



Association of State and Territorial Solid Waste
Management Officials
Federal Facilities Research Center
Policy & Technology Focus Group

FINAL

Institutional Control/Land Use Control
Documentation And Implementation At Federal
Facilities Issues Paper

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

- 1.0 Introduction
- 2.0 Background
- 3.0 Documentation and Scope of ICs at Federal Facilities
- 4.0 Implementation and Integration
- 5.0 Enforcement
- 6.0 Summary
- 7.0 Appendix A
- 8.0 Appendix B

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Executive Summary

The Association of State and Territorial Solid Waste Management Officials (ASTSWMO) is a non-profit trade organization supporting the environmental agencies of the States and Territories. The Association's mission is briefly stated: "To Enhance and Promote Effective State and Territorial Waste Management Programs, and Affect National Waste Management Policies". ASTSWMO's members are the State managers of hazardous waste, solid waste, and cleanup programs, who are engaged full time in the regulatory and remediation activities of their State environmental agencies, and have hands-on familiarity with the implementation of federal and State statutes, regulations and policies governing federal facilities.

In May 2006, the Policy and Technology Focus Group (PTFG) of the Federal Facilities Research Center (FFRC) of ASTSWMO began researching the various challenges of the documentation, implementation and enforceability of institutional controls/land-use controls at federal facilities. Institutional controls (ICs) or land-use controls (LUCs) are legal and administrative measures used to protect human health and the environment from risk based cleanups in which residual contamination remains on a site. By restricting the use, activities, and access to properties that have residual contamination, the ICs/LUCs minimize, manage or eliminate the potential for human exposure to contamination, thereby mitigating risks. The ICs/LUCs are considered part of the selected remedial action and are used when environmental contamination that is left in place prohibits the unrestricted use of the property. Some common examples of ICs/LUCs include deed restrictions, environmental covenants or easements, zoning restrictions, building or excavation permits, and well-drilling prohibitions. ICs/LUCs can be combined with fences, signs and other physical means of regulating access to form an engineering control (EC). For purposes of this paper, the terms ICs and LUCs may be used interchangeably.

I. Introduction

The purpose of State and federal remediation programs is to protect human health and the environment at contaminated sites. Though ICs/LUCs can be an effective *supplement* to site remediation and corrective action, they are rarely an effective *substitute*. Without effective cleanups, threats to human health and the environment cannot be eliminated. State and federal IC programs should emphasize protection of human health and the environment through actual cleanups, using ICs/LUCs to strengthen or enhance the long-term effectiveness of remedial or corrective actions.

The use of ICs/LUCs at federal facilities presents unique issues due to a variety of circumstances including overlapping roles and responsibilities of the State and federal governments. In addition, the federal government has been somewhat reluctant to place enforceable ICs/LUCs on property it currently owns and/or those that are about to be transferred outside of federal government control. There are also issues with the federal government's ability to place ICs/LUCs on leased property at which it is conducting a cleanup.

II. Background

The DoD and Department of Energy (DOE) often use ICs/LUCs as part of the final remedial decision and action at its facilities. A variety of ICs/LUCs are used at part of the remedial actions, and the type of ICs/LUCs used depends upon a number of factors including whether the facility is an active or transferring facility. For example, DoD's Base Realignment and Closure (BRAC) program and the DOE's reuse and reindustrialization of surplus facilities programs use ICs/LUCs as part of many remedial decisions when full remediation is unrealistic, cost prohibitive, technically infeasible, or overly time consuming. In particular, they use such controls on those properties that are being transferred outside of federal control. Because the ICs/LUCs are so widely employed and are being transferred outside of the control of the responsible party (the party with the knowledge of contamination and the use restrictions), the ICs/LUCs must be clearly defined and well documented. Therefore, oversight and monitoring roles must be fully understood and implemented. Also, appropriate enforcement mechanisms must be in place to ensure long-term protectiveness.

Due to the nature of federal facilities, the implementation of ICs/LUCs at sites presents unique challenges. These challenges differ at active versus BRAC sites or transferring facilities. Challenges include, but are not limited to, such things as: changes of site personnel (the keepers of knowledge); loss of institutional knowledge; insufficient documentation; insufficient tracking or monitoring; failure to enforce; and lack of understanding of roles and responsibilities. This paper will discuss some of these challenges in further detail.

Because there is a regular change of personnel and service personnel at active installations that use ICs/LUCs, and the fact that the ICs/LUCs have not historically been recorded in any kind of deed record, the knowledge of the IC/LUC can be easily lost, forgotten or ignored. Without such information, the actual IC/LUC may be ineffective and may result in a breach of the IC/LUC, posing a risk to human health and the environment.

In order to remain protective, the ICs/LUCs at both active and transferring facilities need to be memorialized in a reliable manner and implemented appropriately through individual State programs. One of the most effective ways to ensure that the ICs/LUCs remain in place and are appropriately implemented is to layer the ICs/LUCs. This provides a series of "nets" to ensure that the ICs/LUCs remain in place, or if not, are "caught" before a breach occurs.

The cleanup party and/or another agency may complete implementation of the ICs/LUCs. For example, at active military facilities the authority for regulating and enforcing ICs/LUCs typically lies with the base commander, in accordance with applicable State law. Because federal, State, and tribal government officials are not always located in the neighborhood of the site, local governments and community members can help to ensure that ICs/LUCs work properly. This can be accomplished through interview and communication with local agencies (health departments, public water authorities, zoning and planning boards, etc.) and already established programs (land use databases, utility location services, IC repositories, etc.). These communications should include

information about the roles and responsibilities regarding the ICs/LUCs that are clearly stated early in the process of choosing the selected remedial action and creating the use restrictions.

Meanwhile, the responsibility for ensuring that ICs/LUCs work at active facilities depends largely on the type of ICs/LUCs and who is conducting or overseeing the cleanup. Overlapping responsibilities sometimes make it difficult to identify the person or entity responsible for the ICs/LUCs compliance. For example, zoning is often the responsibility of a local zoning board; easements are based on State law; and permits or orders can occur at the federal, State, tribal and local level. It is also common for several entities to have some overlapping responsibility for ICs/LUCs. For example, an agency that approves a cleanup frequently has some responsibility for making sure that the ICs/LUCs are implemented and maintained.

Another challenge is that DoD has argued that some proprietary or governmental controls cannot be applied on active federal facilities because a deed does not exist or the landholding federal agency lacks the authority to encumber the property. While States do not necessarily agree with this position, there are many effective ways to ensure that an IC/LUC is appropriately documented. Using these and other tools together can result in effective ICs/LUCs. At active facilities, ICs/LUCs are commonly memorialized in remedy selection documents base master plans, and separate Memorandum of Understanding (MOU). Some federal facilities have used “Notices” with the county recorder of deeds as a placeholder of the IC/LUC until a deed is generated at a later date. A notice with the recorder of deeds can be filed for a property that does not have a deed.

For properties being transferred as part of a base closure, however, DoD has more tools available to memorialize ICs/LUCs. In addition to the decision documents and MOUs, DoD may have the authority to restrict property by retaining a property interest (i.e., an easement intended to assure the protectiveness of the remedy), entering into an enforceable environmental covenant, or entering into separate contractual agreements.

This paper will detail the various types of decision documentation used for memorializing ICs/LUCs at federal facilities, ways to implement and integrate ICs/LUCs at active and transferring federal facilities, and tools for enforcing (including State and regulatory roles) and monitoring ICs/LUCs.

III. Documentation and Scope of ICs at Federal Facilities

This section describes the types of documents that are available to DoD, State and federal regulators, and other interested parties to document applicable ICs/LUCs at federal facilities, as well as the spectrum of information that should be contained within the documents themselves in order to ensure the protectiveness of human health and the environment. The protectiveness of ICs/LUCs used at federal facilities depends upon the availability, implementation, and enforceability of the existing IC/LUC documentation that is available for a selected remedial action.

Across the country, State regulators rely on a wide spectrum of decision documents to memorialize the selected remedy and applicable ICs/LUCs at federal facilities. The ICs/LUCs language that is agreed upon by State regulators is typically documented in the remedy selection, remedy design or other related documents.

Types of Decision Documents

The Comprehensive Environmental Response, Compensation, and Liability Act, (CERCLA) and the Resource Conservation and Recovery Act (RCRA) programs have a number of decision documents/closure plans that are developed and implemented to ensure ICs/LUCs are in place.

The types of decision documents employed to memorialize ICs/LUCs at CERCLA sites are generalized and summarized below:

- A Record of Decision (ROD) is a remedial action plan document that describes the remedy selected for a Superfund site and/or federal facility being managed under CERCLA authority. The ROD document serves as the primary document listing the ICs/LUCs. It is extremely important for States to be aware of the section within the document in which the ICs/LUCs are listed and described. Any changes that significantly or fundamentally affect the remedy selected in the ROD will require more explanation and/or opportunity for public comment. Depending on the extent of change for a ROD, a Memorandum (Memo) or Note to the Administrative Record, Explanation of Significant Differences (ESD) or a ROD Amendment is developed.
- An Interim Record of Decision (IROD) document is often a precursor to the ROD. It is a document that is developed and implemented to protect human health and the environment from actual or threatened release of hazardous substances. These documents have primarily been used for a “quick fix” to address an interim remedy in anticipation of a final ROD that would meet final remedial goals. Site-closeout is not complete until the final ROD is memorialized.

In some instances, the ICs/LUCs might be listed in a Post-ROD document. Said documents may include a Remedial Design or a Remedial Action Plan or Operation and Maintenance Plan. In order for States to maximize their regulatory authority, it is important to have the ICs/LUCs documented in those post-ROD documents that are

recognized as decision documents in the Federal Facilities Agreement (FFA) or similar agreement. Typical documents are the Remedial Design (RD) or Remedial Action Work Plan (RAWP). States should be attentive to the different positions that DoD agencies have regarding IC/LUC documentation. For example, the Navy position (ref. “Principles”) is that the ROD should describe the IC/LUC objectives and refer to the RD or RAWP for implementation actions. The Air Force position, on the other hand, is that the ROD should be streamlined to contain remedial objectives and essential implementation and maintenance actions. The Air Force would determine the detailed steps to carry out actions but these would not be subject to additional regulatory approval and enforcement beyond that applied to the ROD.

ICs/LUCs are also included in the Findings of Suitability for Transfer (FOSTs) or Findings of Suitability for Early Transfer (FOSET). DoD developed guidance in 1998 for obtaining approval for an early transfer for Non-NPL property. The process includes preparation of a Finding of Suitability for Early Transfer. The FOSET document consists of DoD findings and determinations of the status of the environmental investigations on the proposed early transfer property. The FOSET must be reviewed by all parties and submitted for public comment. Once all the documents are complete, and the Governor has approved the early transfer, the property may be transferred.

For cleanups conducted pursuant to RCRA, there are a number of decision documents where ICs/LUCs are documented. They include the following:

- Corrective Action Decision Document – Final Decision and Response to Comments. As outlined in the Final Guidance on Completion of Corrective Action Activities at RCRA Sites (Fed Reg. Vol. 68, No. 37), this decision document allows for a determination of “Corrective Action Complete with or without Controls.” The “with Controls” determination provides the owner with recognition that the protection of human health and the environment has been achieved and will continue as long as listed ICs/LUCs are maintained and complied with.
- Post-Closure Plan and Permit. Although the Five-Year Review process outlined below does not apply to RCRA facilities, periodic review and maintenance of controls can be assured through a continuation of a RCRA permit or enforceable order that has been issued by the State or the Environmental Protection Agency (EPA) region.

The following are often used in conjunction with the terms of the decision documents: Five-Year Reviews, Land Use Control Implementation Plans (LUCIPs), Base Master Plans (BMP), and the Environmental Protection Agency (EPA) and/or DoD Services checklists.

- The Five-Year Review is required by CERCLA when hazardous substances, pollutants, or contaminants are above levels that allow for unlimited use and unrestricted exposure. These reviews provide an opportunity for the responsible party and regulator to evaluate the implementation and performance of a remedy to determine whether it remains protective of human health and the environment.

- LUCIPs are agreements (often non-binding, unless specified in RODs or other decision documents) that formalize the roles and responsibilities of State environmental regulators, local government officials, and stakeholders in the long-term administration and management of ICs/LUCs. LUCIPs can take many forms, and are generally tailored to the site, or the specific type of sites, the relevant regulatory frameworks, and the stakeholders involved in the ICs/LUCs. A well-written LUCIP should also outline the roles and responsibilities of the federal government, local government, State regulator, and other stakeholders.
- Base Master Plans are another tool (discussed in the next section) to ensure that ICs/LUCs are maintained.
- EPA and/or DoD Service Checklists are used to ensure that the IC/LUC documentation for the site, whether it is a BMP, LUCIP, MOU, or environmental covenant, is complete.

Understanding how ICs/LUCs are memorialized is important, however, in order to be effective ICs/LUCs must be implemented and integrated into existing systems and processes. It is the implementation and effective use of these systems and processes that ensure that potential exposure to hazardous substances by humans is eliminated.

General Description of Key IC/LUC Language

Regardless of the decision document or legal mechanism used to document an IC/LUC, there are certain provisions or key language that is necessary for it to be effective and complete. Such information should include, but not be limited to:

- A legal description of the property's metes and bounds that clearly identifies the real estate subject to the ICs/LUCs;
- An affirmation of the current and foreseeable future use(s) of the site during the time that the ICs/LUCs are in place;
- A delineation of the nature and extent of contamination and level of risk associated with the residual contamination at the site;
- A description of the prohibited activities (e.g., digging, drilling, etc.) at the site that would otherwise compromise human health if conducted;
- A statement from the party placing the ICs/LUCs on the property that they will conform with the legal requirements of the applicable State and local law as well as the restriction of land uses noted in the IC/LUC (including enforcement authority against future parties tasked with abiding by the IC/LUCs);
- Commitment that the ICs/LUCs will remain in perpetuity, or until such time that the ICs/LUCs are removed; and
- A description of the party responsible for monitoring the effectiveness and integrity of the IC/LUCs at the site, including monitoring frequency and approach.

Other topics that should be considered when developing and documenting ICs/LUCs include:

- Language that describes the process that will be used to correct violations of the ICs/LUCs, including authority (e.g., State/local laws);
- Language that commits the transferring agency to verify maintenance of ICs/LUCs while in place; and
- Language that describes recording requirements and methods to ensure that future owners are aware of the residual contamination and the ICs/LUCs.

At numerous federal facilities across the country, DoD (e.g., transferring entity), as well as State and Federal regulators, rely on a systematic approach to ensure the appropriateness and validity of the suggested ICs/LUCs language. In June of 2005, the EPA provided ICs/LUCs guidance in the form of a checklist that has served to guide final ICs/LUCs language selection for sites warranting this instrument to protect human health and the environment. While some DoD Services, such as the United States Air Force (Air Force) and the United States Navy (Navy), have their own checklists, for the most part, the EPA checklist is more widely used than the DoD checklists. These checklists can be found in Appendix A.

IV. Implementation and Integration

The purpose of this section is to outline the potential mechanisms that could be used to help ensure the appropriate ICs/LUCs are implemented and maintained so that they provide the protection as intended in the ROD or other decision document. The focus is how these ICs/LUCs can be effectively integrated with operations at active federal facilities and transferring facilities.

A. Active Federal Facilities

The development and integration of ICs/LUCs necessarily involves the identification of the authority and role of those responsible for implementing and maintaining the ICs/LUCs at the active facility. The base commander has the primary authority for all base activities as defined in a typical military chain of command, *in accordance with State law*. The designated authority for implementation and record keeping is usually the head of the environmental or engineering section at the base. ICs/LUCs can also be managed at various regional levels of the chain of command. The Navy, for example, has issued regional instructions (COMNAREG MIDLANT 5090.2) that assign roles and responsibilities and coordinate functions among regional engineering groups, regional project managers and installation commanders.

It is important to identify those plans that must be consulted prior to potential IC/LUC affecting activity. Before a decision document is finalized, each State must consider its own regulatory authorities prior to completing the ROD.

The LUCIP or other post-ROD document sometimes refers to the Base Master Plan as the main integrating document that identifies ICs/LUCs at the facility. Typically, Base Master Plans are used to coordinate long-term planning at the installation. They usually include land use maps and applicable regulated constraints such as wetlands, flood plains, historical designations, etc. They may contain brief descriptions of management plans that affect the site, but may not contain references to a specific document location or relevant office. The LUCIP may be referred to or included as an appendix. However, if the plan is not consulted prior to an activity that may impact the ICs/LUCs, it may not be protective. Environmental impact statements are sometimes relied upon to ensure that ICs/LUCs are evaluated and maintained. They are usually required for major construction projects and include thorough evaluations of environmental impact and regulatory review, but may not apply to smaller projects and maintenance or repair activities.

Some ICs/LUCs and/or LUCIPs require that a preconstruction assessment or similar evaluation be performed before any intrusive land use activity is allowed for a particular area. In order for this requirement to be effective, contact with the appropriate environmental/engineering office must be incorporated into established procedures that allow contractors and others to work at the facility. Other onsite potential land users may also impact ICs/LUCs. Base offices for safety, security, operations/maintenance, even morale/recreation may have responsibilities and control over intrusive activities. For example, at an active naval installation, the relocation of a drainage ditch, and the construction of a mud pit for an annual 8K running race resulted in two landfill cap

breaches in violation of the Base Master Plan. In the case of the drainage ditch breach, the contractors failed to observe signage approximately 100 feet away from the landfill cap. Then in the case of the 8K race, organizers of the race were told to relocate their proposed course away from the landfill cap area, but due to subsequent miscommunication, the original course route was used and the breach occurred. Both of these breaches may have been prevented if the appropriate environment personnel performed follow-up inspections or took similar precautions. In response to these incidents the Navy issued regional instructions (COMNAREG MIDLANT 5090.2) that assign roles and responsibilities, and coordinate functions between regional engineering groups, regional project managers and installation commanders as they relate to the implementation of ICs/LUCs.

On-base education programs and/or notification requirements are another method for ensuring/promoting ICs/LUCs awareness for onsite personnel as well as tenants and visitors. ICs/LUCs information could be incorporated into installation databases and maps.

As previously described, the CERCLA Five-Year Review requires that the responsible party, in conjunction with the regulator, review the site conditions every five years where remedies have been established to ensure that they remain protective. Most LUCIPs require inspections and reporting to regulatory agencies more frequently to ensure the integrity of the ICs/LUCs. Quarterly or more frequent inspections may be necessary for highly sensitive areas and should be tailored to the specific site. Checklists provide specific instructions to address visual inspection and verify ICs/LUC inclusion in relevant procedure and documents. In the various decision documents there are also specific requirements for informing the regulatory agencies of any proposed land use change that may affect the integrity or protectiveness of the ICs/LUCs.

In conclusion, the effectiveness of ICs/LUCs at an active facility is dependent on a number of factors, including how well the LUCIP integrates with established on-base operations to ensure that the intent of the ICs/LUCs is realized, how well the BMP is followed, whether efforts are made to consider the IC's/LUCs, etc. The State regulators' role is to ensure that LUCIP detail and inspection procedures are sufficient to maintain IC/LUC goals and protectiveness.

B. Transferring Federal Facilities

As federal facilities are transferred from federal ownership to non-federal ownership under programs such as BRAC, certain determinations have to be made that the property is suitable for its intended reuse. This is usually a multi-step process often involving investigation, evaluation of remedial alternatives, and remediation or the use of other protective measures to ensure that the site is safe for its intended use. Investigations and remediation are often conducted under CERCLA, RCRA, or another environmental cleanup law. The property is then either cleaned up to unrestricted use, or to another level of restricted use that requires ICs/LUCs. While the ICs/LUCs have likely been memorialized in previous documents, additional documentation may be required to define the mix of responsibilities that is generated by the transfer of property.

1. Future ownership changes

Implementation of ICs/LUCs at transferring federal facilities presents a number of challenges. In order to be effective, the subsequent owners of the property have to be willing and able, or otherwise legally required, to implement and maintain the ICs/LUCs. Sometimes the obligation to do so is documented in the cleanup decision document, and referenced in the transfer agreements and contracts between the federal government and the subsequent non-federal owner, and then from that owner to the next.

If an IC/LUC is used at a site, there are requirements for documentation, notification, implementation, maintenance, monitoring and enforcement of the ICs/LUCs. Like at active facilities, these requirements vary from State to State, from municipality to municipality, from one federal agency to another and from one regulatory program to another. Under a RCRA approach, an agreement may be reached detailing the frequency an IC/LUC tracking/monitoring report should be submitted and the information that it should include. Also, in the CERCLA transfer scenario (see below), the ICs/LUCs could be memorialized in the Finding of Suitability (FOST), or the Finding of Suitability for Early Transfer (FOSET).

ICs/LUCs registries or databases have been established in various States or locales as a resource for listing ICs/LUCs. They have been set up on a Statewide or local basis. To date, there is no national ICs/LUCs registry or database.

2. Reporting and Notification Requirements

With the exception of solid waste landfill deed notice requirements and the notification and documentation requirements of CERCLA as described in Section 3, to date there are no national requirements or systematic approach for reporting ICs/LUCs. ICs/LUCs may be recorded in title documentation or property records that are maintained at the local clerk and recorders office. Some States use environmental covenants, deed restrictions, easements, deed notices, zoning or permits. When ICs/LUCs are used at a site, there are requirements for documentation, notification, implementation, maintenance, monitoring and enforcement. These requirements can vary depending upon the federal agency, the State, municipality, and applicable regulatory program.

States have also created statutory programs to implement and enforce ICs/LUCs. Many have taken the lead from the National Conference of Commissioners on Uniform State Laws (NCCUSL) which developed the Uniform Environmental Covenants Act (UECA), and modeled their law after the same.¹ UECA, which was developed in 2003, is a uniform law that establishes requirements for an “environmental covenant” for sites where environmental contamination remains in place. An environmental covenant is a legal device, based upon traditional property law principles, that is recorded in the local land record, thereby binding successive owners of the property. State and local governments would have clear rights to enforce the land use restrictions throughout the life of the land use restriction and through real estate transactions or legal actions. As of May 10, 2007, seventeen States or territories have adopted the UECA while many other States have introduced UECA legislation in 2007. More information on UECA can be found at: <http://www.environmentalcovenants.org/ueca/UECAnews/UECAnews.htm> Benefits and policy decisions for States to consider prior to adoption of UECA are listed on the ASTSWMO homepage, www.astswmo.org (under Publications – Federal Facilities Research Center).

It may be beneficial for some States to consider modifying their existing registry programs to include data on ICs/LUCs in that State. Doing so may provide another opportunity to notify those who may unknowingly buy, or come into contact with, contamination on those properties with environmental contamination and ICs/LUCs, that the contamination and the restrictions apply. By having a registry, people can research whether ICs/LUCs exist for that property and evaluate the associated risks of that property, and make informed decisions about purchasing the property, or taking action.

3. CERCLA 120(h) Transfer Process

At federal facilities being cleaned up pursuant to CERCLA, CERCLA Section 120(h) also sets forth requirements for documenting ICs/LUCs and notifying others about the ICs/LUCs in place for that facility.

CERCLA 120(h) requires, among other things, that prior to transferring any federal property out of federal hands (regardless of cleanup program), the property must be suitable for transfer. In order to be suitable for transfer, any property where hazardous substances were stored for 1 year or more or known to have been released or disposed of, must have included in the deed transfer a covenant warranting that all necessary remedial action has been taken with respect to that property, per CERCLA Section 120(h)(3)(A). In addition, the transferring federal agency must be able to demonstrate to the EPA that the chosen remedy is “operating properly and successfully” before the covenant required in the deed can be given (see CERCLA 120(h)(3)(B)).

In the event that the remedial action has not been taken, and the federal government still wants to transfer the property, the federal government can get a deferral of the covenant. This is often known as an “early transfer.” In an early transfer, the deed or other agreement governing the transfer must include, among other things, “response action assurances” (see CERCLA Section 120(h)(3)(C)). These are provided to ensure that

¹ According to the UECA website listed above, as of March 15, 2007 nearly half of all States have some sort of law providing for land use restrictions, either through an environmental covenant type law like UECA, or other State statutes.
June 25, 2007

individuals who acquire the property or come into contact with the site will be adequately protected. It also serves as a notification of the contamination and associated ICs/LUCs at the site. These response action assurances must include “any necessary restrictions” on the use of the property to ensure protection of human health and the environment, and ensure that the required remedial action, response action, and oversight activities will not be disrupted.

The federal agency that transfers the federal property is responsible for ensuring that the ICs/LUCs are created, documented, implemented, maintained and monitored. However, in some situations, the federal agency transferring the property may require that the subsequent landowner take on the responsibility for maintaining, monitoring, and ensuring that the ICs/LUCs remains in place and remain protective of human health and the environment. The best way to do this is to establish legal agreements setting forth the ICs/LUCs and the consequences for failure to maintain the ICs/LUCs. As part of these legal agreements, the federal government may be required to provide funding (or an offset of the purchase price) for the new landowner’s agreement to do this. Such an agreement could be documented in the transfer agreements or purchase agreements. However, the federal government remains ultimately liable for ensuring that the ICs/LUCs are implemented and that any remedial action found to be necessary after the date of transfer is completed (see CERCLA Section 120(h)(3)(ii)(II)).

Many States have specific requirements or procedures as to how ICs/LUCs will be used in their State, including documentation, notification, implementation, monitoring and enforcement. Other States or Territories do not have the necessary personnel or structure to record, maintain or enforce these controls. As stated above, this can vary from State to State and depends upon many factors including applicable State law, cleanup program, State policy, or community acceptance.

V. Enforcement

In order for ICs/LUCs to be truly effective in the long-term, legal authority to enforce the limitations or restrictions they impose must support them. It is important to note that differences exist between the enforcement capabilities of federal, State and local governments, and private parties. It is important to have firm legal protocols in place when planning IC/LUC use and implementation of a site. Long-term effectiveness of a control becomes difficult or impossible if the entity responsible for enforcement does not have the means or authorities by which to enforce.

A. State Authority/Roles

How States ensure the effectiveness of the ICs/LUCs at active and transferring federal facilities varies from State to State. Some States such as Florida, Illinois, and Missouri have entered into agreements, such as Post-ROD Federal Facility Agreements (FFAs) or Memorandums of Understanding (MOU), which provide the regulatory framework for monitoring and overseeing the IC/LUC within their State. While the MOU is not considered an enforceable document, it does help the installations document the long established methods for managing ICs/LUCs. The benefit that an agreement of this type provides is accountability in the eyes of regulators that allows for periodic verification that ICs/LUCs are being managed properly.

While installations may have a comprehensive list of ICs/LUCs in their Base Master Plan, LUCIP, or MOU with details including boundaries and expected duration of the ICs/LUCs, the federal facility representatives should also notify regulators of planned property conveyances, including federal-to-federal transfers. Property conveyances could include leaseholds, easements and any other transfer of partial interests in real property, as well as typical land sales or transfers via deed. If the ICs/LUCs are part of a remedial action, the installation generally needs to obtain regulatory concurrence before modifying or terminating ICs/LUCs in order to ensure that human health and the environment are protected.

B. State Registry Programs

Due to these legal issues, States should conduct a deep search in their “tool box” for establishing better mechanisms that can provide assistance, enforcement and monitoring of ICs/LUCs such as Colorado’s Environmental Covenant Statute. In 2001, the Colorado legislature modified the State’s hazardous waste laws to create an environmental covenants statute. Like UECA covenants, described above, these covenants, which are recorded with the deed and run with land, provide a mechanism to ensure that institutional controls that are part of environmental remediation projects are properly implemented, and that engineered structures are protected and maintained so that implemented remedies continue to be protective of human health and the environment for as long as the residual contamination remains a risk. The law also provides a method to enforce the land use restrictions. As part of this program, the Colorado Department of Public Health and the Environment (the implementing agency) also developed a registry list detailing all the environmental covenants in Colorado since the inception of this law. This registry is publicly accessible on its website and useful for those who are interested

in learning of existing environmental covenants in Colorado (see C.R.S. 25-15-101 et. seq.) and provides another layer of communication about existing ICs/LUCs.

State registry programs may provide some benefit to the monitoring and tracking of ICs/LUCs. The federal agency could agree to include its land with residual contamination on a State registry. These types of encumbrances are usually only acceptable on federal lands if it is clear that the federal government has a perpetual obligation and it is very unlikely that the federal government will ever relinquish ownership to a non-federal entity.

States have also considered or are in the process of implementing a program by regulation or legislation that would require current site owners to inspect and certify IC/LUCs compliance. This would provide assurance to DoD that the ICs/LUCs were being observed and would also ensure that current owners were fully aware of IC/LUC restrictions on their property. In addition to the self-certification program concept, random audits with posting on the web by the States may also be a component to the program.

Missouri recently passed the “Missouri Environmental Covenants Act” which requires environmental covenants to run with the land and provides that registered sites file with the county recorder of deeds information detailing the period which the site was used as a hazardous waste disposal area. For active DoD facilities that do not have a deed and utilize their Base Master Plans for recording ICs/LUCs, Missouri has used “Notices” with the county recorder of deeds as a placeholder of the IC/LUC until a deed is generated at a later date (presumably at the date of transfer). A notice with the recorder of deeds can also be filed for a property that does not have a deed.

In Florida, contaminated sites where an institutional control has been imposed must be reported on the State of Florida Department of Environmental Protection's Institutional Controls Registry, or ICR. The Registry is a database of all contaminated sites in the state of Florida that are subject to institutional and engineering controls. This database is located on the Department's website. The website uses ESRI's ArcIMS software Internet mapping technology to help visitors visualize, locate, and identify ICR sites in the state. This registry allows the FDEP to better track these controls and allow for better enforcement of the restrictions contained in the controls. This registry is maintained on the FDEP's Division of Waste Management home page and is available to the public online at <http://www.dep.state.fl.us/waste/> (under “Highlights” topics list).

C. Guidance

EPA is developing guidance to estimate IC/LUC life cycle costs. In doing so, it is attempting to describe the processes and methods for estimating IC/LUC life cycle costs, including IC/LUC implementation, monitoring, information management, enforcement, and termination.

Calculating the life cycle cost of an IC/LUC remains a topic of research and is to some extent controversial, since there are so many variables to consider when estimating these costs. Radioactive sites differ from solvent contaminated sites. Environmental programs

and laws vary from State to State and would impact the funding and execution of a State program that would oversee the tracking and maintenance of ICs/LUCs. States, and other interested stakeholders, should continually re-evaluate estimates for existing IC/LUC life cycle costs, especially once EPA's guidance on life cycle costs is available. This will help to ensure that the estimated costs and associated funds earmarked for these costs are sufficient to maintain the IC/LUC for its intended length of time. This may require that the State collect IC/LUC fees, which are dedicated and preserved solely for IC/LUC maintenance purposes.

VI. Summary

Institutional controls (ICs) and land use controls (LUCs) are legal and administrative measures to protect human health and the environment when the remedial strategy for a site involves leaving residual contamination. ICs/LUCs are intended to control risks from residual contamination by minimizing or eliminating the potential for exposure. This is accomplished by restricting access to, use of, or activities in areas where contamination remains. ICs/LUCs are intended to be an effective supplement to site remedial and corrective action, strengthening their long-term protectiveness. They are not a substitute for action.

There are several unique issues associated with the use of ICs/LUCs on federal property. These include overlapping roles of the federal and State government in implementing ICs/LUCs, reluctance by the federal government to place restrictions on property it owns or is planning to transfer to non-federal ownership, and the ability of the federal government to place ICs/LUCs on leased property being remediated. Examples of general ICs/LUCs challenges inherent to federal property include continuing changes in personnel and loss of institutional knowledge, insufficient documentation, insufficient tracking and monitoring, difficulty or failure to enforce provisions, and lack of understanding of the roles and responsibilities of various individuals and agencies.

Issues can differ somewhat depending upon whether the site is active or is being transferred out of federal control. At active facilities, the authority for regulating and enforcing ICs/LUCs typically lies with the base commander, but communication with local entities (such as health departments, water authorities, etc.) is important to ensure that the ICs/LUCs work properly. Overlapping responsibilities among federal, State, tribal, and local agencies can complicate implementation and maintenance of ICs/LUCs at active facilities. A further complication is that a deed may not exist at a federal facility, or the federal agency lacks authority to encumber the property. For properties being transferred out of federal control, more tools are available to document ICs/LUCs, although effective communication and coordination among several governmental entities remains a significant challenge.

Several types of decision documents are available to memorialize ICs/LUCs. Under CERCLA, a Record of Decision (ROD), Interim Record of Decision (IROD), or a number of types of Post-ROD documents (e.g., Remedial Design, Remedial Action Work Plan, Operation and Maintenance Plan) are examples of documents where ICs/LUCs may be explained and implemented. ICs/LUCs can also be included in Findings of Suitability for Transfer (FOSTs) or, for Non-NPL property, Findings of Suitability for Early Transfer (FOSETs). For sites managed under RCRA, ICs/LUCs can be documented in Corrective Action Decision documents and in a Post Closure Plan and Permit. These decision documents may be supported by Five-Year Reviews, Land Use Control and Implementation Plans (LUCIPs), Base Master Plans (BMPs), and EPA and/or DoD Service Checklists.

Basic provisions of ICs/LUCs include: a legal description of the property; specification of the current and future uses of the site; the nature and extent of contamination remaining and the level of risk associated with this contamination; a description of prohibited

activities in order to control exposure; a statement assuring compliance with ICs/LUCs and applicable State and local laws; and a description of the approach and frequency with which the ICs/LUCs will be monitored for effectiveness. ICs/LUCs may also include language naming the authority responsible for enforcing the IC/LUC and the process that will be used to correct violations, language committing the transferring agency to verify maintenance of ICs/LUCs while in place, and language describing recording and future landowner notification requirements.

The primary responsibility for implementation of ICs/LUCs at active military facilities usually lies with the base commander, with specific activities assigned in a typical military chain of command. In order to be effective, procedures must be in place so that documents recording ICs/LUCs are reviewed prior to any activity that might affect them. Coordination among a variety of facets of the facility, including the environmental/engineering office and offices for safety, security, operations/maintenance, and perhaps even recreation, is needed in order for ICs/LUCs to be effective. On-base education and notification programs are important tools to increase awareness and foster communication.

Implementation of ICs/LUCs at transferring federal facilities requires the willingness and ability of future owners to comply with IC/LUC provisions. Specific requirements can vary depending upon the federal agency transferring the property, the program under which contamination is being addressed (CERCLA, RCRA, etc.) and the State and municipality where the facility is located. With only a few exceptions, no national requirements exist for notification regarding ICs/LUCs, although some States and local governments maintain registries of ICs/LUCs. Some States also have statutory programs to implement and enforce ICs/LUCs that would affect transferred property. In general, the federal agency transferring the property has a responsibility to insure that the ICs/LUCs are properly created, documented, implemented, maintained, and monitored. Under some circumstances, however, the federal agency may require the future landowner to assume responsibility for maintaining and monitoring the IC/LUC.

Approaches to enforcement of ICs/LUCs vary from State to State, including the use of different types of agreements between the State and the federal agency responsible for the land. A number of States have developed registry programs that are useful for monitoring and tracking ICs/LUCs. Some States are also considering placing legal requirements on current owners of transferred federal property to certify compliance with any ICs/LUCs.

Developing, communicating, and implementing ICs/LUCs on federal properties is challenging. In order to be effective partners in the process, States and regional/local agencies need to become familiar with the unique opportunities and limitations associated with restrictions on federal lands and find ways to use their own regulatory tools to strengthen the protectiveness of ICs/LUCs.

The purpose of this paper was to examine how the IC/LUC process applies at active and transferred federal facilities. We hope that this paper provides a framework for States to assess their role in ensuring that ICs/LUCs remain an effective and protective remedy now, and in the future, by looking at how ICs/LUCs need to be evaluated, developed,

negotiated, and once agreed to, adequately implemented, maintained and monitored. It is important that all parties recognize, understand, and acknowledge that IC/LUC implementation at a contaminated site does not end the remedial process at that site, but that instead, it is the beginning of a long-term remedy that must be operated, maintained, monitored, and evaluated for effectiveness for as long as the conditions which predicated the need for the remedy exist.

Appendix A

SAMPLE FEDERAL FACILITY LAND USE CONTROL ROD CHECKLIST WITH SUGGESTED LANGUAGE²

(Navy/Army, DLA RODs, #s 1-9 below and RD/RAWP, #s 10-19 below /Air Force RODs, #s 1-19 below)

Where appropriate, Regions should consider including concepts and provisions in RODs, etc., similar to the samples provided below in order to ensure protective remedies:

- _____ 1. Map/Figure showing boundaries of the land use controls
- _____ 2. Document risk exposure assumptions and reasonably anticipated land uses, as well as any known prohibited uses which might not be obvious based on the reasonably anticipated land uses. (For example, where “unrestricted industrial” use is anticipated, list prohibited uses such as on-site company day-care centers, recreation areas, etc.)
- _____ 3. Describe the risks necessitating the LUCs.
- _____ 4. State the LUC performance objectives. We have had comments on these because several of the objectives have not been clear. The following are some examples of what we have been looking for:
 1. Prevent access or use of the groundwater until cleanup levels are met.
 2. Maintain the integrity of any current or future remedial or monitoring system such as monitoring wells, impermeable reactive barriers.
 3. Maintain the 12-inch vegetative soil layer to limit ecological contact.
 4. Prohibit the development and use of property for residential housing, elementary and secondary schools, childcare facilities and playgrounds.
- _____ 5. Generally describe the LUC, the logic for its selection and any related deed restrictions/notifications
- _____ 6. Duration language: “Land Use Controls will be maintained until the concentration of hazardous substances in the soil and groundwater are at such levels to allow for unrestricted use and exposure.”

²While the checklist applies to land use controls, ROD reviews indicated a slight problem with the Declaration language which often states who selected the remedy. Where that language is included, please ensure that the military service and EPA select the remedy.

_____7. Include language that the [military service] is responsible for implementing, maintaining, reporting on, and enforcing the land use controls. This may be modified to include another party should the site-specific circumstances warrant it.

_____8. Where someone else will or the military service plans that someone else will ultimately be implementing, maintaining, reporting on, and enforcing land use controls, the following language should be included:

“Although the [military service] may later transfer [has transferred] these procedural responsibilities to another party by contract, property transfer agreement, or through other means, the [military service] shall retain ultimate responsibility for remedy integrity.”

_____9. **[ONLY INCLUDE IN NON-AF RODS]** Refer to the remedial design (RD) or remedial action work plan (RAWP) for the implementation actions. Because this is a new idea (i.e., including the LUC implementation actions in either or both of these two primary documents), to ensure that the requirement is clear and enforceable, we developed the following language where it makes sense:

“A LUC Remedial Design will be prepared as the land use component of the Remedial Design. Within 90 days of ROD signature, the [military service] shall prepare and submit to EPA for review and approval a LUC remedial design that shall contain implementation and maintenance actions, including periodic inspections.” Another option is to refer to the enforceable schedule in the IAG for the RD or RAWP.

_____10. Commitment by military service to address any situation that may interfere with the effectiveness of LUC:

“Any activity that is inconsistent with the IC objectives or use restrictions, or any other action that may interfere with the effectiveness of the ICs will be addressed by the [military service] as soon as practicable, but in no case will the process be initiated later than ___ days [10 days suggested] after the [military service] becomes aware of the breach.”

_____11. Commitment by military service to notify EPA of and address any situation that may interfere with the effectiveness of LUC:

“The [military service] will notify EPA and [the state] as soon as practicable but no longer than ten days after discovery of any activity that is inconsistent with the IC objectives or use restrictions, or any other action that may interfere with the effectiveness of the ICs. The [military service] will notify EPA and [the state] regarding how the [military service] has addressed or will address the breach within 10 days of sending EPA and [the state] notification of the breach.”

_____12. Notification to EPA and the state regarding land use changes:

[For closing base]: [We are seeing in military service RODs language requiring the property transferee to notify EPA and the state prior to notifying the military service

about possible land use changes. We have switched that around so that the military service reviews the proposal first. This should save EPA some resources.]

“Prior to seeking approval from the EPA and [the state] the recipient of the property must notify and obtain approval from the [military service] of any proposals for a land use change at a site inconsistent with the use restrictions and assumptions described in this ROD Amendment.”

[For active base]:

“The [military service] shall notify EPA and state ____ days [45 days suggested] in advance of any proposed land use changes that are inconsistent with land use control objectives or the selected remedy.”

_____13. Notification regarding transfers and federal-to-federal transfers:

“The [military service] will provide notice to EPA and [the state] at least six (6) months prior to any transfer or sale of [OUs at issue] so that EPA and [the state] can be involved in discussions to ensure that appropriate provisions are included in the transfer terms or conveyance documents to maintain effective ICs. If it is not possible for the facility to notify EPA and [the state] at least six months prior to any transfer or sale, then the facility will notify EPA and [the state] as soon as possible but no later than 60 days prior to the transfer or sale of any property subject to ICs. In addition to the land transfer notice and discussion provisions above, the [military service] further agrees to provide EPA and [the state] with similar notice, within the same time frames, as to federal-to-federal transfer of property. The [military service] shall provide a copy of executed deed or transfer assembly to EPA and [the state].”

_____14. Concurrence language: “The [military service] shall not modify or terminate Land Use Controls, implementation actions, or modify land use without approval by EPA and the [state]. The [military service] shall seek prior concurrence before any anticipated action that may disrupt the effectiveness of the LUCs or any action that may alter or negate the need for LUCs.”

_____15. Monitoring and reporting language:

“Monitoring of the environmental use restrictions and controls will be conducted annually [or more or less frequently as may be determined to be necessary based upon site activities or conditions] by the [military service]. The monitoring results will be included in a separate report or as a section of another environmental report, if appropriate, and provided to the USEPA and the [the state]. The annual monitoring reports will be used in preparation of the Five Year Review to evaluate the effectiveness of the remedy.

The annual monitoring report, submitted to the regulatory agencies by the [military service], will evaluate the status of the ICs and how any IC deficiencies or inconsistent uses have been addressed. The annual evaluation will address whether the use restrictions and controls referenced above were communicated in the deed(s), whether the owners

and state and local agencies were notified of the use restrictions and controls affecting the property, and whether use of the property has conformed with such restrictions and controls.”

_____ 16. A comprehensive list of LUCs. If the description of the LUCs in #5 above is comprehensive, it could substitute for #16's listing of LUCs.

_____ 17. For active facilities, a description of the internal procedures for implementing the LUCs (e.g., orders, instructions, Base Master Plan) and a commitment by the [military service] to notify EPA in advance of any changes to the internal procedures that would affect the LUCs.

Generally, #s 18 and 19 apply at a BRAC installation, but they may have application elsewhere.

_____ 18. Other property transfer language:

a. “Deed Restrictions: “Each transfer of fee title from the United States will include a CERCLA 120(h)(3) covenant which will have a description of the residual contamination on the property and the environmental use restrictions, expressly prohibiting activities inconsistent with the performance measure goals and objectives.

The environmental restrictions are included in a section of the CERCLA 120(h)(3) covenant that the United States is required to include in the deed for any property that has had hazardous substances stored for one year or more, known to have been released or disposed of on the property. Each deed will also contain a reservation of access to the property for the [military service], USEPA, and [the State], and their respective officials, agents, employees, contractors, and subcontractors for purposes consistent with the [military service] Installation Restoration Program (“IRP”) or the Federal Facility Agreement (“FFA”). The deed will contain appropriate provisions to ensure that the restrictions continue to run with the land and are enforceable by the [military service].”

b. “Lease Restrictions: “ During the time between the adoption of this ROD and deeding of the property, equivalent restrictions are being implemented by lease terms, which are no less restrictive than the use restrictions and controls described above, in this ROD. These lease terms shall remain in place until the property is transferred by deed, at which time they will be superseded by the institutional controls described in this ROD.”

c. “Notice: “Concurrent with the transfer of fee title from the [military service] to transferee, information regarding the environmental use restrictions and controls will be communicated in writing to the property owners and to appropriate state and local agencies to ensure such agencies can factor such conditions into their oversight and decision-making activities regarding the property.”

_____ 19. Ensure that the document adequately describes pre-transfer LUCs, not just post-transfer LUCs.

Appendix B Tools

The Rocky Flats Citizens Advisory Board Stewardship Working Group stewardship toolbox is an analytical matrix designed to help decision-makers ensure that long-term stewardship requirements are thoroughly considered during the remedy selection process. The toolbox is divided into six discrete components of a long-term stewardship analysis which will also become components of a long-term stewardship plan: physical controls; institutional or administrative controls; operational and performance monitoring and maintenance; information management; periodic assessment; and maintenance by a responsible controlling authority. The toolbox lays out a framework for conducting a systematic review of the long-term needs for each of these categories. This document explains how to use the toolbox and explores many of the essential elements of a comprehensive stewardship analysis.

www.lucs.org/files/Stewardship%20Toolbox.pdf