



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
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**MEMORANDUM**

**Subject:** Ensuring Effective and Reliable Institutional Controls at RCRA Facilities

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**To:** RCRA Directors (Regions I-X)  
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This memorandum<sup>1</sup> emphasizes the need for effective and reliable institutional controls at Resource Conservation and Recovery Act (RCRA) facility cleanups, corrective action and closures where such controls are necessary to provide protection of human health and the environment. It sets forth a number of guiding principles and recommendations that can help EPA and state decision makers on the use of institutional controls at RCRA facilities. Specifically, the following represent important themes that EPA or state personnel should consider in implementing institutional controls at RCRA Facilities:

1. Select and establish effective institutional controls at RCRA facilities and ensure that they are implemented through enforceable mechanisms. Institutional controls can be enforceable by EPA, the states and/or local governments.
2. Work with facility owners or operators to evaluate institutional controls early in the remedial process.

<sup>1</sup> This document provides guidance to EPA Regions and States involved in RCRA corrective action cleanups. It also provides guidance to the public and the regulated community on the implementation of institutional controls as part of a cleanup decision. The guidance is designed to implement national policy on these issues. The document does not, however, substitute for RCRA or EPA's regulations, nor is it a regulation itself. The document does not impose legally-binding requirements on EPA, States, or the regulated community and may not apply to a particular situation based upon the circumstances. EPA and State decision makers retain the discretion to adopt approaches on a case by case basis that differ from this guidance where appropriate. Any decisions regarding a particular facility will be made based on the applicable statutes and regulations.



3. Consider more than one institutional control at a particular facility to increase their reliability (i.e., “layering”) because institutional controls each have their own strengths and weaknesses.<sup>2</sup>

4. Plan for and delineate the roles and responsibilities of the parties involved in implementing, monitoring, and enforcing the selected controls so that they remain effective over the long term.

Part I of this memorandum provides background on the uses of institutional controls. Part II sets forth guiding principles and recommendations for ensuring the reliability of institutional controls that can serve as a starting point when institutional controls are being considered for use at RCRA facilities. Part III provides a list of EPA guidance documents addressing institutional controls, as well as information on a number of key resources, including for example, the list of EPA Institutional Controls Legal Coordinators in each Region. The institutional controls legal coordinators are very important resources as they have significant experience with institutional controls both at Superfund sites and RCRA facilities.

## I. Background

EPA defines institutional controls as “non-engineered instruments, such as administrative and legal controls, that help to minimize the potential for human exposure to contamination and protect the integrity of the remedy.”<sup>3</sup> Such controls provide information and/or restrictions that help modify or guide human behavior at facilities and properties where hazardous wastes and contamination prevent unlimited use and unrestricted exposure. For example, a remedy may use an engineered cap to cover contaminated soils and an institutional control (e.g., an excavation permit) may be used to restrict excavation through the cap. Common examples of institutional controls include permits and orders, zoning, building or excavation permits, well drilling prohibitions, and easements and restrictive covenants. Some states like Illinois, Delaware and Texas have ground water management zones that designate appropriate uses or inappropriate uses of ground water and that may serve as institutional controls at RCRA facilities. A robust institutional controls approach includes evaluating layering institutional controls based on their individual strengths and weaknesses.

The use of institutional controls was the subject of a U.S. Government Accountability Office report entitled, *Hazardous Waste Sites: Improved Effectiveness of Controls at Sites Could Better Protect the Public* (GAO-05-163, March 7, 2005). This report acknowledges the difficult issues that must be overcome to achieve reliable and effective institutional controls. To achieve success in implementing institutional controls, we recommend that up-front planning and adequate monitoring, enforcement, and tracking be conducted to effectively protect human health and the environment. EPA recognizes the challenges associated with institutional controls, and will continue to coordinate our efforts across programs to improve their implementation.

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<sup>2</sup> For more discussion of layering institutional controls see, *Institutional Controls: A Site Manager’s Guide to Identifying, Evaluating, and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups*, OSWER 9355.0-74FS-P, USEPA 540-F-00-005, September, 2000 (“2000 IC Guidance”).

<sup>3</sup> See, the 2000 IC Guidance at page 2.



In the coming years, the RCRA corrective action program plans to achieve the 2008 Government Performance and Results Act (GPRA) goals, including selecting final remedies at 30% of RCRA baseline facilities, and completing construction at 20% of these facilities. Furthermore, EPA's hazardous waste program is putting great emphasis on developing its "2020 Initiative" for completing cleanups at RCRA corrective action facilities. The RCRA Program has a goal that by the year 2020, cleanup of existing RCRA regulated facilities will be completed at the great majority of these sites. However, some ongoing long-term remediation work, and mechanisms for addressing future releases may still be needed at these facilities.

To assist in the implementation of institutional controls in the future, EPA expects that lessons learned at RCRA facilities and at cleanups under other programs will prove beneficial. EPA and the states have gained extensive experience with institutional controls through over a decade of use in final remedies under the Superfund and RCRA programs and have made significant improvements in our approach to implementing them. The Agency has developed guidance on the full life cycle of institutional controls from identification, evaluation, and selection to implementation, monitoring and enforcement.<sup>4</sup> Many states have enacted legislation that improves the availability, reliability, and tracking of institutional controls established under state law. Also, the RCRA program has recently revised its RCRA Info data system so that it can track the implementation of institutional and engineering controls at RCRA facilities.<sup>5</sup>

## **II. Guiding Principles and Recommendations for Effective Institutional Controls at RCRA Facilities**

### *General Considerations*

- When waste is left on site after cleanup and is present above levels that would not be protective in an unrestricted use/unlimited exposure scenario, institutional controls are generally needed to protect the integrity of the remedy by preventing or limiting exposure to remaining hazardous waste and constituents.
- Giving institutional controls adequate consideration throughout remedy evaluation, selection and implementation of cleanup and in all closure activities can greatly improve the protectiveness of the remedy and potentially avoid additional cleanup activities in the future.
- Establishing and implementing institutional controls through enforceable mechanisms can help ensure compliance. Facility permits (e.g., operating, corrective action, and post-closure), post-closure plans, and orders may serve as institutional controls if they appropriately restrict the land and resource uses required by the selected remedy.

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<sup>4</sup> See both the 2000 IC Guidance and the 2002 draft guidance entitled Institutional Controls: A Guide to Implementing, Monitoring and Enforcing Institutional Controls at Superfund, Brownfields, Federal Facility, UST and RCRA Corrective Action Cleanups, December 2002.

<sup>5</sup> The Superfund program is also developing an Institutional Controls Tracking System (ICTS).

Institutional controls need to be effective and reliable for as long as they are needed, including whenever the property is transferred, to protect human health and the environment.

#### *Remedies Requiring Institutional Controls*

- Generally, a remedy that does not allow for unlimited use and unrestricted exposure requires institutional controls to ensure long-term protection of human health and the environment.

#### *Availability and Use of Institutional Controls*

- Because the availability of a particular governmental, enforcement or proprietary institutional control (e.g., zoning or restrictive covenant) for use at a given facility may depend on the state and local jurisdiction in which the facility is located, it is recommended that EPA or the state coordinate with facility owners or operators and local government agencies early during remedy selection to ensure that viable and enforceable institutional control options exist and are available.
- We recommend that institutional controls be fully evaluated for their ability to protect human health and the environment, their availability in the subject jurisdiction, their implementation and maintenance requirements (both legal and practical), their cost (short and long term), and their long term reliability and effectiveness.<sup>6</sup>

#### *Evaluating and Selecting Appropriate Institutional Controls*

- During the evaluation of remedial alternatives by the facility, we recommend that the assessment of potential institutional controls begin as early as possible. When contamination is first discovered at the facility, investigation and implementation of near term engineering or institutional controls may be needed to ensure that people are protected from coming into contact with potentially harmful materials. In addition, an assessment of any long-term institutional controls that may be needed at the facility may begin during the early stages of investigation.
- If the remedial options being evaluated would not allow for unlimited use and unrestricted exposure, the facility should generally identify appropriate institutional controls to ensure that inappropriate uses or unacceptable exposures from residual contamination do not occur.

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<sup>6</sup> For more discussion of useful criteria for assessing institutional controls see the 2000 IC Guidance.



- We recommend a thorough evaluation of the institutional controls prior to remedy selection, including: addressing the institutional control objectives (e.g., preventing dermal contact with contaminated soils, the ingestion of contaminated groundwater, and damage to an engineered cap), assuring that the tools and enforceable mechanisms used to meet the institutional control objectives are available under state and local law, identifying the parties' responsibility for implementing, monitoring, and enforcing the institutional controls and assessing whether these parties have the financial and organizational capabilities and interest to reliably accomplish these tasks (this is both a legal and practical consideration), and that the costs (short and long term), and long-term effectiveness of the institutional control are considered.<sup>7</sup>

#### *Key Considerations When Implementing Institutional Controls*

- The Final Guidance on Completion of Corrective Action Activities at RCRA Facilities (FR Vol.68, No. 37), issued from the Directors of OSW (Robert Springer) and OSRE (Susan Bromm) to the EPA Regions, states that: "EPA generally believes it is appropriate to make a Corrective Action Complete with Controls determination at a facility where ...[among other things]... all that remains is performance of required operation and maintenance and monitoring actions, and/or compliance with and maintenance of any institutional controls. The Corrective Action Complete with Controls determination provides the owner/operator with recognition that protection of human health and the environment has been achieved, and will continue as long as the necessary operation and maintenance actions are performed, and any institutional controls are maintained and complied with."
- The key to effective institutional controls is to get the right information, to the right people, at the right time. To achieve this goal of increasing the effectiveness of the institutional controls, and depending on the institutional control(s) being evaluated, we recommend the use of more than one institutional control and the use of different types of institutional controls.<sup>8</sup> For example, if the remedial objective is to restrict excavation, a possible approach may include requiring a negative easement or restrictive covenant, as well as working with the local government to notify users through a "one call" system. The land use restriction may serve to alert future landowners of the limits on land or resource use, and the "one call" system can provide a warning to excavators or others using the property that may not have access to or knowledge of what is recorded in the land records (e.g., contractors, utility companies).

<sup>7</sup> EPA is reviewing options for estimating institutional controls costs and for developing appropriate guidance. In addition, EPA has supported the development of an analysis by the Environmental Law Institute and Resources for the Future entitled *Estimating the Cost of Institutional Controls*, March 2005, and will continue to monitor the development of cost estimation tools by private entities.

<sup>8</sup> A RCRA order, or a permit, may be used to create "layered" institutional controls by (a) itself, restricting the owner's excavation activities; (b) requiring the owner to place a restrictive covenant on the land to restrict the excavation activities of future owners; and (c) requiring the placement of a colored barrier between clean soil and contaminated soil to alert anyone who inadvertently excavates that there might be an issue.

- We recommend that the parties involved have a clear understanding of their respective roles and responsibilities in the identification, evaluation, implementation and monitoring of institutional controls, along with the authority and financial capacity to fulfill them.
- Special expertise may be needed to develop language for some institutional controls and we recommend that Regional and state attorneys or other institutional control experts be involved in drafting to ensure that the institutional controls can be effectively implemented, monitored and enforced.
- RCRA closure and post-closure regulations require, among other things, that owners or operators of closing hazardous waste management facilities submit a professionally prepared survey plat to the local zoning authority indicating the location and dimensions of landfills or other hazardous waste disposal units and that notice of the type, location and quantity of hazardous wastes be recorded in the land records. Coordination between EPA, state and local government is recommended to implement and monitor these requirements.<sup>9</sup>
- The cost of implementing and monitoring institutional controls should be considered in estimating the total corrective action or closure/post-closure cost, as appropriate, in order to get the true cost of the various remedial alternatives, as well as to assure accurate cost estimates for financial assurance.

#### *Monitoring the Effectiveness of Institutional Controls*

- To ensure effectiveness, we recommend that institutional controls be monitored over the duration of their use. Coordination between EPA, state, and local governments and the facility/responsible party is important so that post-closure land use restrictions, restrictive covenants or local government controls are periodically monitored and remain effective.
- Monitoring for institutional controls may take place in conjunction with facility inspections, such as compliance/enforcement inspections, multimedia inspections, sampling, etc. See Part III of this memorandum for guidance documents that provide more information on monitoring and evaluating institutional controls.

#### *Modifying and Terminating Institutional Controls*

- Generally, EPA or the authorized state should be informed, and its approval sought, before approval or termination of the institutional control.
- Changes to the overall facility operations, changes in local land uses, or other issues may affect the need for, or scope of, institutional controls used as part of a selected remedy. When the institutional control is being implemented by a facility specific mechanism (e.g., RCRA corrective action permit or order and other institutional controls), that document may need to be modified to reflect the current status of the facility.

<sup>9</sup> At federal facilities this coordination should include the lead federal agency.



- It is important to ensure that an enforceable mechanism is in place so that there is compliance with and maintenance of the institutional controls. Permits and orders have been, and will continue to be, used as enforceable mechanisms to assure compliance for as long as the institutional control is necessary. Other enforceable mechanisms also may be appropriate for implementing institutional controls, for example, several States have passed legislation that create mechanisms to enforce institutional controls. In these cases, the institutional control itself may provide an independent enforcement, modification or termination authority to the EPA, state, or local authority. For example, signing as the “agency” in a covenant entered into under a state adopted version of the Uniform Environmental Covenants Act provides EPA or the state authority to enforce the covenant.<sup>10</sup> Thus, for facilities where long term institutional controls are necessary to ensure continued protection of human health and the environment, the regulator may explore a variety of options, including permits, orders, and other enforceable mechanisms to maintain the institutional controls.

### **III. EPA Resources for Additional Information and Assistance**

#### *Regional Institutional Control Coordinators*

Each EPA Region has designated a Regional Institutional Controls Legal Coordinator. These Coordinators have experience with the use of institutional controls at Superfund sites and RCRA facilities and have knowledge of EPA’s policies and guidance documents. The Coordinators are a helpful resource for providing advice and answering questions on the use of institutional controls. Each coordinator has been asked to fulfill the following duties:

- \* Coordinate Regional technical and legal assistance to ensure that institutional controls are sufficiently analyzed and reliably implemented on a facility-specific basis.
- \* Participate on a National Institutional Controls Enforcement Policy Workgroup and assist in the implementation of an institutional controls strategy.
- \* Help review and contribute to the production of institutional controls tools and policies.
- \* Be available to the public to discuss and disseminate information on EPA’s use of institutional controls.
- \* Serve as points of contact to support EPA training on institutional controls.

A list of Institutional Controls Legal Coordinators for each Region is available to EPA employees at <http://intranet.epa.gov/oeca/osre/workgroup/ic.html> and can be made available to the states through the EPA contacts identified in the conclusion section of this document.

#### *Internet/Intranet Resources*

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<sup>10</sup> Also, EPA and the state may be able to directly enforce a restrictive covenant as “third party beneficiaries” to the covenant. See, Institutional Controls: Third Party Beneficiary Rights in Proprietary Controls, April 2004 at <http://www.epa.gov/compliance/resources/policies/cleanup/superfund/ic-thd-pty-rights.pdf>

The Office of Solid Waste and Emergency Response maintains a public Web site with institutional control information at <http://www.epa.gov/superfund/action/ic> (much of the information is transferable across programs).

The Office of Site Remediation Enforcement (OSRE) has an intranet site that currently contains a wide variety of information, including institutional controls guidance, working drafts, model documents, institutional controls workgroup activities, scheduled conference calls, and links to laws and regulations. In the near future, this site will also include summaries of institutional controls related state statutes and Regional pages with information generated by each Region (e.g., training materials). This site is available to EPA employees at <http://intranet.epa.gov/oeca/osre/workgroup/ic.html>.

### *Institutional Controls Guidance*

The following additional guidance documents can be used to assist in the implementation of this guidance memo.

- \* Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups, EPA 540-F-00-005, OSWER 9355.0-74FS-P (2000).
- \* Institutional Controls: Third-Party Beneficiary Rights in Proprietary Controls (2004)
- \* Institutional Controls: A Citizens Guide to Understanding Institutional Controls at Superfund, Brownfields, Federal Facilities, Underground Storage Tank, and Resource Conservation and Recovery Act Cleanups, OSWER 9255.0-98 (2005).
- \* Draft, Institutional Controls: A Guide to Implementing, Monitoring, and Enforcing Institutional Controls at Superfund, Brownfields, Federal Facilities, Underground Storage Tank, and Resource Conservation and Recovery Act Cleanups (final version forthcoming, 2007).

## **IV. Conclusion**

We encourage RCRA program and enforcement personnel to take advantage of some of the lessons learned from experience across remediation programs and to use the internal expertise that has been developed, including EPA's institutional controls guidance documents, to improve the effectiveness of institutional controls at RCRA facilities. To achieve effective and reliable institutional controls, we recommend thoughtful planning, rigorous implementation, and diligent oversight. If you have any questions or comments, we encourage you to contact Gregory Sullivan (OSRE), (202)564-1298, [sullivan.greg@epa.gov](mailto:sullivan.greg@epa.gov) or Carlos Lago (OSW), (703)308-8642, [lago.carlos@epa.gov](mailto:lago.carlos@epa.gov).



cc: Regional Institutional Controls Legal Coordinators  
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