Implementing IC Registries

An IC registry helps ensure the durability and effectiveness of ICs. When creating an IC registry, a regulatory agency discovers, characterizes, displays, and verifies an IC. Note that the term "registry" is a term-of-art within UECA, where the registry is limited to only proprietary controls. The UECA sense of "registry" is not used in this guidance, but instead "IC registry" refers to a catalog of proprietary or governmental permits or enforcement tools and informational documents (see [Survey Results discussion](#)). This section describes basic attributes of an IC registry, as well as procedures to assure that a recently created IC can ultimately be discovered in the state's IC registry.

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The purpose of an IC registry is to allow an agency or stakeholders to access ICs within their jurisdiction. When a registry of ICs is assembled within an IC management program, the desired outcome is as follows:

- An agency has a complete inventory of ICs relied upon in remedies within the jurisdictional boundary. This inventory includes ICs that may have been entered into among agencies with overlapping geographic interest.
- The agency has entered key attributes of the IC into the database.
- The agency maintains an internal and external presentation of ICs.
- The agency maintains and confirms the completeness and accuracy of the contents of a registry at a proper frequency.

A detailed registry can also assure that this outcome can

equally be reflected by the OP, or owner, who may hold one or many ICs.

After an IC is accepted as part of a remedy and implemented, the IC becomes part of a registry. As agencies manage multiple ICs, they may develop a process to assure that the IC information is input into the registry. Ultimately, an IC management program is only successful at those sites where the occurrence of ICs is recognized by the agency. For example, IC monitoring may fail if the IC does not appear in a registry. Or, if the IC has been terminated and the agency is unaware of this termination, the effectiveness of the IC is compromised and may delay the property's return to full use.

Developing IC Registries

Three broad elements create a program to bring ICs into a registry, and then facilitate the use of the registry by the agency, obligated party, or stakeholders:

- **Entry of an IC into a registry—**includes characterizing an IC and entering it into a registry.
- **Agency or obligated party use of an IC registry—**includes maintenance and use of a registry by the agency and, in some cases, by obligated parties that may hold a large number of ICs.
- **Public use of an IC registry—**includes use by the general public and specialized users such as local government, a water resources agency, or other public or private entity.

Maintaining IC Registries

An effective long term IC management program depends on timely discovery and accurate input. Discovery at implementation establishes an immediate baseline for further IC management elements. Maintaining an IC registry can be challenging

because the proprietary ICs are typically recorded by an entity other than the environmental agency that is responsible for tracking the ICs. For example, a governmental control might be recorded by a local agency while a proprietary control is typically recorded at a local land records office, or an enforcement document may have been generated by a federal agency, not the state agency charged with tracking the ICs. Furthermore, state agencies are complex, and ICs may have been generated within an agency or division different from that responsible for maintaining the ICs. Because ICs may be recorded outside of the agency, ICs should be included in the agency's IC tracking database. The process of documenting an IC within a registry may vary by the type of control.

Entering an IC consists of entering the required information into the registry, and then characterizing the land use restrictions, affirmative obligations (such as requirements to provide periodic inspection/monitoring reports, certifications, and requirements to notify regulators upon land transfers), geographic extent, and other attributes important to the users and the other elements of an IC management program. Another aspect of the IC registry maintenance would be to ensure compatibility with operating systems of those who may need to access information or data in the registry. As technology and software change, the registry also evolves in order to remain compatible and searchable by agencies and stakeholders. Registry updates require a long-term financial commitment to ensure compatibility; otherwise the registry becomes outdated and the money spent to originally develop the registry has been wasted.
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Agency Use of a Registry

An agency may use the IC registry as an ongoing resource to inform location, monitoring, tracking, and maintenance of ICs. The registry is often part of a broader state land contamination management system. Use of the registry may

include:

- scheduling IC obligations
- documenting points of contact for LTS roles and responsibilities
- preparing invoices for land stewardship
- describing inspection results
- documenting IC breaches or noncompliance
- describing response actions for noncompliance
- documenting IC compliance reporting
- tracking enforcement referrals
- managing ICs, terminated issuance, modification or termination of ICs, or permits
- generating and tracking periodic reporting and certification obligations, or other reporting responsibilities by the obligated party
- providing outreach to stakeholders

Public Use of an IC Registry

For the public, the IC registry is an authoritative resource to search for and learn about ICs. These uses may include:

- finding an IC via search form or map
- viewing the registry in a tabular (grid) format with multiple attributes and hyperlinks
- displaying the registry in a map view showing either the point or polygon limits of the IC
- determining what restrictions have been implemented on a site

Representative IC Registries

IC registries vary in scope across state agencies, and comparable registries exist for obligated parties that hold multiple ICs. Several selected practices to build IC registries are summarized in Table 4. The registries examined

and discussed here include those from New Jersey, California, Missouri, Washington State, Idaho, the U.S. Navy, and Terradex (ITRC BRNFLD-3, 2008 SECTION 5.13). Additional information on each registry is included in state registry examples (click the registry program in the left column to open each example).

Table 4. Summary of IC registries
▼Open table

Program	Registry Includes	Entering ICs into Registry	Agency Use of Registry	Public Use of Registry
California	Two Registries: • State Water Resources Control Board – registry GeoTracker • Department of Toxics Substance Control – registry Envirostor	• A project manager at DTSC creates as an "activity" in the database of an IC (deemed an environmental covenant or deed restriction). • The project manager scans the recorded IC and uploads the document within the IC activity form. • Within the DTSC database, one of the final steps is choosing the "Restricted Uses" from a dropdown menu.	An IC registry is formed through search within the EnviroStor platform. This search approach provides for not only discovery of sites with ICs, but also listings of affirmative obligations such as inspections that are pending.	The public view of the IC registry on EnviroStor consists of search, grid view, and map view.

Missouri	• The Missouri IC registry is maintained by the Missouri Department of Natural Resources (MDNR). • The registry is encompassed by the Site Management and Reporting System (SMARS). Missouri SMARs overview	• MDNR maintains an internal multiuser database that allows the characterization of ICs. • All attributes except the geographic boundaries of the IC are entered into SMARS including restrictions, affirmative obligations, and monitoring results. • The SMARS database organizes IC obligations with an LTS section of the database.	Not Available	• MDNR maintains an LTS web page, which introduces the duties of MDNR to manage postremedial obligations. • The page also describes LTS tools to the public. Additionally, the page links to the Hazardous Substance Site Locator. • A public user can search for a cleanup site by county, city zip code, or specific address.

| New Jersey | Proprietary controls, government controls, and enforcement status | • Bureau of Case Assignment and Initial Notice performs an initial review for completeness.
• Includes permit processing steps and completion dates as well as the biennial certification due dates and agency inspection schedule.
• Subscreens of Financial Assurance, monitoring, and inspection requirements | Case type, responsible bureau and staff | • Using GeoWeb can search street address, Program Interest Number, CEA (Classification Exception Area), Deed Notice
• Can identify nearby features such as schools, child care facilities, gas stations, dry cleaners, historical fill, and contaminated areas. |

Washington	• The IC catalog in Washington State is part of an internal database (Integrated Site Information System) maintained by the State Department of Ecology (WA DOE Integrated Site Information System). • This database is not limited to proprietary controls and government controls (easements, permits) and also includes other types of alternative ICs.	• Once an IC has been implemented, it is scanned and uploaded and the details of the IC are entered into the internal database, including any required future activities associated with the IC (such as a five-year review). • IC data are entered into Washington's internal database by a WA DOE cleanup site manager, or administrative staff serving that cleanup site manager), upon discovery.	• The agency view of the IC registry is part of the internal database that contains a description and cleanup data for all sites in Washington's cleanup program. • IC data are found in a subsection of this database and contains a list of required activities or obligations associated with an IC.	• Public view of the IC registry in Washington is provided through a web-reporting tool. • This tool allows the user to search by parameters such as address, city, agency, and region. The results are provided in a variety of tabular forms. • A map search is not available.

| Idaho | • Once an IC is received, the IC information is entered into two systems.
• The HP Trim system stores the document associated with the IC along with other remedy documents.
• The IC boundary is delineated into a polygon by departments mapping staff. | • The data within the TRIM system and GIS are consolidated into a web platform that contains both mapping and documentation.
• The platform maintains backend access for the Idaho Department of Environmental Quality (IDEQ) staff to characterize the ICs, and then confirm that the characterized ICs are visible for public review. | • The Idaho registry of environmental covenants is a web-based display offering both grid and map view.
• The grid view supports search for ICs by type of IC, city, address or other keyword search.
• The response summarizes IC conditions, carries a link to the associated covenant, and a view to the map | • The IDEQ maintains a facility mapper that displays the occurrence of ICs (Figure 3-21).
• This searchable map allows the public to discover cleanup sites by program as well as by keyword search by site name. When covenants are present, a tab is revealed to allow download of the instrument. |

| Navy | The Navy maintains the Land Use Control (LUC) Tracker. The LUC Tracker is representative of a sophisticated inventory used by a responsible party. | Not Available | • This Navy LUC Tracker system is not publicly available, but the results of the inspections are available as part of the five year reviews and other site specific reporting documents.
• The Navy must approve users for access to the Navy LUC Tracker to maintain security at the installations. The Navy RPM and the appropriate managers within the Navy can access the information.
• The information may be made available to other stakeholders who need access and have the required security clearance. | Not Available |

Terradex WhatsDown	The Terradex WhatsDown registry is representative of a commercial service that aggregates multiple IC registries to form a comprehensive nationwide IC registry.	Terradex collects the ICs by downloading registries from agency databases that are either present on the web or requested through the Freedom of Information Act.	>Ideally, IC registries should provide an authoritative and easy-to-use source of information about ICs, their characteristics, and location for agency use. Because ICs carry monitoring and inspection duties, having these obligations cataloged complements other representations of land use restrictions.	The IC registry in WhatsDown is called *Environmental Protections* to inform the public user of the generic purpose of the IC. The registry is responsive to mobile, phone, or desktop use.

Evaluating IC Registries

State and responsible party IC registries offer many services to different parties. Maintaining current information in the registry offers up-to-date information on the condition and the status of the IC. Registries also inform current and future land use decisions about areas on and near the property.

▼*Read more*

Evaluation of Entry into IC Registries

In general, IC registries are developed for the structured attributes of the IC and for the storage of relevant documents; however, accurately describing the boundaries of

ICs, graphically or with written text, often lags other information. States have built databases that allow the structured characterization of ICs, but the entries into the registries are not standardized across states or across agencies when there is overlap.

As the use of ICs is relatively low among cleanup sites, managers often lack the expertise to characterize ICs or to realize which elements of an IC are missing. For example, if the property covered by an IC is geographically described in metes and bounds, a manager may not be familiar with this English derived system that is used to describe general boundaries of a property.

[Washington](#) Department of Ecology's identified shortcoming in their approach in that cleanup site managers typically have few sites where ICs are part of the remedy. As a result, most site managers are not familiar with the procedures necessary to document and describe an IC in the database. To improve the system, the Department of Ecology has implemented a policy that details every step in the process of implementing an IC. This policy includes a comprehensive list of the steps to be followed by the property owner and the state cleanup site manager. This process includes the initial drafting of the IC, the recording process, and entry into the state database (personal communication, Bob Wenzlau, Terradex).

Evaluation of Agency Use of IC Registry

Ideally, IC registries provide an authoritative and easy-to-use source of information about ICs, their characteristics, and location for agency use. Because ICs carry monitoring and inspection duties, having these obligations cataloged complements other representations of land use restrictions.

Registries often lack overview inventories of ICs. For example, in California the overview can only be formed through a search. Additionally, summary listings of IC affirmative

obligations are difficult to create.

Evaluation of Public Use of IC Registries

Agencies interested in monitoring the performance of public use of IC registries can benefit by using standard data formats such as IC extensible markup language (XML), which allows user experience rather than data integrity to be assessed. Some commercial tools use IC XML standard data formats. Standard data formats allow application creators to focus on user experience rather than data integrity. The application then allows the public to easily find and understand the IC information.

Typically, the responsive framework first configures the application for mobile devices, a common means of public access to online information. Next, the application initially orients the map from the user's location using the shared GPS coordinates. The ICs are sometimes called "Environmental Protections," which more clearly communicates the relevance of the ICs. Finally, a common representation is given regardless of the jurisdictional source of the IC. For instance, ICs from USEPA are listed along with ICs from the state.

Model Program and Best Practices for IC Registries

A model IC management program initially includes procedures that efficiently and effectively maintain a catalog of ICs, regardless of programs or jurisdictions.
▼*[Read more](#)*

Entering an IC into a Registry

Entering an IC into a registry should generate an automatic notice to the agency when the proprietary IC is recorded (see [California Case Study](#)).

1. Create and implement a procedure to be followed by any cleanup site manager who may implement ICs as part of a remedy. This procedure offers instruction on the best and most consistent method for adding any new IC to the agency registry, catalog, or database.
2. Add a requirement that ICs include a decimal degree latitude and longitude location to describe the boundaries of the ICs (see [New Jersey Case Study](#)).
3. Require notice to the applicable regulatory agency of the IC if the ordinance is to be modified or terminated by the government entity.

Agency View and Use of an IC Registry

The registry allows characterization of proprietary controls, governmental controls, enforcement documents, engineering controls, and informational devices.

- The registry manages affirmative obligations.
- The IC inventory identifies sites with affirmative obligations and track deliverables such as groundwater monitoring submittals.
- The agency should assign a cleanup site manager to sites with affirmative obligations, especially in cases where ongoing data submittals require analysis.

Public Use of an IC Registry

The registry identifies parcels with land use restrictions, which aids members of the public who are considering property transactions.

- ICs should be searchable by location.
- Any use restrictions should be summarized in plain language without losing the full meaning and description of the IC.
- Geographic description of the IC should be given in latitude and longitude.
- Information on ICs should be able to be easily shared.

- IC iconography (symbolic representation) should be consistent and capable of communicating with all the potential users.