 13007 - Indian Sacred Sites Requires Federal agencies that manage land, to the extent practicable, to avoid impeding the access of American Indians to traditional sacred sites, and to avoid physical impact to such sites.

## XI. Security

### A. Laws

1. Assimilative Crimes Act (18 USC §13) Provides that if an individual commits an act which is not a violation of Federal law, but is a violation of the laws of a State, district, territory, or possession in which the Federal jurisdiction is located, and the Federal jurisdiction is exclusive or concurrent, the individual is considered to have committed a Federal offense.

2. Edgar Amendment (40 USC §490c) Prohibits GSA, with certain exceptions, from contracting for guard, elevator operator, messenger, and custodial services if any permanent veterans preference employee of GSA would be terminated as a result of the procurement of such services.

3. Federal Property and Administrative Services Act of 1949, as amended, (40 USC §§471 et seq.) Authorizes the Administrator of General Services to furnish arms and ammunition for the protection force maintained by GSA. Authorizes officers and employees of GSA having investigatory powers to administer oaths.

4. Protection of Public Property Act (40 USC §§318-318d) Authorizes the Administrator of General Services to:
   a) appoint special police for the policing of property under the charge and control for GSA.
   b) make rules and regulations to govern GSA controlled property and impose penalties for the violation of such rules.
   c) to detail special police to other agencies for protection of property under that agency's control and extend GSA rules and regulations to that property.
   d) utilize the facilities and services of existing Federal law enforcement, and, with consent, that of State and local law enforcement agencies.
   e) appoint nonuniformed special policemen in order to protect property under GSA's charge and control.

## XII. Public Utilities

### A. Laws

1. Clean Air Act of 1963 (42 USC §§7401 et seq.) Requires the utilization in Federal air control programs of all available and appropriate facilities and resources within the Federal Government for the prevention and abatement of air pollution.

2. Energy Policy and Conservation Act (EPACT) (42 USC §§6201 et seq.) Requires Federal agencies to implement programs that reduce energy consumption in Federal Facilities.

3. Federal Power Act of 1920, as amended, (16 USC §§791 et seq.) Regulates power industry and appoints the Federal Power Commission.

4. Federal Property and Administrative Services Act of 1949, as amended, (40 USC §§471 et seq.) Authorizes GSA to manage public utility services and directs the Administrator to represent Federal agencies in negotiations with public utilities and in proceedings involving public utilities before Federal and State regulatory bodies.

5. National Environmental Policy Act of 1969, as amended, (42 USC §§4321 et seq.) Requires consideration of environmental factors in the decision-making process for major Federal actions.

6. Natural Gas Policy Act of 1978 (15 USC §§3301 et seq.) Regulates natural gas supplies, pricing and related issues.

7. Powerplant and Industrial Fuel Use Act of 1978, as amended, (P.L. 95-620, 92 Stat. 3289) Provides, among other things, for decreasing petroleum importation and increasing the capability to use indigenous energy resources.

8. Public Utility Holding Company Act of 1935, as amended, (15 USC §§79a et seq.) Sets rules and standards for the ownership of publicly regulated utilities by unregulated corporations.

9. Public Utility Regulatory Policy Act of 1978, as amended, (P.L. 95-617, 92 Stat. 3117) Provides for the conservation, distribution, and development of electric, hydro-electric, natural gas and crude oil energy resources.

10. Small Business Act, as amended, (15 USC §§631 et seq.) Requires an effort by Federal contractors to place subcontracts with small and small disadvantaged business (economically and socially disadvantaged) concerns.

### B. Public Utilities Executive Orders

1. Executive Order 12902 - Energy Efficiency and Water Conservation at Federal Facilities Requires, among other things, each Federal agency to develop energy consumption reduction goals.

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# APPENDIX H

# REGULATORY OVERVIEW OF MAJOR ENVIRONMENTAL STATUTES AND DIRECTIVES

# APPENDIX H

## Regulatory Overview

### INTRODUCTION

To ensure compliance, the regulatory framework, status, and permits for a given property should be identified and clearly understood as part of an Environmental Due Diligence Audit (EDDA). One or a combination of the following regulatory requirements may dictate the scope of property transfer activities for the facility or portion of a facility.

- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
- Resource Conservation and Recovery Act (RCRA)
- Toxic Substance Control Act (TSCA)
- Clean Air Act (CAA)
- Clean Water Act (CWA) and Safe Drinking Water Act (SDWA)
- Atomic Energy Act (AEA)
- National Environmental Policy Act (NEPA)

These laws have prescriptive requirements and protocols for facilities regulated, permitted, or licensed by these authorities. An overview of each regulatory requirement is provided in the following sections.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA)

This section discusses how to address CERCLA requirements if the Phase I EDDA finds suspected areas of contamination regulated under Superfund. Federal facilities can clean up hazardous substance contamination pursuant to CERCLA, but the cleanup may not be financed through the Superfund. Superfund was created to pay for response actions where the responsible parties cannot be found or are unable to pay. Superfund financing is reserved for non-federal facilities on the National Priorities List (NPL). The NPL is a group of sites with hazardous substance contamination substantial enough to warrant federal attention and money for cleanup. Congress required EPA to create the NPL to identify the most serious sites, ensuring that Superfund monies are spent on the most serious problems. The purpose of the NPL is to notify the public of sites that need remedial action and may present a long-term threat to public health or the environment. Federal facilities may be placed on the NPL even though they cannot receive Superfund money.

Removal actions and enforcement actions are not limited to NPL sites. CERCLA authority may be used for responding to releases of hazardous substances into the environment. Understanding these terms is essential to understanding the scope of CERCLA. The definitions of these terms are provided in Section 101 of CERCLA.

In some cases the PTM may need to determine whether a CERCLA response is warranted. The removal site evaluation process provides flexibility to determine whether a CERCLA response is warranted or another appropriate federal or state response is available. For example, a CERCLA response may not be necessary for a facility licensed by the NRC and being closed in conformance with an NRC-approved decommissioning plan, for a facility being closed in compliance with a RCRA permit or order, or if a release or a substantial threat of a release is not present at the facility or the amount of hazardous substances present does not warrant federal response.

Under CERCLA section 120, each Federal agency is responsible for carrying out most response actions at facilities under its own jurisdiction, custody, or control. Section 120(a) states that Federal departments, agencies, and instrumentalities are subject to CERCLA just like nongovernment entities, including CERCLA's liability provisions. Pertinent guidelines, rules, regulations, and criteria apply in the same manner and to the same extent, with the exception of requirements pertaining to bonding, insurance, and financial responsibility.

Special requirements and timetables are established under Section 120. For example, section 120(c) requires establishment by EPA of a Federal Agency Hazardous Waste Compliance Docket that lists Federal facilities that have reported managing hazardous substances or releases of hazardous substances. Section 120(h) is presented in Appendix D and addresses in detail, guidelines for the property transfer by Federal agencies.

Release Reporting, Removal, and Remedial Authority

CERCLA gave EPA the authority to require reporting of certain releases of hazardous substances and the authority to require cleanup of those releases through a short-term removal action and/or a long-term remedial action. CERCLA response actions should be determined on a site-by-site basis, and in consultation with EPA enforcement officials and the state environmental agency, as appropriate. CERCLA response actions include removal (emergency, time-critical, or non-time-critical) and remedial actions.

Discovery and Notification of a Release

In order for a site to be considered eligible for Superfund response, a release of a hazardous substance must be discovered and reported to the government. If a release of hazardous substances is discovered during Phase II EDDA activities, the owner or operator may need to make a notification about the release and can be held liable for any contamination. Personnel in charge of the facility should carefully examine any records on-site for information about what types of chemicals have been used at the facility and which may have been released. If a hazardous substance has been released into the environment in a quantity equal to or greater than its reportable quantity (RQ) (specified in the list of hazardous substances found in 40 CFR §302.4) within a 24-hour period, upon discovery the owner or operator of the facility must immediately notify the National Response Center. This involves a notification to the National Response Center by telephone at (800) 424-8802 providing detailed information about the facility and the nature of the release (40 CFR §302.6). If the owners/operators are unsure of whether a RQ of the hazardous substance was released and whether it occurred within a 24-hour period, they should still report the release to the National Response Center as a precautionary measure (55 FR 8676; March 8, 1990). Even if a release does not warrant notification, this does not mean the owner or operator of the facility will not be held liable for the release and any cleanup costs pursuant to the release.

After discovery or notification of a hazardous substance release, a preliminary assessment (PA) is conducted to decide if the release is a threat to human health and the environment. If further investigation is warranted, EPA will conduct an site inspection (SI). The information gathered during the PA and the SI is used to develop a Hazard Ranking System (HRS) score. The HRS evaluates relative risks to human health and the environment posed by uncontrolled hazardous waste sites by assessing four pathways of potential human exposure to contamination (i.e., groundwater, surface water, soil and air). EPA uses a site's HRS score to determine if the site should be placed on the NPL. Information gathered on these sites is maintained by EPA in the CERCLA Information System (CERCLIS), a comprehensive national database that inventories and tracks releases which may need to be addressed by the Superfund program.

Removal Actions

If a release presents a serious immediate threat, the federal agency may take a removal action to stabilize or clean up the release. Typical removal actions include removing leaking tanks or drums of hazardous substances, installing security measures such as a fence at a site, or providing a

temporary alternate source of drinking water to local residents. A removal action may be taken at any time necessary during the response process.

There are three types of removal actions (emergency, time-critical, and non-time-critical), each with different regulatory requirements, depending on the urgency of the need for a response to the release. All removal actions have a time and spending restriction of 12 months and $2 million, respectively. The time and spending limits may be exceeded when continuing the removal action is necessary to prevent, limit, or mitigate an immediate risk to public health or the environment which will not be acted upon by another party; or when continuing the removal action is consistent with a remedial action that will be taken at the site.

An emergency removal action requires on-site activities to commence within hours of the lead agency's determination that a removal action is appropriate.

A time-critical removal action occurs when, based on the site evaluation, the lead agency determines that a removal action is appropriate and that there is less than six months available before on-site activities must be initiated. For time-critical removal actions, the community must be involved and an administrative record of the removal action must be created (40 CFR §§300.415(n)(2)/300.820(b)).

Non-time-critical removal actions are those where EPA determines a removal action is appropriate and a planning period of more than six months is available before on-site activities must commence. In accordance with §300.415(b)(4), the lead agency must conduct an engineering evaluation/cost analysis (EE/CA) for a non-time critical removal action. The EE/CA is an analysis of removal alternatives for a site. More information on the procedures and activities involved in conducting an EE/CA can be found in EPA's document entitled *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA* (Office of Solid Waste and Emergency Response (OSWER) Directive 9360.0-32). Specific administrative record requirements for non-time-critical actions are specified in 40 CFR §300.820(a).

Remedial Actions

If a hazardous substance release does not pose an immediate threat to human health and the environment, the federal agency may take a remedial action after further evaluation of the site. Remedial actions are long-term and aimed at achieving a permanent remedy. Examples of typical remedial actions include removing buried drums from a site, thermally treating wastes, pumping and treating groundwater, and applying innovative technologies such as bioremediation to contaminated soil.

A remedial action has two main phases: the remedial investigation/feasibility study (RI/FS) phase, and the remedial design/remedial action (RD/RA) phase. The purpose of the RI/FS is to study conditions at the site, identify contaminants, and evaluate cleanup alternatives. The RI entails collecting and analyzing information to determine the nature and extent of contamination at the site. Specific alternatives are then evaluated during the FS. After the RI/FS, the federal agency

focuses on designing the selected cleanup alternative in the remedial design stage. The remedial action stage follows, with a varying timeframe according to the complexity of the remedy.

A site is considered "completed" or cleaned up once the chosen remedy is operational and functional and meets its designated environmental, technical, legal and institutional requirements. At this stage, operation and maintenance activities are implemented to monitor the effectiveness of the remedy and to ensure that no new threat to human health and the environment arises.

Liability

CERCLA imposes liability when there is a release or threatened release of hazardous substances. CERCLA Section 107(a) casts an extremely broad net in defining the scope of persons who can be liable for paying the costs of responding to a release of hazardous substances. The types of parties that can be held liable are (1) the current facility or vessel owners or operators, (2) former facility or vessel owners or operators, (3) those who arrange for treatment or disposal of hazardous substances at a facility, and (4) those who accept hazardous substances for transport to treatment or disposal sites.

There are three defenses to liability outlined in CERCLA Section 107(b):

- An act of God
- An act of war
- An act or omission of a third party who is not an employee or agent of the defendant, and does not have a contractual relationship with the defendant.

The third-party defense, often called the "innocent landowner" provision, rebuts the presumption of liability associated with ownership of the land by claiming the landowner made a good faith effort to discover any contamination. In addition, the third-party defense may come into play where a person is the victim of a so-called "midnight dumper." To the third-party defense the court scrutinizes the defendant's relationship to the property, specifically whether the defendants knew or had reason to know of the disposal of hazardous substances at the facility. The elements of the defense are found in CERCLA Sections 107(b)(3) and 101(35). The defendant raising the third-party defense must be free of both actual or inferred knowledge and any contractual relationship concerning the property, except as allowed under Section 101(35)(A).

If during closure of a federal facility, hazardous substance contamination is discovered, but the federal agency is clearly not responsible for the release it is possible that the agency may not be held liable for cleanup of the contamination. Determinations will be made on a site-specific basis. Conditions where hazardous substances have come to be located on or in a property solely as the result of subsurface migration in an aquifer from a source of sources outside the property, EPA will not take enforcement actions against the owner of such property to require the performance of response actions or the payment of response costs (60 FR 34790; July 3, 1995).

Enforcement

CERCLA is a strict liability statute, which means that responsible parties are liable without regard to negligence or fault. The concept of joint and several liability applies in situations where more than one potentially responsible party (PRP) is involved and it is difficult to determine each PRP's contribution to the release. In these situations, the courts have held that an owner, operator, waste generator or transporter may be held liable for the entire cost of site cleanup, unless each party's contribution can be identified. Federal facilities often have their own mandates for responding to hazardous substance releases.

Community Involvement

Community involvement opportunities are tailored to each Superfund site and an integral part of every Superfund response. The National Contingency Plan (NCP) provides the public with the opportunity to comment on, and provide input to, decisions about response actions. Interested persons are provided with accurate and timely information about response plans and progress, and their concerns about planned actions are heard by the lead agency.

CERCLA/RCRA Interface

If a facility which is closing has chemical contamination, a response action may be taken pursuant to CERCLA or RCRA regulations. The authority chosen will depend on factors such as the timeliness of a response, and the substances involved. If CERCLA authority is used for the cleanup the facility will need to follow procedures under the CERCLA regulations to ensure proper cleanup of the site. If the hazardous substance released is also a RCRA hazardous waste, the federal agency may use RCRA authority rather than CERCLA authority when cleaning up the site. Generally, sites that may be cleaned up under RCRA or certain other laws will not be placed on the NPL.

Resources

The following resources may assist in complying with closure requirements under CERCLA.

- *CERCLA/Superfund Orientation Manual*, EPA/542/R-92/005, October 1992
- *Questions and Answers on Release Notification Requirements and Reportable Quantity Adjustments*, EPA/540-R-94-005, January 1995

## RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

This section focuses on RCRA Subtitle C and the applicable closure requirements associated with hazardous waste management activities under the EDDA. In addition to these guidelines, the state and local environmental authority should also be consulted to determine if additional or more stringent requirements exist. To ease the complexity and confusion of complying with RCRA, as amended by the Hazardous and Solid Waste Amendments (HSWA) of 1984, all applicable hazardous waste requirements will be referred to as RCRA requirements from this point forward.

### Subtitle C

The RCRA Subtitle C regulations embody a "cradle-to-grave" philosophy in that hazardous waste is managed from the time it is generated through its ultimate disposal. Hazardous waste must always be managed by a responsible party, be it the generator; transporter; or treatment, storage, or disposal facility (TSDF). Operations at facilities or laboratories are generally limited to generator functions; however, there may be instances where facilities or laboratories are designated as TSDFs.

### Generators

There are three types of hazardous waste generators:

- Conditionally exempt small quantity generators (CESQG), which generate less than 100 kilograms (kg) of nonacute hazardous waste or less than 1 kg of acute hazardous waste in a calendar month

- Small quantity generators (SQGs), which generate between 100 kg and 1,000 kg of nonacute hazardous waste or less than 1 kg of acute hazardous waste in a calendar month

- Large quantity generators (LQGs), which generate greater than 1,000 kg of nonacute hazardous waste or 1 kg or more of acute hazardous waste in a calendar month.

Generators must conduct closure activities based on their size (i.e., CESQG, SQG, or LQG) and the type of unit (e.g., containers, tanks, or containment buildings) the waste is stored in on-site. These activities involve removing and managing residues and waste, rinsing and decontaminating temporary storage units, and decontaminating equipment. These closure activities are codified in 40 CFR Parts 261, 262, and 265.

### TSDFs

Federal facilities or laboratories can also be designated as TSDFs, depending on their activities and the amount of time hazardous waste is stored on-site. There are various types of TSDFs used to manage hazardous waste, including containers, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, injection wells, corrective action management units

(CAMUs), drip pads, miscellaneous units, and containment buildings. The definitions of each of these units is codified in 40 CFR §260.10.

There are two sets of closure requirements for TSDFs under RCRA, including the general requirements and the unit-specific requirements. The general closure requirements include performance standards, the closure plan, time allowed for closure, disposal or decontamination of equipment, structures, soil, and closure certification. The unit-specific closure requirements include removal and management of all wastes and residues, decontamination of containment systems and the unit, and decontamination of structures and equipment. If a facility is designated as an interim status TSDF (defined in 40 CFR Part 265), the general closure requirements in 40 CFR Part 265, Subpart G, and the unit-specific closure requirements in 40 CFR Part 265, Subparts I through R, W or DD apply. If the facility is designated as a permitted TSDF (defined in 40 CFR Parts 264 and 270), the requirements in the facility permit apply. These requirements should be reviewed, referenced, and complied with during the EDDA, if applicable.

Additionally, if protection of human health or the environment is still in question after closure activities have been completed, the facility cannot "clean close" the unit and must conduct post-closure care activities. Clean close is not defined under RCRA; however, the March 19, 1987 Federal Register (52 FR 8706) provides language which, in essence, states clean closure is achieved through removing all remaining wastes and residues from the TSDF, or ensuring the contaminants do not pose a threat to human health or the environment. Clean closure is typically left to the discretion of the federal or state enforcement authority. If clean closure is not possible, the facility must perform post-closure care. These activities include the sampling and monitoring of environmental media such as groundwater, surface water, soil, or sediments. Once again, there are general requirements and unit-specific requirements. These requirements should be referenced if "clean closure" is not feasible. These post-closure care requirements are codified in 40 CFR Part 265, Subparts G, I through R, S, or WW for interim status facilities, and the permit for permitted facilities.

Underground Storage Tanks (USTs)

Approximately five million USTs across the United States contain petroleum and other chemicals potentially hazardous to human health and the environment. Many of these tanks and associated piping systems are not protected from corrosion or overfill protection and, therefore, are leaking product or have lost product while in service.

HSWA, Subtitle I of RCRA, established a comprehensive program for new and existing USTs of certain size, use, and which hold regulated substances. A regulated substance is a CERCLA hazardous substance excluding hazardous wastes and petroleum as defined in 40 CFR §280.12.

USTs currently in use must meet technical standards to ensure that regulated substances will not leak or spill out of the tank and cause contamination. Specifically, all USTs must have spill, overfill and corrosion protection by December 22, 1998, or be closed and/or replaced. To prevent spills during delivery of regulated substances, by December 1998, USTs must have catchment basins to contain spills. A tank can often be overfilled, causing a large-volume spill.

To prevent this from occurring, USTs must have overfill protection devices, such as automatic shutoff devices, and overfill alarms by the December 1998 deadline. Federal regulations also require corrosion protection for USTs because unprotected steel USTs can corrode and release substances through corrosion holes.

The requirements of 40 CFR Part 280 are currently applicable to about 1.2 million USTs. However, there are some statutory exclusions to the definition of UST under the federal regulatory program, including:

- Farm or residential tanks of 1,000 gallons or less capacity used for storing motor fuel for non-commercial purposes
- Tanks used for storing heating oil for consumptive use on the premises where stored
- Septic tanks
- Pipeline facilities regulated under a federal or state pipeline safety act, surface impoundments, pits, ponds, or lagoons
- Stormwater or wastewater collection systems
- Flow-through process tanks
- Liquid trap or associated gathering lines directly related to oil or gas production and gathering operation
- Storage tanks situated in an underground area (such as a basement, cellar, or tunnel) if the storage tank is situated upon or above the surface of the floor.

If a facility with a regulated UST is closing, a determination must be made on future use of the UST, as well as whether the UST is the source of any contamination. If the decision is to close the UST, the appropriate closure requirements must be conducted in accordance with the regulations promulgated at 40 CFR Part 280, Subpart G.

An UST may be considered suspect or an area of potential contamination in the Agency Phase I EDDA report for a variety of reasons, such as lack of information on the tank contents and status or physical evidence of stressed or stained vegetation. In addition, a former UST location may also be considered suspect unless documentation, such as sampling results, a letter documenting the state's approval, or a state-certified closure report, is made available during the Phase I EDDA confirming the "clean closure" of a former UST. In cases when the UST or former UST location is considered suspect, the Phase II sampling and analysis plan should incorporate a strategy for characterizing the suspected area. Representative sampling should be conducted accordingly to characterize the soil and other surrounding media of the tanks and pipelines, to determine whether the tanks and pipelines contain product, to characterize the contents of the tanks and pipelines, to verify the integrity and operability of the tank and pipelines. When an UST is suspect, this general approach to characterizing an UST location should be applied to all USTs, regulated and non-regulated.

UST Closure

There are two types of closure for USTs per 40 CFR Part 280, including temporary and permanent closure. When deciding which closure option to follow, facility owners and operators should consider whether there is a potential for future use of the UST, the use planned for the facility, and the condition of the surrounding land in general.

During temporary closure, tanks may either continue to store regulated substances or be emptied. Temporary closure of an UST may last up to 12 months before having to be permanently closed. When an UST system is temporarily closed, owners and operators must continue to comply with normal operating requirements, such as the corrosion protection and release detection requirements of 40 CFR Part 280, Subpart D. Release detection is not required if the UST system is empty, meaning that all materials have been removed using commonly employed practices so that no more than 2.5 centimeters (1 inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remain in the system (40 CFR §280.70(a)).

When an UST system is temporarily closed for three months or more, owners and operators must comply with additional requirements. Vent lines must be left open and functioning, and all other lines, pumps, manways, and ancillary equipment must be capped and secured (40 CFR §280.70(b)).

If an UST system is temporarily closed for more than 12 months, it must be permanently closed. Permanent closure includes emptying and cleaning the UST by removing all liquids and accumulated sludges. All permanently closed tanks must also be either removed from the ground or filled with an inert solid material. Owners and operators must test for the presence of a release from the UST before the completion of closure by conducting a site assessment. Records of the site assessment must be maintained for three years after the tank is closed. If the owner or operator is vacating the facility, the site assessment records should be forwarded to the federal agency's environment, health, and safety office to be maintained in an official document management system.

Sampling and measurement methods must be appropriate for the characteristics of the site and the regulated substance. If contaminated soils, contaminated groundwater, or free product liquids or vapors are discovered, owners and operators must begin corrective action in accordance with Subpart F of 40 CFR Part 280.

Release Reporting

Owners and operators of UST systems must report any suspected or known releases from an UST within 24 hours or another appropriate time period specified by the implementing agency. The implementing agency may direct the owner or operator to determine whether the release has caused any off-site contamination. A suspected release must be investigated within seven days through either a system test or a site check. If a release is confirmed, the owner or operator must begin corrective action.

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Corrective Action

Releases from USTs pose a serious environmental and human health threat in the United States. Because USTs, by definition, are largely hidden from view, areas surrounding USTs must be inspected carefully for any signs of contamination. The federal corrective action regulations for USTs found at 40 CFR Part 280, Subpart F provide a flexible framework for owners/operators and implementing agencies to work within and achieve cleanup levels protective of human health and the environment. Corrective action consists of a series of steps which vary depending on the severity of the release.

Short-Term Corrective Actions

Once a release is detected, immediate response activities such as release reporting, immediate containment, and monitoring of explosive hazards should be taken (40 CFR §280.61). Following the immediate response activities, the facility begins abatement measures (40 CFR §280.62(a)). Examples of such measures are:

- Performing a site check to evaluate the extent of the release
- Containment of the regulated substance to prevent continued release
- Continued monitoring and mitigation of explosive hazards
- Mitigating hazards posed by soils excavated during response activities
- Determining the presence of free product in groundwater.

The owner or operator must submit a report to the implementing agency within 20 days of confirmation of the release describing the extent of initial abatement activities (40 CFR §280.62(b)). The owner or operator must submit a more detailed site characterization report to the implementing agency within 45 days of confirmation of release (40 CFR §280.63(b)). After reviewing the results, the implementing agency may decide that the release warrants further response activities. If further corrective action is required, the owner or operator must submit detailed corrective action plans, including provisions to remediate contaminated soils, groundwater, and surface water to the implementing agency (40 CFR §280.66).

Long-Term Corrective Actions

Regulations for the UST corrective action program cleanup levels or administrative procedures; are left to the discretion of the implementing agency (generally, the state). The federal regulations require that state or local cleanup programs be protective of human health and the environment. Although the corrective action technologies are not specified in the federal regulations, there are

several commonly employed remediation options for soil and groundwater contamination. Available options for soil remediation include in situ soil vapor extraction, in situ bioremediation, excavation and off-site treatment, and natural attenuation. Technologies typically selected for groundwater remediation include in situ air sparging with soil vapor extraction, pump and treat, and biosparging.

Resources

The following resources may assist in complying with closure requirements under RCRA.

- Underground Storage Tanks; Technical Requirements: Final rule. September 23, 1988, Federal Register (53 FR 37082)
- *What Do We Have Here? An Inspector's Guide to Site Assessment at Tank Closure-Video and Companion Booklet*, Video, 510-K-92-006, Booklet, 510-K-92-006
- *Tank Closure Without Tears - Video and Companion Booklet*, Video, 510-V-92-817, Booklet 510-K-92-817
- *RCRA Orientation Manual*, 1990 Edition, EPA/530-SW-90-036

## TOXIC SUBSTANCE CONTROL ACT (TSCA)

By enacting TSCA on October 11, 1976, Congress established a number of requirements and authorities for identifying and controlling toxic chemical hazards to human health and the environment. This section will focus on TSCA polychlorinated biphenyl (PCB) regulations and the Asbestos Hazard Emergency Response Act (AHERA) as they pertain to Agency property transfer and the Phase II EDDA.

### Polychlorinated Biphenyls

PCBs are a group of industrial chemicals that were widely used as coolants, insulating materials, and lubricants in electrical equipment such as transformers and capacitors. PCBs were used from their introduction in the mid-1920s until 1979 when the manufacture and distribution of PCBs in the US was severely restricted due to adverse health effects from exposure.

PCBs are oily liquids or solids, clear to light yellow in color, with no smell or taste. Because of PCBs' widespread distribution and persistence in the environment, they may not only be found in use, but also in general storage items and products or as contamination from prior spills or leaks. It is critical that all PCBs and PCB-containing materials and equipment that may be in service or in storage at the facility are properly identified, managed, and in some cases mitigated. PCBs were used in paints, inks, lubricants, sealants, plasticizers, and carbonless copy paper, as well as the following commonly encountered PCB-containing materials:

- Transformers
- Fluorescent lighting fixtures (ballasts)
- Hydraulic fluids
- Small capacitors (with < 3 pounds of dielectric fluid)
- Switches
- Large capacitors (with 3 pounds or more of dielectric fluid)
- Vacuum pumps
- Liquid-cooled electric motors
- Lab samples
- Microscopy mounting media and immersion oil
- Voltage regulators

If there is suspected PCB contamination identified from the Phase I investigation, the proper procedures for characterizing the extent of contamination should be made part of the sampling and analysis plan for Phase II activities. The following EPA documents, *Verification of PCB Spill Cleanup by Sampling and Analysis* (EPA 560/5-85-026) and the *Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup* (EPA 560/5-86-017), provide insight on sampling methods used to characterize PCB contamination. There are also field screening techniques to test for the presence of PCBs, such as Clor-N-Soil and Chlor-N-Oil, but laboratory analysis should be instituted to confirm PCB concentration before any remediation or disposal actions are taken. The field screening techniques are a good indicator used for confirming the presence of PCBs rather than performing an all-encompassing PCB sampling event, which can be costly. For additional sources of information on PCB sampling, refer to Resources at the end of this section.

PCB Spills

Disposal of PCBs is defined in 40 CFR §761.3 as intentionally or accidentally discarding, throwing away, or otherwise completing or terminating the useful life of PCBs and PCB-containing materials. Disposal includes spills, leaks, and other uncontrolled discharges of PCBs as well as actions related to containing, transporting, destroying, degrading, decontaminating, or confining PCBs and PCB-containing materials. Any release of PCBs to the environment greater than 50 parts per million (ppm) is considered a prohibited act of disposal as defined in the regulations. Facilities are required to report spills of more than 10 pounds (4.56 kg) of PCBs of concentrations of 50 ppm to the EPA regional office. Spills of greater than 1 pound (0.45 kg) must be cleaned up.

The federal regulations stipulate a Spill Cleanup Policy at 40 CFR Part 761, Subpart G, that is applicable to spills which occurred after May 4, 1987. For old spills that were discovered after the effective date of this policy (e.g., discovered as a result of a Phase I investigation) but could have occurred before the effective date of the policy, cleanup requirements are established at the discretion of EPA, usually through its regional offices.

There are two types of PCB spills: a low-concentration spill from a source concentration of PCBs from 50 to 500 ppm, and a high-concentration spill from a source of 500 ppm or greater. In the event that the source of a PCB spill is unknown, the spill is cleaned up based on the concentration of the contaminated material.

- For low-concentration spills, refer to the cleanup requirements at 40 CFR §761.125(b)
- For high-concentration spills, refer to the cleanup requirements at 40 CFR §761.125(c).

It is important to contact the local or state environmental authority. In many cases, the local and state authorities have cleanup requirements that are more stringent than federal regulations. Most likely, this is reflected in the definition of "PCB contaminated." TSCA's range is 50 to 500 ppm, whereas some states define this as 5 to 500 ppm.

Compliance with the Spill Cleanup Policy may prevent enforcement action and any need for additional cleanup under TSCA. However, if the cleanup is required under RCRA, CERCLA, or other statutes, then different standards, other than those imposed by TSCA may be applicable.

Disposal Requirements

A uniform hazardous waste manifest, EPA Form 8700-22, must be prepared if PCB waste is being transported off-site. For each shipment of manifested PCB waste a disposal facility accepts, the owner or operator of the facility must prepare a Certificate of Disposal. Refer to 40 CFR §§761.60 and 761.218 for specific disposal requirements.

Resources

The following resources may assist in complying with TSCA regulations.

- CFR Part 761, Polychlorinated Biphenyls Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
- *PCB Q & A Manual*, EPA, Office of Pollution Prevention and Toxics, 1994
- CFR Part 761 Subpart G, PCB Spill Cleanup Policy
- Lighting Fixture Management Options, Quick Reference Fact Sheet, EPA/200-f-94-008, Sept 1994
- TSCA Assistance Informational Hotline (202) 554-1404

Asbestos

Under TSCA, EPA regulates the use of asbestos in commerce and has issued standards for both controlling its handling and restricting its use. Congress amended TSCA in 1986 by adding a new Title III, AHERA, which required EPA to conduct a study to determine the extent of human health risks posed by asbestos in public and commercial buildings. The EPA responded in February 1988 by sending Congress a study on asbestos-containing materials (ACM) in public buildings. On November 28, 1990, the Asbestos School Hazard Abatement Reauthorization Act (ASHARA) was enacted. Section 15 of ASHARA amended AHERA to require accreditation for any person who inspects for ACM in a public or commercial building, or who designs or conducts a response action with respect to friable ACM in such a building.

AHERA defines "public and commercial buildings" as the interior space of any building which is not a school building, except that the term does not include any residential apartment building of fewer than 10 units or detached single-family homes. Interior space includes exterior hallways connecting buildings, porticos, and mechanical systems used to condition interior space. Examples of public and commercial buildings are government-owned buildings, colleges, museums, airports, hospitals, churches, preschools, stores, warehouses, and factories.

Federal regulations define an inspection to mean those activities undertaken to specifically determine the presence and/or location, or to assess the condition of friable or non-friable asbestos-containing building material (ACBM) or suspected ACBM by either visual or physical examination, or by collecting samples of such material. Therefore, if asbestos surveys or sampling is conducted at a federal facility, the individual(s) performing the survey/sampling should be accredited. Training requirements include:

- Individuals performing asbestos related work must take a four-day, 32-hour EPA-approved training course consisting of topics such as potential health effects of asbestos exposure, the use of personal protective equipment, and state-of-the-art work practices
- A contractor/supervisor must take a five-day, 40-hour EPA-approved course
- Inspectors take a three-day course

- Management planners take a two-day course
- Project designers take a three-day course.

ASHARA does not require building owners to conduct inspections for asbestos-containing materials in public and commercial buildings. However, should the owner decide to conduct an inspection, then he or she must use an inspector who is accredited.

CLEAN AIR ACT (CAA)

In addition to TSCA, regulations under other laws apply to asbestos. The Clean Air Act requires US EPA to develop and enforce regulations to protect the general public from exposure to airborne contaminants known to be hazardous to human health. EPA established National Emission Standards For Hazardous Air Pollutants (NESHAP) and promulgated the asbestos NESHAP in 40 CFR Part 61, Subpart M. The subpart addresses demolition and renovation of facilities, and asbestos waste transport and disposal. The regulations require owners/operators to notify the applicable state and local agencies and/or US EPA regional offices before demolition or renovation of a building occurs which contain a certain threshold amount of asbestos.

Although the NESHAP has not been revised to alter its applicability to friable and nonfriable ACM, nonfriable asbestos materials are now classified as either Category I or Category II material:

- *Category I* material is defined as asbestos-containing resilient floor covering, asphalt roofing products, packings and gaskets. Asbestos-containing mastic is also considered a Category I material
- *Category II* material is defined as all remaining types of non-friable ACM not included in Category I that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Nonfriable asbestos-cement products such as transite are an example of Category II material.

The asbestos NESHAP specifies that Category I materials which are not in poor condition and not friable prior to demolition do not have to be removed, except where demolition will be by intentional burning. However, regulated asbestos-containing materials (RACM) and Category II materials that have a high probability of being crumbled, pulverized, or reduced to powder as part of demolition must be removed before demolition begins.

Surveys and Sampling

If ACM is identified as a suspected area of concern in the Phase I EDDA report, the ACM in the building must be disclosed to the future occupant. Prior to real property transfer, all available information on the existence, extent, and condition of ACM should be incorporated into the EDDA reports or other appropriate documents to be provided to the landlord or future occupant. The EDDA reports should include:

- Reasonably available information on the type, location, and condition of asbestos in any building or improvement on the property
- Any results of testing for asbestos
- A description of any asbestos control measures taken for the property
- Any available information on costs or time necessary to remove all or any portion of the remaining ACM; however, special studies or tests to obtain this material are not required

- Results of a site-specific update of the asbestos inventory performed to revalidate the condition of ACM.

If the presence of asbestos is suspected and an asbestos survey has not been performed or is not available, an asbestos survey should be completed. The occupancy agreement will determine who is responsible for performing the survey. The resources provided to perform an asbestos survey at a federal agency owned or managed facility will depend on the scope of the survey.

ACM should be remedied prior to real property transfer only if it is of a type and condition that is not in compliance with applicable laws, regulations, and standards, or if it poses a threat to human health at the time of transfer of the property. An agreement may be reached with the landlord or future occupant on the appropriate asbestos abatement measures to be taken.

If asbestos is suspected, it is important that the potential health risk is appropriately addressed in the sampling and analysis plan, and in particular, the health and safety plan. Therefore, individuals performing any demolition or renovation activities as part of Phase II or III activities are aware of the potential hazards during abatement. As mentioned previously in this section, all individuals performing asbestos surveys or sampling must be certified in accordance with AHERA. There are a number of resources listed at the end of this section to help plan for asbestos sampling and pre-abatement activities. The manual, *Demolition Practices Under the Asbestos NESHAP* (EPA 340/1-92-013), can assist in planning for demolition activities.

Resources

The following resources may assist in complying with closure requirements concerning asbestos.

- CFR §1910.1001, which applies to all occupational exposures to asbestos in all industries covered by the Occupational Safety and Health Act, except for construction work as defined in 29 CFR §1910.12(b). Exposure to asbestos in construction work is covered by 29 CFR §1926.1101
- CFR Part 763, Asbestos Abatement Projects
- EPA 340/1-92-013, *Demolition Practices Under the Asbestos NESHAP*. This manual is designed to assist the asbestos NESHAP inspector in identifying practices that normally do or do not make Category I nonfriable ACM become RACM
- CFR §1926.58, Asbestos Standard of the Occupational Safety and Health Administration
- EPA Region 5 Asbestos Program Overview which can be accessed via the Internet at "http://www.epa.gov/reg5foia/asbestos/index.html"
- Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance, EPA Publication No. 340/1-90-018, December 1990
- *Managing Asbestos In Place*, EPA Publication No. 20-T-2003, July 1990.

## CLEAN WATER ACT (CWA) AND SAFE DRINKING WATER ACT (SDWA)

This section discusses how to address CWA and SDWA requirements if the Phase I EDDA finds suspected areas of contamination regulated by water management programs. This section specifically addresses requirements under the federal CWA and SDWA programs. Individual state programs should be consulted to determine the applicability of different or more stringent regulatory standards.

### Clean Water Act Regulatory Guide

| TOPIC | ACTION INVOLVED | REGULATORY CITATION |
|---|---|---|
| Oil Discharges | Reporting is required for discharges of oil into navigable waters that:<br>•Violate water quality standards<br>•Cause a film or sheen on the water or shoreline | 40 CFR Part 110 |
| Spill Prevention Control and Countermeasures (SPCC) Plan | SPCC plans must be developed when petroleum is being stored in quantities greater than 42,000 gallons underground, 1,320 gallons total aboveground, or 660 gallons in any single aboveground container. | 40 CFR Part 112 |
| Hazardous Substance Release Reporting | Reporting is required for releases of hazardous substances that exceed CWA reportable quantities (listed in 40 CFR Part 116) within a 24-hour period. | 40 CFR Part 117 |
| National Pollutant Discharge Elimination System (NPDES) Permits | NPDES permits are required for point source discharges of wastewaters into navigable waters of the US | 40 CFR Part 122 |
| Stormwater Discharge Permits | These requirements apply to stormwater discharges from specific activities into navigable waters (e.g., Agency facilities having RCRA permits, new construction involving more than five acres of land). | 40 CFR §122.26 |
| National General Pretreatment Standards | Discharges of wastewater and sanitary waste to the sewer system are subject to the National General Pretreatment Standards, which prohibit discharges of certain wastes to the sewer system. | 40 CFR §403.5(b) |
| National Categorical Pretreatment Standards | These standards regulate discharges of wastewater to the sewer system from specific categories of industrial activities. | 40 CFR Parts 405-471 |

| TOPIC | ACTION INVOLVED | REGULATORY CITATION |
|---|---|---|
| Local Pretreatment Standards | Discharges of wastewater and sanitary wastes to the sewer system will be regulated by a municipal discharge permit or a local sewer use ordinance issued by the local publicly owned treatment works (POTW). | Municipal Discharge Permit or Local Sewer Use Ordinance |
| §404 Dredging Permits | Potential discharges, water quality impairment, hydrological, and navigational impacts associated with dredge and fill activities require review, approval, and permitting by the US Army Corps of Engineers. | 40 CFR §144.31 |

In addition to CWA requirements, the facility may be subject to water management activities regulated under the SDWA. The table above summarizes the major regulatory programs under the CWA that may impact federal agency facilities.

## Safe Drinking Water Act Regulatory Guide

| TOPIC | ACTION INVOLVED | REGULATORY CITATION |
|---|---|---|
| General applicability of SDWA | This subpart establishes key definitions under the national primary drinking water regulations (NPDWR) program, scope of coverage, variances and exemptions, and regulatory effective dates. | 40 CFR Part 141, Subpart A |
| Maximum contaminant levels (MCLs) for organic, inorganic, turbidity, and certain radioactive material | Public drinking water systems providing water for widespread consumption must meet specific maximum contaminant levels to ensure drinking water quality and protect public health. | 40 CFR Part 141, Subpart B and Subpart G |
| Monitoring and analytical requirements for public water systems | Periodic testing and monitoring for coliform bacteria, turbidity, and certain organic and inorganic contaminants is a key aspect of EPA's NPDWR program. The effective dates for these monitoring requirements has been phased in over a period of time. | 40 CFR Part 141, Subpart C |
| Reporting, public notification, and recordkeeping | Reporting and public notification must be conducted for noncompliance with SDWA requirements for public water systems. | 40 CFR Part 141, Subpart F |
| Filtration and disinfection | Specific filtration and disinfection requirements are established for public water systems and supplied by a surface water source or groundwater influenced by surface water sources. | 40 CFR Part 141, Subpart H |

| TOPIC | ACTION INVOLVED | REGULATORY CITATION |
|---|---|---|
| Control of lead and copper in drinking water | New action levels of 0.015 mg/l for lead and 1.3 mg/l for copper were established in 1991. If these values are exceeded at the tap in 10 percent of the public water system subject to monitoring programs, corrective actions must be initiated. | 40 CFR Part 141, Subpart I |
| Underground Injection Control | Discharges or introduction of wastewaters, industrial wastes, and hazardous wastes into injection wells require specific approvals and permits. | 40 CFR Parts 146-149 |

Per Executive Order 12088, Federal Compliance with Pollution Control Standards, October 13, 1978, federal facilities are required to comply with applicable regulations under CWA and SDWA. For example, the National Vehicle Fuel and Emissions Laboratory in Ann Arbor operates oil/water separators, and the Annapolis Central Regional Laboratory previously used septic systems prior to connecting to the municipal sewage treatment works. These facilities would be subject to CWA and SDWA requirements. The Phase I Report will have identified situations such as these examples that may prompt further review under the Phase II EDDA.

National Pollutant Discharge Elimination System Permits (NPDES)

When transferring a federal agency's real property, any permits acquired to operate the facility must be terminated or transferred. Permit termination (40 CFR §122.64) generally will follow prescribed administrative procedures. For a federal NPDES permit, a notice of termination must be filed with the CWA Permitting Division. Contact the Office of Water, Permits Division, at 202-260-9545, for more information if a federal permit needs to be terminated. If a state NPDES permit requires termination, contact the Department of Environmental Quality or equivalent agency where the permit was obtained.

In addition to administrative procedures, any equipment used for wastewater treatment to fulfill NPDES permit conditions must be decontaminated, such as cleaning out and sampling any sludge (as with elementary neutralization tanks) and disposing of equipment or waste products in accordance with pertinent federal and state solid and hazardous waste management rules. Additional information on equipment decontamination and decommissioning is provided in Section A-03 of this document.

If stormwater discharges, discharge points, or discharge transport pipelines are noted as a potential concern in Phase I, then sampling activities should be conducted as part of Phase II to determine the cause of the problem, and the remedy should be addressed in Phase III. Sections A-06 and A-07 of these guidelines should be referenced for additional information on planning, implementing, and reporting the sampling and analysis activities associated with stormwater discharges, discharge points, or discharge transport pipelines.

Potable Water

Although most facilities are served by public water systems and typically are not subject to SDWA regulations for delivery of treated drinking water, facilities that have on-site wells supplying water for consumption by an average of at least 25 people daily for at least 60 days of the year are subject to requirements applicable to nontransient, noncommunity water systems. If the facility is considered a drinking water supplier, it is required to be within the federal and state maximum contaminant levels (MCLs) for any pollutants in its potable water. If the Phase I determines that the facility is a drinking water supplier and that the water supply is likely polluted, the Phase II activities will consist of drinking water sampling and documentation.

Septic Systems

Administrative closure procedures for septic systems need to be addressed with state authorities and the local municipality. Although not directly part of CWA or SDWA requirements, some municipalities have septic tank abandonment procedures that are administered through the local health department. For example, when a sanitary system is attached to a municipal system, the existing septic tank is required to be "caved-in" and filled with an inert material. This will ensure that the abandoned tank does not present a safety issue when transferring the property. In general, there may not be any Phase II sampling activities associated with the septic system unless the facility Phase I investigation indicated discharges of industrial wastewaters or other nonsanitary wastes.

Wells and Groundwater

Federal and state requirements may be most applicable to underground injection control wells. Accordingly, the Phase II should document any sampling activities to verify adherence of past practices to pertinent standards. The facility should ensure that the potential for wells to become a route of transport for contaminants is eliminated.

If groundwater sampling is needed because of suspected contamination, Phase II analysts may use existing wells, install monitoring wells, or use hydropunch or other sampling methods. Any activities performed and their results should be documented.

Wetlands

Requirements for dredging or filling wetlands are issued and enforced by the Army Corps of Engineers under Section 404 of the CWA. State Section 404 programs can be enforced on waters not susceptible to interstate commerce, including tidal waters and wetlands. If the facility obtained a Section 404 permit, it must be terminated with the issuing authority and any dredging and filling activities must cease. Cases of contamination resulting from these activities and associated sampling operations would likely fall under the federal or state Superfund statutes.

Spill Containment, Control, and Countermeasures (SPCC) Plan

Some areas with suspected contamination may stem from oil stored on-site. If the facility stored more than 42,000 gallons underground, 1,320 gallons aboveground total, or 660 gallons in any single container aboveground, then the facility should have an SPCC plan in place in accordance with 40 CFR Part 112. The Phase II investigation should include a review of the SPCC plan to determine what engineering controls and systems are in place; an analysis of this equipment to identify whether it is functioning effectively to eliminate the potential for future spills if oil is still stored on-site; and an inspection to make sure that any incidental spills that may have occurred were cleaned up properly.

Resources

The following resources may be helpful in obtaining further information about clean water management:

- SDWA Hotline: hotline-sdwa@epamail.epa.gov
- Office of Water Resources Center: 202-260-7786, or waterpubs@epamail.epa.gov
- Oil Pollution Act information exchange under the EPA RCRA/ Superfund/Emergency Planning and Community Right-to-Know Act (EPCRA) Industry Assistance Hotline: 1-800-424-9346, or 703-412-9810 for the Washington, DC, metropolitan area
- Wastewater Sampling Computer-Based Training and Manual, a set of six computer-based training modules and complementary manual being developed for Region 1 by the EPA SHEMD Multimedia Laboratory in conjunction with the Office of Water. Contact the Multimedia Laboratory at 202-260-2215.

ATOMIC ENERGY ACT (AEA) and Nuclear Regulatory Commission Licenses

Federal agencies operate laboratories nationwide that may use nuclear material as part of their experiments. Depending on the laboratory's research mission and the extent to which nuclear materials are used, the laboratory obtains a license from the Nuclear Regulatory Commission (NRC) as part of its compliance with NRC regulations under the Atomic Energy Act (AEA). Typical uses of nuclear materials by laboratories are presented in the following table. In most cases, the use of nuclear material is in a sealed source state. When facilities are being prepared for property transfer or consolidation, NRC licensees must terminate their licenses.

Overview of License Termination Process

When a licensed facility terminates its operations and ceases to use or handle radioactive materials, the facility must notify the NRC to terminate its license. The licensee submits a request for termination to the NRC, and in cases where contamination is significant, the facility must develop a decontamination and decommissioning (D&D) plan to reduce radioactivity to acceptable levels.

After NRC approval of the licensee's termination request or D&D plan, the facility must carry out the D&D process if applicable. This process can be simple where only sealed sources or short-lived materials are handled, or it can entail extensive efforts for large-scale nucleotide users. A decision tree of required steps in the license termination process is shown on the following page. Though not required, an initial radiation survey and documentation review serve as good starting points. Results from these reviews should be included with the termination request letter to the NRC.

The NRC will only terminate the user's license by written notice after the user:

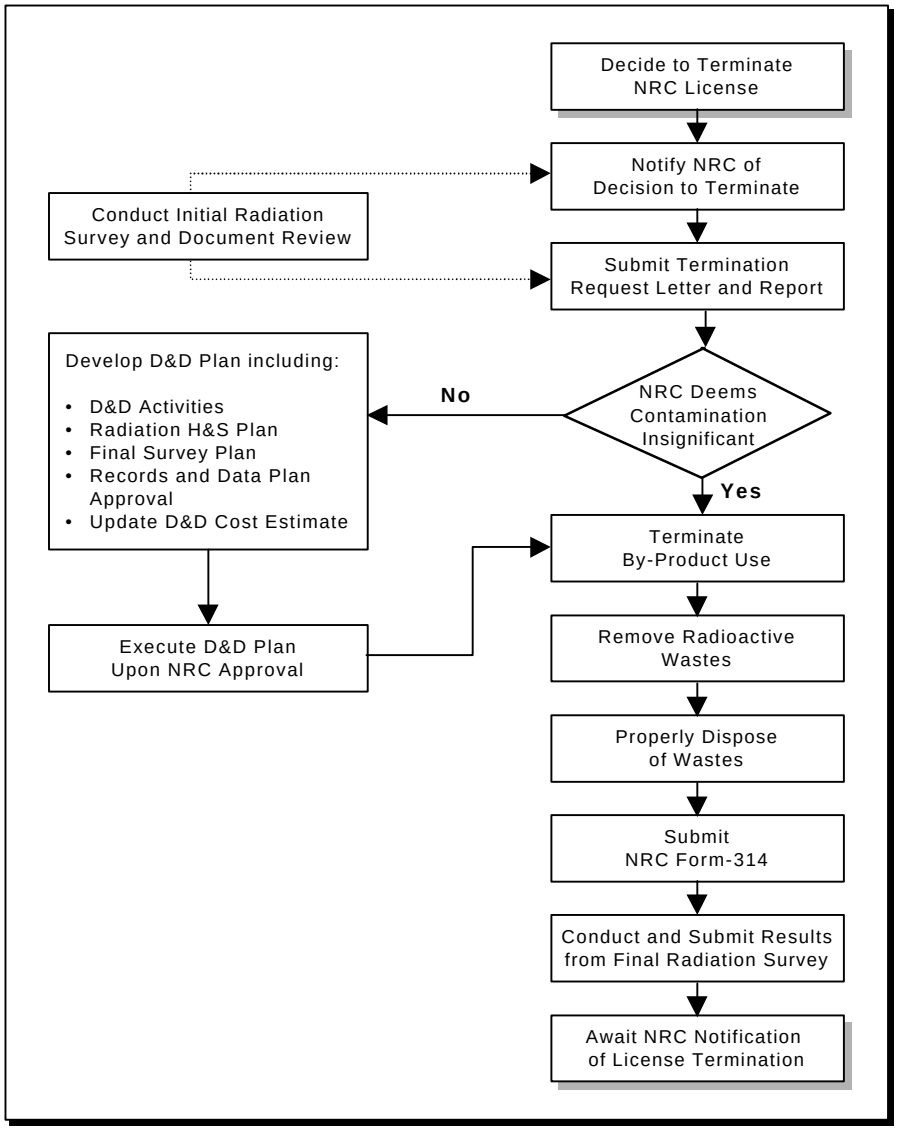
- Terminates the use of radioactive materials
- Properly removes and disposes of radioactive wastes
- Remediates the site, if D&D is required
- Submits NRC Form 314, a copy of which is provided on the next page
- Conducts and submits the results of a final radiation survey to confirm decontamination.

To aid in the decontamination determination, the licensee submits the results of a radiation survey of the facility and common use areas to the NRC. If the results are satisfactory, the NRC provides written confirmation of license termination. The licensee remains under license to the NRC, and thus subject to NRC requirements, during D&D activities. After license termination, the facility is no longer subject to NRC requirements regarding further unrestricted use of the facility.

Recent NRC efforts are being studied to streamline the licensing process, and extend it to the D&D process. NRC's Office of Nuclear Material Safety and Safeguards has undertaken a pilot program to determine the feasibility of performing computer-assisted review of license applications. This system presents consolidated licensing guidance on the Internet, and

significantly reduces the turnaround time on license applications. Presently the system is capable of handling new portable gauge license application only. However, in the future, it is hoped that the system capabilities will be expanded to include other licensing classes and decommissioning and decontamination.

**Decision Tree: NRC License Termination Process**




License Termination Letter

The NRC examines license termination on a case-by-case basis. There are no defined criteria provided for significant contamination determination and subsequent D&D plan development.

A license termination request starts by submitting a notification of termination intentions to the NRC. This usually takes the form of an official letter that contains a description of the facility's nuclear material usage, spill records, site plans with pre- and post-construction modifications, a

list of all regulated areas requiring documentation, and a previously prepared cost estimate for decommissioning. An example of an NRC license termination request letter appears below.

**Sample NRC License Termination Request Letter**

Nuclear Regulatory Commission (Address to NRC regional office)
Office of Nuclear Material Safety and Safeguards
Division of Low-Level Waste Management and Decommissioning
*Street Address*
*City, State zip*

Dear Sir or Madam:

In accordance with 10 CFR Part 30, Subpart 36b, this letter shall serve as notice of intent to terminate NRC license (*number*), which will return the property to unrestricted use. This NRC license enabled the facility to use, store, and dispose of unsealed, radioactive by-products which were used for scientific research and testing. Please find enclosed:

- A record of all spills or other unusual occurrences involving the spread of contamination
- As-built drawings and modifications of buildings where the unsealed sources were used and stored and locations of possible inaccessible contamination
- A list of all regulated areas that require documentation
- Cost estimates initially performed to implement a decommissioning plan (if necessary).

This facility has experienced no spills or other unusual occurrences and has detected no residual radioactive readings from an initial site survey, per recommended procedures. The facility expects NRC to conclude that a decommissioning plan is not required because contamination should be deemed insignificant.

Upon NRC's response to this termination request, the facility will proceed with termination of by-product use, properly dispose of remaining materials, and conduct a final radiation exit survey in anticipation of NRC's own exit survey validation.

If you have any questions about this termination request, please contact the Radiation Safety Officer at (*phone number*).

Sincerely,

Radiation Safety Officer

Enclosures

The facility may work with the NRC to identify additional information needs in making its determination for a decommissioning plan submittal. Because many facilities use minor quantities of radioactive material, the information request generally will be straightforward and limited. For those larger radioactive material users, all information should be obtained from radiation safety officers' reporting requirements files.

Laboratory Decontamination Guidance

The NRC regulations, at 10 CFR Part 20, Subpart E, establish criteria for the remediation of contaminated sites or facilities that will allow their release for future use with or without restrictions. The criteria include a Total Effective Dose Equivalent limit of 15 mrem/year, meaning that the average individual should not be exposed above this level from residual activity within the decommissioned facility. The criteria also require a licensee to reduce any residual radioactivity to as low as reasonably achievable (ALARA).

The NRC developed the *Regulatory Guide on Release Criteria for Decommissioning* (NUREG-1500) to assist facilities in following acceptable procedures for determining the predicted dose level (PDL) from any residual radioactivity at the site. The criteria describes the basic features of the NRC's models and acceptable parameters to factor into PDL calculations.

The NRC has not developed specific guidance on acceptable procedures for decontaminating laboratory equipment. For most facilities, decontamination will use suitable solvents. Note that all solvent disposal must also conform strictly to requirements under CERCLA and RCRA. In cases where ductwork, drains, or fumehoods are contaminated beyond the decontamination abilities of certain solvents, they may have to be decommissioned, removed and disposed of as low-level radioactive waste.

Conducting a Final Radiation Exit Survey

The extent of residual contamination will depend on the type and quantity of nuclear material used at the facility. The NRC has developed a guidance document, entitled *Manual for Conducting Radiological Surveys in Support of License Termination* (NUREG/CR-5849), to assist all types of facilities in executing final radiation exit surveys. This document contains procedures for conducting radiological surveys to demonstrate that residual radioactive material satisfies release criteria. Survey methodologies describe the state-of-the-art instrumentation and procedures for conducting radiological surveys. The document also incorporates statistical approaches for survey design, evaluation, and quality assurance.

Resources

In preparing for facility transfer or closure, the following resources may assist in complying with NRC regulations and NRC closure protocols.

- CFR Part 30 Subparts 35 & 36
- Manual Chapter: *NRC Protocols for Decommissioning a Facility* (NRC Internal Draft)
- NUREG-1500, *Working Draft Regulatory Guide on Release Criteria for Decommissioning:* Staff Draft
- NUREG-1501, *Background as a Residual Radioactivity Criterion for Decommissioning* (Draft)
- NUREG-5512, *Residual Radioactive Contamination from Decommissioning*

- NUREG/CR-5849 *Manual for Conducting Radiological Surveys in Support of License Termination*
- Regulatory Guide 1.86, *Termination of Operating License for Nuclear Reactors*
- Task DG-3001, *Records Important for Decommissioning for Licensees under 10 CFR Parts 30, 40, 70, and 72*
- NRC-7590-01, *Action Plan to Ensure Timely Cleanup of Site Decommissioning Management Plan Sites*

Numerous examples of laboratory closure materials are available through the NRC's public document room, 2120 L Street, NW, Washington, DC 20555.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

The substantive and procedural requirements of NEPA must be followed for all major federal actions, including some activities under the EDDA

In regard to federal Agency's real property transfers, potential major federal actions applicable for NEPA review include lease termination, building consolidation, mission change, or construction of a new facility or laboratory. In working with the General Services Administration (GSA) and other federal agencies to execute the NEPA process, the Responsible Official, such as an property transfer manager, should investigate the potential completion of NEPA documentation by other federal agencies. If NEPA documentation does not exist for the proposed real property transfer, then the federal agency should initiate the NEPA process.

Federal agencies follow a three-tiered procedural review process when an action that could affect the environment is proposed. The *NEPA Process Chart* on the next page gives an overview of the process. Tier 1 determines whether project qualifies for a categorical exclusion (CX). Tier 2 determines whether the project qualifies for a finding of no significant impact (FNSI) after performing an environmental assessment (EA). If no significant impacts are discovered in the EA process, the project qualifies for a FNSI. If significant impacts are discovered in the EA process, an Environmental Impact Statement (EIS) must be prepared. Tier 3 entails preparing an EIS and issuing a Record of Decision (ROD).

Some examples of real property transfer activities that require the preparation of NEPA document include, but are not limited to, activities that:

Significantly affect the pattern and type of land use or growth and distribution of human population

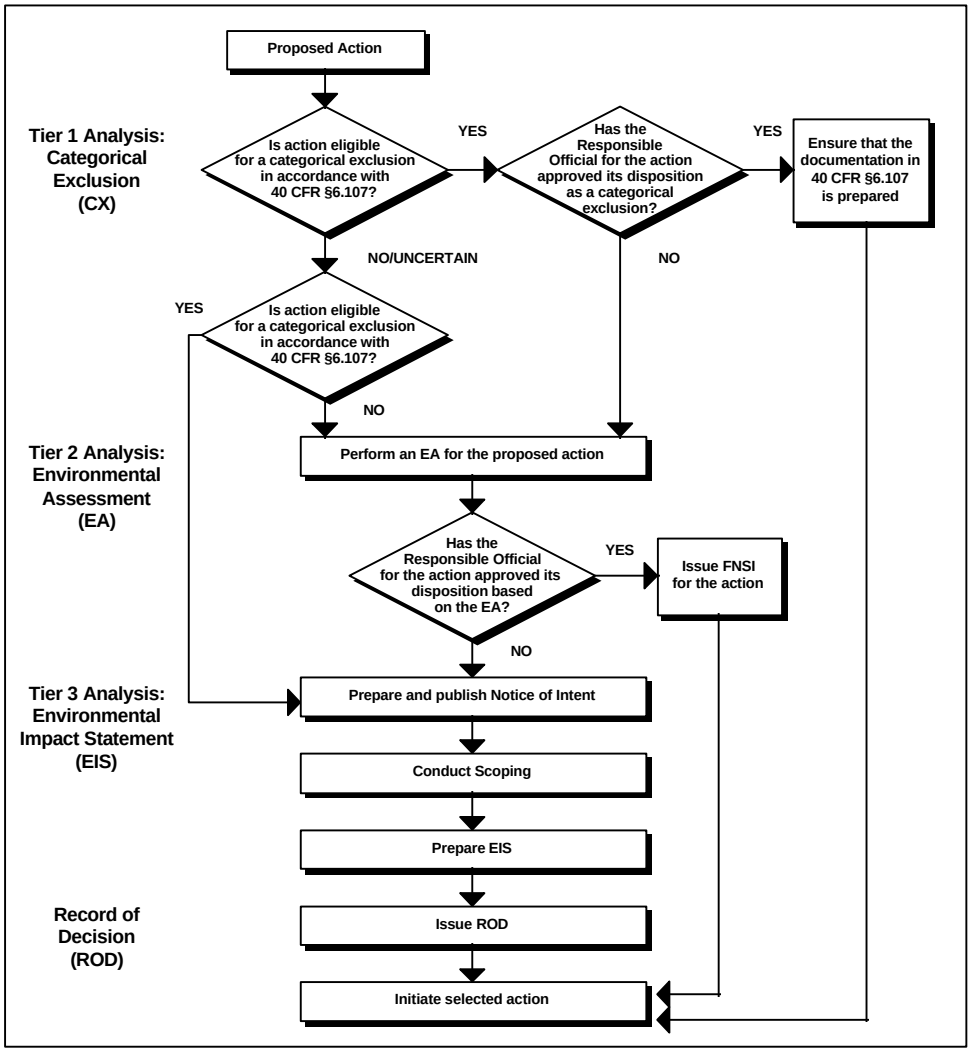
- Conflict with local, regional, or state land use plans or policies
- Significantly affect cultural resource areas, endangered or threatened species, or environmentally important natural resource areas such as wetlands, floodplains, or coastal waters
- Significantly have an adverse effect upon local ambient air quality, noise level, surface water or groundwater quality or quantity, water supply, aquatic life, wildlife, and their natural habitats.

The results of the Phase I and II EDDA will assist in determining the appropriate level of NEPA review and documentation through the disclosure and characterization of environmental conditions of the property.

The following provides a suggested approach for identifying the NEPA requirements and applicability when closing or addressing environmental contamination at a federal agency's property transfer project. At a minimum, the PTM, laboratory director, or Phase II or III oversight official should consult with NEPA specialist and the facility's engineering services division to determine the appropriate and required NEPA activities. The PTM, laboratory

director, or Phase II and III oversight official will be responsible for ensuring the NEPA review process is executed including, but not limited to, evaluation, document development, public notification, and mitigation measures. Finally, all supporting materials, reports, and NEPA documentation should be submitted to the federal agency's headquarters to be maintained indefinitely in an official document management system.

**The NEPA Process**



# APPENDIX I

# CONSIDERATIONS FOR EQUIPMENT DEACTIVATION AND DECOMMISSIONING

# APPENDIX I

## Considerations for Equipment Deactivation and Decommissioning

### INTRODUCTION

"Deactivation" is the process of placing a facility and its systems in a safe and stable condition until the closure activities are completed to protect workers, the public, and the environment. All major processes, equipment, and operations at the facility should be deactivated during Phase II if they have not already been deactivated. Filters and other such removable and replaceable equipment that contain radioactive or hazardous materials must be removed and disposed of properly. The process systems should be cleaned and all process materials removed, including hazardous and nonhazardous sludges and residues. Laboratory experiments and associated containers and equipment should be properly ceased, dismantled, and discarded. Deactivation is particularly important if environmental contamination or hazards will not be addressed until after the lease is terminated or the facility is vacated. Other examples of deactivation activities include:

- Removing fuel and other products from storage tanks
- Draining and/or de-energizing non-essential systems
- Emptying and flushing all process systems and pipelines
- Removing all radioactive, hazardous, and chemical materials
- Discontinuing all non-essential utility services, including electric, gas, fuel oil, propane, steam
- Removing and dismantling all temporary and portable structures, including trailers, laboratories, and equipment
- Decontaminating, cleaning, removing, or disposing of large portable containers.

The facility should document the deactivation activities performed in a brief report to quantify and identify the equipment deactivated, the final equipment condition, and the method of deactivation. All operation and maintenance manuals and technical drawings of equipment and process left in place at the facility should be included as attachments to the report. This documentation will support future closure activities conducted during Phases II and III, and will prevent duplicating effort by eliminating uncertainties about equipment condition. Also, a documented deactivation will provide stakeholders and future property recipients with information on the safe and stable condition of the process and facility systems. The scope of deactivation is not intended to include the removal of contamination that is part of the buildings' infrastructure, such as asbestos, or the decontamination of complex laboratory equipment or process components contaminated with radiological or hazardous substances. These complex and laborious activities should be performed only after sampling and analysis has identified the extent of contamination and evaluated closure alternatives.

Under certain circumstances, the situation may arise where deactivation activities are not performed or documented. These circumstances may include a facility without experienced personnel or an authorized contract to perform deactivation. If deactivation activities are not

performed or documented, a surveillance and monitoring evaluation should be performed. Surveillance and monitoring includes routine maintenance and inspection of the facility and related property with verified or suspected environmental and safety hazards.

## OZONE-DEPLETING SUBSTANCES (ODSs)

Because they deplete stratospheric ozone, chlorofluorocarbons (CFCs) have been banned from production in the United States through the 1990 Clean Air Act (CAA) Amendments. The ban officially took effect January 1, 1996, and extends with different phaseout dates to other ozone-depleting chemicals such as halons, hydrochlorofluorocarbons (HCFCs), and some chlorinated solvents. CFCs have been used by some federal agencies as refrigerants in large and small refrigeration systems throughout the nation at research facilities and various offices.

In July 1992, ozone-depleting substances (ODS) refrigerant venting became illegal during the service, maintenance, repair, or disposal of appliances or industrial process cooling equipment. Compliance officers conduct random inspections of facilities using CFCs to ensure the facilities are operating in strict compliance with federal regulations. To date, no federal facilities have been fined for violations of these requirements.

Federal regulations governing the use of ODSs in commerce do not require sellers of equipment or facilities with CFC-containing equipment to provide documentation of the sale of CFCs as is required of free-product ODS distributors. Also, these regulations do not require the removal of CFCs or HCFCs from refrigeration or process cooling equipment before a transfer of real property. However, the regulations mandate that the liability for violations occurring before actual property transfer fall to the prior owner of the CFC-containing equipment. Therefore, federal facilities must protect against leakages or improper venting of ODS material. In this way, federal agency's guard against undue liability from the transfer of ODS-containing equipment in property transfer activities.

## USE OF CFCs AND HCFCs

CFC use falls predominantly within the area of refrigeration use.

## REQUIREMENTS FOR ODS REMOVAL

For large, non-hermetically sealed ODS-containing equipment (such as a central plant and backup chillers), the suggested policy is to remove the refrigerant and place it in a secure and stable state. To accomplish the removal of ODSs from facility chillers, the facility needs to have the proper certified recycling equipment, certification for technicians, and knowledge of storage and transportation procedures. Additional information on these evacuation requirements can be found in the following section of this appendix, *Evacuation Requirements and Equipment Specifications*.

Small systems that are hermetically sealed do not need to undergo special deactivation procedures. If they are being disposed of locally, the facility will need to provide documentation to the disposal agent that the refrigerants have been recovered according to the federal agency's requirements. The disposal agent will keep this record on file. Federal agencies may recover used refrigerants before disposal and must follow the procedures outlined below to recycle used refrigerants.

## EVACUATION REQUIREMENTS AND EQUIPMENT SPECIFICATIONS

In the past, a major contributor to ozone depletion has been the release of used refigerants, into the environment, from evacuation equipment during changeout of refigerants. To prevent or minimize the amount of refigerants venting into the environment during this process, the Clean Air Act Amendments of 1990 required the use of approved and certified refrigerant recovery and recycling equipment.) When evacuating refrigeration equipment except for Mobile Vehicular Air Conditioners (MVACs) or small equipment, evacuation equipment must be able to remove the refrigerant according to the relative vacuum levels presented in the table below under the conditions of ARI Standard 740-1993, Performance of Refrigeration Recovery, Recycling, and/or Reclaim Equipment (see Appendix B of 40 CFR Part 82). Under the 1990 Amendments to the CAA, private citizens are authorized to seek civil penalties for violations of the Act. Plaintiffs must provide at least 60 days notice of the action to the Administrator, the state, and the alleged violator (CAA §304). To reinforce how serious Congress is about enforcement of the CAA, it has authorized EPA to pay a "bounty" of up to $10,000 to anyone who provides information that leads to a "criminal conviction or a judicial or administrative civil penalty" (CAA §113 (f)).

**Evacuation Levels Required of Certified Recovery or Recycling Equipment**

| Types of Appliances | Inches of Mercury Vacuum | |
|---|---|---|
| | Equipment manufactured before 11/15/93 | Equipment manufactured after 11/15/93 |
| High-pressure systems containing less than 200 pounds of HCFC-22 | 0 | 0 |
| High-pressure systems containing more than 200 pounds of HCFC-22 | 4 | 10 |
| Other high-pressure systems containing less than 200 pounds of refrigerant | 4 | 10 |
| High-pressure systems containing more than 200 pounds of refrigerant | 4 | 15 |
| Very high-pressure systems | 0 | 0 |
| Low-pressure systems | 25 (mm Hg absolute) | 25 (mm Hg absolute) |

Evacuation equipment may also be certified if an approved third party can demonstrate that the equipment is able to meet specific requirements outlined in 40 CFR Part 82, Subpart F. Each piece of equipment certified by EPA must be labeled as such by the manufacturer or importer of the equipment. Effective November 15, 1993, evacuation technicians cannot use equipment that has not been certified according to the requirements set forth in 40 CFR Part 82, Subpart F.

When removing refrigerants from small appliances, the evacuation equipment must be able to recover 90 percent of the refrigerant if the system is functioning and intact and the evacuation equipment was manufactured before November 15, 1993. When the small appliance is intact and functioning, and the evacuation equipment was manufactured after November 15, 1993, the evacuation equipment must be able to recover 80 percent of the refrigerant. When the compressor of the appliance is not functioning, the evacuation equipment must be able to recover 80 percent of the refrigerant. All evacuation equipment used for small appliance refrigerant recovery must be able to evacuate to four inches of mercury vacuum. For further details on evacuation and equipment specification requirements, please refer to 40 CFR Part 82, Subpart F.

## TYPES OF TECHNICIAN CERTIFICATION

Effective November 14, 1994, persons who maintain, service, repair, or dispose of appliances except MVACs must receive special EPA-approved refrigerant handling certifications. There are four types of certification depending on the type of ODS-containing appliance serviced. They are:

- Type I, for persons who maintain, service, or repair small appliances
- Type II, for persons who maintain, service, repair, or dispose of high- or very high-pressure ODS-containing appliances except MVACs and small appliances
- Type III, for persons who maintain, service, repair, or dispose of low-pressure appliances
- Universal, for persons who maintain, service, repair, or dispose of any type of low- or high-pressure ODS-containing appliance.

Technicians must be able to provide proof of certification to EPA inspection officials and may need to be recertified at some future date as determined by the EPA Administrator.

## STORAGE AND TRANSPORTATION REQUIREMENTS

The handling, storage, and transportation of refrigerants are regulated by the Occupational Safety and Health Administration (OSHA) and the Department of Transportation (DOT), rather than by EPA under the 1990 CAA Amendments. OSHA requires that in-plant handling, storage, and use of compressed gases must follow the guidance established in the Compressed Gas Association's Pamphlet P-1-1965, which has been incorporated by reference into 29 CFR §1910.6. The filling and transportation of compressed gas refrigerants is regulated by DOT in 49 CFR Parts 171 to 177. These requirements cover:

- Compressed gases transportation requirements (49 CFR §173.315)
- Charging of cylinders with liquefied compressed gases (49 CFR §173.304)

- Exemptions for the transportation of refrigerating machines and precharging tubes (49 CFR §173.307).

## HIERARCHY OF ODS TRANSFER OPTIONS

Deactivation activities will result in the accumulation of used CFC refrigerants at facility locations. The priority system to ensure that recovered refrigerants are either efficiently reused or properly disposed of is as follows:

### Priority of Actions for Reuse of Old Refrigerants

- Recover refrigerants from evacuated equipment
- Recycle/ reclaim refrigerant for use by other facilities
- Send refrigerants to the Defense Logistics Agency
- Contract out refrigerant removal services with certified refrigerant technicians

The first recommended option is to recycle or reclaim the unused refrigerants. Recycling and reclaiming refrigerant ensures that the facilities have an adequate supply of refrigerant to meet their present and future needs. The next recommended option is evacuating the refrigerant from the equipment and having it transported off-site to the Defense Logistics Agency (DLA). This option allows the Agency to retain control over the removal procedures and to transfer the refrigerant to the military's refrigerant Defense Reserve for use by the Defense agencies or to set up a refrigerant bank for the Agency. DLA has been operating the Defense Reserve since 1993 and now stores between 10 million and 15 million pounds of ODSs. DLA provides recovery cylinders free of charge to agencies that are donating to the refrigerant Defense Reserve. The remaining option recommended is to initiate a contract with a certified technician or reclamation company to remove the refrigerant from the equipment. If this option is chosen, the facility must maintain documentation of all transactions involving the transfer of refrigerant off-site. Although complete records of disposal actions are not required by law, it is advisable to maintain these records to demonstrate a clear line of custody.

**RESOURCES**

Refer to the following resources for further information.

- Compressed Gas Association, Pamphlet P-1-1965
- CFR Part 82, Protection of Stratospheric Ozone
- CFR Parts 171-177, Hazardous Materials Regulations
- CFR Part 1910, Occupational Safety and Health Standards
- EPA publication, *608: The Refrigerant Recycling Rule*, 1994
- EPA publication, *Disposing of Applications with Refrigerants: What You Should Know*, 1993
- Defense Logistic Agency, *Procedures for Turning in Ozone-Depleting Substance to the Defense Reserve*, July 8, 1994.

# APPENDIX J

## EXAMPLES OF EPA OPERATIONS AND EQUIPMENT WHICH MAY REQUIRE DEACTIVATION AND DECOMMISSIONING

# APPENDIX J

## Examples of EPA Operations and Equipment Which May Require Deactivation and Decommissioning

### Hazardous Materials and Waste

- acid waste drain and neutralization pit
- biological species testing chemicals
- central hazardous waste accumulation areas
- chemical adoption program storage areas
- chemical storage areas
- containers/pipes for film processing racks
- containers/pipes for used fix solution (silver)
- containers/pipes for bleach replacement for color film processor
- elementary neutralization systems
- graphics operations
- hazardous materials/waste storage building
- lead-based paint
- pathological/infections waste treatment devices
- pesticide storage areas
- refrigeration systems and equipment
- refrigerant recovery systems
- satellite hazardous waste accumulation areas

### Tanks, Containers, and Other Storage

- acute hazardous waste containers
- compressed gas cylinder storage
- compressed gas cylinders
- control tanks
- corrosive solution containers
- culture and bioassay tanks
- drum storage area surfaces
- effluent collection container
- fuel oil tank
- hazardous waste containers
- head tanks
- indoor drum storage area
- medical waste containers
- modular hazardous waste storage facility
- organic solvent containers
- outdoor solvent storage building
- paint and supply storage areas
- radioactive storage facility
- satellite accumulation area, surfaces
- staging area
- storage cabinets, sheds, surfaces
- surplus property storage facility
- underground and aboveground storage tanks
- vehicular storage/maintenance areas and surfaces

### Environmental Media (Soil, Groundwater, Wetlands)

- acid neutralization pits
- chemical groundwater injection studies
- effluent discharge pipe systems
- sewer system
- test streams
- test stream sediment
- testing trailers and mobile laboratories

### Radioactive Materials

- test streams
- test stream sediment
- test plots and research media
- inductively coupled plasma atomic emission
- sealed sources/isotope solutions
- radiological waste/materials storage areas
- radiological treatment systems
- atomic absorption spectrophotometer
- gas chromatograph with electron capture
- radioactive contaminated floors, wall, items
- radioisotope fume hood
- radioisotope glove boxes
- radiological fume hood air ducts

# APPENDIX J

## Examples of EPA Operations and Equipment Which May Require Deactivation and Decommissioning (continued)

| Polychlorinated Biphenyls | |
|---|---|
| - PCB-contaminated ballast, animal bedding/ cages<br>- PCB-contaminated samples & waste containers<br>- pesticide storage cabinets | - PCB lysi meters<br>- PCB transformers or electrical equipment<br>- PCB waste storage areas<br>- test plots and research media |
| **Asbestos** | |
| - asbestos analysis equipment<br>- asbestos-containing material | - asbestos samples |
| **Indoor Air** | |
| - laboratory exhaust vents<br>- laboratory exposure chambers | - vent pipes |
| **Laboratory Equipment and Pilot/Bench-Scale Experiments** | |
| - acid wash bath equipment/wastewater<br>- atomic absorption spectrophotometer<br>- boiler<br>- five-chamber chemical combustor apparatus<br>- fluid modeling facility<br>- laboratory fume hood stacks<br>- laboratory fume hoods<br>- gas chromatographs with electron capture detectors<br>- glassware washing areas<br>- HPLC instrumentation | - inductively coupled plasma atomic emission spectroscophers<br>- ion-exchange system<br>- mass spectrometer<br>- ozone regeneration system<br>- radioactive contaminated floors, walls, items<br>- sanitary treatment plant<br>- scintillation counting devices<br>- sealed sources/isotope solutions<br>- solvent extraction and distillation flasks<br>- wastewater treatment system and piping<br>- wipe test equipment |
| **Building Systems** | |
| - boilers<br>- building water supply system<br>- emergency power generators<br>- exhaust stacks<br>- fluorescent lights and ballast<br>- furnace equipment<br>- HVAC systems (CFCs, cooling tower)<br>- natural gas-fired boilers | - NPDES effluent pipes<br>- oil-fired steam boiler<br>- pathological incinerator<br>- rotary kiln incinerator system<br>- sanitary sewer system and drains<br>- scrubber water accumulation tanks<br>- septic system<br>- wastewater treatment system |

# APPENDIX J

## Examples of EPA Operations and Equipment Which May Require Deactivation and Decommissioning (continued)

Other

- drinking fountains failing to meet lead standards
- dry system drainage
- fire extinguishers/suppression equipment
- fire-detection equipment
- personal protective equipment
- spill-control equipment
- sumps
- water deionizing systems
- wet laboratory building
- wood and metal shops

# APPENDIX K

# QUALIFICATIONS FOR EDDA PERSONNEL AND MANAGERS

# APPENDIX K

## Qualifications for EDDA Personnel and Managers

### INTRODUCTION

Agencies are responsible for ensuring personnel and managers are adequately trained and qualified to oversee, perform, or manage the environmental due diligence audit (EDDA). The Agency must ensure that only qualified contractors perform EDDA activities. The discussions in this appendix assume that due to the specific and technical nature of activities, agency personnel responsible for initiating and coordinating the EDDA will not provide direct oversight for Phases II and III; however, should be capable of Phase I oversight. This assumption does not automatically exclude the agency from consideration for direct oversight of Phases II and III. The responsible agency personnel can perform the direct oversight role throughout Phases I, II, and III as long as he/she meets the qualification criteria. Specific criteria for personnel involved in the EDDA are discussed below.

Personnel functioning as the responsible agency EDDA coordinator should have either:

- Performed as a Safety, Health and Environmental Management Program (SHEMP) manager for five years and have a good understanding of the *Guidelines for Acquiring and Transferring EPA Real Property and Complying with the Community Environmental Response Facilitation Act (CERFA)*
- A degree in a scientific discipline relevant to the EDDA (e.g., environmental engineering, environmental science, geology, chemistry, biology, forestry) and have a good understanding of the *Guidelines for Acquiring and Transferring EPA Real Property and Complying with the Community Environmental Response Facilitation Act (CERFA)*
- Provided oversight for at least three Phase I EDDAs, environmental due diligence audits (EDDAs), Resource Conservation and Recovery Act (RCRA) or base closures; or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remedial investigations/actions.

**PHASE I REVIEW TEAM**

Internal or contract personnel performing Phase I site inspections should have at least 12 hours of training in Phase I site assessments or environmental due diligence audits and have both:

- Conducted or participated in at least five EDDAs, environmental due diligence audits (EDDAs), or any combination of these
- A degree in a scientific discipline relevant to the EDDA (e.g., environmental science, geology, chemistry, biology, forestry).

Unless there is a comparable internal training program, out-of-agency training is acceptable. Training must include instructions on visual site inspections, record searches, and site owner and personnel interviews.

**PHASE I REVIEWER**

Personnel assigned to review Phase I activities or reports must have similar qualifications as those of the facility PTM. In addition, the Phase I Reviewer must work in coordination with Facilities Management and Services Division (FMSD) and Safety, Health and Environmental Management Division (SHEMD) personnel.

**PHASE II AND III OVERSIGHT PERSONNEL**

Personnel who provide oversight for Phases II or III investigations must have at least 16 hours of training in environmental closures or have conducted, participated in, or reviewed at least five RCRA or base closures, environmental due diligence audits, CERCLA remedial investigations/remedial actions, Phase I site assessments or any combination, and also have had any additional training deemed necessary by FMSD and SHEMD.

# APPENDIX L

# PHASE I EDDA
# CONTRACTOR SPECIFICATIONS

# APPENDIX L

## Phase I EDDA
## Contractor Specifications

### INTRODUCTION

This section contains the minimum specifications that must be met by any contractor selected to perform Phase I EDDAs for Agency property transfers or closures.

### SPECIFICATIONS

**General.** When selecting a contractor to assist the Agency in performing Phase I EDDAs consider the following general practices:

- Include an explicit scope of work as part of the request for proposals (RFP) and contract
- Conduct interviews with the contractors who meet the standard RFP criteria (including the specific individuals who will be doing the work)
- Review standard work product as part of the proposal process
- Thoroughly verify all professional references.

**Criteria.** Use the following specific criteria to evaluate potential Phase I contractors.

**(1) Firm Experience.**

i. Years: Three (total, all activities)

ii. Subject Matter Expertise:

iii. Environmental science and engineering, including the following disciplines: geology, asbestos management, hazardous materials management, and hydrogeology. Regulatory expertise is also required.

iv. Two years of experience conducting Phase I site assessments.

v. Capability to perform Phase II. Requires disciplines such as toxicology, industrial hygiene, chemistry/risk assessment, and three years experience in conducting Phase II site assessments.

**(2) Project Manager Experience.**

vi. Years: Five

vii. Subject Matter Expertise: Environmental Sciences

viii. Degree: MS or Ph.D.

ix. Phase I Experience: Two years of experience within the last five years.

**(3) Team Member Experience.**

x. Years: Three
xi. Subject Matter Expertise: Environmental Sciences
xii. Degree: MS or BS
xiii. Professional Affiliations: Professional Engineer or Geologist Registration preferred
xiv. Phase I Experience: Two years of experience, within the last three years.

**(4) Indemnification and Insurance.** The contractor must:

xv. Be willing to indemnify the Agency for the result of its professional and other negligence
xvi. Possess a minimum limitation of liability to $1 million
xvii. Carry limits of errors and omissions insurance of at least $1 million
xviii. Carry limits of general liability insurance of at least $1 million
xix. Carry workers compensation insurance
xx. Provide certificates of insurance (evidencing coverage) for each of the coverages.

**(5) Conflicts of Interest.** Consultants must not have more than 50 percent of their work coming from developers or real estate leasing groups, the Environmental Protection Agency, or state.

**(6) Report Quality.**

xxi. Report experience should show a similar approach to conducting Phase I as outlined in Agency's guidelines for transferring real property and complying with the Community Environmental Response Facilitation Act (CERFA).
xxii. Reports should be readable and comprehensible by the lay person.
xxiii. Reports should explain all conclusions and explain the relevancy and implication of findings to the Agency. Regulatory and some legal issues also should be explained.

**(7) Size of the Firm.** The contractor must have adequate staff in place to conduct Phase I. It is anticipated that each Phase I will require 1.5 junior staff and 1 senior/project management staff during the course of Phase I.

**(8) Client Experience.** The contractor shall have at least three years experience conducting Phase I EDDAs.

**(9) Locations.** The contractor must be easily accessible to the Agency group reviewing the Phase II work assignment.

**(10) Information Protection.** The contractor must have a program in place for ensuring the confidentiality of information provided by the government. Elements shall include specific standards for labeling information as proprietary and policies for protection of the information, including disciplinary procedures for employees found infringing upon the policy. The contract between the Agency and the contractor must provide that the contractor shall not disclose information obtained from the Agency or related to its relationship with the Agency to third parties without the express consent of the Agency.

**(11) Cost.** Cost shall be reasonable and within the prevailing rates charged by similarly situated contractors.

**(12) Minority/Woman-Owned Business**. The Agency, as well as other federal agencies, are committed to hiring minority or woman-owned business where all technical qualifications are met.

**Evaluation and Balancing.** The following factors shall be considered:

**(1) Primary Criteria.**

i. Firm and individual consultant experience (i.e., education, work)
ii. Insurance and indemnification
iii. Report quality
iv. Conflict of Interest

**(2) Secondary Criteria.**

i. Location
ii. Size
iii. Confidentiality and document retention programs

**(3) Additional Criteria to be Considered.**

i. Use of Subcontractors
ii. Formal quality control programs
iii. Cost
iv. Minority/woman-owned business status

# APPENDIX M

# PRE-ENVIRONMENTAL DUE DILIGENCE AUDIT QUESTIONNAIRE

# APPENDIX M

## Pre-Environmental Due Diligence Audit Questionnaire

Answer the following questions to the best of your knowledge. If a question does not apply, or if you are unsure of the answer, please indicate so in your response. If possible, please identify which participant responded to the question or set of questions. This will assist in the verification of suspected contamination during the site inspection, investigation, and interview process.

1. List all the personnel involved in the completion of this survey. Include names of any individuals who have experience in operations at your site. This list of contacts will be used to arrange interviews during the site inspection and investigation.

2. What is the basis for the Agency's current real property interests at this location?

3. Where is the property located (complete address, longitude/latitude, parcel number, or legal description if available)?

4. How large is the property (acreage)?

5. Is the site located on or near any waterways, schools, or recreational facilities?

6. Does the property contain new buildings, improvements, or other modifications since current owner's occupancy?

7. How large are the new structures?

8. What are the ages of the buildings?

9. How are the buildings being used?

10. Who are the current owners and operators?

11. Identify the main contacts for further inquiries.

12. What are the current uses of the subject property?

13. Who were the past owners and operators of the property?

14. What were the past uses of the property? (To the best of your knowledge)

15. Is the current owner or operator aware of any present or past underground or aboveground storage tanks located on or adjacent to the subject property?

16. If yes, can the owner/ operator demonstrate that the tanks have been properly closed, installed, certified or that existing tanks are not currently leaking?

17. If underground storage tanks (USTs) or aboveground storage tanks (ASTs) exist, complete the UST questionnaire in Appendix L.

18. Is the owner/ operator aware of any landfill (public or private) operators on or adjacent to the subject property?

19. If yes, identify the waste types that were disposed of within the landfill.

20. Is the owner/ operator aware of any hazardous substances (e.g., polychlorinated biphenyls (PCBs), asbestos) in any structures, equipment (electrical/mechanical), or on the premises?

# APPENDIX N

# SITE VISIT GUIDELINES

# APPENDIX N

## Site Visit Guidelines

The guidelines below can be used in performing a site visit during Phase I of the environmental due diligence process (EDDA). Answers to the questions can be helpful in identifying potential environmental issues that should be addressed before transferring real property

General Information

1. Is the property located in an area designated as a wetland, wilderness, or historical area?

2. Are any rivers, streams, springs, lakes, or ponds located near or on the property?

3. What are the zoning requirements or intended future use for the property?

Adjacent Property

4. What are the zoning requirements or intended future use for adjacent properties?

5. Who are the adjacent property owners? What activities take place at all adjacent properties (e.g., commercial tenants handling hazardous waste, military or industrial research, machinery repair, landscaping, mining/quarrying, oil/gas extraction, manufacturing, agriculture)?

6. Who are the adjacent property main contacts for further inquiries and coordination?

7. Is the current owner/operator aware of any present or past underground or aboveground storage tanks being located adjacent to the subject property? If yes, can the owner/operator demonstrate that the tanks have been properly closed, installed, certified or that existing tanks are not currently leaking? If underground storage tanks (USTs) or aboveground storage tanks (ASTs) exist complete UST questionnaire in Appendix O.

Records and Documents

8. Is (or has been) the subject property on the National Priorities List (NPL) of Superfund sites? *The Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) reports can be obtained from the Resource Conservation and Recovery Act (RCRA)/Superfund Industry Assistance Hotline (800-424-9810), the CERCLIS Helpline (202-260-0056), the EPA Regional Office, or from the state environmental agency.*

9. Have or are nearby properties (within two miles of the site) been on the NPL?

10. Have there been any fuel leaks in the area? *The State Environmental Agency Site Lists, which is similar to CERCLIS, contain information on smaller fuel leak sites.*

Permits, Surveys, Violations

11. Has the facility possessed any environmental permits in the past or present? Indicate Y/N. ___ air quality; ___ hazardous waste treatment, storage or disposal facility;
    ___ public owned treatment works; ___ sanitary sewer; ___ USTs
    ___ National Pollutant Discharge Elimination System; ___ stormwater discharge

12. Has the facility been cited for permit violations or environmental noncompliances? If yes, provide a brief description of all violations or noncompliance.

13. Have soil or groundwater studies been performed on the subject property or adjacent properties? *These reports and test results should be available from the owner/operator of the properties.*

14. Does the local fire department have record of any violations (impacting human health and the environment) of the owner/operator facility? Provide a list or brief description.

15. Has an indoor air quality survey been performed recently? If so, when and what were the results?

16. Has a radon survey been performed recently? If so, when and what were the results?

17. Has a radiological survey been performed recently? If so, when and what were the results?

18. Has an asbestos inspection or survey been performed at the facility before or during occupancy? Are reports available documenting the inspection results? Briefly describe the results or provide the inspection report. *The report can be obtained from the owner or operator of the facility.*

19. Has an UST survey been performed by a qualified engineer? If so, when and what were the results?

20. Were aerial photographs taken prior to the Agency occupying the property? *The United States Geological Survey (USGS) in Reston, Virginia, maintains aerial photographs of the United States.*

21. Has a lead-based paint survey been performed recently? If so, when and what were the results?

22. Has a RCRA facility assessment or investigation been performed in the past or present? Provide a brief description.

Hazardous Materials Usage/Releases

23. Are any automotive or industrial batteries or paints handled or used in large volumes greater than five gallons?

24. Are any industrial drums (15-55 gallons) used, handled, or stored at the facility? If so approximately how many?

25. Was the site ever used for or by commercial tenants handling hazardous waste, military or industrial research, machinery repair, landscaping, mining/quarrying, oil/gas extraction, manufacturing, or agriculture?

26. Are hazardous substances disposed of on-site, injected into groundwater, or discharged into drains, septic systems, ponds, or lagoons?

27. Are there any ponds or collection pits on-site? If yes, what do they contain?

28. Are the signs of stressed vegetation (browned, burned out) or stained soil?

29. Are any leaks, spills, or stains present on the property or in any buildings?

30. What hazardous materials are or have been used, treated, or otherwise handled on-site? *This information can be obtained from material safety data sheets (MSDS) or from the local fire department.*

31. Has there been any history of hazardous or municipal solid waste disposal on-site?

32. Have there been on-site or off-site releases?

33. Are there any drinking water or groundwater monitoring wells on-site?

Storage Tanks

34. Have or are wells, dry wells, or septic tanks operating? Are there any abandoned wells or septic tanks?

35. Are any underground storage tanks on the property, close proximity to the subject propery facility, or on the adjacent property? If yes, complete the UST questionnaire in Appendix O.

36. Are any aboveground storage tanks on or near the property? If so, describe the construction, age, capacity, and contents of the tank(s).

37. Is there staining around any of the storage tanks?

38. Does the AST have secondary containment?

Polychlorinated Biphenyl (PCB) Transformers

39. Are any of the following transformers on-site? Indicate Y or N. ___ electrical transformer; ___ electrical capacitors; ___ hydraulic systems; ___ waste oil tank; ___ other (specify)

40. Has or is any of the equipment leaking or damaged? If leaks or damages have occurred in the past, provide a brief description of the incident and actions taken.

Asbestos

41. When was each building on-site constructed? *Note any construction prior to 1987 that may contain asbestos.*

Pesticides

42. Are or were pesticides used, stored, or manufactured at the site?

43. Has there ever been a spill of pesticides at the site?

Radioactive Materials and Waste

44. Are or were radioactive materials used, stored, or manufactured at the site? Is a Nuclear Regulatory Commission (NRC) license available for review?

45. Has there ever been a radioactive materials release or violation at the site?

46. What engineering controls for radioactive materials are or have been used?

47. Is or has a liquid radioactive waste storage and treatment system been operated at the facility?

48. Is or has liquid radiological waste been discharged to the sanitary sewers?

49. Were or are radiological materials used, or stored in rooms, areas or work surfaces constructed of porous materials, tile floors, concrete, or other surfaces with cracks, crevices, and seams?

Laboratory Operations, Analysis, and Experiments

50. Are or have experiments been conducted in the soils, groundwater, man-made streams, or sediments at the site? Provide a brief description of each experiment.

51. What laboratory bench or pilot-scale operations or experiments have been or are conducted that involve engineering systems or equipment exposure to hazardous materials? Provide a description of each.

52. What treatment systems have been or are in operation including, but not limited to, waste water, water, incinerators, solvent recovery/recycling, elementary neutralization, sanitary?

53. Are or have laboratory activities been conducted in temporary structures or mobile trailers? Provide a description of the structure and associated activities.

54. Are there on-site mobile equipment or temporary structures on site that may require removal, decommissioning, shutdown, or decontamination because of exposure to hazardous or radiological materials? Provide a list and brief description.

# APPENDIX O

# UST / AST QUESTIONNAIRE

# APPENDIX O

## UST / AST Questionnaire

1. **Quantity** - How many underground storage tanks (UST) are at the facility? _____
   How many aboveground storage tanks (AST) are at the facility? _____

2. **Location** - Please attach site maps, facility layouts or provide a description regarding where the tanks are located relative to one another. Include in the map/ layout/ description the location of any groundwater monitoring wells, as well as the proximity of tanks to water retention ponds, surface impoundments, sewer and utility lines, storm/waste water lines, surface water, or stormwater drains?

**3. Ownership and Management** - *Please complete the following matrix for each tank at the facility, adding lines as necessary.*

| Tank ID | Under or Aboveground Tank (UST or AST) | Owner | Operator Name /Organization | Relationship of Operator to Owner |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

*Tank Operator means any person in control of, or having responsibility for, the daily operation of the UST system. Provide the individual's name, organization, and/or relationship to owner.*

4. Who submits required notifications and reports to the implementing agency? (for example, certification of installation, release reports, corrective action plans) (See 40 CFR §§280.22 and .34 for notifications and reports.) _____

5. Who maintains tank documentation (release detection records, notification and reporting activities? _____

   Where is this documentation kept? _____

6. Who oversees and tracks product delivery and inventory control? Please provide the individual's name, organization, and/or relationship to owner. (See 40 CFR §§280.40 and .43) _____

7. Who performs operation and maintenance of the equipment and systems? Provide the individual's name, organization, and/or relationship to owner. _____

8. **Tank Profile** - *Please complete the following matrix for each tank at the facility, adding lines as necessary*

| Tank ID | Tank Capacity | Tank Construction Material* | Piping Material* | Product[1] Stored in Tank | Does tank meet 12/98 standards (Y/N) | Release Detection Method** | What equipment does the tank serve ? | Any release from tank? (Y/N) | Release followup action*** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

* **Construction Material Key**:

a) steel w/o protection b) steel with cathodic protection c) steel with corrosion protection d) vaulted steel e) other metal
f) fiberglass g) fiberglass-reinforced plastic h) steel-fiberglass-reinforced-plastic composite i) unknown j) other _____

[1]Please be specific, including noting if tank contains Heating Oil.

** **Release Detection Key**: *(Indicate "T" for tank and "P" for piping.)*

k) Interstitial monitoring l) Vapor monitoring m) Groundwater monitoring n) Tank tightness testing
o) Manual or automatic tank gauging p) Inventory control process

*** **Followup Release Action Key**:

q) release investigation r) Passive remediation s) Soil removal
t) vapor recovery u) Inert fill material v) other _____

9. Have UST closure activities been performed in the past on any tanks at this facility? ___ Yes ___ No

10. Are groundwater monitoring wells in place? ___ Yes ___ No

11. Are monitoring well data, results, and reports available for the last two years? ___ Yes ___ No

# APPENDIX P

# NUCLEAR REGULATORY COMMISSION REGIONAL OFFICES

# APPENDIX P

## Nuclear Regulatory Commission Regional Offices

The mission of the U.S. Nuclear Regulatory Commission (NRC) is to ensure adequate protection of the public health and safety, the common defense and security, and the environment in the use of nuclear materials in the United States. The NRC's scope of responsibility includes regulation of commercial nuclear power reactors; nonpower research, test, and training reactors; fuel cycle facilities; medical, academic, and industrial uses of nuclear materials; and the transport, storage, and disposal of nuclear materials and waste.

The information for this appendix was extracted from the internet at http://www.NRC.gov. In addition, the following can be obtained from the NRC internet site.

- *"Radioactive Waste: Production, Storage, Disposal"* (NUREG/BR-0216); July 1996
- Index of Radioactive Sealed Sources and Devices by Manufacturer and Model Number http://www.hsrd.ornl.gov/nrc/ssdr/ssdrindx.htm

**Headquarters**
One White Flint North, 11555 Rockville Pike
Rockville, Maryland 20852-2738
Switchboard Telephone Number: 301-415-7000

NRC Regional Offices

Each regional office has its own switchboard, which operates during the normal business hours only. During nonbusiness hours (evening, weekend, and Federal holidays), callers are given the Headquarters Emergency Operations Center telephone number by means of a tape-recorded announcement, or callers may leave a recorded message.

**Region I**
475 Allendale Road
King of Prussia, PA 19406-1415
(EST)
Switchboard Telephone Number: 610-337-5000
Hours: 7:30 a.m.-4:15 p.m., Monday through Friday

**Region II**
Atlanta Federal Center (AFC) Tower
61 Forsyth Street, SW, Suite 23T85
(EST)
Atlanta, GA 30303
Switchboard Telephone Number: 404-562-4400
Hours: 7:30 a.m.-4:15 p.m., Monday through Friday

**Region III**
801 Warrenville Road
Lisle, IL 60532-4351
(CST)
Switchboard Telephone Number: 630-829-9500
Hours: 7 a.m. to 4:45 p.m., Monday through Friday

**Region IV**
Harris Tower
811 Ryan Plaza Drive, Suite 400
(CST)
Arlington, TX 76011-8064

Switchboard Telephone Number: 817-860-8100
Hours: 7:30 a.m.-4:15 p.m., Monday through Friday

**Walnut Creek Field Office**
1450 Maria Lane
Walnut Creek, CA 94598-5388
(PST)

Switchboard Telephone Number: 510-975-0200
Hours: 7:30 a.m.-4:15 p.m., Monday through Friday

**DISPOSAL OF RADIOACTIVE WASTE** (NRC Office of Public Affairs Fact Sheet; internet http://www.nrc.gov/OPA/gmo/tip/drwaste.htm 5/98)

Radioactive materials that result from use of nuclear materials can be separated into two main categories:

1. Effluents - materials discharged to the environment as gaseous or liquid effluents (the active content of these effluents must fall within established Nuclear Regulatory Commission and Environmental Protection Agency limits and must be as low as reasonably achievable) - and

2. Wastes - materials that are of sufficient radiological hazard that they require special care.

Radioactive wastes (the second category) are separated into two broad classifications: "high-level wastes" and "other than high-level wastes." High-level wastes are radioactive wastes produced in the first solvent extraction cycle of fuel reprocessing operations, and spent fuel elements should they be discarded. At present there are no commercial reprocessing operations in this country, and these wastes, for the most part, are contained in the used fuel. The used fuel, which is highly radioactive and requires shielding and remote handling, is stored in specially-designed, water-filled basins or dry casks at commercial power reactor sites or at one away-from-reactor storage facility.

The Nuclear Regulatory Commission has regulatory authority over storage and disposal of all commercially generated wastes and those Department-of-Energy-generated high-level radioactive wastes that are subject to long-term storage and that are not used for, or a part of, research and development activities. Regulations require conformance with minimum acceptable performance criteria for waste management activities, while providing for flexibility in technological approach. These criteria and guidelines are designed to ensure adequate protection of the public health and safety and the environment. Facilities for storage and disposal of high-level wastes licensed by NRC will be designed and operated in accordance with these requirements.

NRC's performance criteria for solidified high-level wastes consider the potential for accidents during interim storage, transportation, handling, emplacement and post-emplacement. Repository siting criteria encompass a broad spectrum of concerns, including earth science, natural resource, demographic and socioeconomic factors.

Low-level wastes, which are generally defined as radioactive wastes other than high-level and wastes from uranium recovery operations, are commonly buried in near-surface shallow trenches, usually in the containers in which they are shipped. There is no intent to recover the wastes once they are buried. There were once six operating commercial facilities in the United States licensed to bury low-level radioactive wastes. They are located at West Valley, New York; Maxey Flats near Morehead, Kentucky; Sheffield, Illinois; Beatty, Nevada; Hanford, Washington; and Barnwell, South Carolina. At the present time, only the latter two sites are receiving waste for burial. The West Valley, Maxey Flats, Sheffield and Beatty sites have permanently stopped receiving wastes. Burial of transuranic nuclides is limited at all of the sites.

The two currently operating commercial burial grounds are located in Agreement States and are regulated by the states. However, the NRC licenses special nuclear material because the quantities received by the commercial operator exceed those that the Agreement States may license under their agreements. The sites are all commercially operated.

Part 61 of the NRC's regulations sets forth the procedures, criteria, terms and conditions for licensing sites for land disposal of low-level waste. The requirements established under Part 61 also provide the basis for Agreement State regulation, since State rules must be compatible with NRC requirements.

# APPENDIX Q

# UNITED STATES GEOLOGICAL SURVEY OFFICES

# APPENDIX Q

## United States Geological Survey Offices

For information on products and services, check the internet (http://www.usgs.gov); use the EARTHFAX fax-on-demand system ( 703-648-4888 ); or call 1-800-USA-MAPS.

The United States Geological Survey (USGS) is organized into the following regions and centers.

| Eastern Region & Headquarters | Central Region | Western Region |
|---|---|---|
| 703-648-4000 | | |
| USGS National Center | U.S. Geological Survey | U.S. Geological Survey |
| 12201 Sunrise Valley Drive | Box 25046 Denver Fed. Ctr. | 345 Middlefield Road |
| Reston, VA 20192, USA | Denver, CO 80225, USA | Menlo Park, CA 94025, USA |

### USGS INFORMATION AND DATA CENTERS

| | |
|---|---|
| Earth Science Information Center | EROS Data Center (EDC) |
| National Earthquake Information Center | National Geomagnetic Information Center |
| National Landslide Information Center | National Water Information Center |

**Earth Science Information Centers** (ESIC) (http://www-nmd.usgs.gov/esic/esic.html) provide nationwide information and sales services for USGS map products and earth science publications. The Centers listed below can fill orders and provide information about:

- Geologic, hydrologic, topographic, and land use maps, books, and reports
- Aerial, satellite, and radar images and related products
- Earth science and map data in digital format and related applications software
- And geodetic data.

**AK-Anchorage** USGS-ESIC
4230 University Drive, Rm. 101
Anchorage, AK 99508-4664
Phone: (907) 786-7011
FAX: (907) 786-7050
Email: gfdurocher@usgs.gov

**CA-Menlo Park** USGS-ESIC
Building 3, MS 532, Rm. 3128
345 Middlefield Road
Menlo Park, Ca 94025-3591
Phone: (650) 329-4309
FAX: (650) 329-5130
Email: esic_west@usgs.gov
TDD: (650) 329-5092

**VA-Reston** USGS-ESIC
507 National Center
Reston, VA 20192
Phone: (703) 648-6045
FAX: (703) 648-5548
Email: esicmail@usgs.gov
TDD: (703) 648-4119

**MO-Rolla** USGS-ESIC
Phone: (573) 308-3500

1400 Independence Road, MS 231 FAX: (573) 308-3615
Rolla, MO 65401-2602 Email: mcmcesic@usgs.gov

**UT-Salt Lake City** USGS-ESIC Phone: (801) 975-3742 TDD: (801) 975-3744
2222 W 2300 S, 2nd Floor FAX: (801) 975-3740
Salt Lake City, UT 84119 Email: slcesic@usgs.gov

**SD-Sioux Falls** USGS-ESIC Phone: (605) 594-6151 TDD: (605) 594-6933
EROS Data Center FAX: (605) 594-6589
Sioux Falls, SD 57198-0001 Email: custserv@edcmail.cr.usgs.gov

**WA Spokane** USGS-ESIC Phone: (509) 353-2524 TDD: (509) 353-3235
US PO Building, Rm. 135 FAX: (509) 353-2872
904 West Riverside Avenue Email: esnfic@mailmcan1.wr.usgs.gov
Spokane, WA 99201

**DC-Washington** DOI-USGS-ESIC Phone: (202) 208-4047
1849 C Street, NW, Rm. 2650 Email: esicmail@usgs.gov
Washington, D.C. 20240

**CO-Denver** USGS-ESIC Phone: (303) 202-4200
Box 25286, Bldg 810 FAX: (303) 202-4188
Denver Federal Center Email: infoservices@usgs.gov
Denver, CO 80225

USGS Information Services (Denver)
Map and Book Sales Phone: (303) 202-4700 or 1-800-HELP-MAP
Fax: (303) 202-4693
Open-File Report Sales Phone: (303) 202-4200
Fax: (303) 202-4695

Where can topographic maps be purchased?

- At any USGS ESIC (listed herein and at http://mapping.usgs.gov/esic/esic_index.html )
- From a local map dealer ( http://mapping.usgs.gov/esic/usimage/dealers.htm )
- By mail through USGS Information Services in Denver, CO.

How much do maps cost?

- Nearly all USGS maps are $4.00 per sheet. A few titles include multiple sheets. A $3.50 handling charge is applied to all orders sent by mail. Call us at 1-800-USA-MAPS for more information.

Where can map index and ordering information be obtained?

- In person at any USGS ESIC
- By phone, call 1-800-USA-MAPS
- By fax, from the fax-on-demand system ( 703-648-4888 ) or 1-800-USA-MAPS (press 4).

Is map data available in digital form? YES.

- On the internet at http://mapping.usgs.gov/www/products/dgeosp1.html
- By phone, call for the information package on digital cartographic data.

Is stream gauging data available for a particular stream?

- USGS has real-time water data online ( http://water.usgs.gov/public/realtime.html ) for many streams. For a specific stream, also refer to the USGS Water Resources Division.

How can aerial photographs be obtained?

- The USGS **Earth Science Information Center** (ESIC) maintains an informational data base of aerial photographic coverage of the United States and its territories that date back to the 1940's. This information describes photographic projects from the USGS, other Federal, State, and local government agencies, and commercial firms. ESIC representatives will assist you in locating and ordering photographs. Please submit the completed checklist, geographic coordinates (if known), and your marked map to any ESIC. The National Aerial Photography Program (NAPP) photography can be researched and ordered online using WebGLIS (http://edcwww.cr.usgs.gov/Webglis/glisbin/search.pl?NAPP).

What are Digital Raster Graphics?

- A digital raster graphic (DRG) is a scanned image of USGS topographic map, including all map collar information. The image inside the map neatline is geo-referenced to the surface of the Earth. The DRG can be used to collect, review, and revise other digital data, especially digital line graphs (DLG). When the DRG is combined with other digital products, such as digital orthophoto quadrangles (DOQ) or digital elevation models (DEM), the resulting image provides additional visual information for the extraction and revision of base cartographic information.

How can Digital Raster Graphics be obtained?

- USGS distributes DRG's on Compact Disc-Recordable (CD-R). The number of files and area covered varies due to the irregularity of land mass shapes. For the contiguous States plus Hawaii, the cells will usually contain sixty-four 1:24,000-scale files, two 1:100,000-scale files, and one 1:250,000-scale file. For Alaska, the cells will usually contain thirty-two 1:63,360-scale files and one 1:250,000-scale file. The price for a USGS CD-R is $32 for one disc, or $42 for two disc sets (plus a $3.50 handling charge per order). Contact any Earth Science

Information Center, call 1-800-USA-MAPS, or go online to the USGS Global Land Information System (WebGLIS) for information on ordering DRG's on CD-R.

# APPENDIX R

# EXAMPLE PHASE I REPORT OUTLINE

# APPENDIX R

## Example Phase I Report Outline

**1.0 Introduction**

**2.0 Site Location and Description**

**3.0 Site Ownership and Use**

- 3.1 Site Ownership
- 3.2 Site Use - Historical
- 3.3 Site Use - Current

**4.0 Site Inspection**

- 4.1 Site Buildings
- 4.2 Site Grounds
- 4.3 Underground Storage Tanks
- 4.4 Aboveground Storage Tanks
- 4.5 Transformers
- 4.6 Asbestos
- 4.7 Indoor Air
- 4.8 Radioactive Materials
- 4.9 Motor Pools, Shops and Laboratories Operations, Analyses and Experiments
- 4.10 Other Information
- 4.11 Facility Records

**5.0 Regulatory Review**

- 5.1 Federal Records
- 5.2 State Records
- 5.3 Local Records

**6.0 Adjacent and Neighboring Properties**

**7.0 Hazardous Materials and Waste Management**

- 7.1 Hazardous Waste Generation, Storage and Disposal Practices
- 7.2 Hazardous and Regulated Materials Management
- 7.3 Nonhazardous Waste Management

**8.0 Sensitive Environmental Areas**

- 8.1 Wetlands
- 8.2 Historic Value
- 8.3 Recreational Land Use
- 8.4 Future Use and Zoning

**9.0 Supplemental Information and Previous Studies**

**10.0 Conclusions and Recommendations**

**APPENDICES**

- Site Location Map
- Site Plan
- Site Photographs
- Site Ownership Records
- Federal, State, Local, and EPA Facility Records
- Aerial Photographs
- List of Chemicals Used and In Use at the Facility
- Material Safety Data Sheets
- Groundwater Monitoring Results
- Previous Site Work Repairs
- Groundwater Monitoring Results
- Soil Boring Data

# APPENDIX S

# PHASE II AND III EDDA CONTRACTOR PROCUREMENT SPECIFICATIONS

# APPENDIX S

## Phase II and III EDDA Contractor Procurement Specifications

The following specifies qualifications for a Phase II EDDA contractor, and was extracted from Federal Aviation Administration (FAA) Order 1050.19.

**a. General**.

Phase II EDDAs are considerably site-specific. Therefore, it is impracticable to prepare specific, minimum contractor specifications for the conduct of these activities. However, like the procurement approach for Phase I EDDAs, when selecting a contractor to assist the Agency in performing Phase II EDDAs, the Agency shall consider the following general requirements:

- An explicit scope of work shall be included as part of the request for proposals (RFP) and contract.
- Interviews shall be conducted with the contractors who meet the standard RFP criteria (including the specific individuals who will be doing the work).
- A recent work product on a related activity shall be reviewed as part of the proposal process.
- All professional references shall be thoroughly verified.

**b. Criteria**.

As stated above, the site-specific nature of the Phase II EDDA precludes the issuance of detailed procurement specifications. The following general criteria shall be used when evaluating the potential Phase II EDDA contractors.

**(1) Firm Experience**.

**i.** Years: 10 (total, all activities)

**ii.** Subject Matter Expertise:

- Environmental science and engineering including, but not limited to, the following disciplines: hazardous site remediation, toxicology, risk assessment, chemistry, geology, hydrogeology, asbestos, hazardous materials management, and industrial hygiene. Regulatory expertise also shall be required.
- Five years of experience in conducting Phase II EDDAs or related activities.

**(2) Project Manager Experience.**

**i.** Years (10)

**ii.** Subject Matter Expertise: Environmental Sciences

**iii.** Degree: M.S. or Ph.D.

**iv.** Professional Affiliations: Professional Engineer's or Geologist's Registration

**v.** Phase II Experience: two years of experience within the last three years.

**(3) Indemnification, Insurance and Bonding**. Insurance and bonding are highly dependent upon the nature and scope of the work to be performed. It is therefore not practical to provide specific levels of coverage. Generally, the contractor shall:

- Be willing to indemnify the Agency for the results of its professional and other negligence
- Possess adequate bonding, including bid bonding, performance bonding, and payment bonding
- Carry limits of errors and omissions insurance
- Carry limits of general liability insurance
- Carry workers compensation insurance
- Provide certificates of insurance (evidencing coverage) for each of the coverages.

**(4) Conflicts of Interest**. Consultants shall not have greater than 50 percent of their work coming from developers or real estate leasing group, the Environmental Protection Agency, or State environmental agencies.

**(5) Report Quality**.

**i.** Report experience should show a similar approach to conducting Phase II EDDAs as outlined in the Agency EDDA Guidelines.

**ii.** Reports should be readable and comprehensible by the lay person.

**iii.** Reports should explain all conclusions and explain the relevancy and implication of findings to the Agency. Regulatory and some legal issues also should be explained.

**(6) Size of the Firm**. The contractor shall have demonstrated capabilities to adequately staff and conduct two Phase II EDDAs concurrently for the Agency.

**(7) Client Experience**. The contractor shall have some experience in working with Federal agencies, although it does not need to be 100 percent of their experience.

**(8) Location**. While the primary contractor shall be easily accessible to the Agency Headquarters, to minimize costs, the contractor shall also have staff in the areas likely to be the location of Phase II activities.

**(9) Information Protection**. The contractor shall have in place a program for ensuring the confidentiality of information provided by the Government. Elements shall include specific standards for labeling information as proprietary and policies for protection of the information, including disciplinary procedures for employees found infringing upon the policy. The contract between the Agency and the contractor must provide that the contractor shall not disclose information obtained from the Agency or related to its relationship with the Agency to third parties without the express consent of the Agency.

**(10) Cost**. Cost shall be reasonable and within the prevailing rates charged by similarly situated contractors.

**(11) Minority/Woman-Owned Business**. Federal agencies, are committed to hiring minority or woman-owned businesses, where all technical qualifications are met.

**c. Evaluation and Balancing**.

The following factors shall be considered:

**(1) Primary Criteria.**

- **i.** Firm and individual consultant experience (years)
- **ii.** Firm and individual consultant expertise (education, work experience)
- **iii.** Insurance and indemnification
- **iv.** Report quality
- **v.** Use and quality of subcontractors
- **vi.** Conflict of interest

**(2) Secondary Criteria.**

- **i.** Location
- **ii.** Size
- **iii.** Confidentiality and document retention programs.

**(3) Additional Criteria to be Considered.**

- **i.** Formal quality control programs
- **ii.** Cost
- **iii.** Minority/woman-owned business status.

# APPENDIX T

# DESCRIPTION OF SAMPLING AND ANALYSIS PROCEDURES

# APPENDIX T

## Description of Sampling and Analysis Procedures

The components of sampling and analysis activities are defined below.

Sampling Objectives

The sampling objectives must be clearly delineated in advance because they will dictate many of the subsequent decisions on methodology, sampling sites, types and number of samples, and proper sample containers.

Constituents to be Sampled

The choice of constituents to be sampled will be guided by the results of the Phase I. Chemicals or other potentially hazardous materials that are known to exist, were at one time present, or were used at the facility should be sampled.

Field Sample Types

The types of field samples taken during the Phase II may include a grab or composite sample. A grab sample is a discrete sample that is collected once. Because it is representative of only one specific sample point at a specific time, it is best used if the source of contamination is likely to be stable over a geographical area. A composite sample is non-discrete, comprised of more than one sample collected at various sampling points and/or times, homogenized and treated as one. Composite samples may give an average concentration or composition and are best used to characterize a location where contamination is not visually evident but may be suspected.

Sampling Locations

Sampling locations and frequency should be discussed in the plan. The locations and distance between sample points will impact the cost of the Phase II activities and the range of data points available to determine the extent of contamination. Sampling locations should be as close as possible to the areas of concern and should be based on the hydrogeologic characteristics of the site, as applicable. The location of sampling is critical in determining the location of the source and the degree of contaminant migration. The number of samples can be an indicator of the validity of the information. The frequency of sampling is also important in determining the validity of information, particularly in the case of surface water and groundwater sampling. For groundwater and surface water the

frequency of sampling will impact the toxicity and mobility levels that vary by season and weather conditions (i.e., results will vary if samples are taken after a severe thunderstorm or during a summertime drought).

Collection and Handling

Collection and handling methods should provide a description of the practices to be used to ensure that samples are not contaminated or otherwise compromised during the sampling, transportation, and analytical process. Sample preservation techniques should be specified to prevent the samples from degrading or transforming, including selecting appropriate containers and properly storing the sample. For example, some compounds could react with plastic containers or degrade if exposed to light.

Quality Assurance (QA)

In addition to the collection and handling techniques, QA samples must also be taken to ensure and document the integrity of all samples gathered at the site. QA samples include duplicate samples, split samples, spiked samples, and blank samples. Exhibit A-9, Definitions, provides a description of each of these. In addition to QA, quality control (QC) procedures ensure analytical accuracy through strict handling and documentation protocols. QA/QC analyses should comply with procedures outlined in Test Methods for Evaluating Solid Waste, Physical/Chemical, SW-846 Manual, 3rd edition or whichever edition is most current at the time of sampling. Items to be included in the sampling and analysis plan include the QA/QC samples and instrument tuning and calibration procedures.

Site Characteristics

Topographic, geologic, and hydrologic characteristics of the site should provide information on the potential for significant impact of contamination on surface and groundwater.

Geographic and Demographics

Area geographic, flora and fauna, and demographic information will help decision makers determine whether any contamination may impact flora, fauna, or human health.

Materials Characteristics

Information regarding the physical properties and hazardous characteristics of the materials involved will allow decision makers

to determine the potential impact on human health and natural resources of any contamination found in the area.

Safety and Health Plan

A safety and health (S&H) plan must be included that specifies how workers will be protected from suspected contaminants during sample collection. The S&H plan must ensure that necessary and careful thought takes place before the project begins, so that needed supporting facilities, equipment, and services are identified or procured in a timely fashion. A written S&H plan also provides a basis for uniform practice for both the worker and the safety professional. Additional S&H plan guidance for sampling and analysis projects can be found in *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* (NIOSH/OSHA/USCG/EPA, 1985).

# APPENDIX U

# EXAMPLE PHASE II REPORT OUTLINE

# APPENDIX U

## Example Phase II Report Outline

**1.0 Introduction**

- 1.1 Summary of Known Information Findings of Phase I Assessment
- 1.2 Scope of Investigation

**2.0 Site Map/Building Plans**

**3.0 Likely Sources of Contamination**

- 3.1 Likely Sources of Contamination
- 3.2 Location of Likely Sources
- 3.3 Approximate Date/Type/Quantity of Release

**4.0 Soil Sampling and Analysis**

- 4.1 Sampling Overview
  - 4.1.1 Types of Samples
  - 4.1.2 Location of Samples
  - 4.1.3 Sampling Objective and Justification
  - 4.1.4 Analytical Parameters Including Justification
- 4.2 Sampling Methods
  - 4.2.1 Sampling Methods and Procedures
  - 4.2.2 Boring Logs
  - 4.2.3 Field Screening Data
- 4.3 Analytical Methods
  - 4.3.1 Analytical Parameters Including EPA Method Number and Detection Limit
  - 4.3.2 Maps and Diagrams Showing the Extent of Contamination
- 4.4 Results
  - 4.4.1 Data Presentation Including Tables
  - 4.4.2 Notation of Results Above Applicable Standards
  - 4.4.3 Maps and Diagrams Showing the Extent of Contamination

**5.0 Ground Water Sampling and Analysis**

- 5.1 Sampling (QA/QC) Overview
  - 5.1.1 Number of Wells
  - 5.1.2 Surveyed Well Location
  - 5.1.3 Well Placement
  - 5.1.4 Well Depth and Screened Interval
  - 5.1.5 Well System Justification
  - 5.1.6 Analytical Parameters Including Justification
- 5.2 Sampling Methods
  - 5.2.1 Well Drilling Methods
    - a. Screening Data in Cuttings/Soil Samples
    - b. Drilling Logs
    - c. Well Construction Descriptions and Diagrams
    - d. Well Development Methods
    - e. Well Stabilization Period
  - 5.2.2 Sampling Methods and Procedures
    - a. Sampling Rationale
    - b. Field Testing Results
    - c. Sampling Frequency
- 5.3 Analytical Methods
  - 5.3.1 Analytical Parameters Including EPA Method Number and Detection Limit
  - 5.3.2 Name and Certification of Laboratory
- 5.4 Results
  - 5.4.1 Data Presentation Including Tables
  - 5.4.2 Notation of Results Above Applicable Standards
  - 5.4.3 Maps and Diagrams Showing the Potentiometric Surface and Extent of Contamination

# APPENDIX V

# SAMPLE LIST OF REMEDIATION TECHNOLOGIES

# APPENDIX V

## Sample List of Remediation Technologies

| TECHNOLOGY | DESCRIPTION |
|---|---|
| Asbestos Containment/Removal | Immobilization of asbestos fibers to ensure that particles cannot become friable. Traditional abatement can also include complete removal of asbestos fibers which can be an extremely expensive procedure. |
| Incineration/Thermal Treatment | Heat is used to concentrate or alter the concentration of soil contaminants. The technology is effective in treating organic wastes; however, it is expensive. |
| Capping/Slurry Wall | Wastes are isolated to prevent migration. This remedial solution is not recommended because it simply contains wastes and does not eliminate significant hazards. |
| Excavation/Off-Site Disposal | Material is transported off-site for disposal at an approved facility. Limited landfill capacity and RCRA Land Disposal Restrictions have made this option increasingly expensive. |
| Bioremediation | Microorganisms are used to consume and render the waste less hazardous. The process is limited by several factors, including salinity of soils, presence of metals, use of designer microorganisms, and toxicity of contaminant substrates. This technology tends to be among the least expensive ones and is gaining public acceptance. |
| Soil Venting | Air is drawn through wells drilled around the treated area and assists in removing volatile chemicals. Soil venting is inexpensive to install and effective for volatile chemicals only. |
| Soil Washing | A washing solution is applied to an excavated area of contaminated soil which removes persistent wastes. The cleaned soil is then returned to the excavation site. This process is effective in treating most contamination, but is expensive and time-consuming for small quantities. |
| Groundwater Pump and Treat | Wells are installed around the site of contamination and water is pumped to retrieve contaminants. This technology tends to be expensive and require many years to effectively remove site contamination. |

# APPENDIX W

# EXAMPLE PHASE III REPORT OUTLINE

# APPENDIX W

# EXAMPLE PHASE III REPORT OUTLINE

**1.0 Introduction**
- 1.1 Summary of Findings from Phase I and II Investigations
- 1.2 Scope of Phase III

**2.0 Site Maps/Building Plans**

**3.0 Sources of Contamination**
- 3.1 Description of Contaminant Sources
- 3.2 Locations of Contaminant Sources
- 3.3 Approximate Date/Type/Quantity of Release

**4.0 Sampling and Analysis Results**
- 4.1 Soil Sampling
  - 4.1.1 Sample Types
    - 4.1.1.1 Procedures for Each Type
    - 4.1.1.2 Boring Logs
    - 4.1.1.3 Physical and Chemical Field Screening Data Quality Objectives
    - 4.1.1.4 Field Analytical Procedures
    - 4.1.1.5 Field Deviations from Sampling and Analysis Plan
  - 4.1.2 Sample Locations
    - 4.1.2.1 Objectives and Sampling Rationale
    - 4.1.2.2 Distribution and Density
    - 4.1.2.3 Deviations from Sampling and Analysis Plan
  - 4.1.3 Laboratory Analysis
    - 4.1.3.1 Laboratory Analysis Data Quality Objectives
    - 4.1.3.2 Analytical Parameters (include EPA Method Number and Detection Limit)
    - 4.1.3.3 Quality Assurance Sample Analysis Results
  - 4.1.4 Sampling and Analysis Results
    - 4.1.4.1 Data Presentation including Tables
    - 4.1.4.2 Discussion of Results
    - 4.1.4.3 Maps, cross-sections, and other diagrams depicting extent of contamination

**4.0 Sampling and Analysis Results (*continued*)**

- 4.2 Groundwater Sampling
  - 4.2.1 Sample Types
    - 4.2.1.1 Procedures for Each Type
    - 4.2.1.2 Physical and Chemical Field Screening Data Quality Objectives
    - 4.2.1.3 Field Analytical Procedures
    - 4.2.1.4 Deviations from Sampling and Analysis Plan
  - 4.2.2 Sample Locations
    - 4.2.2.1 Objectives and Well Placement Rationale
    - 4.2.2.2 Surveyed Well Locations, Depths, and Screened Intervals
    - 4.2.2.3 Sampling Depths
    - 4.2.2.4 Field Deviations from Sampling and Analysis Plan
  - 4.2.3 Laboratory Analysis
    - 4.2.3.1 Laboratory Analysis Data Quality Objectives
    - 4.2.3.2 Analytical Parameters (include EPA Method Number and Detection Limit)
    - 4.2.3.3 Quality Assurance Sample Analysis Results
  - 4.2.4 Sampling and Analysis Results
    - 4.2.4.1 Data Presentation including Tables
    - 4.2.4.2 Discussion of Results
    - 4.2.4.3 Maps, cross-sections, and other diagrams depicting extent of contamination

- 4.3 Surface Water/Sediment Sampling
  - 4.3.1 Sample Types
    - 4.3.1.1 Procedures for Each
    - 4.3.1.2 Physical and Chemical Field Screening Data Quality Objectives
    - 4.3.1.3 Field Analytical Procedures
    - 4.3.1.4 Deviations from Sampling and Analysis Plan
  - 4.3.2 Sample Locations
    - 4.3.2.1 Objectives and Rationale
    - 4.3.2.2 Sediment Sampling Depths
    - 4.3.2.3 Field Deviations from Sampling and Analysis Plan
  - 4.3.3 Laboratory Analysis
    - 4.3.3.1 Laboratory Analysis Data Quality Objectives
    - 4.3.3.2 Analytical Parameters (include EPA Method Number and Detection Limit)
    - 4.3.3.3 Quality Assurance Sample Analysis Results
  - 4.3.4 Sampling and Analysis Results
    - 4.3.4.1 Data Presentation including Tables
    - 4.3.4.2 Discussion of Results
    - 4.3.4.3 Maps and Other Appropriate Diagrams Depicting Contaminant Distribution

**4.0 Sampling and Analysis Results (*continued*)**

4.4 Building HVAC Systems Sampling
- 4.4.1 Sample Types
  - 4.4.1.1 Procedures for Each
  - 4.4.1.2 Physical and Chemical Field Screening Data Quality Objectives
  - 4.4.1.3 Field Analytical Procedures
  - 4.4.1.4 Deviations from Sampling and Analysis Plan
- 4.4.2 Sample Locations
  - 4.4.2.1 Objectives and Rationale
  - 4.4.2.2 Duct Work Sampling Intervals
  - 4.4.2.3 Duct Outlet Sampling Throughput Volumes
  - 4.4.2.4 Field Deviations from Sampling and Analysis Plan
- 4.4.3 Laboratory Analysis
  - 4.4.3.1 Laboratory Analysis Data Quality Objectives
  - 4.4.3.2 Analytical Parameters (include EPA Method Number and Detection Limit)
  - 4.4.3.3 Quality Assurance Sample Analysis Results
- 4.4.4 Sampling and Analysis Results
  - 4.4.4.1 Data Presentation including Tables
  - 4.4.4.2 Discussion of Results
  - 4.4.4.3 Schematic Diagrams Depicting Contaminant Distribution

4.5 Building Surfaces Sampling
- 4.5.1 Sample Types
  - 4.5.1.1 Procedures for Each Type
  - 4.5.1.2 Physical and Chemical Field Screening Data Quality Objectives
  - 4.5.1.3 Field Analytical Procedures
  - 4.5.1.4 Deviations from Sampling and Analysis Plan
- 4.5.2 Sample Locations
  - 4.5.2.1 Objectives and Rationale
  - 4.5.2.2 Pipe Insulation Sampling Intervals
  - 4.5.2.3 Ambient Air Sampling Throughput Volumes
  - 4.5.2.4 Field Deviations from Sampling and Analysis Plan
- 4.5.3 Laboratory Analysis
  - 4.5.3.1 Laboratory Analysis Data Quality Objectives
  - 4.5.3.2 Analytical Parameters (include EPA Method Number and Detection Limit)
  - 4.5.3.3 Quality Assurance Sample Analysis Results
- 4.5.4 Sampling and Analysis Results
  - 4.5.4.1 Data Presentation including Tables
  - 4.5.4.2 Discussion of Results
  - 4.5.4.3 Schematic Diagrams Depicting Contaminant Distribution

**4.0 Sampling and Analysis Results (*continued*)**
- 4.6 Summary of Findings

**5.0 Risk and Future Land-Use Options**
- 5.1 Risk Assessment
  - 5.1.1 Qualitative Risk Assessment
    - 5.1.1.1 Rationale for Performing Qualitative Risk Assessment
    - 5.1.1.2 Discussion of Contaminants of Concern and Pathways Considered
    - 5.1.1.3 Results of Qualitative Risk Assessment
  - 5.1.2 Quantitative Risk Assessment
    - 5.1.2.1 Rationale for Performing Quantitative Risk Assessment
    - 5.1.2.2 Assessment of Carcinogens
    - 5.1.2.3 Assessment of Noncarcinogens
    - 5.1.2.4 Results of Quantitative Risk Assessment
  - 5.1.3 Assessment on Overall Risk of the Property
- 5.2 Future Land-Use Options
  - 5.2.1 Discussion on Future Land-Use Options
  - 5.2.2 Rationale for Selection of Future Land-Use Option
  - 5.2.3 Relationship Between Future Land-Use and Overall Risk at the Property

**6.0 Final Technology or Alternative**
- 6.1 Final Technology or Alternative Selection
  - 6.1.1 Description of Screening Process
  - 6.1.2 Description of Technologies or Alternatives Under Consideration
  - 6.1.3 Comparative Analysis of Technologies or Alternatives
    - 6.1.3.1 Overall Protectiveness of Human Health and the Environment
    - 6.1.3.2 Compliance With ARARs
    - 6.1.3.3 Long-Term Effectiveness
    - 6.1.3.4 Reduction of Toxicity, Mobility, or Volume Through Treatment
    - 6.1.3.5 Short-Term Effectiveness
    - 6.1.3.6 Implementability
    - 6.1.3.7 Cost
    - 6.1.3.8 State Acceptance
    - 6.1.3.9 Community Acceptance
  - 6.1.4 Detailed Discussion of Selected Alternatives
  - 6.1.5 Implementation Plan and Schedule for Selected Alternatives
  - 6.1.6 Statutory Determination for Selected Alternatives

**7.0 Conclusions and Recommendations**

7.1 Conclusions

7.1.1 Summary of Site Characterization

7.1.2 Discussion on Success in Meeting Remediation Goals and Objectives

7.2 Recommendations

7.2.1 Discussion on follow-up Actions

**APPENDICES** (as needed)

- Site location and topography
- Sampling locations and designation (excepts from FSP)
- Site safety and health plan
- Field and boring logs
- QA/QC program and documentation (e.g. chain of custody and laboratory QA/QC program)
- Laboratory analytical results
- Mapping of contamination plumes and zones
- Remedial alternative technical/cost specifications