Association of State and Territorial ASTSWMO Solid Waste Management Officials

ECOS

EPA United States Environmental Protection Agency

NALGEP

Long Term Stewardship Roundtable and Training

April 4th and 5th, 2007

Morning sessions for
Thursday, April 5

Long Term Stewardship Roundtable and Training
April 4th and 5th, 2007

Morning Sessions for Thursday, April 5

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Presentation slides are not included for all presenters, and session summaries are not included for the training sessions.

Long-Term Stewardship Roundtable and Training
April 4-5, 2007
San Diego, California
Session Summary

Session Title:	**Managing Site Data…or How to Change Your Tires While the Car is Moving!**
Date and Time:	Thursday, April 5, 2007, 8:30 a.m., Session A
Speakers:	Shannon Similai, CA DTSC Ben Adams, Oak Ridge Site Specific Advisory, Oak Ridge, TN Paul Locke, MA DEP Trey Hess, MS DEQ

The key themes of this session outline the organizational and technological changes that states and local governments must cope with in managing site data.

Presentations

Shannon Similai Presentation
California's EnviroStor Database

Ms. Similai reviewed California's EnviroStor database and discussed the type of information available, the process used to create the database, and future plans to upgrade the system.

- EnviroStor is a site information database, available to public online (www.envirostor.dtsc.ca.gov).
- The database has searching capabilities that allow users to search by location, type of contaminant, site type, site status and site identification code.
- EnviroStor catalogues publicly available reports, including land use restrictions.
- Display results can be viewed in tabular or map formats, with Google maps providing base layer imagery for the mapping display.
- Land use restriction interface allows users to see all land use controls (LUCs) attached to sites.
- Database supports uploading of any file type.
- As part of this effort, California DTSC is planning to go a step further and provide online public access to shapefiles showing parcels and geographic areas where ICs are in place. These will be available through the mapping system.

Questions related to the presentation were as follows:

- What level of effort was required to develop this system?
  - California DTSC used two staff and developed the system over six months for about $100,000. The 128(a) grants can be used to pay for developing systems like this one.

- How popular is this Web site?

- Over the last 90 days the site received roughly 400,000 hits. The public comment form has not yet captured any negative comments. Public feedback has helped to clarify site locations. Users are generally satisfied with the system.

Ben Adams Presentation
Oak Ridge DOE Reservation

Mr. Adams discussed the role and ongoing information exchange efforts of the Oak Ridge Site Specific Advisory (ORSSA), a community-based group established to ensure public awareness of long-term remediation plans for the Oak Ridge DOE Reservation site. Mr. Adams is a resident of Oak Ridge, Tennessee and a member of the ORSSA.

- The US Department of Energy site at Oak Ridge operated as a plant for nuclear weapon development during the Manhattan Project.
- Mapping the Oak Ridge Reservation has been completed and made publicly available.
- Mr. Adams is a member of a 20-person scientific advisory board of citizens and Department of Energy representatives that is working to share information with the public and help incorporate community concerns into the remedial planning process at the Oak Ridge Reservation.
- Public land records in Anderson County, Tennessee that store information about long-term stewardship issues at the site. The State of Tennessee has been able to require that the Department of Energy provide land record updates to County and Statewide land record information systems.
- Department of Energy updates to land record systems have been needed to replat and place additional restrictions at properties as waste facilities. Land transfers have not been occurring at the site.
- A key consideration is that the land record system and public information exchange is handled by the County government. The ORSSA Board trusts the County to manage the records and mapping. It is important to recognize that this is a small experiment, only in operation at one site.

Paul Locke Presentation
MS DEQ Bureau of Waste Site Cleanup

Mr. Locke described the ongoing efforts to manage ICs and site data at the Massachusetts Department of Environmental Protection, Bureau of Waste Site Cleanup.

- Evolution of technology in program management at DEQ has required the government to change the way it does business.
- An online file review system in Massachusetts has electronic submittal protocol for the regulated community to upload files to Mass DEP's Website. Program staff at the department gain few benefits from the system, which makes it difficult to track permitting and administrative documents. This challenge highlights the need to ensure that information technology initiatives and department program goals are well coordinated.

- Web sites can provide multiple portals to access the information people may need. Maps may be one entry point, but databases and municipal Web sites can also help the public access site information.
- An Activities and Use Limitations (AULs) land use control mapping layer is available as a Google Earth layer.
- The Massachusetts Registry of Deeds is managed by counties. Deeds are available online.
- What information do you want to share, and why do you want to share it? Can you help improve efficiency and make less work for staff? If you do that, will it get you where you need to go?
- Language and accessibility is important to consider. People must be able to accurately interpret the information that statistics make available.
- Applying pressure up the chain of command was an important point in this presentation. Helping departmental management to understand why to care about information sharing will likely be an ongoing challenge for program staff.

Questions related to the presentation were as follows:

- What have been some of the results of applying pressure and what benefits have come from your efforts to improve accessibility to data?
  - Saving paper and money to pay for space to store paper documents.

- What has been your experience with converting site information into accessible language?
  - Mass DEP has only made a small amount of progress in this area, but hopes to keep making data available and easy to interpret.

Trey Hess, MS DEQ Presentation

MS DEQ Brownfield Program

- Mississippi's Department of Environmental Quality (MS DEQ; www.deq.state.ms.us) has been working to develop a system for environmental information sharing with the community and contractors needing site information. Mr. Hess presented a big picture goal for online information sharing.
- The Brownfield Program Agreement site database tracks site names, identification information, site contacts, COCs, remedial components, ICs, and provides a link to a PDF of a Brownfield Agreement (a document signed by MS DEQ and the PRP outlining land use controls required for the site).
- This database effort has been initiated within the Brownfields program as a pilot. The department hopes to expand this model to all of Mississippi's waste response programs.
- Site engineering drawings in TIFF format are layered in a Google Earth interface to show site information.
- Anticipated challenges include applying the approach in place in MS DEQ's Brownfield Program to other programs and communicating key information to construction workers, public works directors, and small town government staff.

Group Discussion

- **Accessibility and Appropriate Site Documentation**
  - Participants discussed the difference between data and a document. What is important to an end user may differ significantly from what is important to a state waste clean up program staffer or a public works employee. State programs know that translating site documentation into accessible data for the public is important but expensive and challenging for states with limited resources. Waypoints along the path of information available online can provide different levels of information targeting different users. The end goal should be to provide decision documents or permits with required signatures and stamps of approvals to legitimize the information.
  - One data system for multiple programs can help reduce the complexity for public users and simultaneously allow program staff to work together to share information. Electronic reporting mandates from state legislatures are becoming an important issue for state programs.
  - Data tends to be succinct and can be misleading in a world where site information contains a certain level of uncertainty.
  - Permitting is the top priority for MS DEQ. Above all, site data management needs to be designed to support the permitting requirements of various programs.

- **State Level Leadership and Lessons Learned**
  - There is a need for an effort to identify the lessons learned from states.
  - It is important to make the most out of available resources. State hazardous waste management departments do not have endless budgets. Using geospatial technology to develop maps of key, visually appealing site data can go a long way toward convincing upper level management that it is worthwhile to invest in information exchange.
  - There is a need to develop systems for coordinating between IT and program staff. IT staff focus on developing the infrastructure to run efficient programs. IT initiatives need to remain focused on the end program goals.

- **Deciding What Information to Make Available on a Web Site**
  - In California, EnviroStore just shows major milestones but will eventually have all the data.
  - MS DEQ's system is geared towards sharing information with consultants and PRPs in a way that is cost effective. The department shares information that is readily available but is hesitant to post all available site information. PRPs and site contractors will likely need to visit the sites and the DEQ in order to gather all necessary site data. If contractors need detailed site information, they should probably come out to the site.
  - In Massachusetts, DEP is archiving all hardcopy site documentation, but cataloguing key milestones for data sharing with public. Starting with the information that is easy to share has been a successful approach in Massachusetts.

GIS information for Massachusetts already exists for sites with activity and use limitations, and this information could be made more accessible to the public.

- In the City of Oak Ridge, the Scientific Advisory Board communicates site information to the public by sending out postcards via U.S. mail.

Use of Web-Based Data System for Access to Information on Institutional Controls and Contaminated Sites

Shannon Similai

EnviroStor Administrator

California Department of Toxic Substances Control, Site Mitigation & Brownfields Reuse Program

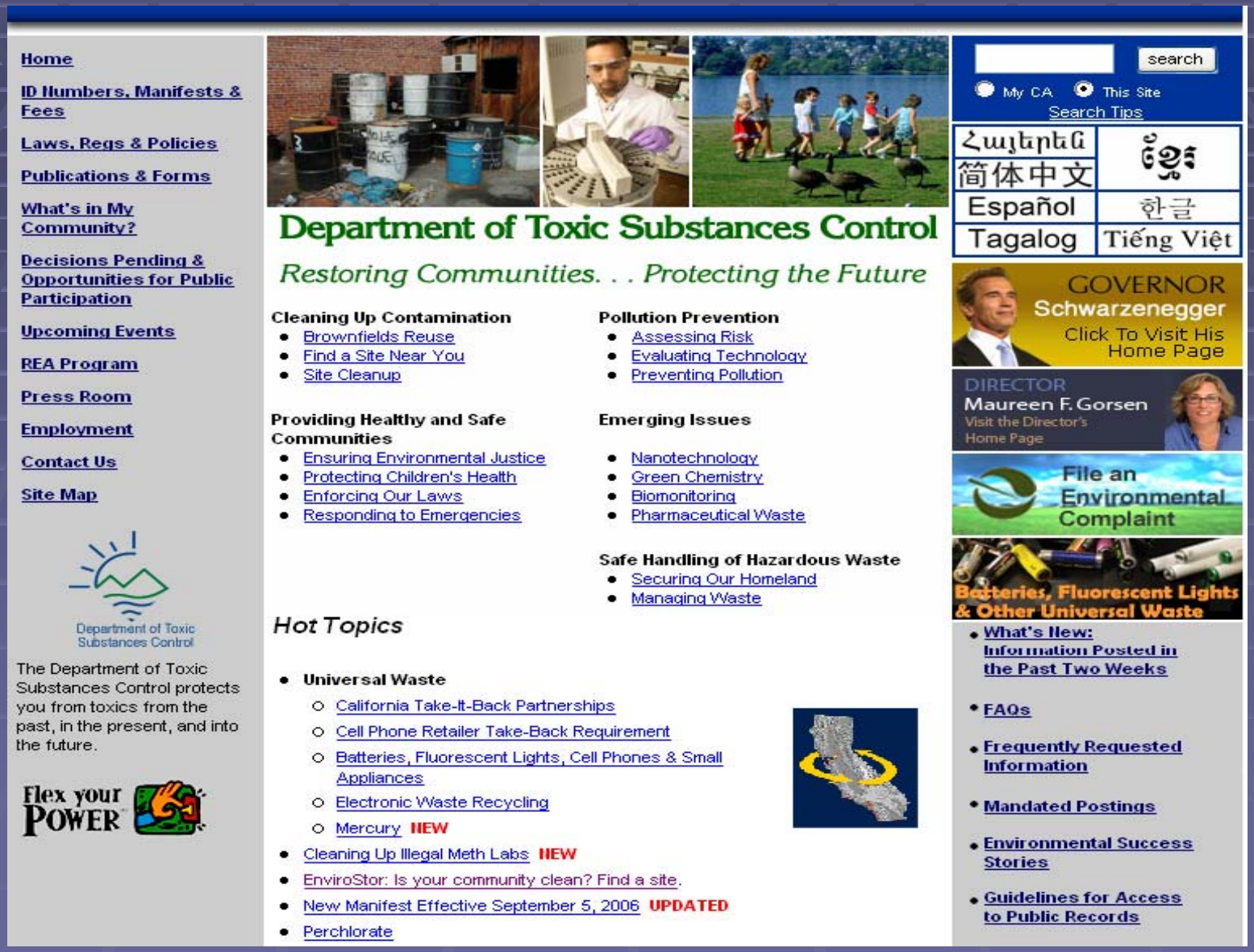
Overview

1. EnviroStor
2. Google Maps – EnviroStor Maps
3. Public Land Use Restriction Information
4. Challenges and Opportunities
5. The Future for IC Monitoring

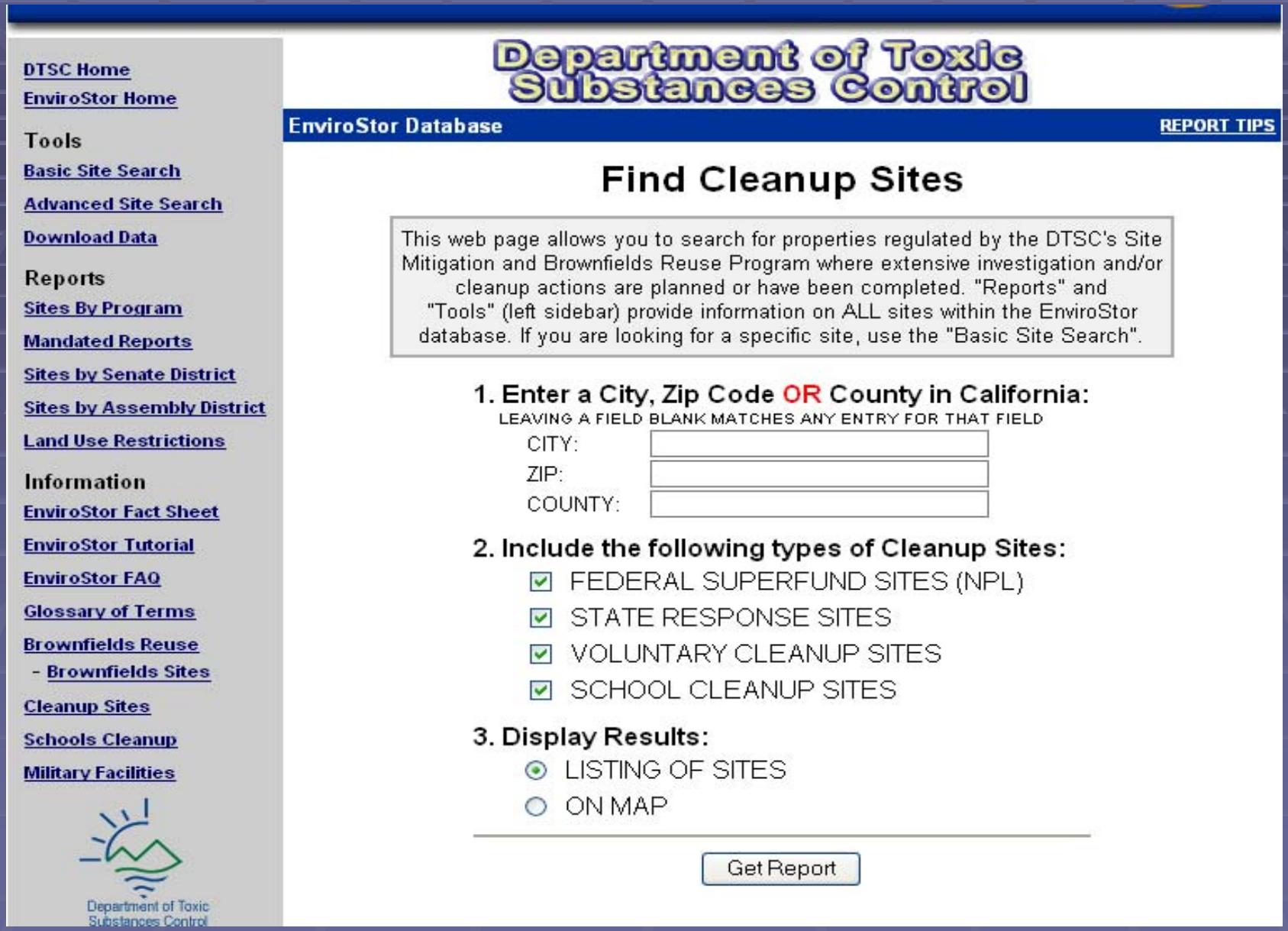
EnviroStor

1. Comprehensive cleanup site database
2. Publicly accessible via the Internet
3. www.dtsc.ca.gov “Find a Site Near You”
4. Public documents, detailed site information
5. Maps, DTSC contacts
6. Public version/regulator version
7. Transparency in government

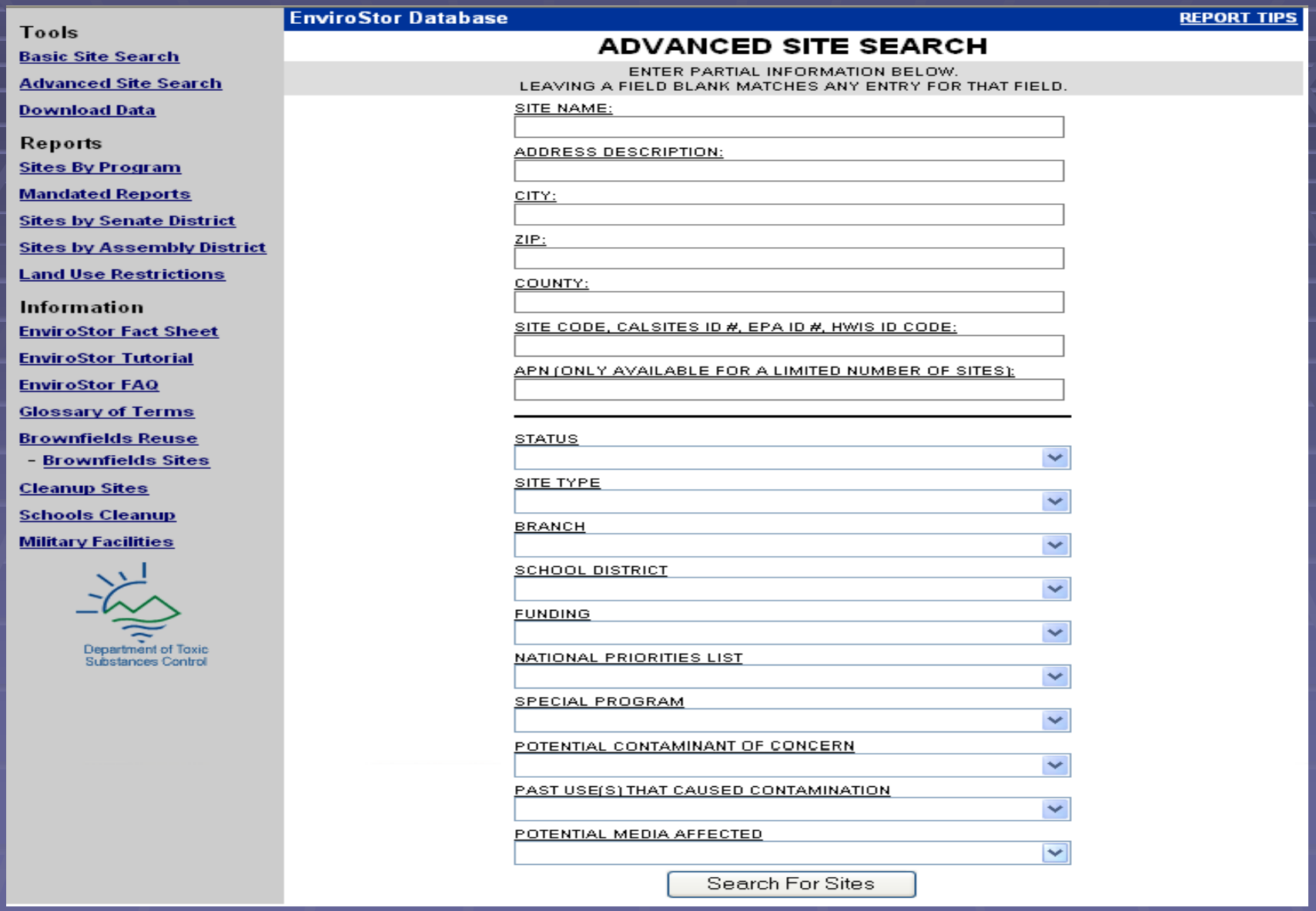
DTSC Public Website Home Page



EnviroStor Home Page



Advanced Site Searches



Land Use Restrictions

Department of Toxic Substances Control

EnviroStor Database - BACK TO ENVIROSTOR HOME — REPORT TIPS

[VIEW PRINTER FRIENDLY VERSION] STATUS: All Statuses GO

SEARCH CRITERIA: ALAMEDA, FEDERAL SUPERFUND SITES (NPL), STATE RESPONSE SITES, VOLUNTARY CLEANUP SITES, SCHOOL CLEANUP SITES

PROJECT SEARCH RESULTS 175 RECORDS FOUND EXPORT TO EXCEL PAGE 1 OF 4

		SITE NAME	SITE TYPE	STATUS	ADDRESS DESCRIPTION	CITY	ZIP	COUNTY
[REPORT]	[MAP]	528 LEWIS STREET	STATE RESPONSE	CERTIFIED	528 LEWIS STREET	OAKLAND	94607	ALAMEDA
[REPORT]	[MAP]	5A RENT-A-SPACE	STATE RESPONSE	ACTIVE	2201 CLEMENT AVENUE	ALAMEDA	94501	ALAMEDA
[REPORT]	[MAP]	63RD STREET TRUNK SEWER PROJECT	VOLUNTARY CLEANUP	NO FURTHER ACTION	63RD STREET	EMERYVILLE	94608	ALAMEDA
[REPORT]	[MAP]	A. BERCOVICH 18TH STREET	VOLUNTARY CLEANUP	ACTIVE - RESTRICTED USE	1639 18TH STREET	OAKLAND	94607	ALAMEDA
[REPORT]	[MAP]	ACTION PLATING (2W)	STATE RESPONSE	ACTIVE	10132 EDES AVENUE	OAKLAND	94603	ALAMEDA
[REPORT]	[MAP]	AERO QUALITY PLATING	VOLUNTARY CLEANUP	ACTIVE	710 73RD AVENUE	OAKLAND	94621	ALAMEDA
[REPORT]	[MAP]	ALAMEDA NAS	FEDERAL SUPERFUND - LISTED	ACTIVE	2,616 ACRES IN ALAMEDA, CALIFORNIA	ALAMEDA	94501	ALAMEDA
[REPORT]	[MAP]	ALAMEDA NAVAL AIR STATION EAST HOUSING	STATE RESPONSE	CERTIFIED - RESTRICTED USE	950 W. MALL SQUARE	ALAMEDA	94501	ALAMEDA
[REPORT]	[MAP]	ALAMEDA NAVY SUPPLY CENTER (NSC) ANNEX,	STATE RESPONSE	ACTIVE - RESTRICTED USE	2155 MARINER SQUARE LOOP	ALAMEDA	94501	ALAMEDA
[REPORT]	[MAP]	ALAMEDA, NAVAL AND MARINE RESERVE CENTER	STATE RESPONSE	ACTIVE	2144 CLEMENT AVENUE	ALAMEDA	94501	ALAMEDA
[REPORT]	[MAP]	AMCHEM PRODUCTS, INC - FORMER HERBICIDE STORAGE AREA	STATE RESPONSE	CERTIFIED	37899 NILES BOULEVARD	FREMONT	94536	ALAMEDA
[REPORT]	[MAP]	AMCO CHEMICAL	FEDERAL SUPERFUND - LISTED	ACTIVE	1414 THIRD STREET	OAKLAND	94607	ALAMEDA
[REPORT]	[MAP]	AMTRAK MAINTENANCE FACILITY	VOLUNTARY CLEANUP	ACTIVE	3RD & UNION STREETS	OAKLAND	94607	ALAMEDA
[REPORT]	[MAP]	APPLIED BIOSYSTEMS	VOLUNTARY CLEANUP	CERTIFIED / OPERATION & MAINTENANCE - RESTRICTED USE	6001 SUNOL BOULEVARD	PLEASANTON	94566	ALAMEDA
[REPORT]	[MAP]	ASCEND SITE	SCHOOL CLEANUP	INACTIVE - NEEDS EVALUATION	3709 EAST 12TH STREET	OAKLAND	94601	ALAMEDA
[REPORT]	[MAP]	ASHLAND CHEMICAL	STATE RESPONSE	REFER: RWQCB	8600 ENTERPRISE DRIVE	NEWARK	94560	ALAMEDA
		ASPIRE SCHOOL SITE/66TH	SCHOOL					

Land Use Restrictions Report Results

Department of Toxic Substances Control

EnviroStor Database - BACK TO ENVIROSTOR HOME — REPORT TIPS

SITES WITH LAND USE RESTRICTIONS — EXPORT TO EXCEL

	SITE NAME	AREA	SUB-AREA	SITE TYPE	STATUS	ADDRESS	CITY	ZIP	COUNTY	DATE RECORDED
VIEW COVENANT	241 SIXTH STREET	PROJECT WIDE		VOLUNTARY CLEANUP	CERTIFIED / OPERATION & MAINTENANCE	241 6TH STREET	SAN FRANCISCO	94103	SAN FRANCISCO	6/17/1994
VIEW COVENANT	518 MINNA STREET APARTMENTS	PROJECT WIDE		STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	518 MINNA STREET	SAN FRANCISCO	94103	SAN FRANCISCO	12/30/1994
VIEW COVENANT	A Z DECASING COMPANY	PROJECT WIDE		STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	1420 SOUTH SIGNAL DRIVE	POMONA	91766	LOS ANGELES	3/19/2003
VIEW COVENANT	A. BERCOVICH 18TH STREET	PROJECT WIDE		VOLUNTARY CLEANUP	ACTIVE	1639 18TH STREET	OAKLAND	94607	ALAMEDA	3/27/2006
VIEW COVENANT	ACME-STOCKTON GALVANIZING WORKS	PROJECT WIDE		STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	540 WEST SCOTTS AVENUE	STOCKTON	95203	SAN JOAQUIN	8/17/1989
VIEW COVENANT	ACME-STOCKTON GALVANIZING WORKS	PROJECT WIDE		STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	540 WEST SCOTTS AVENUE	STOCKTON	95203	SAN JOAQUIN	1/25/1991
	AGRICULTURAL TRACT	PROJECT WIDE		VOLUNTARY CLEANUP	CERTIFIED	1030 APOLLO COURT	ANTIOCH	94509	CONTRA COSTA	6/30/2005
	ALAMEDA NAVAL AIR STATION EAST HOUSING	EAST HOUSING		STATE RESPONSE	CERTIFIED	950 W. MALL SQUARE	ALAMEDA	94501	ALAMEDA	7/20/2000
	ALMADEN QUICKSILVER COUNTY PARK	PROJECT WIDE		STATE RESPONSE	CERTIFIED / OPERATION & MAINTENANCE	ALAMITOS ROAD / HICKS ROA				
	AMERICAN FOREST PRODUCTS - FORESTHILL	PROJECT WIDE		VOLUNTARY CLEANUP	NO FURTHER ACTION	2380 ROA				
	AMERICAN FOREST PRODUCTS - FORESTHILL	PROJECT WIDE		VOLUNTARY CLEANUP	NO FURTHER ACTION	2380 ROA				
	AMERICAN OLEAN TILE COMPANY	PROJECT WIDE		VOLUNTARY CLEANUP	NO FURTHER ACTION	8250				
	AMERICAN STANDARD	PROJECT		VOLUNTARY	CERTIFIED /					

Land Use Restriction

W. - 94-F627583-00
Check Number 112
Friday, JUN 17, 1994 14:40:48
REC $59.00 MAG $55.00 MIC $1.00
STP $54.00
Total- $169.00 Nbr-0000186835
REEL 6155 IMAGE 0594

COVENANT
TO RESTRICT USE OF PROPERTY
Located At
241 Sixth Street
San Francisco, California

Recording Requested By:

The Knox Partners Limited Partnership
230 Fourth Street
San Francisco, CA 94124

When Recorded, Mail To:

Barbara Cook, Chief
Site Mitigation Branch
Department of Toxic Substances Control
700 Heinz Avenue, Suite 200
Berkeley, California 94710

This Covenant and Agreement ("Covenant") is made on the 15th day of June, 1994, by The Knox Partners Limited Partnership ("Covenantor"), which is the owner of record of certain property located at 241 Sixth Street, City and County of San Francisco, State of California, described in Exhibit "A" attached hereto and incorporated herein by this reference ("Property"), and by the California Department of Toxic Substances Control ("Department"), with reference to the following facts:

A. The Property consists of one parcel, identified as Lot 7A of Assessor's Block 3732, in the City and County of San Francisco, California. The Property has 8,000 square feet.

-1-

Department of Toxic Substances Control

EnviroStor Database — REPORT TIPS

VIEW PRINTER FRIENDLY VERSION

DTSC Home
Envirostor Home

Tools
Basic Site Search
Advanced Site Search

Reports
Sites By Program
Mandated Reports
Sites by Senate District
Sites by Assembly District
Deed Restrictions

Information
Brownfields Reuse
- Brownfields Sites
Cleanup Sites
Schools Cleanup
Military Facilities

Department of Toxic Substances Control

241 SIXTH STREET - (MAP) - (GOOGLE MAP)
241 6TH STREET
SAN FRANCISCO, CA 94103
SAN FRANCISCO COUNTY
SITE TYPE: VOLUNTARY CLEANUP
ACRES: 0.18 ACRES
APN: Lot 7A Block 3732
NATIONAL PRIORITIES LIST: NO
CLEANUP OVERSIGHT AGENCIES:
DTSC - SITE MITIGATION AND BROWNFIELD REUSE PROGRAM

PROJECT MANAGER: MONICA GAN
SUPERVISOR: BARBARA COOK
DIVISION / BRANCH: NORTH COAST
ENVIROSTOR ID: 38990011
SITE CODE: 200322
ASSEMBLY DISTRICT: 13
SENATE DISTRICT: 03
SPECIAL PROGRAM: VOLUNTARY CLEANUP PROGRAM
FUNDING: SITE PROPONENT
PRESS CONTACT: ANGELA BLANCHETTE

COMMUNITY INVOLVEMENT

STATUS
CERTIFIED / OPERATION & MAINTENANCE AS OF 1/1/1995

LAND USE RESTRICTIONS

	DATE RECORDED	SITE MANAGEMENT REQUIREMENTS
VIEW COVENANT	6/17/1994	LAND USE COVENANT, NOTIFY PRIOR TO SUBSURFACE WORK, ACTIVITIES PROHIBITED WHICH DISTURB THE REMEDY AND MONITORING SYSTEMS WITHOUT APPROVAL

REGULATORY PROFILE
PAST USE(S) THAT CAUSED CONTAMINATION
ILLEGAL DUMPING

POTENTIAL CONTAMINANTS OF CONCERN
LEAD - CONFIRMED
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS) - CONFIRMED

POTENTIAL MEDIA AFFECTED
SOIL

SITE HISTORY
The site was formerly a marsh land which was filled in with contaminated soil containing lead and polycyclic aromatic hydrocarbons (PAHs). The Site was redeveloped into a multi-story affordable housing complex.

FUTURE ACTIVITIES

Site Report

- Link to Zeneca Profile

ZENECA RICHMOND AG PRODUCTS -
(MAP) - (GOOGLE MAP)
1415 SOUTH 47TH STREET
RICHMOND, CA 94804
CONTRA COSTA COUNTY
SITE TYPE: STATE RESPONSE OR NPL
ACRES: 86 ACRES
APN: 560-050-016, 560-050-020, 560-050-022, 560050023, 560010046, 560-050-007, 560-050-021
NATIONAL PRIORITIES LIST: NO
CLEANUP OVERSIGHT AGENCIES:
DTSC - SITE MITIGATION AND BROWNFIELD REUSE PROGRAM - LEAD

PROJECT MANAGER:	LYNN NAKASHIMA
SUPERVISOR:	BARBARA COOK
DIVISION / BRANCH:	NORTH COAST
ENVIROSTOR ID:	07280002
SITE CODE:	201624 - East Stege Marsh
ASSEMBLY DISTRICT:	14
SENATE DISTRICT:	09
SPECIAL PROGRAM:	
FUNDING:	RESPONSIBLE PARTY
PUBLIC PARTICIPATION SPECIALIST:	DIANE FOWLER
PRESS CONTACT:	ANGELA BLANCHETTE

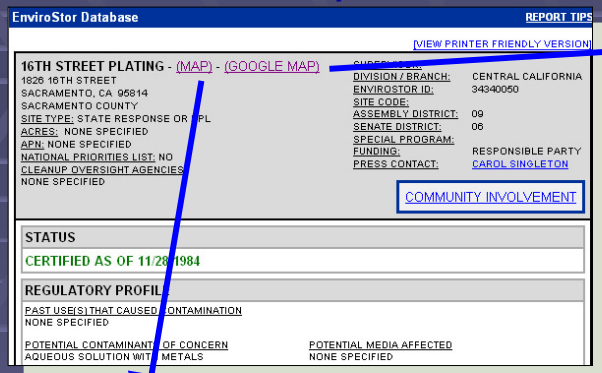
COMMUNITY INVOLVEMENT

STATUS

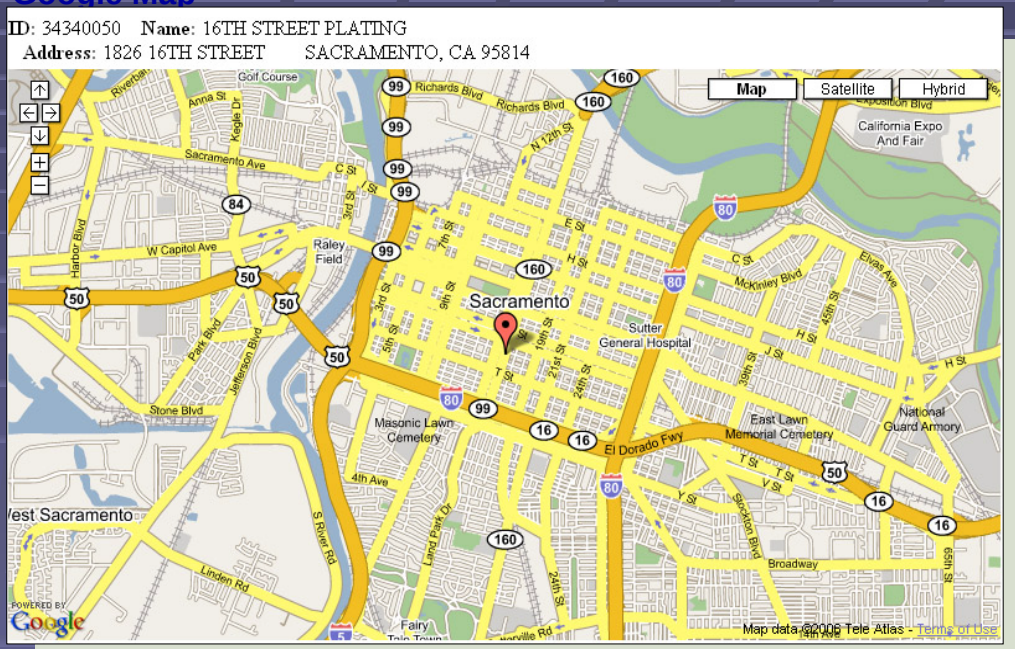
ACTIVE AS OF 11/6/2004

EnviroStor Maps

EnviroStor Profile Report



Google Map



EnviroStor Map

Satellite view

Hybrid view

The Map Quest

1. What do you want out of your maps?
2. What features are you looking for?
3. Google maps
4. State maps
5. How to go about it
6. Future plans

The Challenges

1. What did it take to get here?
2. EnviroStor – getting the support
3. IT vs. Program
4. Legislative mandate for IC data
5. Public web site vs. regulator web site
6. Fear of going “live” to the public

More challenges/opportunities!

1. Data migration, data entry, mapping
2. From clerical to project manager responsibility
3. “EnviroSuck”
4. Too many priorities – too little time/money
5. EPA support

IC's and Brownfields

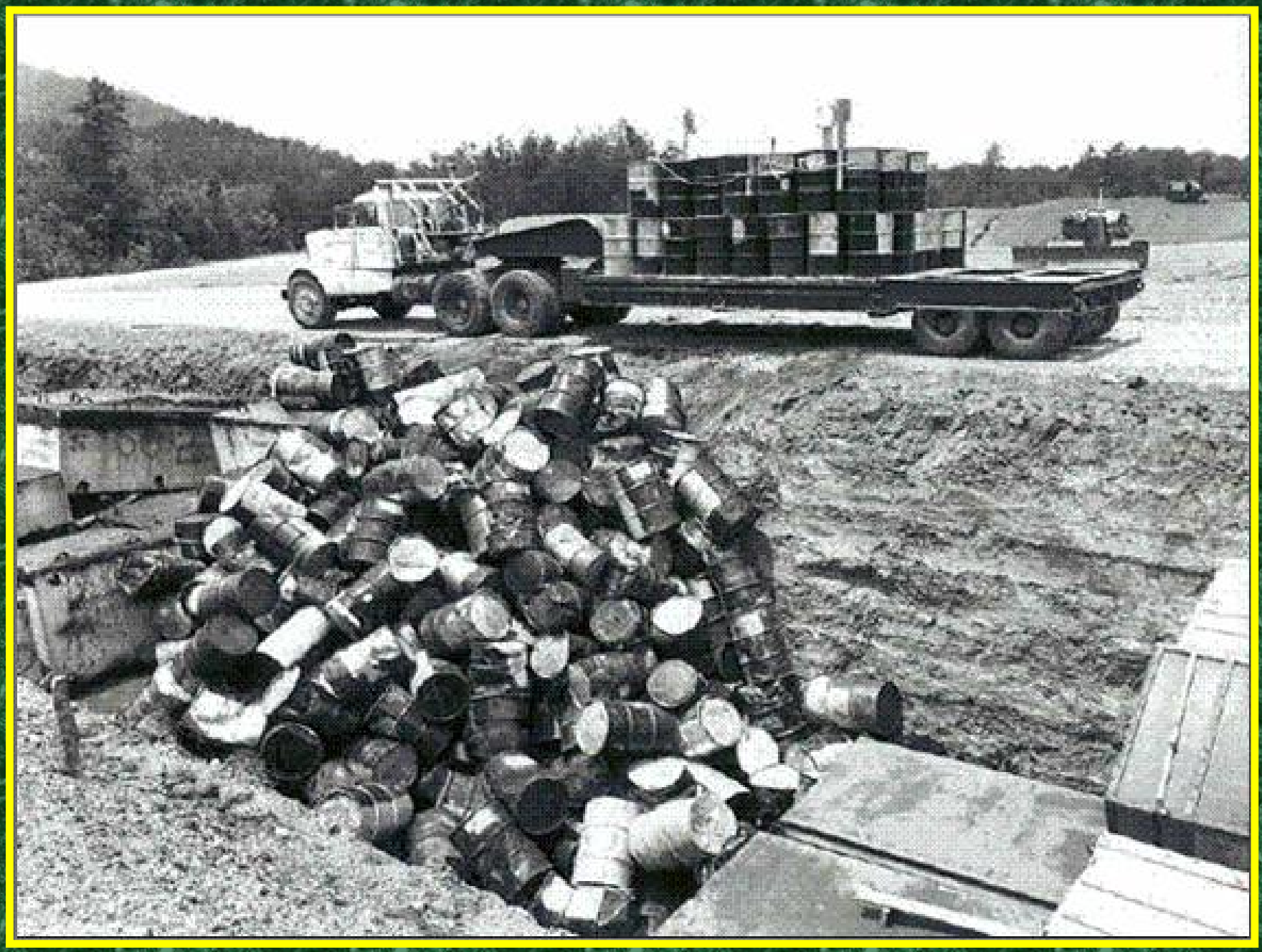
1. Potential Achilles heal
2. 350 plus deed restrictions
3. Is annual inspection enough?
4. Learning from experience

The Future

1. Implementing an alert system to all deed restricted sites
2. Integrate with EnviroStor – public access
3. Map boundaries
   a. Deed restricted areas
   b. All sites and OU's
4. EIEN Grant – IC Tracking System Project

Two Counties – One City: Long-term Stewardship Information for Anderson County, Roane County, and the City of Oak Ridge, Tennessee

Ben Adams and Alfred Brooks




CASE


Earth-capped waste site

Waste disposal problems run with the land so -

Waste left in place must have a long-term stewardship program that ensures the integrity of the sites.

What better place to store information about hazardous waste than in land records?

List of Requirements for Long-term Stewardship (LTS) Information System

1. System must fulfill existing legal requirements for filing of notices and deed restrictions and notifying local land use authority.

2. Long term success of the system should not depend on the presence or funding by DOE or the federal government.

3. System must be perpetual and concerned with the longevity of data.

List of Requirements for LTS Information System, cont.

4. System must be accessible by local land use authority, land use planners, developers, potential buyers and the general public.
5. System must be searchable as land titles are searchable.
6. Final system is estimated to comprise 50-100 site entries of modest size.

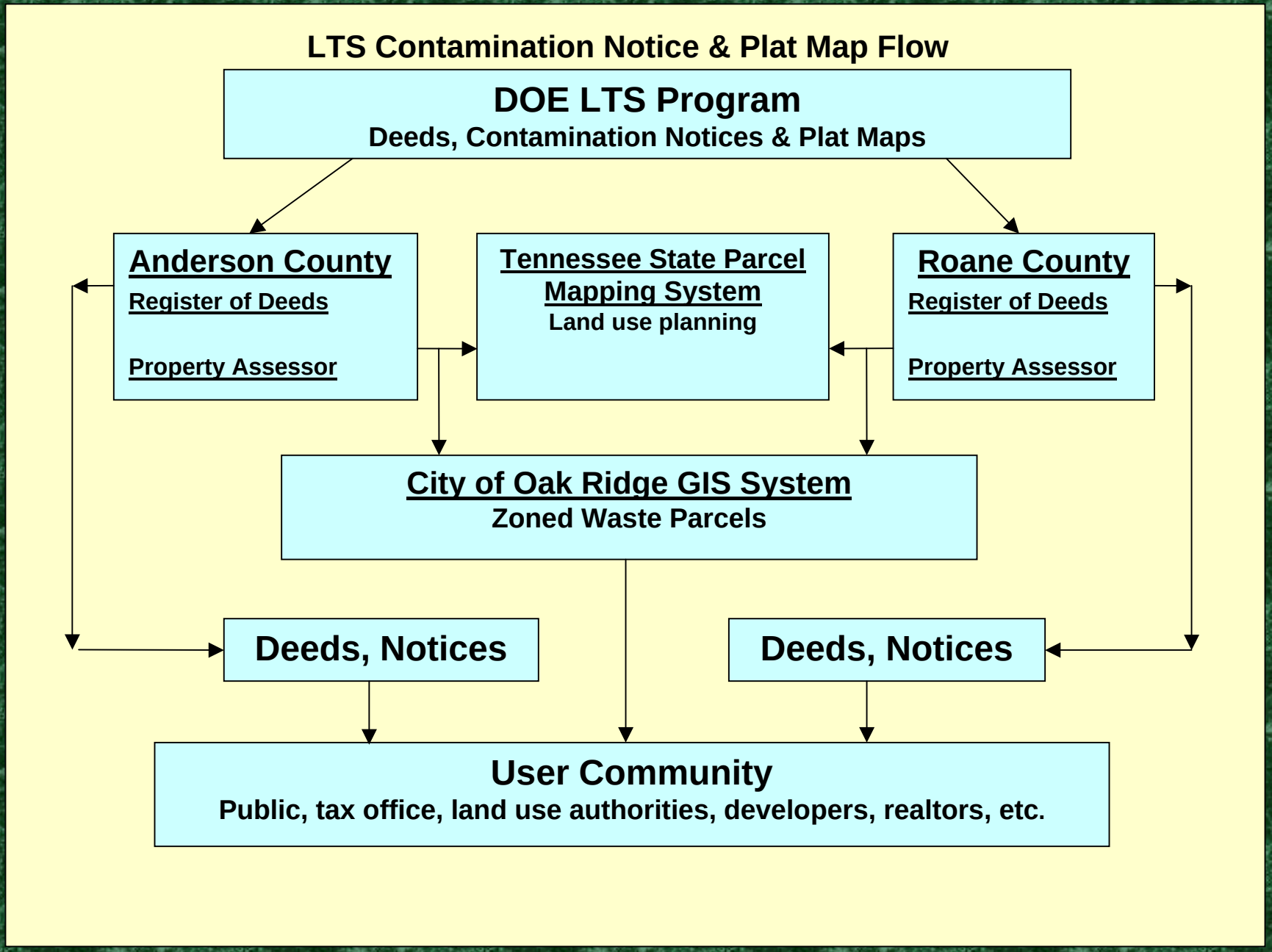
Implementation Required

1. Formalize and standardize submission of environmental notices and transfer deeds
2. Initiate practice of notifying City of Oak Ridge of the closure or sale of any site
3. Verify that parcels and ancillary information occur appropriately in Tennessee State Parcel Mapping system

Implementation Required, cont.

4. Institute appropriate quality assurance to verify that new entries in all four databases are properly entered.

5. Ensure uniform nomenclature which will make searches more accurate and complete.


LTS Contamination Notice & Plat Map Flow
DOE LTS Program
Deeds, Contamination Notices & Plat Maps
Anderson County
Register of Deeds
Property Assessor
Tennessee State Parcel Mapping System
Land use planning
Roane County
Register of Deeds
Property Assessor
City of Oak Ridge GIS System
Zoned Waste Parcels
Deeds, Notices
Deeds, Notices
User Community
Public, tax office, land use authorities, developers, realtors, etc.

There is no requirement that environmental notations and plats be referenced to one another in the county records.

The Oak Ridge Site Specific Advisory Board is looking into having a legislative act passed for Anderson and Roane Counties to reference notations and plat maps to each other.

Conclusions:

1. Storage of essential LTS information can be accomplished in databases operated by city, county, and state governments intended for the documentation of ownership and tax responsibilities, and local land use planning and control authorities.

2. Use of these systems accomplishes all of the requirements for data retention and accessibility necessary to LTS and is a system that does not depend on the federal government's long-term support.

Conclusions:

3. The issue of long-term retention of the LTS data is thus merged with identical need for long term retention of documentation of property rights.

4. Establishment of the system to retain essential information must not replace reasonable efforts to also retain the voluminous complete remediation records.

5. While no generation can ensure what a following generation will do, the proposed system provides information to act in their best interest for a long, long time.

The Commonwealth of Massachusetts
Department of Environmental Protection

MassDEP

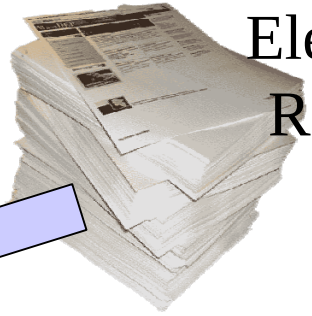
Managing Site Data

How to Change Your Tires While the Car is Moving

Paul W. Locke
MassDEP Bureau of Waste Site Cleanup

MassDEP

The Goal: On-Line File Review



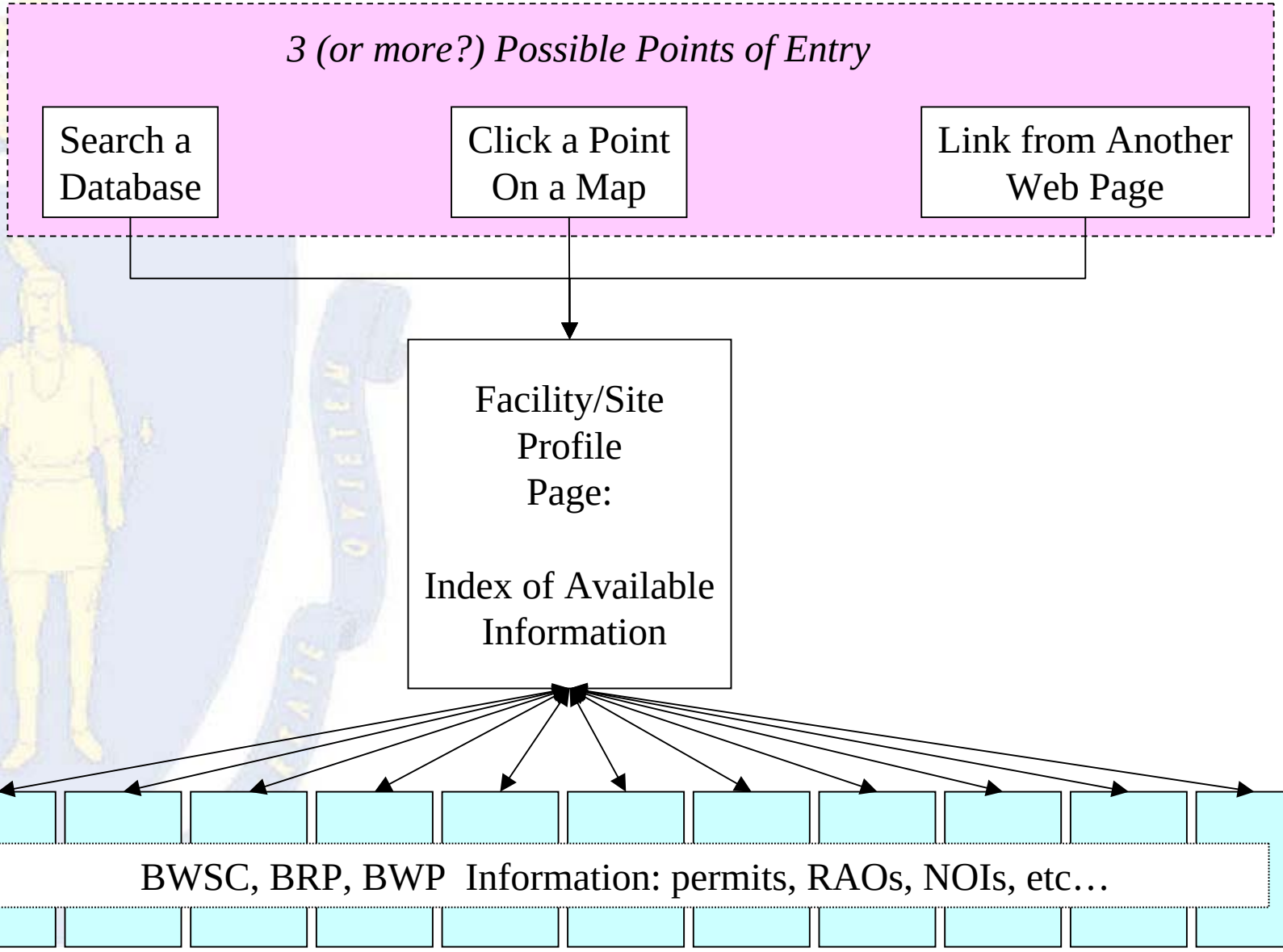
Electronically Submitted Reports from Regulated Community

DEP Staff documents

Scanned Documents from Paper Files

The Commonwealth of Massachusetts
Department of Environmental Protection

Online File Review: What the Users See



MassDEP

Example:

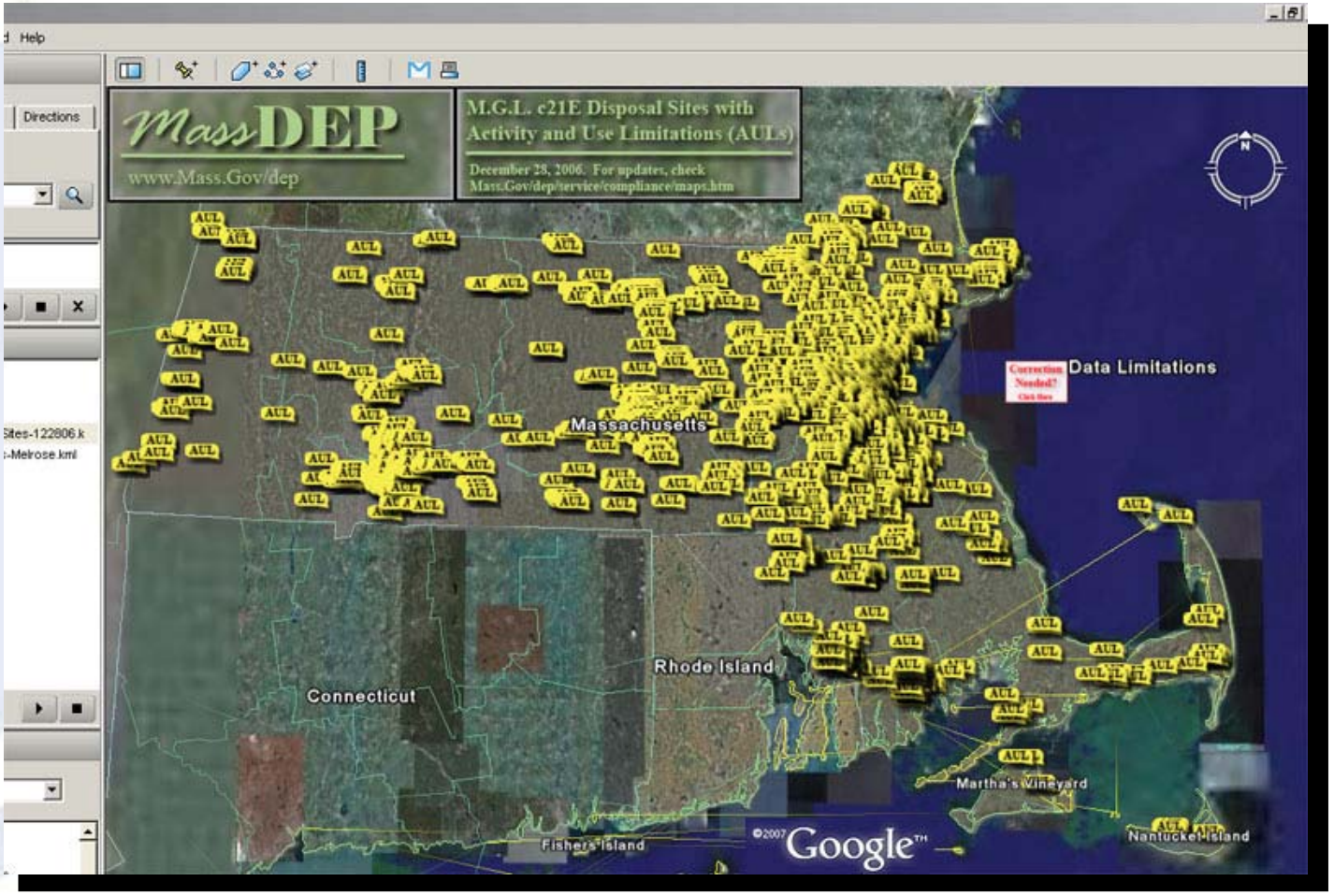
Sites with

Activity and Use Limitations (AULs)

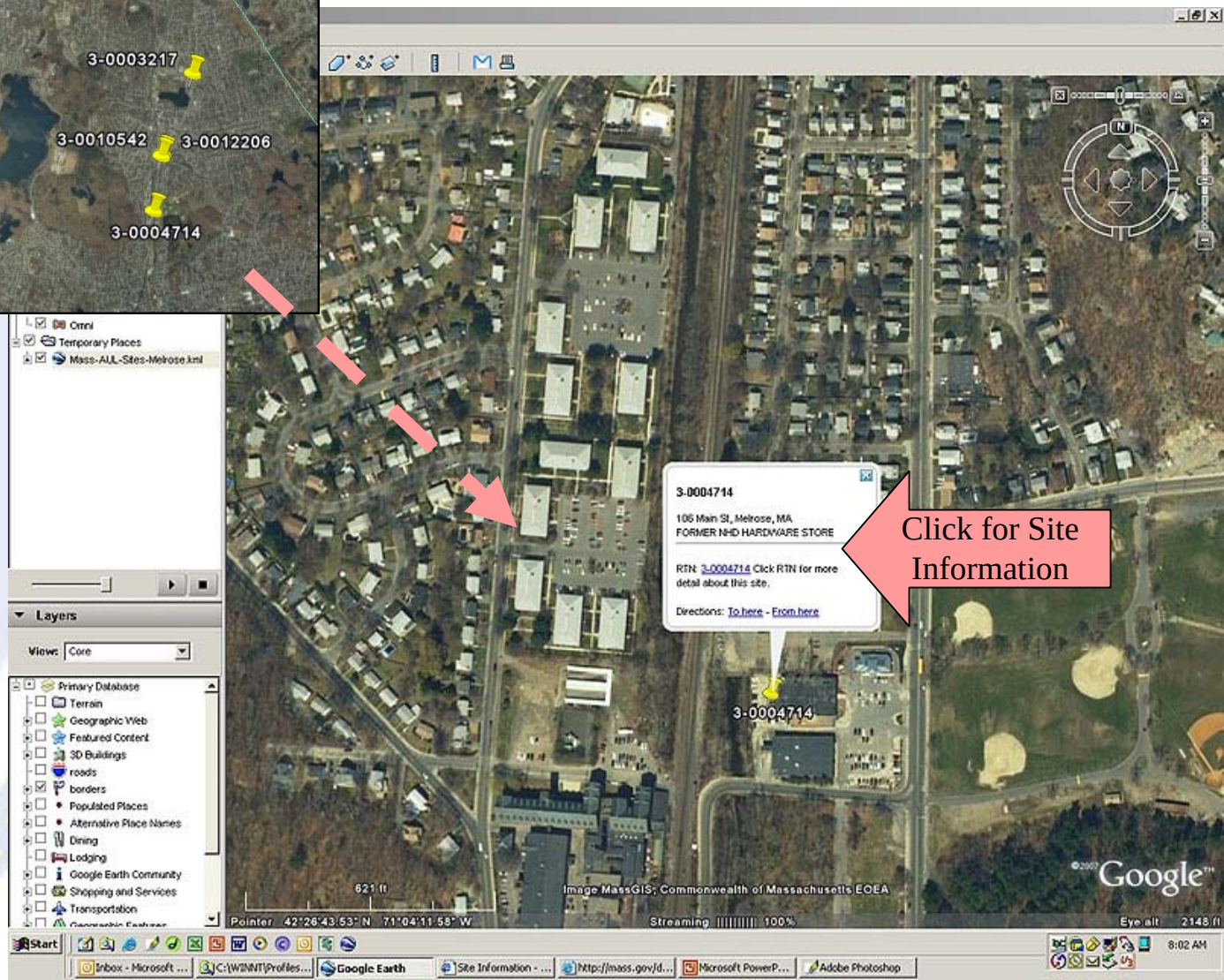
(a.k.a., Institutional Controls)

21E Sites with Activity and Use Limitations Mapped in KML and Displayed in Google Earth

http://mass.gov/dep/service/compliance/maps.htm



Zoom in to the Site and Click on the RTN for More Information



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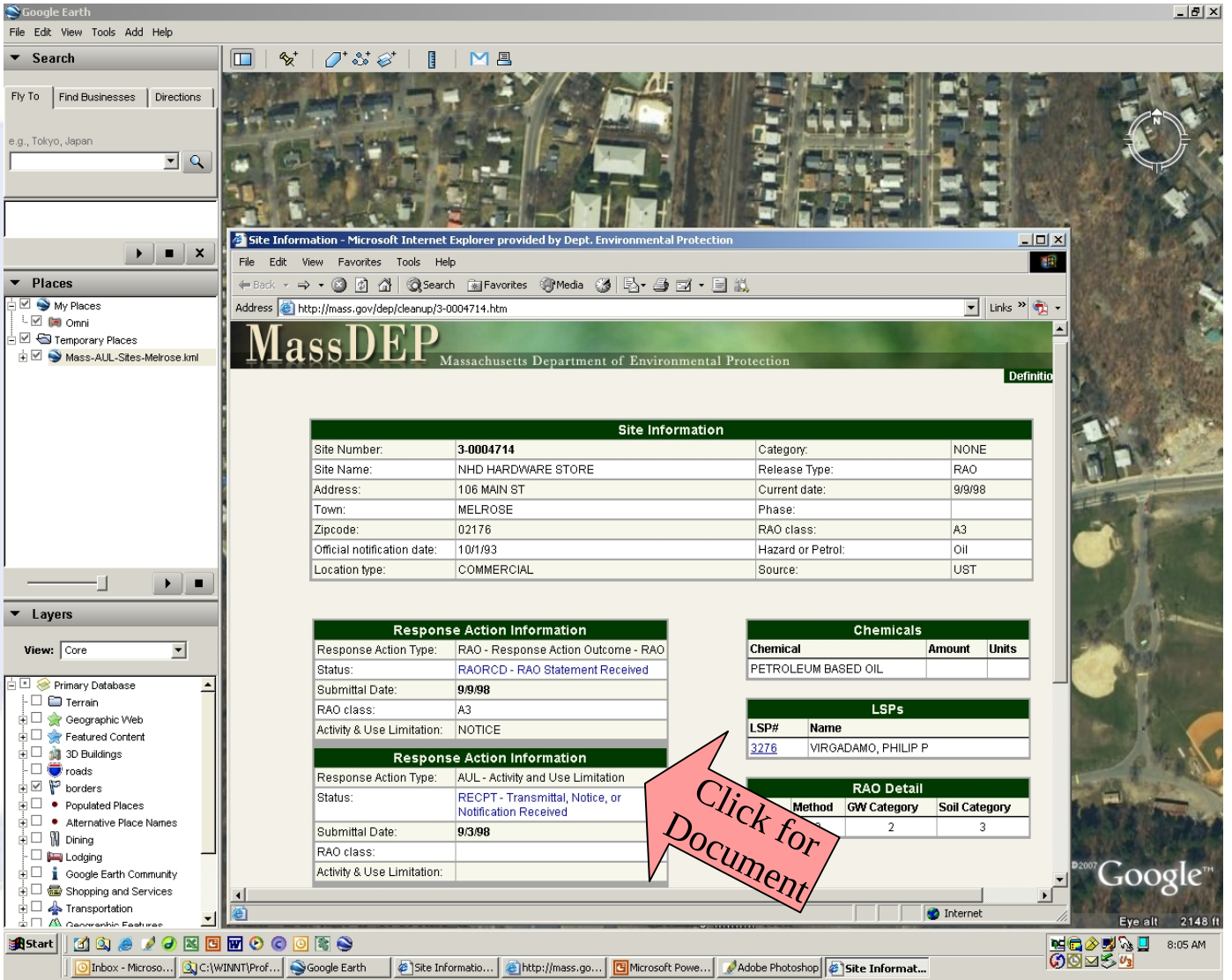
Summary of Site Information Links to More Detailed Information and Documents



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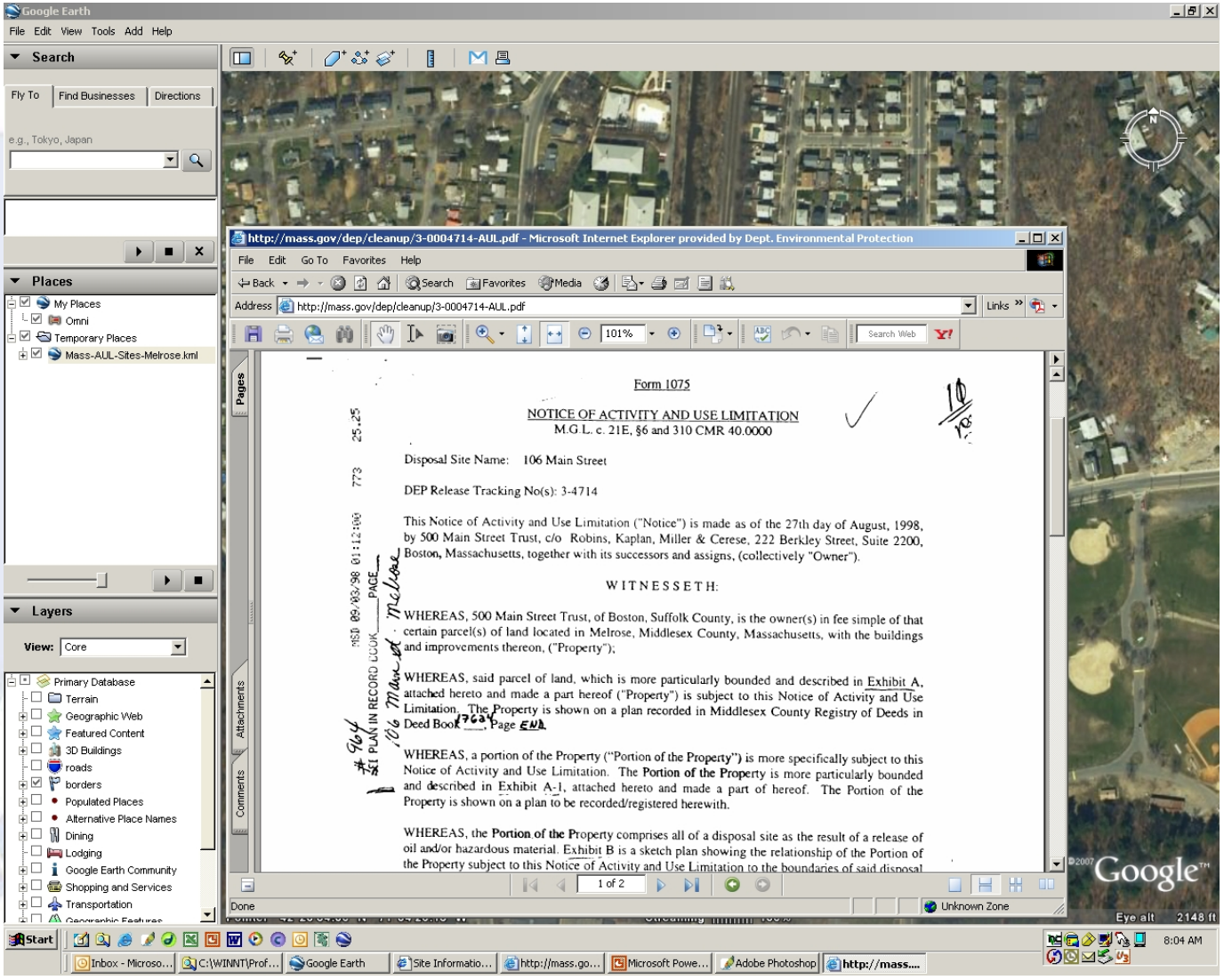
Site Information, such as this AUL in PDF format, can be reviewed.

Other formats, such as Word documents, JPEG images, etc… can also be linked



Take as a Given: The Technology exists (you <u>can</u> do it)

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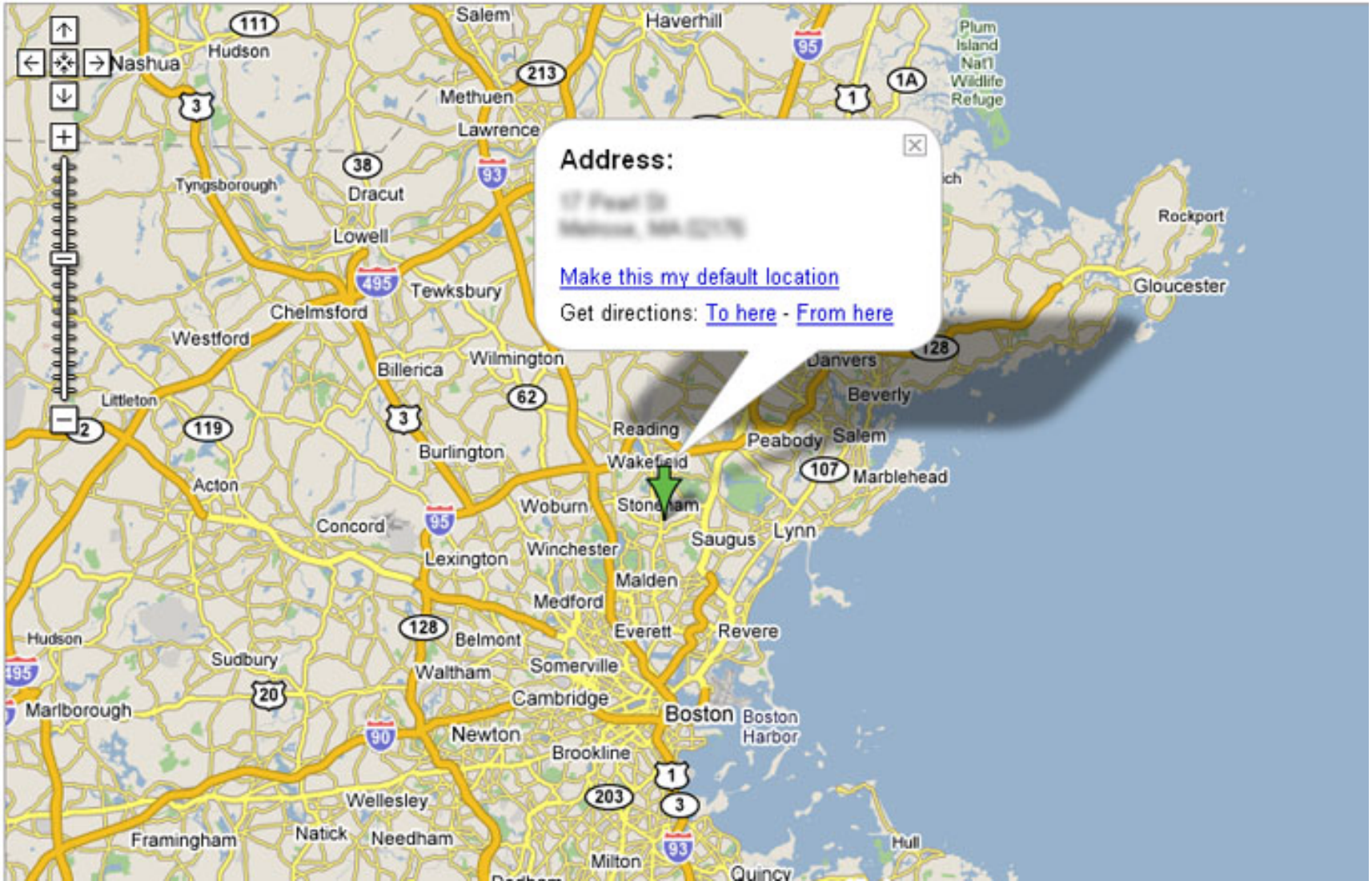
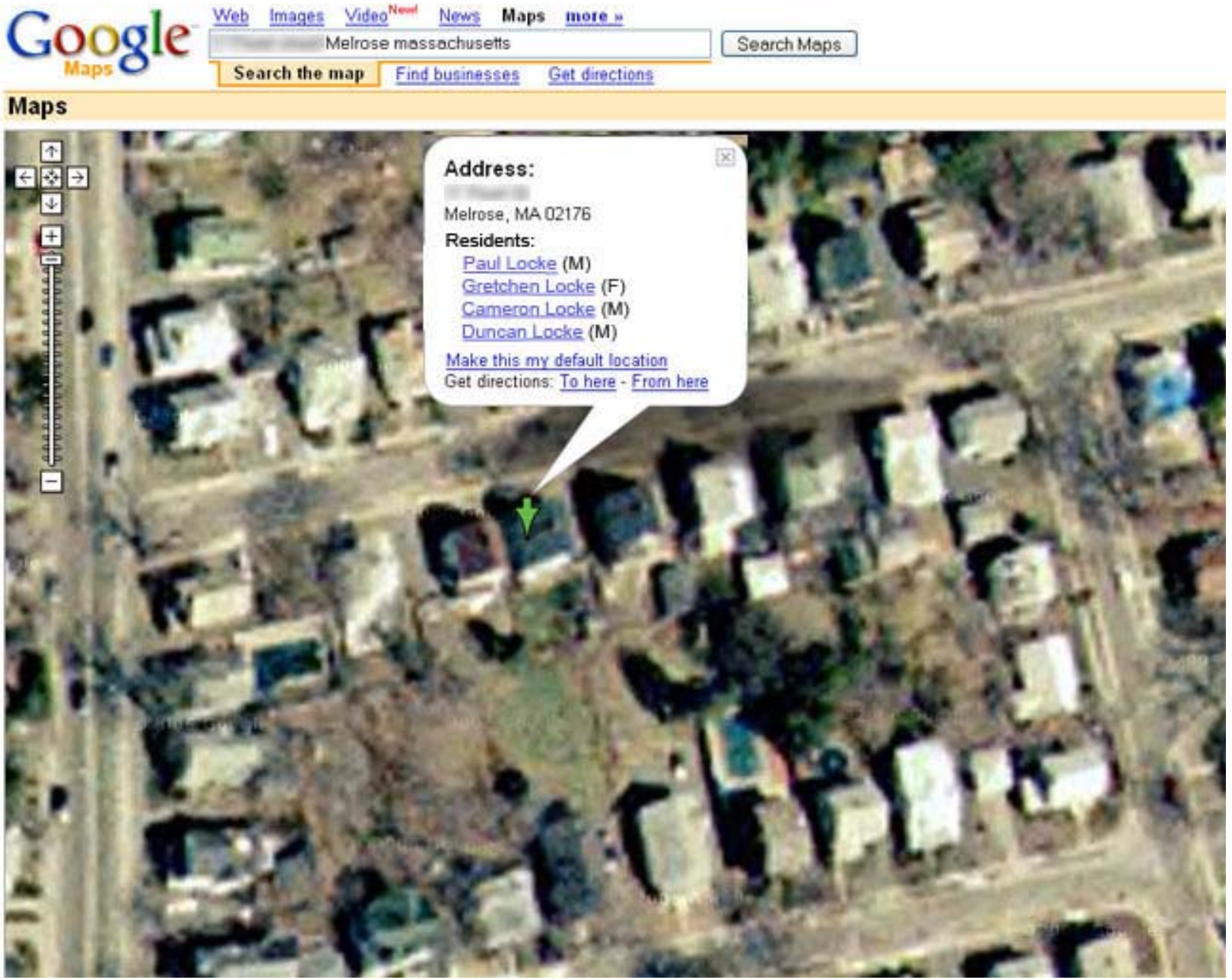
Consider 3 Issues

1. Appropriateness of the Data
2. Quality of the Data
3. Understanding of the Data

Appropriateness of Data



Closer…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Maps
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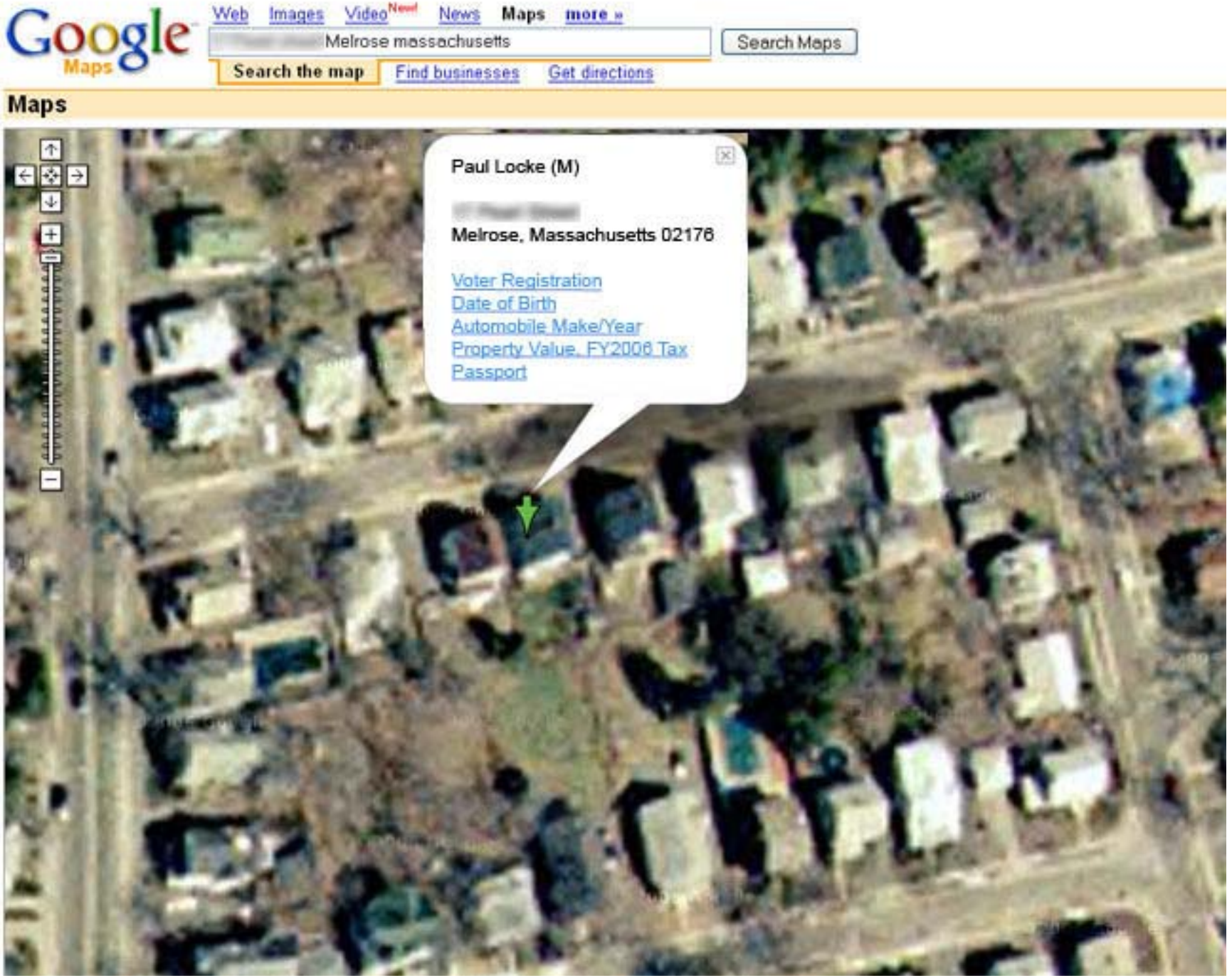
Melrose, MA 02176
Residents:
Paul Locke (M)
Gretchen Locke (F)
Cameron Locke (M)
Duncan Locke (M)
Make this my default location
Get directions: To here - From here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Paul Locke (M)
[redacted]
Melrose, Massachusetts 02176
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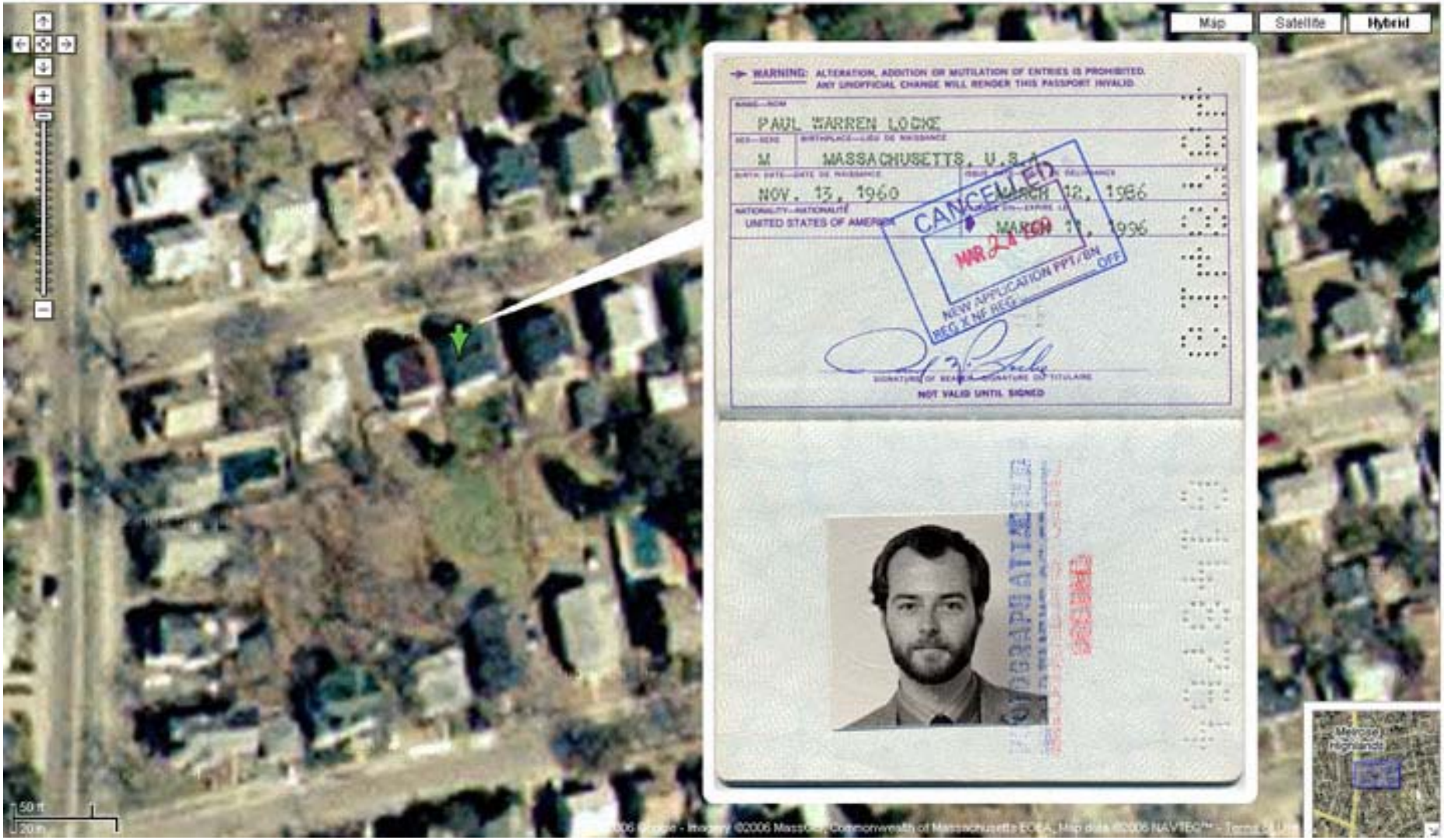

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Appropriateness

Data must be evaluated and screened, possibly including,

1. "Financial Inability" statements
2. Billing & Payment records
3. Proprietary chemicals/processes
4. "Enforcement Sensitive" material

What do you want to make public, and why?

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Data Quality

- Not a new issue
- Linking from maps to databases may hide data quality issues (*vs* staff-generated web sites)
- "Publishing" data online (*vs* maintaining paper files) may imply "ownership" – state is vouching for the quality

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Promoting Understanding

1. Appropriate, high quality data is not enough
2. Maps & associated data must be presented in a larger context
3. The information must be *understandable* to the target audience(s)

What is the program goal you want to achieve?

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Table 1:
Number of Public Schools and Students Attending Classes Within a Half-Mile of a Superfund or State-Identified Contaminated Site

State	Number of Schools	Number of Counties	Estimated Number of Students	Lists Used to Identify Toxic Sites
California	43	11	32,865	Superfund only
Massachusetts	818	13	407,229	Superfund & State
Michigan	64	27	20,999	Superfund & State
New Jersey	36	11	18,200	Superfund only
New York	235	39	142,738	Superfund & State
Total	**1,195**	**100**	**622,031**	

from CREATING SAFE LEARNING ZONES: INVISIBLE THREATS, VISIBLE ACTIONS (2002)
by The Child Proofing Our Communities Campaign

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Summary

1. Current technology allows mapping of sites with links to more detailed site information
2. Cost is the primary barrier and costs are dropping
3. Web-based mapping increases accessibility
4. Increased accessibility is good

Conclusion: It is your destiny

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Continued Summation

5. Accessibility of data will raise issues of appropriateness, quality and understanding
6. Managers should not be seduced by the technology or view the project as an IT issue

For More Information

1. MassDEP data available in KML/KMZ format: http://mass.gov/dep/service/compliance/maps.htm
2. NOAA's Standards Description Document for KML: http://www.weather.gov/cio/policy/standards.htm
3. Google Earth and support documentation: http://earth.google.com

Other Examples:

1. USEPA Data now in XML format: http://epa.gov/enviro/geo_data.html
2. EPA Regulated Facility Data for Region 2 : http://www.epa.gov/region02/gis/data.htm
3. Northampton, MA: http://www.northamptonma.gov/opd/GIS_and_Maps/GIS_Shapefiles/
4. Kentucky Public Hunting Areas http://fw.ky.gov/kfwis/google/GoogleEarth.asp

MassDEP

The Commonwealth of Massachusetts
Department of Environmental Protection

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Abstract

Two Counties – One City: Long-term Stewardship Information for Anderson County, Roane County, and the City of Oak Ridge, Tennessee

Ben Adams and Alfred Brooks

The U.S. Department of Energy (DOE) Oak Ridge Reservation (ORR) comprises approximately 36,000 acres in Anderson and Roane Counties and the City of Oak Ridge in Tennessee. Since the early 1940s, a wide variety of DOE activities related to production of enriched uranium has resulted in numerous contaminated sites in both the counties and the city.

In 1997, an End Use Working Group was formed under the auspices of the Oak Ridge Site Specific Advisory Board. This group recommended that the information necessary for long-term care of perpetually contaminated areas reside in a system that would transcend the presence of DOE. The Comprehensive Environmental Response, Compensation, and Liability Act requires filing of a Notice of Contamination and plat map with the county Register of Deeds. The End Use Working Group recommended that this plat map be placed into the geographical information system (GIS) of the county Property Assessor as well as the City's GIS system. The Anderson County Register of Deeds and the Property Assessor, as well as their Oak Ridge counterparts, welcomed these requests with enthusiasm.

In early 2004, a successful pilot study was performed in Anderson County to test the concept. The test sample, already in the Register's system, was typed as *Environmental Notations*, and entered as a parcel into the

Property Assessor's GIS system and subsequently transferred at the next quarterly update to the Oak Ridge GIS system. Except for entries into two parcel descriptive fields, the systems have performed well without any changes. What better place to store land contamination information than in the official and accessible county Property Record system? And to distribute it in an existing publicly accessible GIS system? In these systems, the information receives the same long-term protection afforded to all other property records essential to a functioning society

The text of contamination notices and the plat locations are now available on-line to the public at no cost via the existing Anderson County Register's document retrieval system. The plat information will be transferred quarterly to the existing City of Oak Ridge GIS system, where it will be available on-line at no cost to the public, the tax office, land use authorities, developers, and real estate agents. It will also be transferred annually to the Tennessee Base Mapping system for use by all manner of state organizations. All of these systems have copious redundancy and backup and are mostly free, except for a small filing charge for the notices and plat and service charges for the Roane County Register's System.

Roane County is now instituting an identical system and has agreed to extend the tests into its system. No serious problems are expected. Cooperation between jurisdictions has been excellent.

The conference presentation of this topic will take approximately 25 minutes and will contain the above information, along with some viewgraphs

showing the beginning DOE data and finished county mapping. For the benefit of interested attendees, contact information for relevant persons and organizations will be furnished and a limited quantity of handouts is available.

About the authors:

Ben Adams is a member of the Oak Ridge SSAB and chair of the SSAB's Long-term Stewardship Committee. He is a practicing civil engineer in Oak Ridge.

Alfred Brooks is a citizen member of the Stewardship Committee and member of other DOE-related committees. He is a retired chemist and computer analyst. Both Mr. Adams and Mr. Brooks are active, long-term members of the Oak Ridge community.

Two Counties – One City:
Long-Term Stewardship for Anderson County,
Roane County, and the City of Oak Ridge, Tennessee

Ben Adams
Oak Ridge Site Specific Advisory Board

Al Brooks
Stewardship Committee of the Oak Ridge Site Specific Advisory Board
475 Oak Ridge Turnpike
Oak Ridge, Tenn. 37830

Abstract -The publicly accessible, very-long term storage of the essential stewardship information concerning the residual contamination of the Department of Energy - Oak Ridge Reservation (DOE-ORO) in East Tennessee is discussed. A solution to this problem was proposed by a citizens' committee in 1998, which recommended that information necessary for long-term care of contaminated land reside in a system that would transcend DOE. A test study has shown that the proposed solution to the problem is feasible and can meet all the proposed objectives including the legal requirements imposed by federal and state laws for past waste sites. This paper explains how the test tracked notices of contamination through the Anderson County and City of Oak Ridge property records. The test shows how, if the system is fully implemented, interested parties can discover notices of contamination at the city, county, or state level.

I. INTRODUCTION

In late 1942, the federal government gained title to 52,000 acres (later 59,000 acres) of land in Roane County and Anderson County by right of eminent domain for the purpose of constructing research development, and production plants associated with the then classified Manhattan Project. The Oak Ridge Reservation (ORR) is now about 35,000 acres of which about 4,000 have some history of contamination. The diverse activities continued after World War II until the present. It is the considered judgment of DOE and the informed public that reasons of worker safety and cost, some of the contamination should remain on the ORR after proper precautions is taken.[1] As a result, after three aggressive remediation campaign ending nominally in 2015, the ORR will accommodate the residual wastes of several radio-chemical and physical operations. These include wastes from research and development reactors, radio-chemical processing facilities, three uranium enrichment facilities, a weapons production facility, an historic radio-waste disposal facility for the northeastern United States and known as the Southern Regional Burial Ground, and a permanent, engineered waste storage facility. The profile of radio and stable elemental waste indicates two time regimes: 1)short term (300 years), tritium, cesium, cobalt, etc., 2) long term (1 million +), Pu^{239}, U^{235}, U^{238}, and stable but toxic metals, etc. The largest manmade deposit is 30 million pounds of U^{238}, in shallow graves; nearly 1 million curies of strontium and cesium are stored grouted in deep, isolated aquifers residing in very old shale. A total of about 3,500 acres are involved in waste repositories of one kind or

[1] End Use Working Group, *Final Report of the ORR End Use Working Group*, July 1998, DOE Information Center, 865-241-4780

another; much of it requires hydrologic isolation due to high ground water levels and surface waters. There is one volatile organic compound, plume of significance and several smaller ones of various contaminants

The five areas, designated as residually an contaminated or once contaminated, including three ongoing waste storage areas, two ongoing programmatic sites (one research, one production) and one reindustrialized area, span two Tennessee counties, Roane and Anderson. All of these areas lie within the incorporated area of the City of Oak Ridge, which is the local land use authority from which the federal activities are largely exempt. Several residential areas abut the ORR one is sufficiently close as to warrant concern but does not evidence substantial exposure. The wet climate and karstic geology of the region ensure that radio-waste is in contact with ground water during at least the wet season making hydraulic isolation and ground water treatment a "must." One river system (Clinch/Tennessee) and several tributaries (one with mercury contamination of its flood plain passing through Oak Ridge residential areas) give ample opportunity for the water exposure route to affect the communities of several downstream counties. Fortunately the historic, main-channel contaminations of off-site waterways are buried beneath old sediments and are safe if not disturbed, although PCBs are a ubiquitous concern.

The bottom line is: Long Term Stewardship[2](LTS) of these areas is an absolute necessity to preserve their engineering integrity and for the long term public safety. The anticipated time span over which the integrity of the disposal facilities must be maintained is until the “twelfth of never” and that's a long, long time. One crucial element of LTS is the long term preservation of the essential information that documents for future generations that these hazardous areas exist, what they comprise and what precautions must be taken in the future to ensure public safety, i.e., that these waste storage facilities are never unknowingly breached.

Central to the concept of LTS[3] is the perpetual responsibility of the federal government to maintain these waste sites in a condition that will protect public health and safety. This includes monitoring and maintenance, surveillance, re-remediation as needed, and enforcement of restrictions. The proposed system in no way reduces this responsibility but serves as an alternative data repository independent of the federal government that should survive any lapse of the federal government’s attention and permit the public and local governments to ensure the federal government meets its legal responsibility.

Central to the concept of storing the essential information is: the federal government may, in the distant future, fail to fund an active LTS effort.

II. THE PROPOSED SOLUTION

In 1998, the End Use Working Group (EUWG) recognized two realities: 1) based on worker safety and costs, it recommended that radioactive waste and other residual contaminated waste should be left on the ORR and 2) this was only a responsible recommendation if there existed an LTS program that ensured the integrity of the disposal sites. In 1998, the EUWG proposed such an LTS system and, in 1999, the Stewardship Working Group (SWG) published a more detailed report on the same system. The waste disposal problem was seen as one that "ran with the land" and involved, among many other things, a small hard core of information that was necessary to apprise future generations of the existence and extent of the problem. Society has one other piece of information about land that it now preserves and must continue to preserve as long as land is owned by the public: the titled ownership of the land and any encumbrances on that title. The EUWG/SWG reasoned: What better place to store vital land information than in the system society uses to store even more necessary land information? In such an arrangement, the questions of disaster protection, long-term viability and accessibility will receive the same attention as society assigns to "the documentation of ownership." Further, this system forms the starting point for much of the land control and planning that takes place throughout society. Upon looking into the matter, EUWG/SWG found that the legal

[2] End Use Working Group, *Stakeholder Report o*n *Stewardship* (Vol. 1), July 1998.

[3] Stewardship Working Group, *Stakeholder Repor*t *on Stewardship, Vol. 2*, December 1999.

foundation for waste disposal had earlier reached a similar conclusion and had required that the essential information be filed with the county register of deeds and also with the local authority for land use. All that remained was to establish that the system could, with a little fine tuning, meet the needs of LTS.

III. REQUIREMENTS OF THE LTS ESSENTIAL INFORMATION RETENTION SYSTEM

The following long term requirements were placed on the system:

1) The system must fulfill the existing legal requirements for the filing of notices[4], of deed restrictions[5] and giving notice to the local land use authority.[6]
2) The long term success of the system should not depend on the presence of or funding by DOE or the federal government.
3) The system must be perpetual and be concerned with the longevity of the data.
4) The system must be accessible by the local land use and control authority, all land use planners, land developers, potential land buyers and the general public.
5) The system must be searchable in the manner that land titles are searchable.
6) The final system is estimated to comprise 50-100 site entries of modest size.

In the consideration of these requirements, the currently existing state, county and city systems are, for all practicable purposes, the same. In Roane and Anderson Counties these systems when complete will comprise: 1) the Register of Deeds document systems as mandated by state law and their on-line components, 2) a Property Assessors Geographic Information System (GIS) for maintaining tax rolls, 3) the Tennessee State Parcel Mapping System, the basis for all state land planning and land use functions for state agencies, 4) the City of Oak Ridge's GIS System which is the basis for local land use planning and control as well as city tax rolls. Items 1) and 4) have on-line public assess. All of these systems have the same general requirements as the LTS system.

IV. FUNCTIONAL COMPONENTS OF THE LTS ESSENTIAL INFORMATION RETENTION SYSTEM

NOTA BENE: Let it be made perfectly clear that the system being discussed here is for the retention of the hard core of essential information on which the LTS depends but it does not address the retention of the enormous array of reports and other documents that make up the vast majority of the total LTS information.

The proposed system (not yet finalized) would function in the following manner:

1) At the time of Recourse Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) waste site closure pursuant to existing law and DOE agreement, an environmental notice including a plat map describing the site and its restrictions would be filed by DOE with the appropriate county register of deeds and called to their attention to ensure that the property assessor is aware of the plat. At the same time notice would be given by DOE to the local land use and control authority, the City of Oak Ridge, supplying essentially the same information. Upon the sale of any waste site at any later date, DOE will append the required information to the land transfer deed and file it with the register of deeds.
2) The appropriate county property assessor will immediately capture the plat map and ancillary descriptive information as a parcel in the property assessor's data base. The ancillary information should be augmented at this time as needed to make future users aware of the waste hazard and any restrictions.
3) In the normal quarterly update cycle, the parcel information will be transferred to the City of Oak Ridge's GIS system at

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[4] 40 CFR 264.119, also TDEC Rules 1200-1-11.05 (7) (j) (2)
[5] 42 USC 9620 (h) (3), also 40 CFR 264.119 and TDEC Rules 1200-1-11.05 (7) (j) (2)
[6] 40 CFR 264.116, also TDEC Rules 1200-1-11.05 (7) (g)

which time the ancillary parcel information will be augmented by descriptive information supplied by the local land use authority.

4) In the normal yearly update cycle, the parcel information will be transferred to the Tennessee State Parcel Mapping system where it is available to a wide variety of state planning and land use agencies.
5) During the construction phase of the database, DOE will conduct quality assurance on the data in the several systems to ensure that the system is functioning properly. After completion of the data content DOE will ascertain that data does not disappear from the system.

The schematic of Figure 1 shows the flow of information through the system:

The underlined entities are currently existing databases operating under local jurisdictions and without DOE funding. The LTS database is an identifiable subset of the data within these systems. The DOE data submissions are required by federal and state law but the underlying systems operate independently of DOE or the federal government. These local systems by the nature of their fundamental missions must constantly address problems of data stability and accessibility. Their constant use by the interested public will place the LTS data constantly before the segment of the public and local authorities most likely to attach significance to the information.

V. FEASIBILITY TESTING

In January 2004, the Oak Ridge Site Specific Advisory Board Long Term Stewardship Committee (ORSSAB/LTS) decided to run a feasibility test of the existing systems based on the several "environmental notices" filed with the Anderson County Register of Deeds. (The Roane County system is similar but was not sending data to Oak Ridge and no notices had been filed.) The test was deliberately planned to make as few changes as possible to the existing systems. The test steps are described below:

1) The seven "environmental notices" previously filed in Anderson County by DOE were identified. It was also noted that DOE had not notified the City of Oak Ridge as the local land use authority that the waste site existed nor were there any Roane County notice filings.

2) The instrument types of the DOE documents were uniformly established as "environmental notations"[7] to correspond to the standard notation of the database system. A search on the Instrument Type/Environmental Notations will ensure the retrieval of all waste parcels (7 of 8 hits) and the display of the notice information and can now be carried out by the public.
3) The plat information of these instruments was transferred as a standard parcel to the Property Assessor's database in the same manner as any new land parcel. An identifying parcel name was added to an existing field of the parcel description. The efficacy of this step was obtained by creating the map containing the outline of the parcel and its identifying name as well as the State of Tennessee Real Estate Appraisal Card which contains the ancillary parcel information.

4) At the next update, the information was transferred from the Property Assessor's system to the City of Oak Ridge's GIS system. This was done at the same time as the first update from Roane County was received and several system glitches occurred. The parcel outline had appeared immediately on the Oak Ridge maps which are accessible to the public; the ancillary information was not available. The parcel outline also appears on the City's hard-copy maps. Our testing was deliberately not high priority and minor corrections to the system, necessary to recover the ancillary information, were made in due course. The ancillary "Parcel Information" now available by an Owner/Department of Energy/ search though two fields normally supplied by the City are not yet filled. This omission is being pursued at this time. Routine notice to the City as required by law should go a long way to remedy this omission, and the identification of the parcels as restricted use, "waste management" land.

5) The Roane County system will be tested as soon as the Anderson County features are finalized and sufficient filings have been made. No serious problems are expected as the systems are similar.

[7] Categorization of documents listed with Anderson County Register of Deeds.

The tests to date are considered a success and the route to a successful Anderson County portion is quite clear. The Anderson County information now resides permanently in three local systems and is retrievable on-line by the public from two of them. The retrieval is straight forward (7 of 8 hits) from the Register of Deed's system[8] and from the City's GIS system.[9] Hard copy can be produced from all three systems. The reader should access these two public accessible systems to view the lists, documents, screens and maps available describing the LTS parcels.

VI. IMPLEMENTATION

If DOE adopts this system, the implementation[10],[11] steps will be minimal and are listed below:

1) By documented procedure, formalize the submission of the environmental notices and transfer deeds with regards to content and a cover letter requesting that the instrument type be "environmental notation" and the land be designated as a parcel in the property assessor's data base. The cover letter should also state any specific terminology required in specific data fields. This uniformity will facilitate computerized searching.
2) Initiate the practice of notifying the City of Oak Ridge of the closure or sale of any site alerting them of the need to supply ancillary information at the appropriate time.
3) Verify that these parcels and ancillary information occur appropriately in the Tennessee State Parcel Mapping system
4) Institute appropriate quality assurance to verify that new entries in all four databases are properly entered and old entries have not been lost. Failure to ensure uniform nomenclature will make entries in all databases difficult to locate.

The implementation steps should be included in the forthcoming "Long-term Stewardship Implementation Plan" being produced by DOE/ORO.

VII. CONCLUSIONS

The storage of essential LTS information can be accomplished in databases operated by the city, county and state governments intended for the documentation of ownership, tax rolls, and local land use planning and control authorities. The use of these systems accomplishes all of the requirements for data retention and accessibility necessary to LTS and is a system that does not depend on the federal government's long-term support. The problems of long-term retention of the LTS data are thus merged with the identical need for the long term retention of the documentation of property rights, a problem society must solve to function as we understand it. The establishment of the system to retain essential information must not replace reasonable efforts to also retain the voluminous completed remediation records. While no generation can ensure what a following generation will do on the “twelfth of never,” the proposed system gives them the information to act in their best interests for a long, long time.

REFERENCES

1. END USE WORKING GROUP, “*Final Report of the ORR End Use Working Group,”* (1998)
2. END USE WORKING GROUP, “*Stakeholder Report on Stewardship,”* (1998)
3. STEWARDSHIP WORKING GROUP, “*Stakeholder Report on Stewardship,”* (1999)

[8] Anderson County Register of Deeds Document Register System: http://www.andersondeeds.com/

[9] City of Oak Ridge Geographic Information System: http://gis.cortn.org/

[10] Long-term Stewardship Committee, *Annotated Outline for the DOE LTS Implementation Plan*, 2004,http://www.oakridge.doe.gov/em/ssab/Recommendations/FY2004/R7-14-04.8.pdf

[11] DOE/ORO, *DOE/ORO LTS Implementation Plan*, in progress.

4. 40 CFR 264.119, also TDEC Rules 1200-1 11.05 (7) (j) (2)
5. 42 USC 9620 (h) (3), also 40 CFR 264.119 and TDEC Rules 1200-1-11.05 (7) (j) (2)
6. 40 CFR 264.116, also TDEC Rules 1200-1
7. 11.05 (7) (g)
8. Anderson County Register of Deeds Document Register System: http://www.andersondeeds.com/
9. City of Oak Ridge Geographic Information System: http://gis.cortn.org/
10. LONG-TERM STEWARDSHIP COMMITTEE, "*Annotated Outline for the DOE LTS Implementation Plan,"* 2004.
11. DOE/ORO, "DOE/ORO LTS Implementation Plan," in progress.

About the authors:

Ben Adams is a member of the Oak Ridge SSAB and chair of the SSAB's Long-term Stewardship Committee. He is a practicing civil engineer in Oak Ridge.

Alfred Brooks is a citizen member of the Stewardship Committee and member of other DOE-related committees. He is a retired chemist and computer analyst. Both Mr. Adams and Mr. Brooks are active, long-term members of the Oak Ridge community.

Long-Term Stewardship Roundtable and Training
April 4-5, 2007
San Diego, California
Session Summary

Session Title:	**State LTS Programs and State Model Language**
Date and Time:	Thursday, April 5, 2007, 8:30 a.m., Session B
Speakers:	Matthew Hicks, EPA Region 4
	Yvonne Jones, EPA Region 4
	John Pendergrass, Environmental Law Institute

Matthew Hicks and Yvonne Jones Presentation

Working with States to create restrictive covenants for use at Federal Superfund Sites - Experiences at EPA Region 4

- A handout titled "Working with States to Create Restrictive Covenants for use at Federal Superfund Sites" was provided with this presentation.
- Topics covered included:
  - Overview of Restrictive Covenants
  - Key provisions to consider in drafting
  - Experiences in preparing

Questions and comments regarding the presentation were as follows:

- EPA can only hold third party beneficiary rights with the right of enforcement. On a cautionary note, it depends on state real property laws as to the enforceability; third party beneficiary rights are considered contractual rights.

- A suggested resource is "Institutional Controls: Third Party Beneficiary Rights in Proprietary Concerns" by Susan E. Bromm, EPA Office of Site Remediation Enforcement (available online at: http://icma.org/upload/library/2005-04/%7B7BDE2C37-4707-4085-9A60-A49FCA98706E%7D.pdf).

- If restrictive covenants cloud the title and the state does not take action, does EPA need to sign off on any transfer of property?
  - It is suggested to use a modification or termination clause to deal with title clouds. This would define who has the ability to approve such a request. This does not change EPA's status as the lead agency in cleanup. The uses remain the same and remedies remain the same. EPA retains some responsibility under Five-Year Reviews. EPA is a partner in long-term stewardship. EPA has rights under CERCLA for access, so there is no need to grant specific rights for access through restrictive covenants.

John Pendergrass Presentation

Elements of an Effective LTS Program

- Protecting public health and safety while allowing reuse of sites.

- Restrictive Covenants serve an important function.The Uniform Environmental Covenants Act provides practical yet protective methods for modifying or terminating a covenant, either by consent of the parties or through court action.
- onus elements of using restrictive covenants including: exclusionary zoning; land use planning that considers environmental restrictions; programs for educating the public about risk and appropriate uses; provision for NGOs to be stewards.
- The roles of local governments in use of restrictive covenants are numerous and include: protecting public health and safety; promoting and facilitating development; land use planning and control; issuing building permits; providing environmental services; and many others.
- Stable funding is important for the ongoing monitoring and maintenance of sites. What is needed is a framework for estimating costs.

Questions and comments related to the presentation are as follows:

- Would a subsequent owner be treated as an innocent landowner?
  - If the title is shown to be free of restriction, how a landowner would be treated under CERCLA is different.

- Is there some way of searching the history of property beyond the title?
  - The use of layering protections and multiple systems can aid in discovering issues that may exist. One cannot rely on pre-CERCLA, it is only one piece. Restrictive covenants are vital part of any toolbox to assure that appropriate action is taken on the site and inappropriate actions are avoided.

- One method being explored is using Non-Governmental Organizations (NGOs) as beneficiaries or trustees. There is some evidence that NGOs are longer-lived than companies which means they may have resources for the future (e.g., cemetery associations that are centuries old and community-based land trusts). They are, many times, already experienced at managing land for public use. Land trusts have a record of being in existence, in many cases, more than a generation.

- Why would land trusts interested in conservation take an interest in protecting reuse?
  - Land Trusts could be encouraged to stretch their mission. Many times the focus on ability to monitor land and community involvement already exists. Another benefit is that Land Trusts can require funds for monitoring.

- What about having local government serve as grantees?
  - Generally most local governments are not interested due to lack of funding, lack of staff, unwillingness to assume the liability.

- UECA suggests notification of local governments. This is a big issue, as many times local governments are not included in notifications.

- What happens if you do not get a subordination agreement when there are existing easements or judgment liens? What does the utility gain by subordinating an easement?

- An adverse reason could be the potential liability for digging a sewer. It is in the utilities' interests to subordinate and cooperate with EPA.

- Protective measures should be in compliance with materials and management protocol or health and safety protocol.

- In the case of severance of mineral rights from surface rights, the mineral owner is not exempt but state property rights law does apply. In many states the mineral owner has the property right.

Working with States to Create Restrictive Covenants for use at Federal Superfund Sites[1]

This paper focuses on how EPA, working with states, can create restrictive covenants to minimize the potential for human exposure to contaminants and protect the integrity of engineered remedies at federal superfund sites that are not suitable for unrestricted use and unlimited exposure. This paper does not cover other types of institutional controls, such as environmental easements, governmental controls (e.g, well drilling ordinances), and zoning. In addition, this paper does not cover the use of restrictive covenants at federal facilities.

Restrictive Covenants

Restrictive Covenants are legal devices recorded in the local land records office that require a property owner to refrain from doing something on his or her land.[2] Parties to a restrictive covenant include the grantor (property owner) and grantee (holder of the property interest the grantor agrees no to exercise). Restrictive covenants are enforceable amongst the original parties to the agreement under the law of contracts. The strength of restrictive covenants is that they can run with the land (i.e., pass automatically to successive owners or occupiers of the land or interest in land), provide for legal enforcement of violations of use restrictions, and, once recorded, provide legal notice to prospective property purchasers of prohibited uses.[3]

There may be several challenges, however, to using restrictive covenants at a given site. For instance, restrictive covenants can be invalidated if they fail to meet certain common law requirements such as privity of estate and having the benefit or burden touch or concern the real property.[4] Also, restrictive covenants may not be an option at a site if the property owner is defunct, and therefore cannot grant the covenant, or when there is no grantee to hold the conveyed interest. In the event that there is a property owner, restrictive covenants may still be difficult to implement depending on who owns the property. If the property is owned by a potentially responsible party (PRP), having the PRP record a restrictive covenant on their property can be an express obligation of the cleanup order. If the property is owned by a non-responsible party, however, or a party who EPA exercises its enforcement discretion not to pursue, negotiating the implementation of a restrictive covenant on their property can become problematic. Such parties may either refuse to cooperate or require compensation for the (real or perceived) diminution of their property value that results from placing an encumbrance on the title.

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[1] Prepared by Matthew L. Hicks, Associate Regional Counsel, EPA Region 4.

[2] See Restatement (Third) of Property: Servitudes, § 1.3 (2000).

[3] Restrictive covenants whose restrictions run with the land are called servitudes. See id.

[4] See 20 Am. Jur. 2d *Covenants, Conditions, and Restrictions* § 20 (2006).

States as Partners

If a decision is made to use a restrictive covenant as part of a cleanup remedy, the party performing the response action will need to prepare an instrument that is valid and enforceable under real property law (common law and/or statutory law) in the state that is the situs of the cleanup. Some states have developed model restrictive covenants for use at state superfund, brownfields, or voluntary cleanup sites as a means of effectuating risk-based clean-ups and returning properties to productive use. These models are designed to be consistent with state real property law. As a result, EPA should consider working with states to adapt state models, if available, for use at federal superfund sites.[5]

[5] In many instances, state environmental agencies are familiar with and have played an active role in the development and review of the remedy that calls for institutional controls at a federal superfund site. State environmental agencies are also extremely knowledgeable about their model restrictive covenants and the program(s) that authorize their use. For these reasons, EPA should work closely with state officials in the adaptation of state models for use at federal sites.

EPA should also consider having the state serve as the grantee of the restrictive covenant once it is developed. This makes sense for two reasons. First, most states have a cost-sharing role in the operation and maintenance of remedial actions at National Priorities List (NPL) sites and thus have an interest in ensuring that the restrictive covenant that is implemented is effective and enforceable. The second reason EPA should encourage states to assume the role of grantee of restrictive covenants at federal superfund sites is because of the limitations EPA faces in being named as the grantee. The grantee of a restrictive covenant is usually considered to have received a property interest and Section104(j) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) states that EPA may only acquire a property interest if the state will accept transfer of the interest following completion of the remedial action.[6] Often, restrictive covenants are implemented after the remedy has been completed (a.k.a. "construction complete") and EPA is thus prohibited from acquiring the interest. In the event that construction completion has not yet occurred, EPA must receive approval from the U.S. Department of Justice to acquire the interest, must comply with federal title requirements, and must have the state agree to receive the property interest prior to creation of the interest.[7] Because states have an interest in ensuring the effectiveness of the restrictive covenant and because naming EPA as a grantee on a restrictive covenant can be difficult, if not impossible, it makes sense that the state serve as the grantee.[8]

A state's ability to enter into a restrictive covenant at federal superfund sites may be limited by statute, however. For instance, some state statutes prohibit the use of state institutional controls at NPL sites. Other state statutes are interpreted as authorizing the state environmental agency to enter into restrictive covenants at sites covered by state cleanup programs only. Some states find no authority for state environmental agencies to enter into restrictive covenants at all, regardless of whether the site is part of a state or federal cleanup. The complexity of state authorization issues and the impact they can have on the validity and enforceability of environmental covenants underscores the need for EPA to work closely with its state counterpart when creating federal restrictive covenants.

Key Provisions

[6] See 42 U.S.C.A. § 9604(j) (2007).

[7] CERCLA § 104(j)(2) states that EPA may acquire an interest in real property in order to conduct a remedial action if the state provides EPA assurances, through a contract, cooperative agreement, or otherwise that the state will accept transfer of the interest following completion of the remedial action *before the interest is acquired*. See id (emphasis added).

[8] Other suitable grantees might include PRPs, local governments, adjacent property owners, or nonprofit groups.

Restrictive covenants for use at environmental cleanup sites can vary from state to state in form, substance, and title.[9] These variations often reflect differing requirements under state property law and the state superfund, brownfields, or voluntary cleanup program statutes and regulations that authorize the use of restrictive covenants. EPA must be mindful of these distinctions if it chooses to adapt a state model for use at federal superfund sites. At the same time, EPA should ensure that the restrictive covenant contains language that is necessary and appropriate in the federal cleanup context. Provided below is a discussion of key provisions that EPA should consider incorporating into restrictive covenants used at federal superfund sites.

Authority

Restrictive covenants should state the authority each agency is relying on to implement, monitor, and enforce the covenant. For EPA, this is CERCLA §§ 9601 et. seq. For the state, this is often the state superfund, brownfields, or voluntary cleanup program statutes or regulations. The state may be able to cite to a cooperative agreement with EPA to implement institutional controls at federal superfund sites as further authority. The restrictive covenant should also reference the decision document that calls for the restrictive covenant and, in the case of a PRP-lead site, the enforcement order that obligates the responsible party to implement the restrictive covenant.

Intent

Restrictive covenants should express the intent of the parties to create a restrictive covenant that runs with the land. The restrictive covenant should therefore clearly state that the covenant touches and concerns the property, is perpetual unless modified or terminated, and runs with title to the property.

Use Restrictions

[9] Restrictive covenants for use at environmental cleanup sites are sometimes referred to as "environmental covenants," "land use restrictions," or "negative easements."

Use restrictions are property rights that the grantor severs from the property (and conveys to the grantee), prohibiting future owners from exercising such rights. Use restrictions can be categorized into restrictions that protect the integrity of the remedy and restrictions that prevent exposure to contaminated material. It is essential that the use restrictions set forth in the restrictive covenant reflect what is called for in the decision document. Sometimes the use restriction is followed by a statement such as "except as approved by _____." This would allow for the property user to apply to the oversight agency or other named party for a variance from the use restriction if such use would not frustrate the purposes of the remedy. Allowing for such case-by-case approval can create a problem, however, if evidence of the approval is lost at a later date.[10] One alternative to providing for case-by-case approval of variations is to narrowly tailor the restriction in such a way that would allow for the desired use while still maintaining the protectiveness and integrity of the remedy. A second alternative is to amend the restrictive covenant if it is later determined that a proposed use would be appropriate. In any case, it is important that the wording of the use restriction remain true to what is called for in the decision document.

Enforcement

[10] Such a scenario could create a cloud on the title to the property that might affect its marketability.

Restrictive covenants should name the parties responsible for enforcing the use restrictions set forth in the covenant. At federal superfund sites, enforcement parties often include EPA, the state environmental protection agency, responsible parties, local governments, adjacent property owners, or nonprofit groups. Enforcement parties are typically the grantees of the restrictive covenant and the grantee of a restrictive covenant is usually considered to have received a property interest. As discussed earlier, EPA cannot receive a property interest except under very limited circumstances. Nevertheless, EPA must have the ability to enforce the restrictive covenant and thus will want to be named as an enforcement party. One way to insure that EPA retains its ability to enforce the restrictive covenant without acquiring a property interest is to have the parties to the restrictive covenant name EPA as third-party beneficiary of the covenant with the right of enforcement.[11] EPA may also consider adding a statement to the restrictive covenant that by being named as an enforcement party EPA does not acquire a real property interest.

Notice and Reporting

Restrictive covenants should have a notice provision that requires the property owner to include on all legal instruments that convey an interest in the property (deeds, mortgages, plats, etc.) a notice that the property is subject to the restrictive covenant and a reference to the book and page number where the restrictive covenant is recorded in the local land records office. Restrictive covenants should also have a reporting provision that requires the property owner to submit to EPA and the state an annual compliance certification detailing the owners compliance or lack of compliance with the terms of the restrictive covenant. EPA and the state may also want to include reporting requirements for conveyances of the property, applications for building permits, and changes in land use.

Modification/Termination

Restrictive covenants should address the process for modification or termination of the covenant and the restrictions therein. This includes not only the conditions upon which a covenant may be modified or terminated but also the parties who must approve. In the event that the covenant gives parties other than EPA the ability to modify or terminate the covenant, the

[11] Third-party beneficiary rights are typically associated with contracts but applying them to servitudes such as restrictive covenants is "consistent with the general trend of dispensing with antiquated legal principles of real property transactions and instead focusing on the intent of the parties to the agreement." See *Institutional Controls: Third-Party Beneficiary Rights in Proprietary Controls*, Susan E. Bromm, EPA Office of Site Remediation Enforcement, April 19, 2004. Whether third-party beneficiary rights are recognized in a real estate context is a question of state law that the site attorney will need to answer. The site attorney will also want to confirm that the third-party beneficiary interest is not an interest in real property. See id.

covenant should clearly state that approval may only be given if the clean-up goals set forth in the decision document have been met.

Access

Some restrictive covenants include an access provision where the owner of the property grants the parties to the covenant a right of access to the property for implementation and enforcement of the covenant. A right of access might be interpreted as a property interest so EPA should not be included on the list of parties receiving such grant. A grant of access would also be redundant because EPA, as the lead enforcement agency, has independent access rights under CERCLA. EPA may want to clarify this point in an "EPA Reservation of Rights" section.

Conclusion

Restrictive covenants can be an effective tool for limiting exposure to contaminants and protecting the integrity of the remedy at federal superfund sites. State law governs the use of restrictive covenants so it is imperative that EPA work closely with states in creating a restrictive covenant that will be viable and enforceable under state law. EPA should also encourage states to serve as grantees of the covenant. When drafting the covenant, EPA will want to include language that is necessary and appropriate in the federal cleanup context.

Working with States to Create Restrictive Covenants for use at Federal Superfund Sites: Experiences at EPA Region 4

Presented by:

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and

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Goals of this Presentation

1. To provide a brief overview of restrictive covenants
2. To discuss how states may serve as key partners in the creation of restrictive covenants for use at federal superfund sites
3. To identify key provisions drafters should consider including in restrictive covenants
4. To share our experiences preparing and implementing a restrictive covenant at the Lyman Dyeing and Finishing Superfund Site in Lyman, South Carolina

Restrictive Covenants : Definition

Restrictive Covenants are legal devices recorded in the local land records office that require a property owner to refrain from doing something on his or her land.

Restrictive Covenants : Strengths

1. can run with the land (i.e., pass automatically to successive owners or occupiers of the land or interest in land).

2. provide for legal enforcement of violations of use restrictions.

3. once recorded, provide constructive notice to prospective property purchasers of prohibited uses.

Restrictive Covenants : Weaknesses

1. can be invalidated if RC fails to meet certain common law requirements (e.g. privity of estate, having the benefit or burden touch or concern the real property).

2. require a grantor (property owner) to grant a property interest. Problem if:

a. property owner is defunct

b. property owner is a non-responsible party

3. require a grantee (holder) to hold the property interest.

States as Partners

State environmental agencies can be invaluable partners in the creation, implementation, monitoring, and enforcement of restrictive covenants at Federal Superfund sites. Two key ways that states can assist EPA are:

1. Working with EPA to adapt state model restrictive covenants, if available and appropriate, for use at federal superfund sites

2. Agreeing to serve as grantee of the restrictive covenant

Adapting State Models

1. Restrictive covenant must be valid and enforceable under the real property law (state common and statutory law) in the state where the site is located.

2. Some states have created model restrictive covenants for their state superfund, brownfields, or voluntary cleanup programs.

3. Because state model restrictive covenants are designed to be consistent with state real property law, EPA should consider working with states to adapt state models, if available and appropriate, for use at federal superfund sites.

Adapting State Models (cont'd)

Region 4 states with model restrictive covenants:

Florida - "Declaration of Restrictive Covenant"

Kentucky - "Environmental Covenant"

North Carolina - "Declaration of Perpetual Land Use Restrictions"

South Carolina – "Declaration of Covenants and Restrictions"

States as Grantees

EPA should consider having states serve as grantees of restrictive covenants for two reasons:

1. Most states have a cost-sharing role in the operation and maintenance of remedial actions at National Priorities List (NPL) sites and thus have an interest in ensuring that the restrictive covenant that is implemented is effective and enforceable.

2. Pursuant to Section 104(j) of CERCLA, EPA is limited in its ability to serve as grantee.

Limitations on EPA's Ability to Serve as Grantee

1. The "grantee" of a restrictive covenant is usually considered to have received a property interest.

2. To receive a property interest requires the approval of U.S. DOJ (and compliance with federal title requirements).

3. State must agree, prior to creation of the interest, to accept the property interest upon completion of the remedial action. See 42 U.S.C.A. § 9604(j); 40 C.F.R. § 300.510(f).

4. EPA can't possess a property interest after completion of the remedy. Completion is considered to be the point at which O&M measures are initiated. See id.

Limitations on States' Ability to Enter into Restrictive Covenants at Federal Superfund Sites

1. some state statutes prohibit the use of state institutional controls at NPL sites

2. some state statutes may be interpreted as authorizing the state environmental agency to enter into restrictive covenants at sites covered by state cleanup programs only

3. some states find no authority for state environmental agencies to enter into restrictive covenants at all, regardless of whether the site is part of a state or federal cleanup

Key Provisions

Authority

EPA

1. CERCLA §§ 9601 et. seq.

2. decision document / enforcement order

State

1. state superfund, brownfields, or voluntary cleanup program statutes or regulations

2. cooperative agreement

Key Provisions (Cont'd)

Intent

The restrictive covenant should clearly state that the covenant touches and concerns the property, is perpetual unless modified or terminated, and runs with title to the property.

Key Provisions (Cont'd)

Use Restrictions

1. Two general categories:
   a. - restrictions that protect the integrity of the remedy; and
   b. - restrictions that prevent exposure to contaminated material

2. use restrictions set forth in the restrictive covenant should reflect what is called for in the decision document

3. variances from use restrictions can cloud title

Key Provisions (Cont'd)

Enforcement

1. Restrictive covenants should name the parties responsible for enforcement of the use restrictions

2. At federal superfund sites, enforcement parties often include:

a. EPA
b. state environmental agencies
c. responsible parties
d. local governments
e. adjacent property owners
f. nonprofit groups

Key Provisions (Cont'd)

Enforcement (Cont'd)

3. Enforcement parties are typically the grantees of the restrictive covenant and the grantee of a restrictive covenant is usually considered to have received a property interest.

4. As discussed earlier, EPA cannot receive a property interest except under very limited circumstances- see CERCLA 104(j).

5. Nevertheless, EPA must have the ability to enforce the restrictive covenant and thus will want to be named as an enforcement party.

Key Provisions (Cont'd)

Enforcement (Cont'd)

6. One way to insure that EPA retains its ability to enforce the restrictive covenant without acquiring a property interest is to have the parties to the restrictive covenant name EPA as third-party beneficiary of the covenant with the right of enforcement.

7. For more information, see Institutional Controls: Third-Party Beneficiary Rights in Proprietary Controls, Susan E. Bromm, EPA Office of Site Remediation Enforcement, April 19, 2004.

Key Provisions (Cont'd)

Notice and Reporting

1. RCs should have a notice provision requiring the owner to include on all legal instruments conveying an interest in the property (deeds, mortgages, plats, etc.) a notice that the property is subject to the RC and a reference to the book and page number where the RC is recorded in the local land records office.

2. RCs should also have a reporting provision requiring the owner to submit to EPA and the state an annual compliance certification detailing the owners compliance or lack of compliance with the terms of the RC.

Key Provisions (Cont'd)

Modification and Termination

1. RCs should address the process for modification or termination of the RC and the restrictions therein.

2. If the RC gives parties other than EPA the ability to modify or terminate, the RC should clearly state that approval may only be given if the clean-up goals set forth in the decision document have been met.

Key Provisions (Cont'd)

Access

1. A right of access might be interpreted as a property interest so EPA should not be included on the list of parties receiving such grant.

2. A right of access is unnecessary because EPA has independent access rights under CERCLA.

Lyman Dyeing and Finishing Site
Site Background

1. 14-Acre waste disposal facility used from 1924 to 1965.

2. The Site consists of a 3.9-acre landfill and a 4.5-acre wetland area.

3. This Site is located approximately 700 ft. upstream of a water treatment plant that serves ≈ 40,000 people.

4. Site is zoned industrial. However, industrial, residential & commercial properties surround the Site.


1"=330' 02-10-00 1-02

Lyman Dyeing and Finishing Site RI/FFS

1. The PRP completed the Remedial Investigation and Focus Feasiblity Study (RI/FFS) in January 2003.

2. The RI/FFS revealed the following:

   a. The landfill required an engineered cap

   b. The concentration levels of PAHs, Iron & Arsenic found in on-site soils posed an unacceptable risk for the current site visitor/trespasser scenario.

   c. Contaminated surface soils had the potential to migrate to the wetlands and the Middle Tyger River and impact the water treatment plant

Lyman Dyeing and Finishing Site
Non-Time Critical Removal

In 2004, EPA and the PRP entered into an AOC for a Non-Time Critical Removal Action (NTCRA). The primary goals of the NTCRA include:

1. Excavation and off-site disposal of surface soils in areas where concentration levels result in a risks greater than $1x10^{-6}$ using the **Industrial Land Use Scenario** for Human Health
2. Installation of an engineered cap
3. Off-site disposal of screened soil and partial consolidation of screened soil under the cap
4. Long-Term monitoring of the groundwater and the surface water and sediment in the wetland and Middle Tyger River
5. Implementation of institutional controls

Lyman Dyeing and Finishing Site
Adapting SC's Model Restrictive Covenant

1. Because waste has been left in place that does not allow for unlimited use and unrestricted exposure, institutional controls are necessary.

2. EPA, South Carolina Department of Health and Environmental Control (SCDHEC) and the PRP property owner negotiated a restrictive covenant based on SC's model "Declaration of Covenants and Restrictions."

Lyman Dyeing and Finishing Site Adapting SC's Model Restrictive Covenant (Cont'd)

1. The restrictive covenant includes the following key provisions:

a. runs with title to the property
b. names SCDHEC as an enforcement party
c. names EPA as a third party beneficiary with the right of enforcement
d. gives SCDHEC the right to terminate the RC if (1) the requirements of the AOC have been met, and (2) EPA consents to such termination
e. contains notice and annual reporting requirements

Lyman Dyeing and Finishing Site Use Restrictions

The restrictive covenant includes the following use restrictions:

1. The property shall not be used for residential, agricultural, child day care facilities, schools, or elderly care facilities.

2. If the property is used for recreational purposes, prior approval is required.

3. The groundwater beneath the property shall not be used for consumptive use or other purposes.

4. The property shall not be used in a manner that would interfere with the cap on the property.

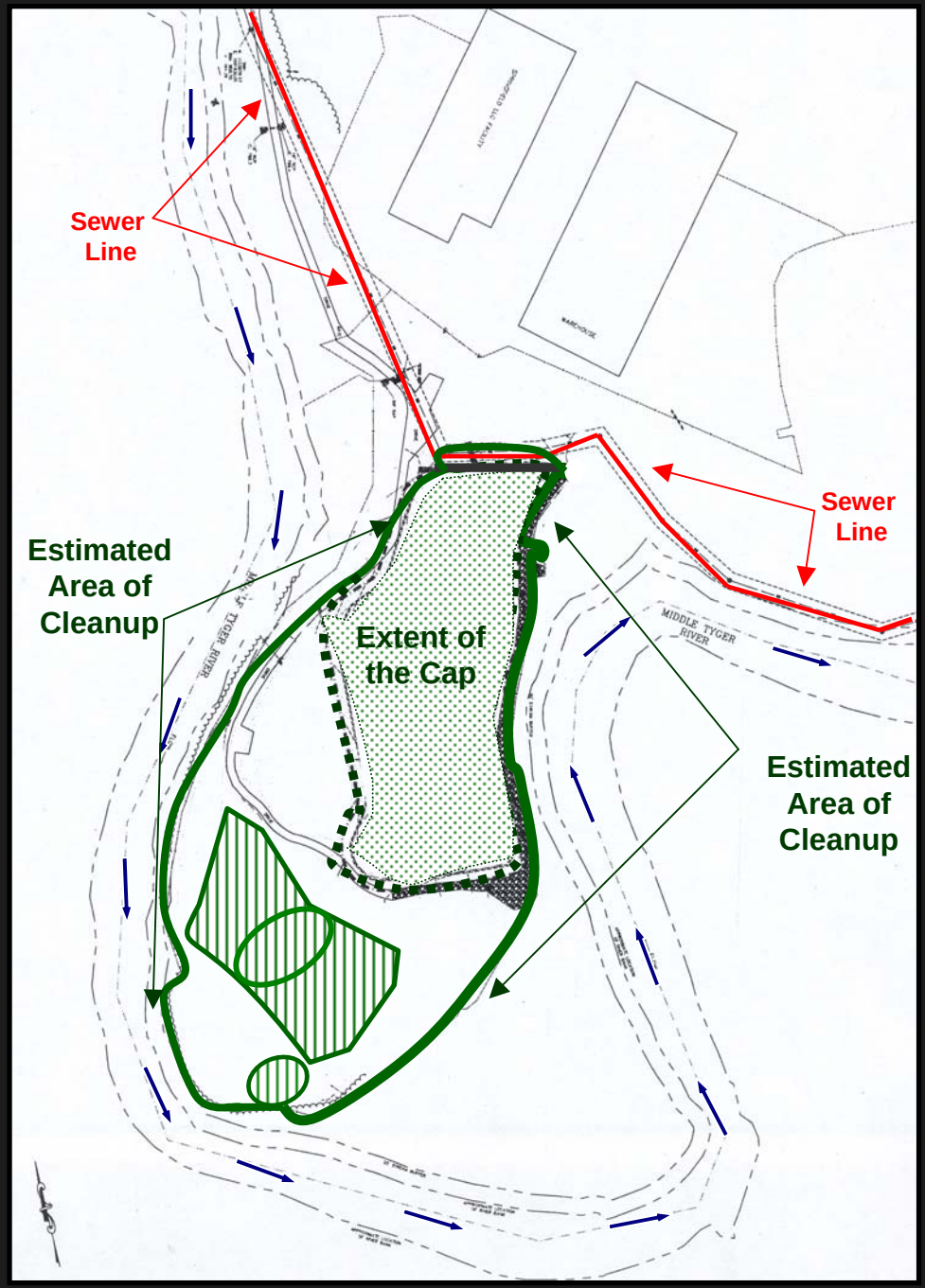
5. There shall be no drilling of groundwater wells on the property.

6. There shall be no digging, excavation, grading or other disturbance of the property to a depth exceeding twelve (12) inches.

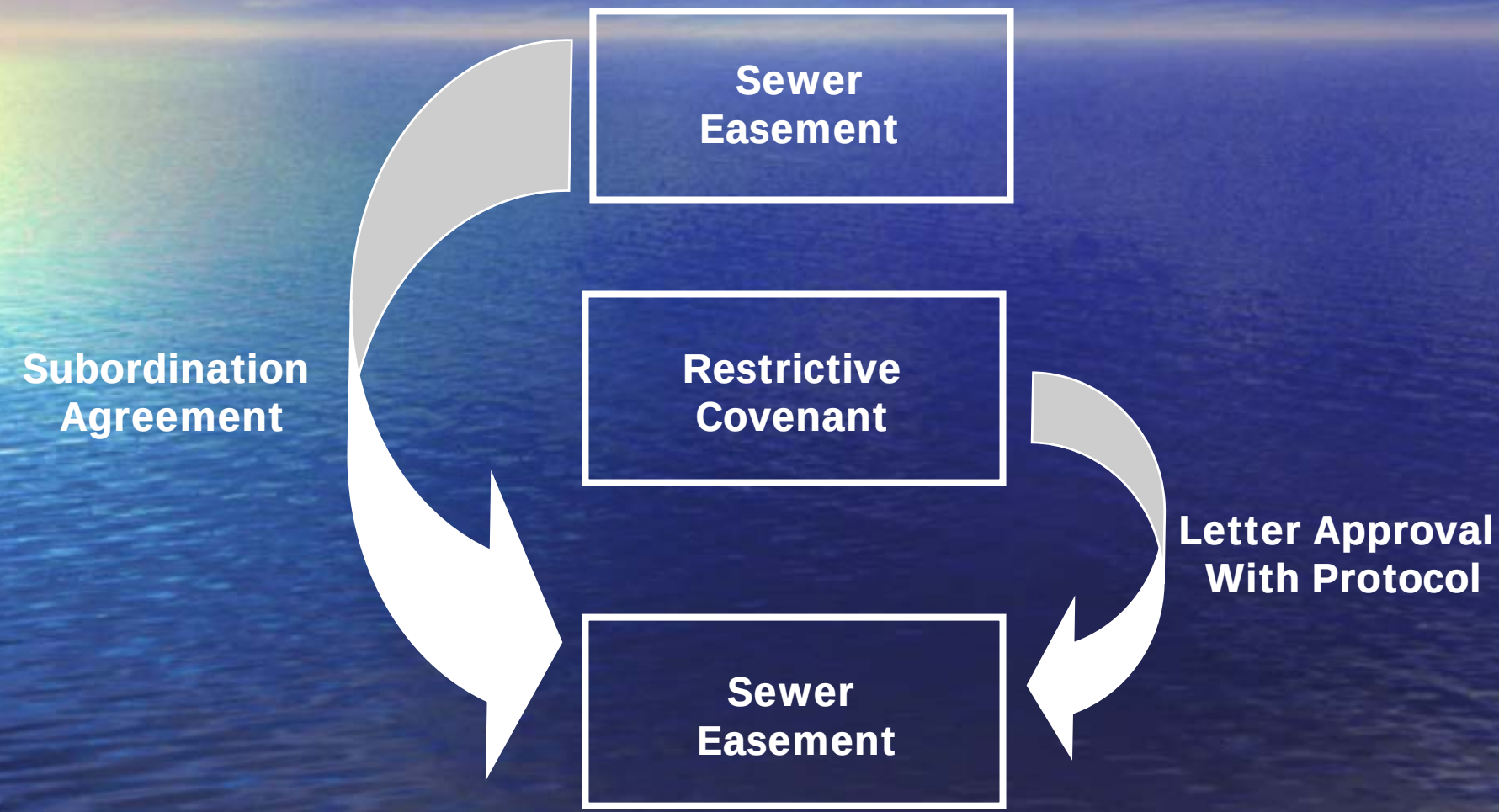
Lyman Dyeing and Finishing Site Title Commitment

1. In order to confirm property ownership and identify any interests that have the potential to affect the validity and enforceability of the Restrictive Covenant, EPA required the PRP to perform a title commitment

2. The title commitment revealed the following conflicting interests:
   a. Judgment Lien
   b. Sewer Easement


Sewer Line
Sewer Line
Estimated Area of Cleanup
Extent of the Cap
Estimated Area of Cleanup
MIDDLE TYGER RIVER

Lyman Dyeing and Finishing Site Subordination



Lyman Dyeing and Finishing Site
Lessons Learned

1. Involve stakeholders (local, state, federal, PRP & the community) early in the process
2. Scope ICs (including title commitment) prior to the decision document
3. Fully address IC objectives and responsibilities in the AOC/CD
4. Work closely with stakeholders to resolve impediments to IC implementation


Thank You!

Elements of an Effective Long-Term Stewardship Program

John Pendergrass
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Goals of Long-Term Stewardship

1. “programs and activities for protecting public health, safety, and the environment at sites where the cleanup has left hazardous substances in place at levels that do not meet an unrestricted use standard and therefore requires some restrictions on the use of the site.”
2. Allowing appropriate reuse of such sites

Objectives of an LTS Program

1. Operate for as long as contamination remains hazardous
2. Minimize human exposure
3. Minimize environmental exposure
4. Provide information to people to enable them to decide about activities at site
5. Maintain information about contamination for future reevaluation of risk

Objectives of an LTS Program

1. Be effective even for those who ignore warnings, violate laws, or do not comply with other requirements

Elements of an Effective LTS Program

1. Robust record keeping system
2. Legally binding restrictions on the use of property, including groundwater
3. Agency with responsibility for overseeing sites, including monitoring and enforcement
4. Regulatory system for groundwater and soils
5. Public information systems

Elements of an Effective LTS Program, cont'd

1. Stable funding (for program and each element)
2. Coordination between government agencies with institutional control responsibilities
   a. State (often multiple agencies)
   b. Federal (often multiple agencies)
   c. Local (often multiple agencies)
3. System for periodic review of sites

Elements of an Effective LTS Program, Bonus

1. Land use planning and control system that considers environmental restrictions
2. Exclusionary zoning
3. Programs for educating the public about risks and appropriate uses
4. Provision for NGOs to be stewards

The Many, Varied Roles of Local Governments

1. Protect public health and safety
2. Promote and facilitate development
3. First responders
4. Land use planning and control
5. Building permits
6. Property records

The Many, Varied Roles of Local Governments, cont'd

1. Provide environmental services
   a. Water, sewage, waste collection and disposal
2. Provide site and LTS information to the public
3. Provide staff and funding

The Many, Varied Roles of States

1. Establish Programs/Making Policy
2. Cleanup Decisions that Lead to ICs
3. Draft/Design ICs
4. Implement ICs
5. Monitor Implementation by Others
6. Enforce ICs

The Many, Varied Roles of States, cont'd

1. Records of cleanup, residual contamination and ICs
2. Review and Reevaluation
3. Approving Modification and Termination
4. Funding IC & LTS programs
5. Provide information to the public

The Many, Varied Roles of Federal Government

1. Set national policy
2. Cleanup decisions that lead to ICs & LTS
   a. CERCLA
   b. RCRA
   c. Others
3. Draft/Design ICs & LTS strategies
4. Implement ICs & LTS (relatively rare)

The Many, Varied Roles of Federal Government, cont'd

1. Monitor implementation by others
2. Enforce ICs
3. Review and reevaluation
4. Approve modification and termination
5. Fund LTS programs

Framework for Estimating Costs

1. Similar approach to engineering costs
2. Labor
3. Materials

Categories of Costs

1. Initial or Set-up costs
2. Implementation costs
    a. Annual or Regular Activities
3. Episodic costs

Initial Activities Costs

1. System costs
   a. Establishing tracking system
   b. Establish system for using tracking system (for local government or other non-owner user)
   c. Amend state laws
2. Set-up costs for a particular IC
   a. Negotiating deed restriction language
   b. Title search
   c. Recording restriction
   d. Infrastructure (rare, but significant at DOE sites)
   e. Adding site to tracking system

Initial Activities cont'd

3. Identify all potential implementers of ICs
   a. State agency
   b. Property records (county recorder)
   c. Local government
   d. Land owner
   e. Responsible party
   f. NGO
4. Determine expected timeline for IC

Regular Activities

1. Monitoring
2. Training

Episodic Costs

1. Response when monitoring/inspection reveals a problem
2. Responding to change in ownership
   a. Updating records/tracking system
   b. Change agreements/enforcement documents

Categories of IC Activities

1. Planning
2. Informing the public
3. Record keeping
4. Administration
5. Monitoring
6. Inspection
7. Enforcement

Thank You

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Long-Term Stewardship Roundtable and Training
April 4-5, 2007
San Diego, California
Session Summary

Session Title:	**Managing Long Term Stewardship Comprehensively within Large Systems**
Date and Time:	Thursday, April 5, 2007, 8:30 a.m., Session C
Speakers:	Chris Cady, MO DNR Dale Rector, TN DEC Tom Lanphar, CA DTSC

Chris Cady Presentation
Missouri's Long-Term Stewardship Program: At a Crossroads

- Lessons learned from the Missouri LTS program
  - Consider studying your state, city, institution, or all three.
  - Data dissemination is key.
  - Consider the mechanics.
  - Involve all stakeholders.
  - Involve local governments.

Questions and comments related to the presentation were as follows:

- Are owners reliable in performing self-inspections?
  - In the Brownfield program, there are a couple of large sites owned by power companies and the power companies do their own inspections every year and have been very good about it. It depends on how sophisticated the owner is; a large utility is probably better than a small company due to resources.

- It is nice to have a consolidated portal (such as www.cpeo.org), which is critical for the communities. Ideally it would be a one-stop shop that would link you to where you need to go.

Dale Rector Presentation
Monitoring and Oversight of the Department of Energy Oak Ridge Reservation in Tennessee

- The Oak Ridge Reservation is now 35,000 acres. There are 100 miles of streams addressed by advisories and ICs; 130 acres of buried waste; 40 million pounds of buried uranium; hundreds of thousands of Curies discharged into streams; six defunct reactors.
- Tennessee oversight agreement is a non-regulatory independent monitoring and oversight agreement.

- Long-term issues include: cleanup budget will likely run out; contaminants will last in perpetuity; engineered structures will fail; and a monitoring and maintenance fund is needed.

Questions and comments related to the presentation are as follows:

- Can you elaborate how the perpetual funding trust is funded, who holds the money, who has the obligation, and how it works?
  - Someone set up the state RCRA statute with a mechanism for a reasonable service charge, which brings in $1 million a year until the site is closed. Interest from that will be used by the state to monitor performance and maintain the site (mow grass, etc.).

- How did you understand what needs to be monitored and LTS? How do you get additional money?
  - The facility maintenance and annual costs were itemized. The money is obtained from interest on a set-aside. If the Department of Energy leaves any perpetual waste in place, there needs to be a perpetual fund.

- The perpetual fund deals with more than just CERCLA piece of the site. It can be used for monitoring other places on the reservation as well.

Tom Lanphar Presentation

A Proposed Management Systems Approach for the Integration of Remediation and Redevelopment at Hunters Point Shipyard

- Hunter's Point Shipyard includes 443 acres of San Francisco Bay and 420 acres of land.
- A management system approach for the integration of remediation and redevelopment can improve environmental protection, coordination and oversight.
- A management system creates an integrated approach to remediation and oversight. It establishes a "Rule Book". It helps ensure compliance and builds credibility and trust. It is not overly onerous and EMS is a model, not a requirement.

Questions related to the presentation are as follows:

- Will the vapor intrusion approach be a contingency remedy (i.e., Will certain levels need to be met in specific areas that require ICs)? If it is a transfer, what mechanism is used to get the Navy to fund it?
  - We are still trying to figure this out. The city and the developer would like the Navy to do it, so they are sampling now to find out where ICs are necessary, but it may take a few years. There is pressure to move it forward. The remedial design could define requirements and then define the extent. As ground water plumes are remediated, there may be a point where there is no VOC issue, so there has to be a process to remove the ICs if no longer needed. We are not sure who pays for it.

- What is driving the endpoint: uses, cleanup level or both?
  - It is a mix of both. As the plans are developed and contamination comes to light, plans have been adjusted.

- Will the radiation be removed or capped?
  - Both. The sanitary and sewer system must be removed to determine the extent of contamination. In the areas with landfills, it cannot be guaranteed that all the contamination is gone, so ICs need to be in place for radiological issues.

- Who is taking responsibility for sediment, since there is no real reuse for it?
  - We will be receiving the feasibility study for Parcel F where there is radiological and PCB issues shortly. The piers may be contaminated, and must be removed and checked. We are considering removal or covering for PCB contamination. We may use activated carbon in sediment to combine and make it non-biologically available. We are trying to define the line that would require actions or ICs and this will be complicated.

Missouri's Long-Term Stewardship Program: At A Crossroads

"LTS" Roundtable, San Diego, CA

March, 2007

Chris Cady, Ph.D.

Environmental Specialist

Missouri Department of Natural Resources

Brownfields/Voluntary Cleanup Program

Missouri Department of Natural Resources

“LTS” Failures:
Better to Prevent than Respond

May 4, 2006 10:31 pm US/Pacific

Bay Area Construction Sites On Toxic W

Anna Werner
Reporting

Published - April, 9, 2006

Day care stands in the shadow
a Superfund site

Lesley Conn
@PensacolaNewsJournal.com

Kerry Kust got every application and inspection she
to open her day-care center.

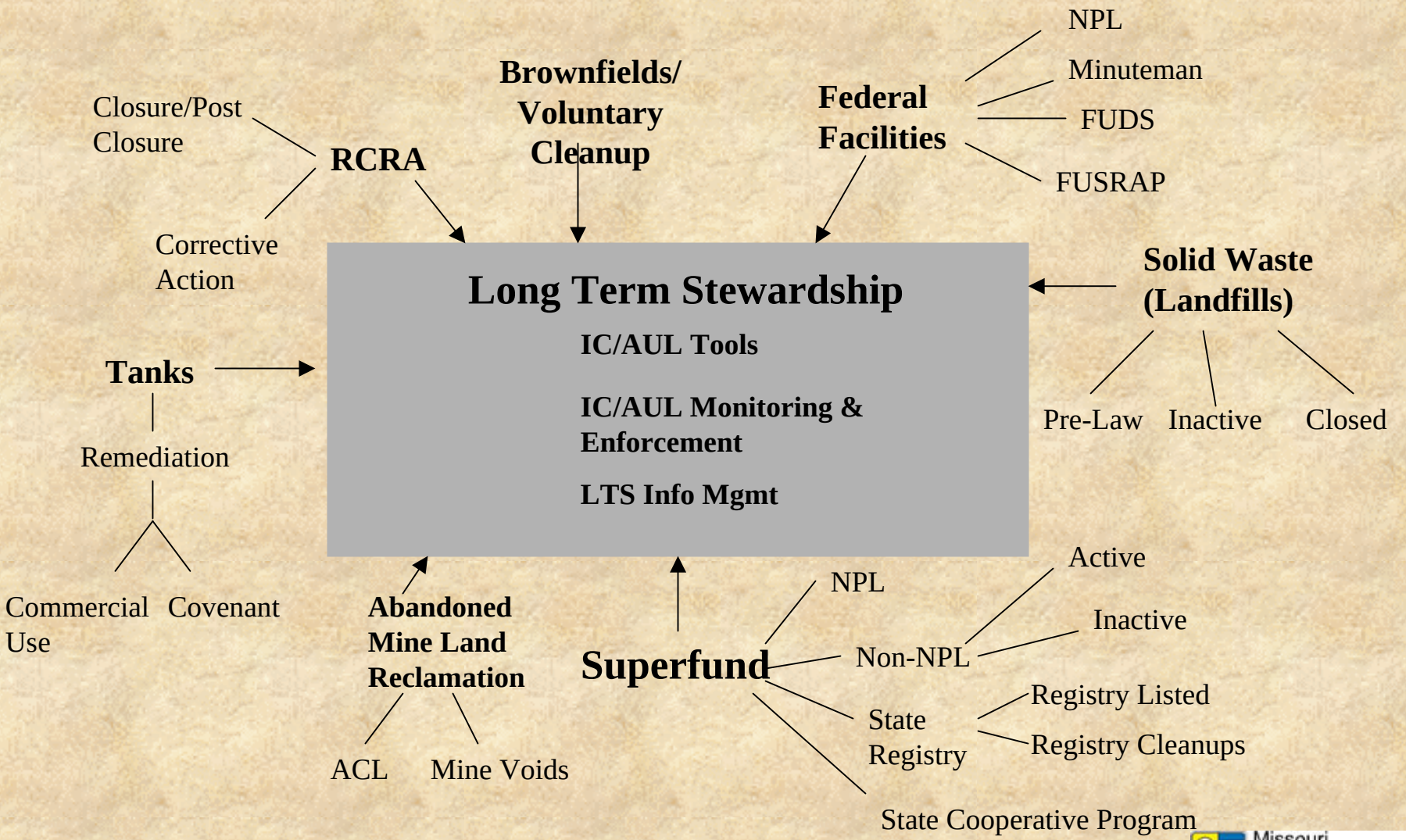
After Mercury Pollutes a Day Care Center, Everyone Points Elsewhe

August 19, 2006, Saturday
By TINA KELLEY (NYT); Metropolitan Desk
Late Edition - Final, Section B, Page 1, Column 1, 1687 words

*Please Note: Archive articles d
not include photos, charts or
graphics. More information.

Sorry, Chief.
Missed it by
THAT much!

Missouri's Long Term Stewardship Universe



Missouri Department of Natural Resources

Missouri "LTS" Study: Will the Ice Cap Melt and Release the "LTS" Monster?

1. Define "LTS" for Missouri
2. Existing laws and regs?
3. What programs?
4. How many sites?
5. When/How does a site become an "LTS" site?
6. Who Monitors restrictions?

Missouri Department of Natural Resources

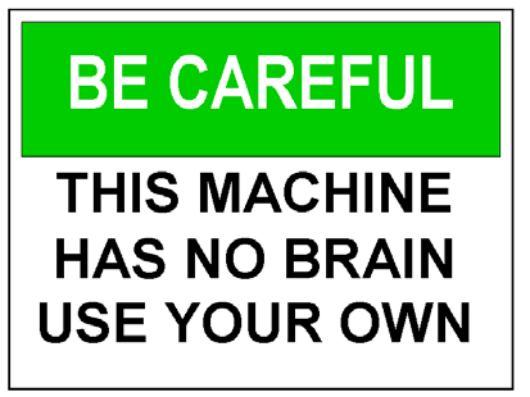
Missouri "LTS" Study Questions

1. Who enforces restrictions?
2. Do outside parties do “M&E”?
3. How is info managed by programs?
4. “UECA”?
5. One-Call?
6. Costs?

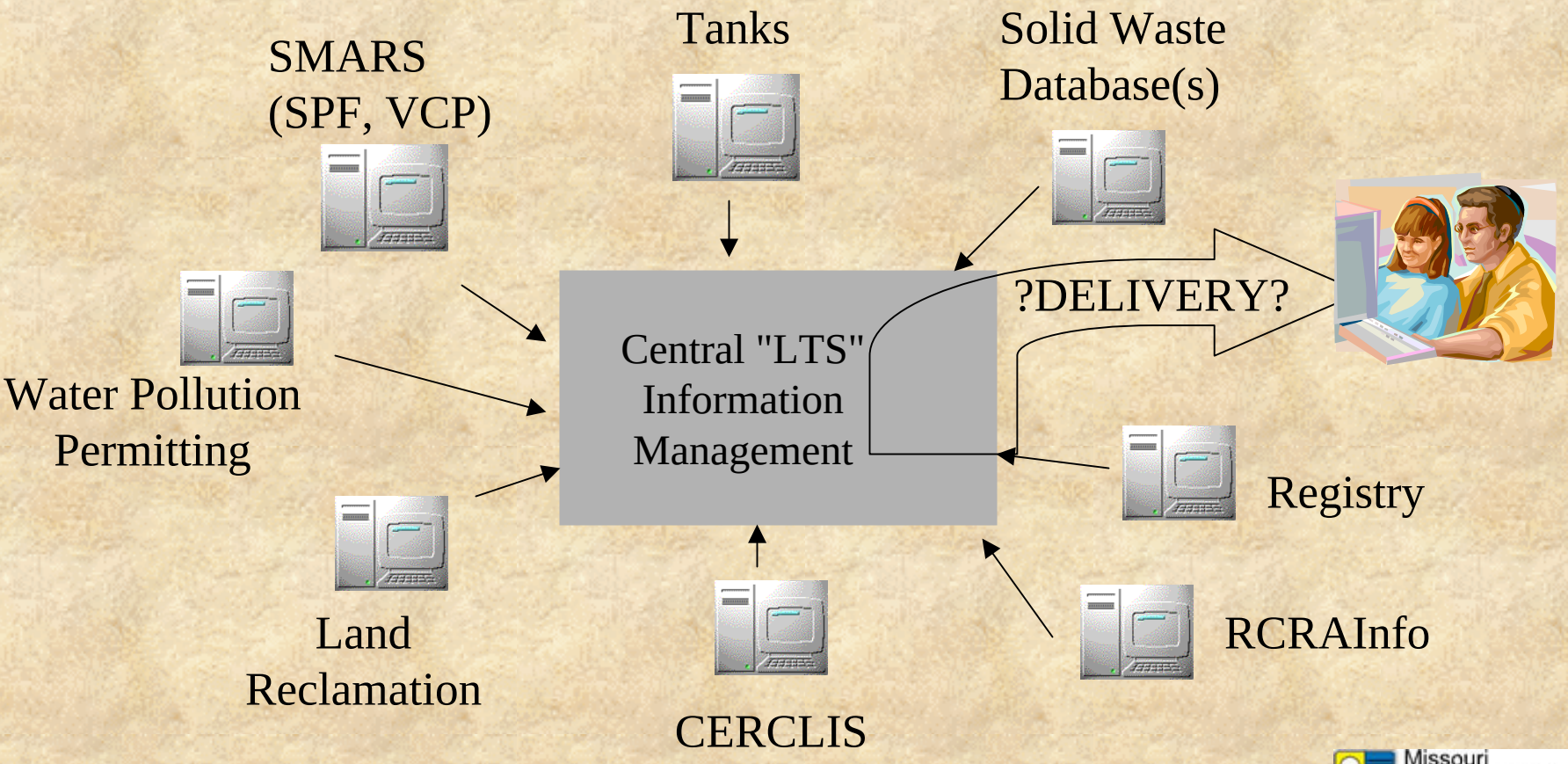
Missouri Department of Natural Resources

Key Study Recommendations

1. Centralize "LTS" Management
2. Define ComMissourin Threshold for Sites
3. Enact UECA
4. Improve Covenant Implementation
5. Investigate One-Call; Major Questions
6. Missourinitoring and Auditing: Involve Responsible Parties
7. Involve Local Governments
8. Determine Costs, Reconsider Fees/Funding
9. Improve Information Management and Delivery



Missouri's "LTS" Information Management Universe



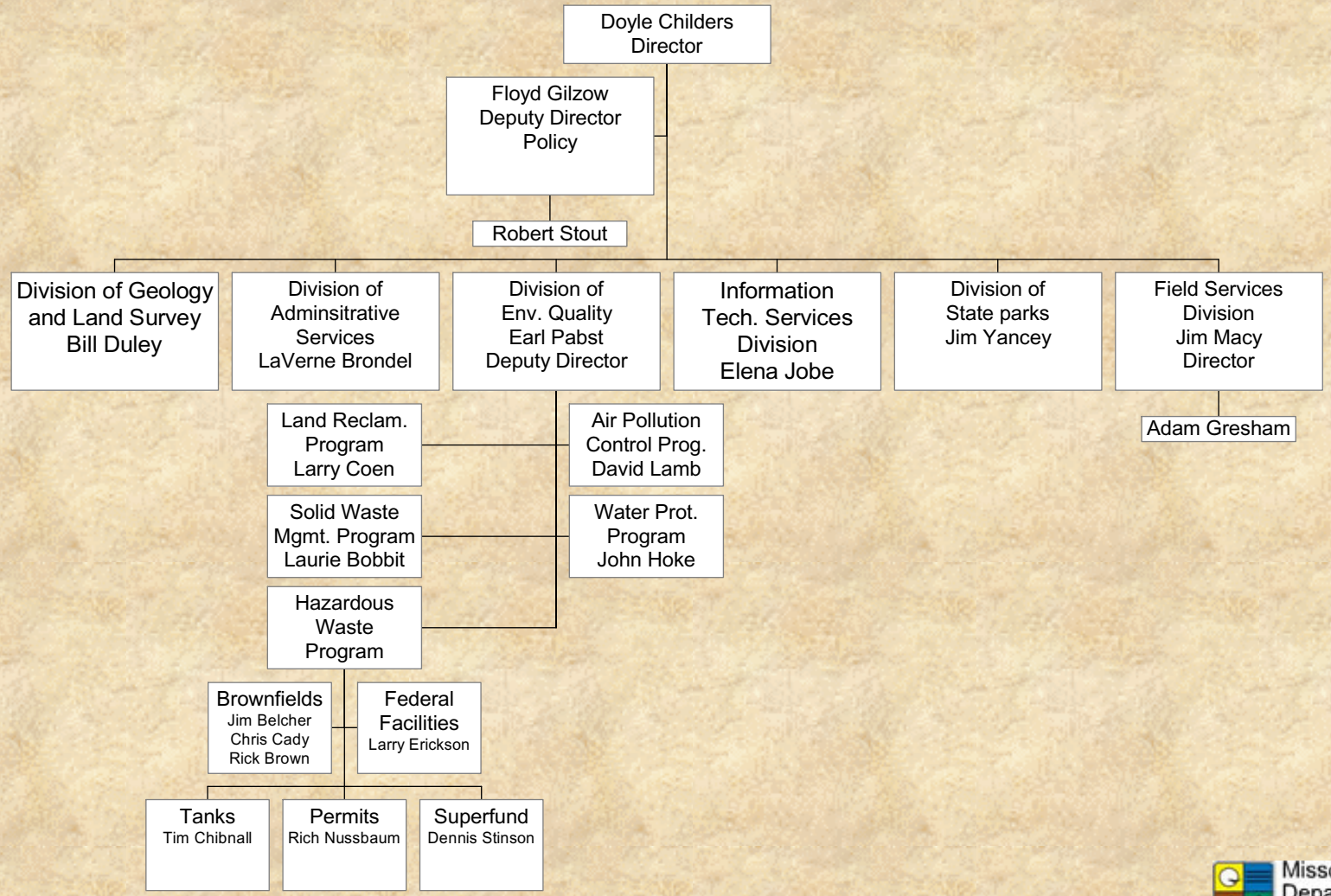
Missouri Department of Natural Resources

This Week's Information Management Pitfalls

1. File Folder Flagellations
2. Is Archiving Forever? File Retention Woes

Missouri Department of Natural Resources

“MDNR” Long Term Stewardship Work Group



Missouri Department of Natural Resources

Take Home Points

1. Consider studying your state/city/institution
2. Holistic approach
3. Data dissemination is key
4. Consider the mechanics
5. Involve ALL stakeholders
6. Listen to low level staff
7. Involve local governments

Missouri Department of Natural Resources

Tennessee

Monitoring and Oversight of the "DOE" Oak Ridge Reservation in Tennessee

To Improve Long Term Stewardship
A Comprehensive Approach

EPA Long Term Stewardship Roundtable
Dale Rector, TDEC "DOE" Oversight Division
April 5, 2007, San Diego, CA

POPULAR NATIVE AMERICAN POSTER


DANGEROUS


21 12:11PM

Presentation Objectives

1. History of the Oak Ridge “NPL” Site
2. The Tennessee Oversight Agreement
   “FFA”, “FFCA”, CERCLA ….
3. Establishment of an onsite disposal facility for CERCLA wastes and Perpetual Fund
4. Inputs into “system improvements”
5. Long Term Issues

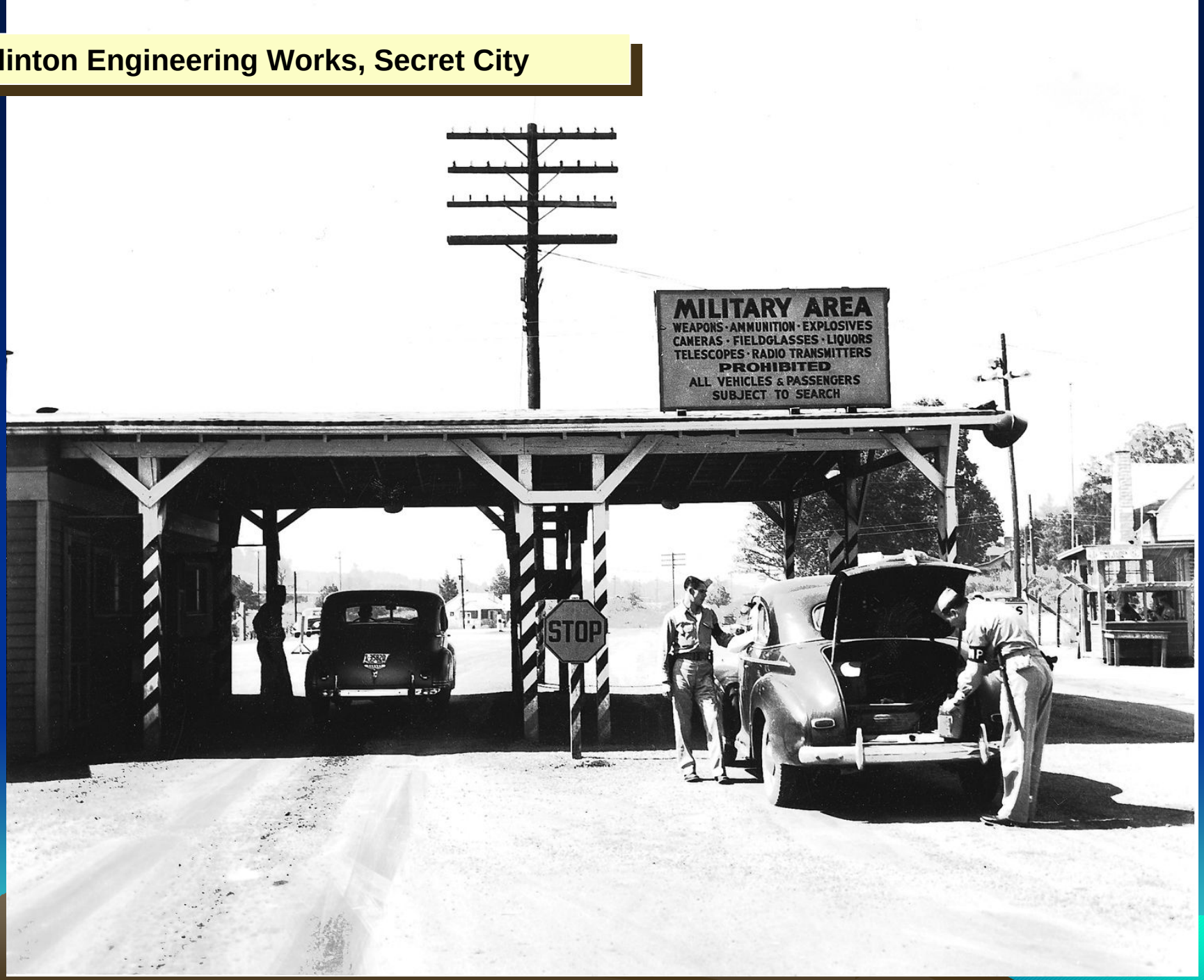
History of the Oak Ridge Reservation

Farm Life Pre-Manhattan

Pre-Manhattan Farm, neatly constructed, three ears corn, good luck

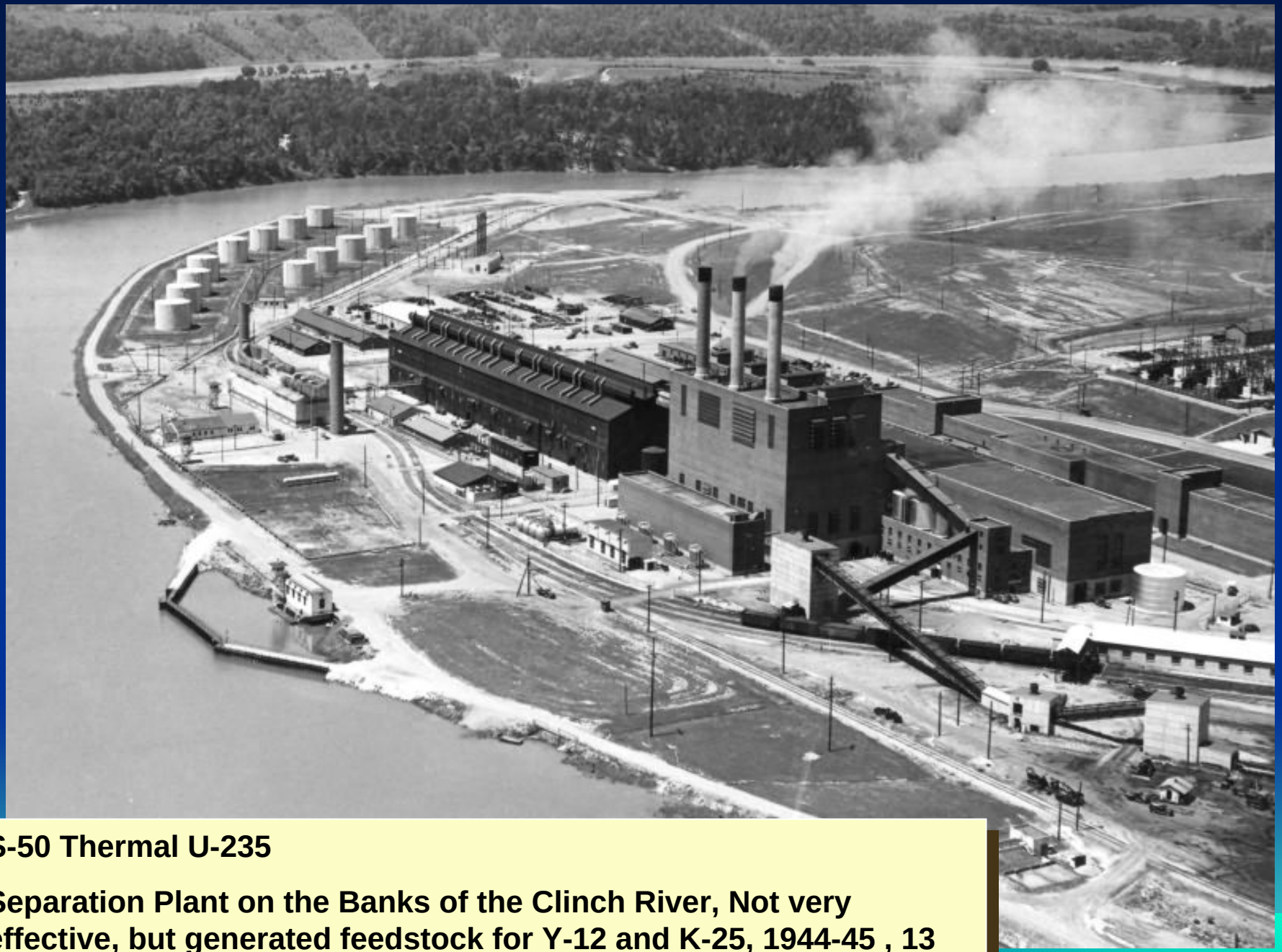
Few bridges and decent roads, crossing the Clinch River

Clinton Engineering Works, Secret City



Size of Industrial Sites and Reservation

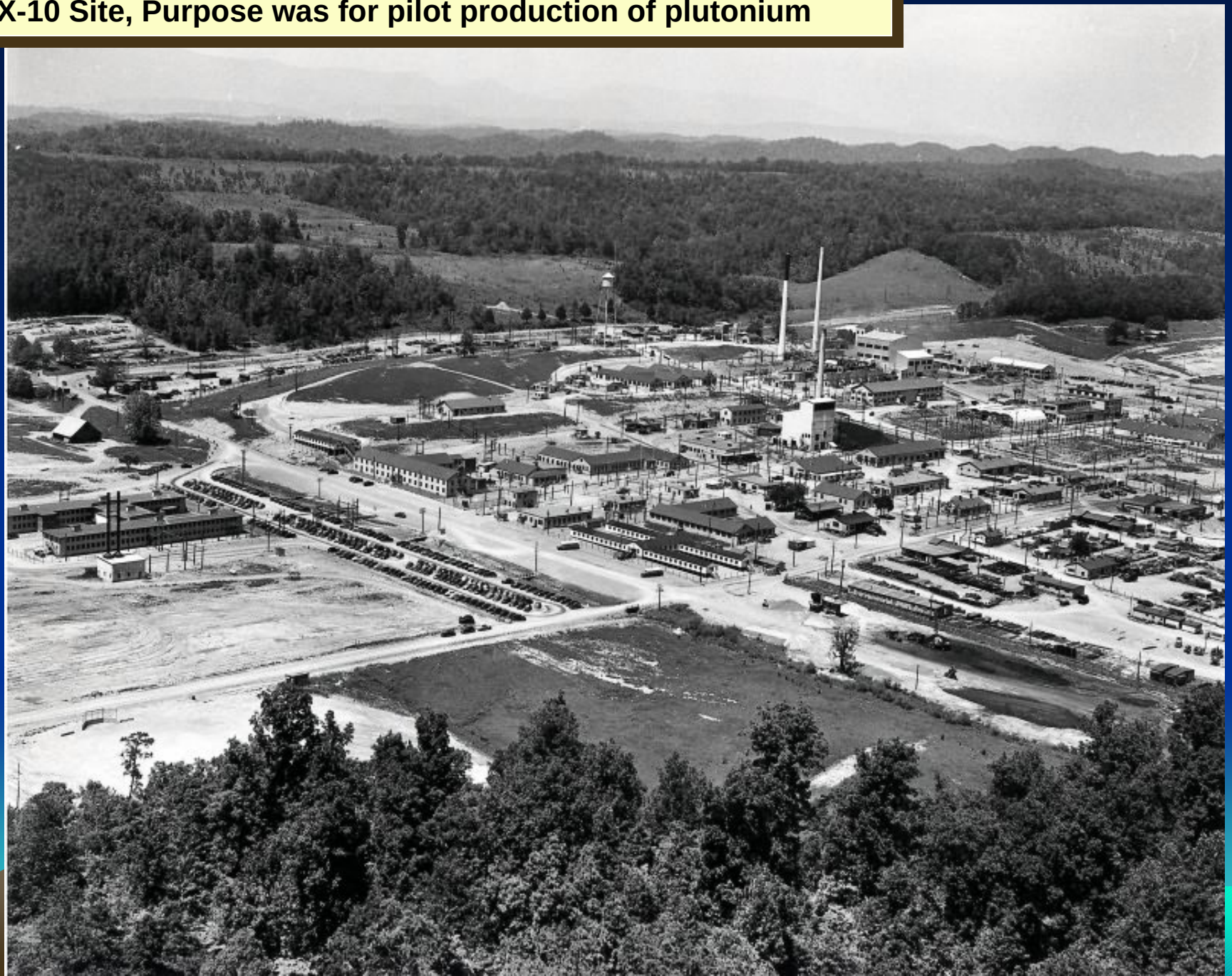
1. S-50 “big” but not there anymore
2. Y-12 800 acres
3. K-25 1,500 acres
4. X-10 2,900 acres
5. Oak Ridge Reservation originally 59,000 acres, but is now 35,000 acres
6. Oak Ridge City Limits still 59,000 acres



S-50 Thermal U-235

Separation Plant on the Banks of the Clinch River, Not very effective, but generated feedstock for Y-12 and K-25, 1944-45 , 13 Tanks contents “rivered” per legend

X-10 Site, Purpose was for pilot production of plutonium



Oak Ridge National Laboratory

DOE photo

K-25, Purpose, separation of U-235, Each side of "U" is one-half mile. Site is two miles across. Probably late 1943 to 1945.

K-25 enrichment converters. Eventually there were five large enrichment buildings

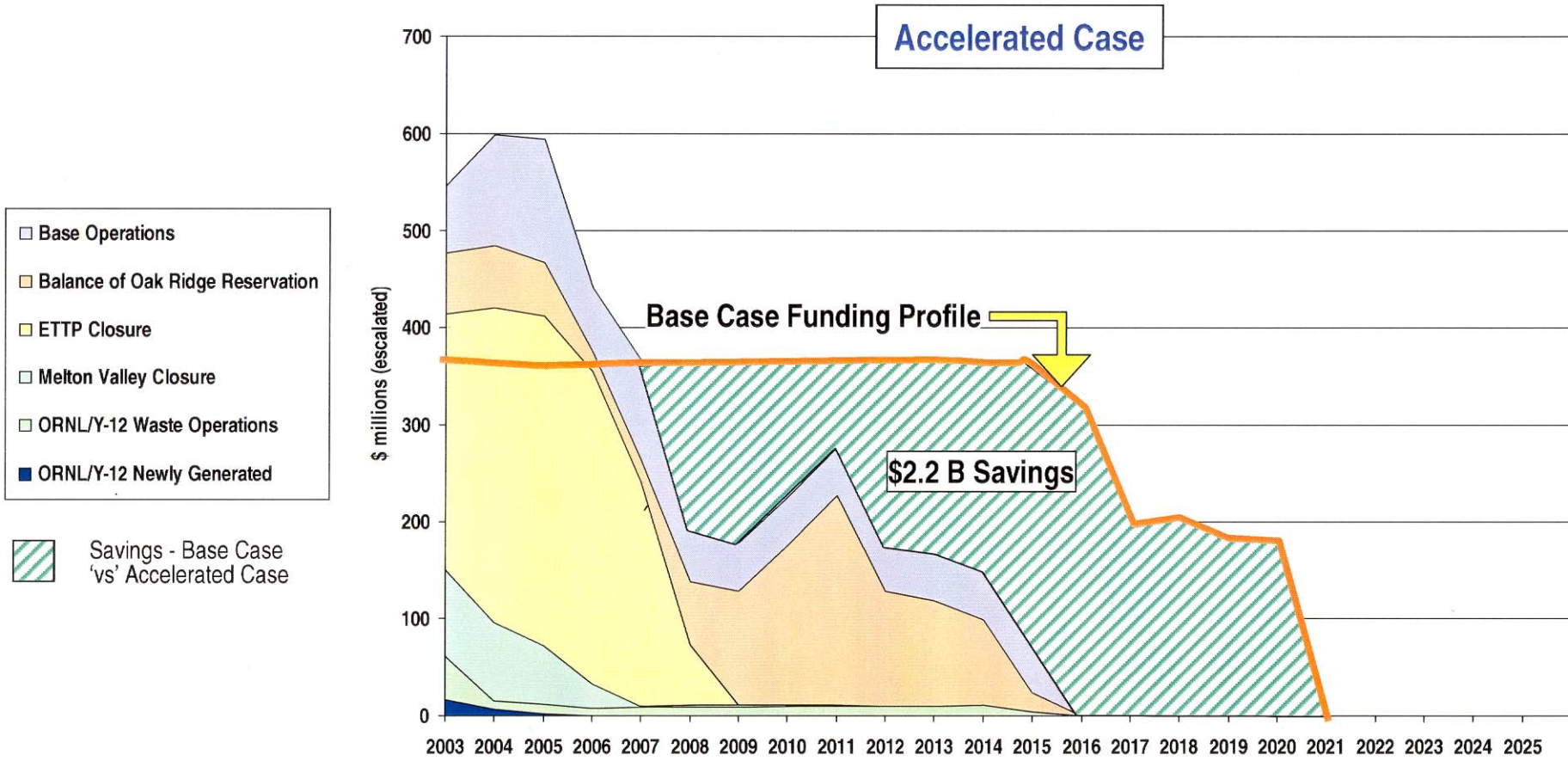
Y-12, magnetic separation plant for U235. Plant, well over two miles in length 1940s. Today's groundwater contamination reaches over four miles.

Nature and Extent of Contamination

1. 100 miles of streams addressed by advisories and institutional controls
2. 130 acres of buried waste (6 mil Curies)
3. 40 mil pounds buried uranium
4. 250,000 Curies discharged into streams
5. 339,000 pounds mercury discharged into streams

Nature and Extent Continued

1. Six shut down reactors
2. More than 400 surplus facilities
3. "LLW", mixed "LLW," and most of "DOE" "RH", "TRU" stored in Oak Ridge
4. 62,000 tons of uranium hexafluoride
5. Several offsite commissioners orders for scrap yard type cleanup

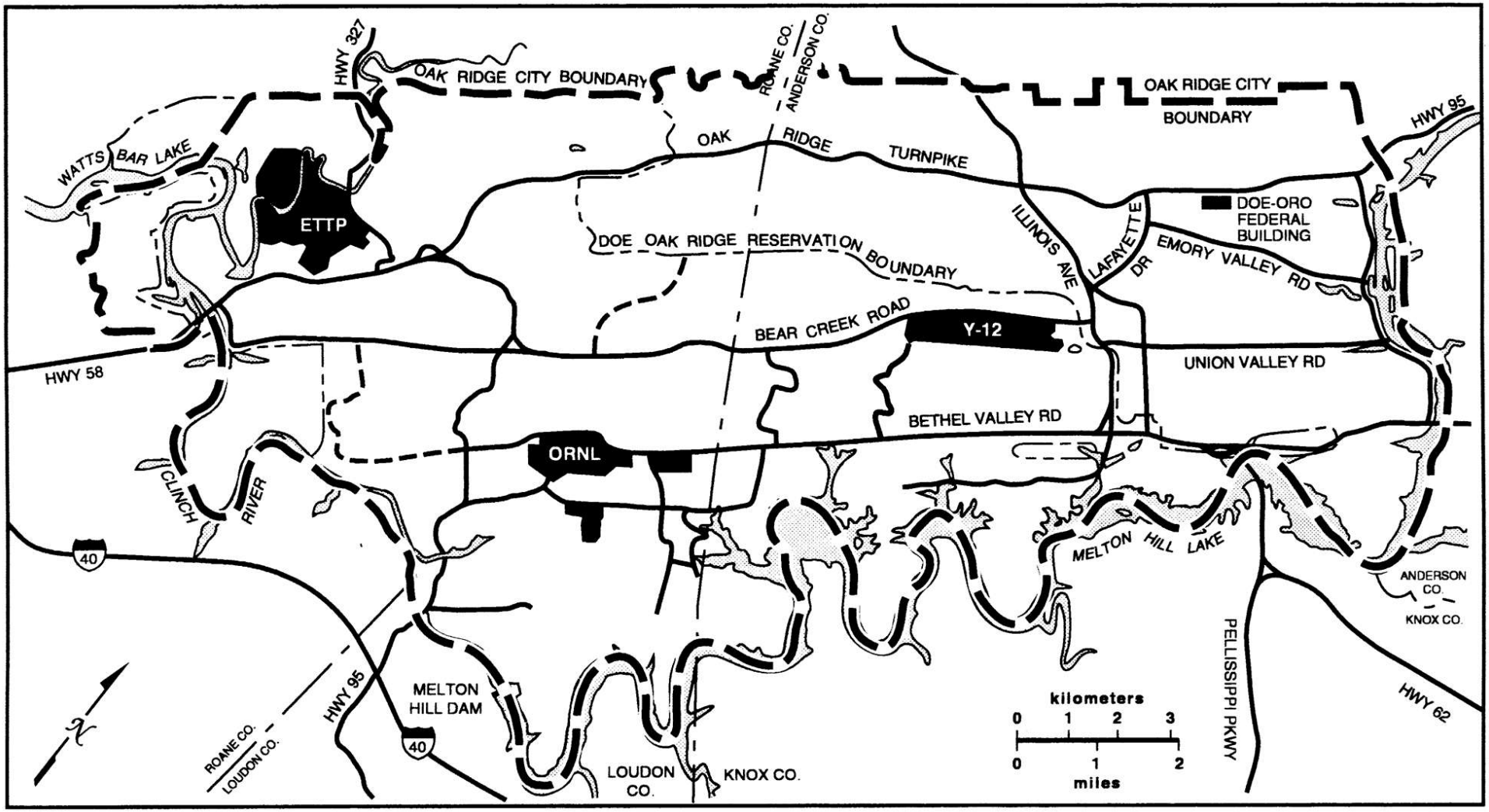


	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Base Case	386	382	384	381	382	382	383	385	384	386	389	387	382	336	208	220	193	193	61	7	2	1	0
Funding Required for Acceleration	161	252	251	141	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Savings	0	-35	-40	-79	-78	-189	-205	-160	-108	-209	-220	-235	-302	-318	-206	-219	-193	-193	-61	-7	-2	-1	0
Net Funding Required from Expedited Cleaup Fund	161	217	211	62		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Accelerated Case	547	598	595	443	367	194	177	225	276	177	169	152	79	19	1	0	0	0	0	0	0	0	0

Figure E.5 Comprehensive Closure Plan Funding Profile

Interim Holding Pond Area of White Oak Creek Flood Plain being cleaned up. June 2002.

City limits still the same as the old “District” boundary and includes, K-25, X-10, Y-12, and the old S-50 site.



Tennessee Oversight Agreement

1. Non-regulatory independent environmental monitoring and oversight, Public Input.
2. Regulatory participation in the Federal Facilities Agreement with “EPA” and "DOE" for CERCLA cleanup, “TDEC”-"DOE"-”O”.
3. Multi-jurisdictional planning for emergency response, TEMA.

Needs

1. Off site waste disposal options, “WIPP”, “NTS”, and commercial
2. On site option needed for high volume “lower activity” wastes (90% of waste)
3. Interstate equity better if Tennessee disposes as much waste as possible onsite
4. Cost effectiveness

Establishment of an Onsite CERCLA Waste Disposal Facility was Needed


Y-12
EMWMF
ETTP
ORNL

Long Term Issues

1. At some point, "DOE" will zero out the clean-up budget
2. Contaminants will last to perpetuity
3. Engineered structures will fail
4. A monitoring and maintenance fund is needed

Need for Long Term Funding

1. The "DOE" complex will be cleaned up
2. Congress might view projects as “finished”
3. Subject to annual appropriations at any rate
4. Needed a trustworthy source of funding for state monitoring
5. “Trust Fund” ***Reliable Fund***

Inputs into “System” Improvements

1. “Project Core Teams” Region IV “EPA”, State, "DOE" and contractors.
2. Monitoring to assess releases from clean-up activities, surface water and air.
3. Site visits to assess effectiveness and adherence to plans
4. Automated monitoring and data logging of radiation from waste trucks

Inputs into “System” Improvements, Cont.

1. Observations may result in audits on particular waste lots.
2. Insure plans are followed and Data Quality Objectives are met
3. Insure Waste Acceptance Criteria are followed
4. Ultimately insure that the disposal facility is not loaded over its design capability.

Inputs into "System" Improvements, Cont.

1. Implement Corrective Actions, such as
2. Carry Lessons Learned into future work
3. Carry all existing statistical uncertainties into volume weighted sum of fractions for onsite disposal "WAC" attainment
4. Provide extra conservatism to compensate for particular lax characterizations.

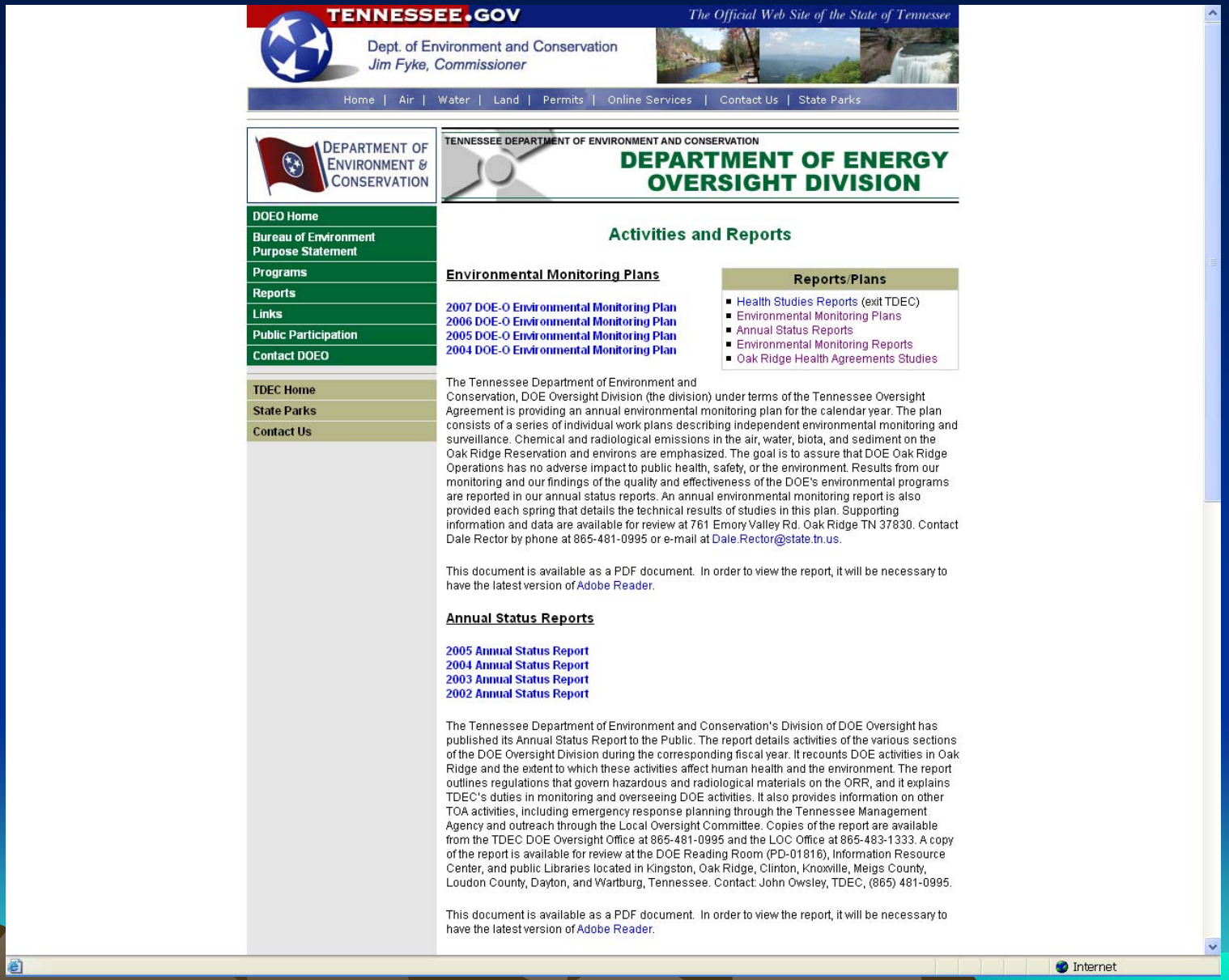
Long Term Issues

1. Residual Contamination in Soils and Groundwater After Clean-up
2. “Perpetual” Wastes (uranium) disposed on-site will in-grow daughters (radium etc)
3. Hydro-fracture will likely remain, millions of curies pumped into deep shale formation
4. Communication to the future through a tradition of environmental stewardship

Hope for the Future

1. The "DOE" funded Oak Ridge Site Specific Advisory Board Stewardship Kit for Local Schools
2. The “TOA” funded Local Oversight Committee relates with local county executives and the public.
3. Information available on the internet and in local libraries.

http://www.state.tn.us/environment/doeo



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Dept. of Environment and Conservation
Jim Fyke, Commissioner

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TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION

DEPARTMENT OF ENERGY OVERSIGHT DIVISION

Activities and Reports

Environmental Monitoring Plans

2007 DOE-O Environmental Monitoring Plan
2006 DOE-O Environmental Monitoring Plan
2005 DOE-O Environmental Monitoring Plan
2004 DOE-O Environmental Monitoring Plan

Reports/Plans

- Health Studies Reports (exit TDEC)
- Environmental Monitoring Plans
- Annual Status Reports
- Environmental Monitoring Reports
- Oak Ridge Health Agreements Studies

The Tennessee Department of Environment and Conservation, DOE Oversight Division (the division) under terms of the Tennessee Oversight Agreement is providing an annual environmental monitoring plan for the calendar year. The plan consists of a series of individual work plans describing independent environmental monitoring and surveillance. Chemical and radiological emissions in the air, water, biota, and sediment on the Oak Ridge Reservation and environs are emphasized. The goal is to assure that DOE Oak Ridge Operations has no adverse impact to public health, safety, or the environment. Results from our monitoring and our findings of the quality and effectiveness of the DOE's environmental programs are reported in our annual status reports. An annual environmental monitoring report is also provided each spring that details the technical results of studies in this plan. Supporting information and data are available for review at 761 Emory Valley Rd. Oak Ridge TN 37830. Contact Dale Rector by phone at 865-481-0995 or e-mail at Dale.Rector@state.tn.us.

This document is available as a PDF document. In order to view the report, it will be necessary to have the latest version of Adobe Reader.

Annual Status Reports

2005 Annual Status Report
2004 Annual Status Report
2003 Annual Status Report
2002 Annual Status Report

The Tennessee Department of Environment and Conservation's Division of DOE Oversight has published its Annual Status Report to the Public. The report details activities of the various sections of the DOE Oversight Division during the corresponding fiscal year. It recounts DOE activities in Oak Ridge and the extent to which these activities affect human health and the environment. The report outlines regulations that govern hazardous and radiological materials on the ORR, and it explains TDEC's duties in monitoring and overseeing DOE activities. It also provides information on other TOA activities, including emergency response planning through the Tennessee Management Agency and outreach through the Local Oversight Committee. Copies of the report are available from the TDEC DOE Oversight Office at 865-481-0995 and the LOC Office at 865-483-1333. A copy of the report is available for review at the DOE Reading Room (PD-01816), Information Resource Center, and public Libraries located in Kingston, Oak Ridge, Clinton, Knoxville, Meigs County, Loudon County, Dayton, and Wartburg, Tennessee. Contact: John Owsley, TDEC, (865) 481-0995.

This document is available as a PDF document. In order to view the report, it will be necessary to have the latest version of Adobe Reader.

Internet

Thanks

1. For having me come to this meeting

2. “TDEC” staff under managers Jim Harless (Monitoring), Bud Yard (Radiation), Doug McCoy (CERCLA), and Kristof Czartoryski (Waste Management)

3. etc

Questions?

Dale Rector

865 481-0995

Dale.rector@state.tn.us

A Proposed Management Systems Approach for the Integration of Remediation and Redevelopment at Hunters Point Shipyard

Tom Lanphar

Office of Military Facilities

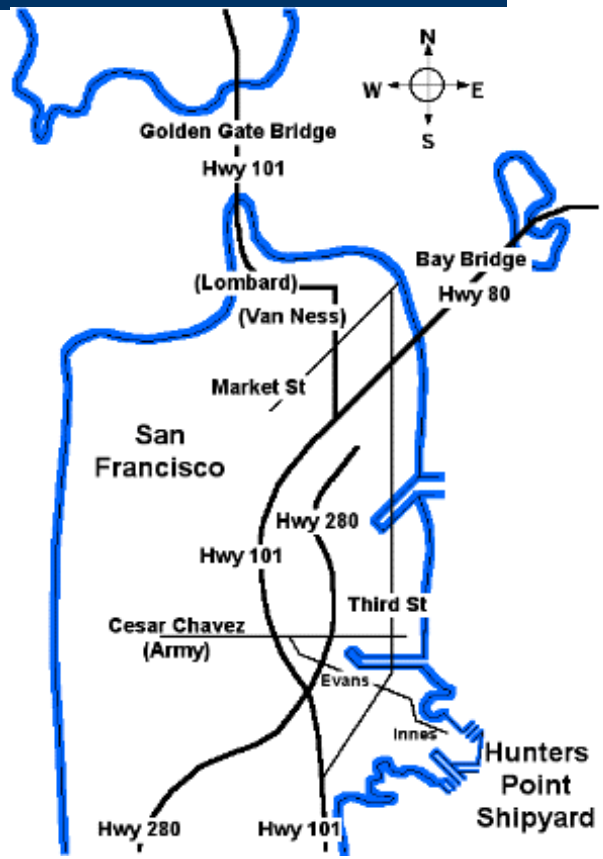
California Department of Toxic Substances Control

Overview

1. Hunters Point Shipyard
2. Remediation/Redevelopment Challenges
3. Management Systems
4. MS Approach to Reme and Redevelopment
5. Conclusions

Hunters Point Shipyard

1. San Francisco, California
2. First Dry Docs 1867
3. World War II
   a. Ship Repair
   b. Operation Crossroads



Hunters Point Shipyard

1. San Francisco, California
2. First Dry Docs 1867
3. World War II
   a. Ship Repair
   b. Operation Crossroads

Hunters Point Shipyard

1. San Francisco, California
2. First Dry Docs 1867
3. World War II
   a. Ship Repair
   b. Operation Crossroads

Hunters Point Shipyard

1. Closed 1974
2. NPL 1989
3. BRAC 1991
4. 420 Acres Land
5. 443 Acres SF Bay
6. Seven Parcels (Operable Units)

Remediation/Redevelopment Challenges

1. Thirty-Two Years Since Closure
2. Eighteen Years Since NPL
3. Sixteen Years Since BRAC
4. Parcel B Record of Decision 2000
5. Parcel B ROD Amendment 2007
6. Parcel A No Action ROD 1998
7. Parcel A Transfer 2005

Remediation/Redevelopment Challenges

1. Active Community
   a. Remediation
   b. Redevelopment
   c. Economic Opportunities
2. Parcel A Redevelopment Experience
   a. Dust – Serpentine - Asbestos
3. Alternative Site for San Francisco 49rs Stadium

Remediation/Redevelopment Challenges

1. Soil:
   a. Ubiquitous Metals Health Risk
   b. Inhalation Risks: VOCs and SVOCs
   c. Radiological Contaminants: Radium, Strontium, Cesium
2. Groundwater
   a. Groundwater Plumes and Isolated Wells
   b. Inhalation Risks: VOCs
   c. Mercury, Metals, PCB: SF Bay

Remediation/Redevelopment Challenges

1. Proposed Remedies
   a. Metals and Radiation in Soil:
      1. Hot Spot Removal
      2. Free-Release of Rad where possible
      3. Cover and Caps (Entire Shipyard) with Institutional Controls (ICs)

Remediation/Redevelopment Challenges

1. Proposed Remedies
   a. VOCs and SVOCs in Soil and Groundwater
      1. Hot Spot Removal
      2. Groundwater Treatment and Monitoring
      3. Soil Vapor Extraction
      4. Extensive Use of Vapor Control Systems with ICs

Remediation/Redevelopment Challenges

1. Multi-Agency Coordination
   a. Navy
   b. US EPA
   c. California DTSC
   d. California Water Board
   e. City and County of San Francisco

Remediation/Redevelopment Challenges

1. Proposed Early Transfer
   a. City and Developer takes responsibility for remediation
   b. Remediation (covers, vapor controls, and removal) integrated with redevelopment.

Remediation/Redevelopment Challenges

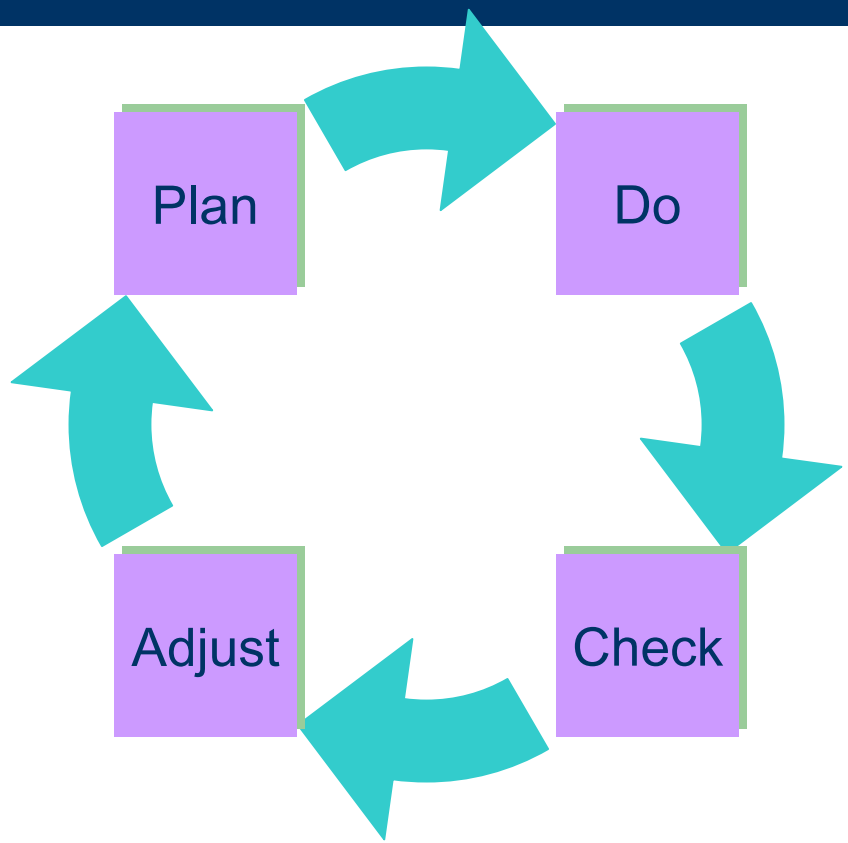
City and Developer seeks clear ‘rule book’ and limited agency oversight.

1. Pre-approval for many activities if meet specifications.
   a. Covers: roads, landscaping, building
2. Hierarchy of Agency involvement in more complex areas
   a. Vapor control systems
   b. Groundwater remediation
3. Reporting
   a. Status Reports
   b. New Discoveries

Management System Approach

Thesis: A Management System Approach for the integration of Remediation and Redevelopment can improve environmental protection, coordination, and oversight.

Management System Cycle



Management System Approach

1. Examples
    a. Environmental Management System
        1. IS0 14000
        2. EMAS
    b. Quality Management System
        1. ISO 9000
    c. Dynamic Groundwater Monitoring
2. EMS as a model, not a requirement!
3. Much of the system is already a requirement!

MS Approach: PLAN

1. Environmental Policy
   a. Clearly and succinctly communicates commitments and expectations
   b. EMS commitments to compliance, prevention of pollution and continual improvement
2. Aspects and Impacts
   a. Identification of important activities with potential impacts, for example:
      1. Soil movement > dust generation, metals, voc and asbestos emissions
      2. Transportation > dust generation, hazardous waste movement in community
      3. Cap and cover construction > risk reduction

MS Approach: PLAN

1. Legal and Other Requirements (The Rule Book)
    a. Record of Decision
    b. Remedial Design
    c. Applicable Relevant and Appropriate Requirements
    d. Institutional Controls
    e. Land Use Covenants
        1. Implementation and Enforcement Plan
    f. Objectives and Targets
    g. Performance goals and indicators
2. Communications: Internal and External

MS Approach: DO

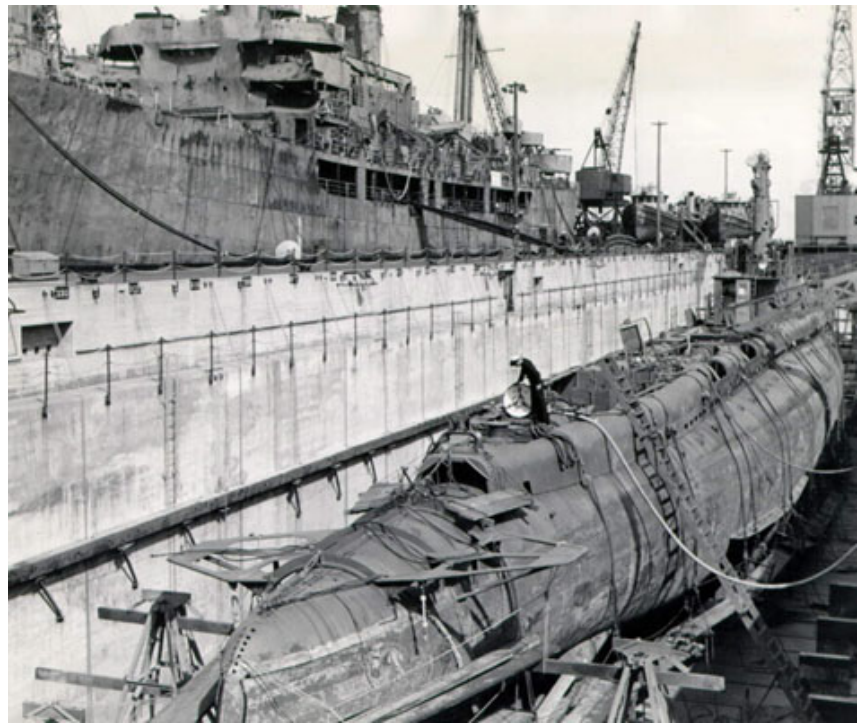
1. Training
   a. Requirements and Competency
2. Operational Controls
   a. Standard Operating Procedures
   b. Soil Management Plans
   c. Groundwater Monitoring Sampling Analysis Plan
   d. Dust Control
   e. Transportation
   f. Environmental Monitoring Programs: VOCs, Radiation
   g. Health and Safety Plans: Construction Worker

MS Approach: DO

1. Implement Remediation
   a. Integrated with Redevelopment
2. Monitoring and Reporting
   a. Groundwater
   b. Air
   c. Soil

MS Approach: CHECK

1. Evaluate Data
2. Site Visits
3. Audits – Compliance and System
   a. Internal
   b. Externals
4. Root Cause Analysis
5. Management Review
   a. Consortium of Managers



MS Approach: ADJUST

1. Specific Corrective Action
    a. Training
    b. Equipment
2. System Improvement
    a. Operational Controls
    b. Communication
    c. Monitoring Programs
        1. Groundwater

Conclusion

1. A Management System creates an integrated approach to remediation and oversight.
2. Establishes “Rule Book”
3. Helps Ensure Compliance
4. Builds Credibility and Trust
5. Not Overly Onerous
6. EMS as a Model, not a Requirement.

Long-Term Stewardship Roundtable and Training
April 4-5, 2007
San Diego, California
Session Summary

Session Title:	**ICs, Removal Actions, and Enforcement**
Date and Time:	Thursday, April 5, 2007, 8:30 a.m., Session D
Speakers:	Helena Healy, EPA OSRE
	Kevin Mould, EPA OEM
	Sherry Estes, EPA Region 5
	Mike Hendershot, EPA Region 3
	Jim Tjosvold, CA DTSC

Ms. Healy introduced the topic for the panel and panel members introduced themselves. Ms. Healy commented that this is the first time representatives from different groups have gotten together to discuss removal actions and ICs.

Ms. Healy and Mr. Mould first presented their slides and questions from the audience followed. Then Ms. Estes, Mr. Hendershot, and Mr. Tjosvold presented their slides with questions following each of their presentations.

Helena Healy Presentation
ICs, Removal Actions, and Enforcement

- Using ICs in conjunction with removals actions is an emerging topic that does not get enough attention.
- Removals are short-term solutions, so more ICs need to be used in conjunction with them.

Kevin Mould Presentation
Removal Actions and Institutional Controls

- The National Contingency Plan only mentions ICs in relation to remedial actions, not removal actions.
- There is some guidance through OSWER and ASTSWMO that suggests long-term stewardship at removal sites after the removal action has taken place.
- Prime Western Smelter, Kansas example.

Questions related to the presentation were as follows:

- (For Kevin) Did the agreement in Kansas run with the land so that the responsibilities would be passed on?
  - A state representative attending the session answered that ICs do run with the land.

- (For Helena) Is the purpose of using ICs in conjunction with removals to anticipate their use for the long-term or just for use as an interim measure until a removal action can take place?

- The purpose is to use them for the long-term, but if also necessary as an interim measure, then they should be used.

Sherry Estes Presentation
Institutional Controls for Buried Radioactive Wastes at Removal Sites in Chicago

- Lindsay Light Company example of thorium contamination in Streeterville.
- ICs may be more needed in areas with piecemeal removal actions and high populations.
- PRPs and developers may be more willing to conduct cleanup in areas with high property values to avoid the taint of ICs.

Questions related to the presentation were as follows:

- From where does the authority for enforcement come?
  - An AOC. The IC is the governmental control.

- Is biointrusion factored in as a long-term strategy for the site? (e.g., small mammals and rats bringing contamination to the surface).
  - Rats might be the only animals present as the site discussed here is a very developed area in Chicago.

Mike Hendershot Presentation
Institutional Controls in Removal Actions

- Example of tundra swan death from ingestion of lead shot on a former recreational shooting range.
- Instead of removing lead shot from the soil, a soil cover was placed on top of the contaminated soil and ICs were instituted. This allowed the current owner to continue farming.
- The ICs were redundant, thus increasing their reliability.

Questions related to the presentation were as follows:

- Were the costs weighed between the actual removal and the O&M costs for leaving it there?
  - This raises an important issue about factoring in O&M costs with removals. The costs were not weighed.

- Did the state have the ability to bill the owner for oversight costs?
  - Yes, if the owner did anything inconsistent with the management plan, the state could bill the owner.

Jim Tjosvold Presentation
Central Eureka Mine: Implementing a Permanent Remedy through Time Critical Removal Action and Institutional Controls

- Arsenic contamination from a former mine (present in dust and bioavailable).

- Removal actions required ICs to ensure long-term protectiveness.
- ICs included fencing and posting signs, land use covenants and deed restrictions.

Questions and comments related to the presentation were as follows:

- Who are the grantor and grantee of the management plan?
  - The owner of the property is the grantor and DTSC was responsible for enforcement and oversight (as prescribed by statute).

- The owners are thrilled with ICs because they look inexpensive. How is EPA looking at getting people to understand the long-term costs of ICs and how to incorporate ICs into long-term perspective?
  - (Helena) Guidance is being developed which will probably be released in 2008. There will be specific guidance related to costing. If EPA moves forward with ICs without considering costs, a lot of band-aids could result.

- Suggestion to not put ICs in place for removal actions that are interim actions. Doing so makes it appear (to PRPs) as if this is all that needs to be done and reduces motivations for cleaning up.

Long Term Stewardship Roundtable

ICs, Removal Actions, and Enforcement

Thursday, April 5, 2007

Our Panel

1. Helena Healy, Branch Chief, Office of Site Remediation Enforcement, EPA
2. Kevin Mould, Office of Emergency Management, EPA
3. Sherry Estes, Assistant Regional Counsel, EPA Region 5
4. Mike Hendershot, Assistant Regional Counsel, EPA Region 3
5. Jim Tjosvold, Chief, California Department of Toxic Substances Control

ICs and Removals

Removals –

1. Short-term responses to prevent, minimize, mitigate or eliminate threats to the public health or the environment at sites where hazardous substances, pollutants, or contaminants have been released or where there is a substantial threat of a release

2. authorized by CERCLA §§104(a)(2), with limits on funding in 104(c)(1)

ICs and Removals

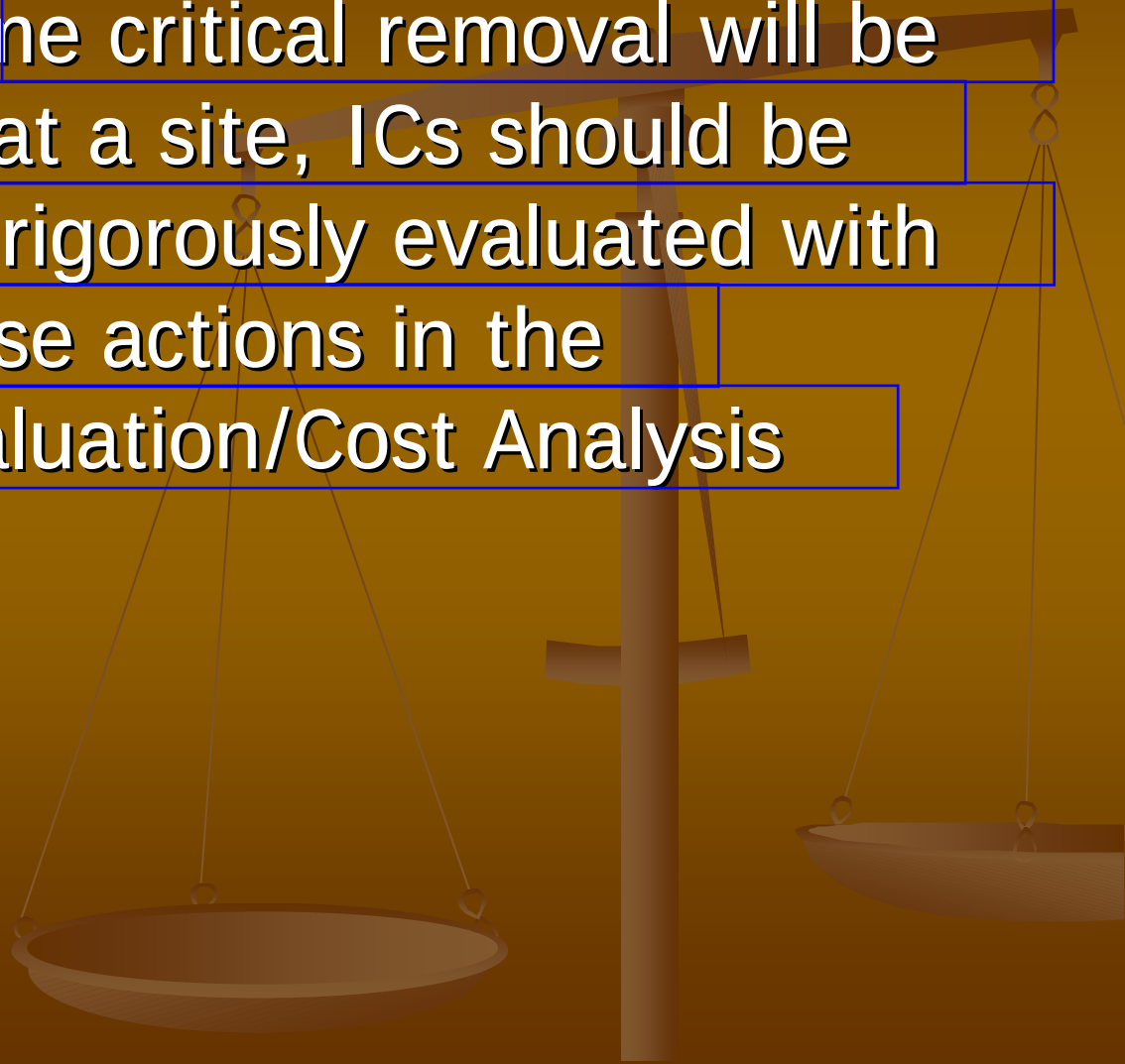
When would you use ICs at removal sites?

ICs are more likely to be a component of a non-time critical removal action or during a follow-up to a remedial action. There are also situations where ICs may be necessary for time critical removal actions.

Post-removal site control agreements should be completed before a fund-financed removal action begins where ICs are included in post-removal site control (OSWER Directive No. 9460.2-02)

ICs and Removals

Where a non-time critical removal will be the final action at a site, ICs should be thoroughly and rigorously evaluated with all other response actions in the Engineering Evaluation/Cost Analysis (EE/CA).



ICs and Removals

What is the role of enforcement?

Ensuring ICs are included in negotiated removal enforcement documents such as Administrative Orders on Consent (AOCs).

Taking enforcement actions when selected ICs at removal sites are not properly implemented by responsible parties (for example, issuance of penalties or 106 orders).

ICs and Removals

Lyman Dyeing and Finishing Superfund Site
Spartensburg, South Carolina

After considering and addressing all comments received on the proposed remedy, on September 30, 2003, EPA issued an Action Memorandum that selected limited excavation and offsite disposal of contaminated soils to a qualifying landfill, an engineered cap, long-term monitoring of groundwater, surface water and sediment in the wetlands and surface water and the sediments at the SJWD intake. In addition, the remedy included institutional controls and access controls. As part of the access controls, a fence will be placed around the cap and appropriate signs will be posted at the Site to deter trespassing.

ICs and Removals

EPA (OSWER and OECA) have been focused on the role of ICs in remedial and RCRA corrective action work. (The National IC Strategy – 2004)

It is time to take the lessons learned from our work and apply it to the world of removal sites to ensure the protection of the clean up and allow for productive and appropriate reuse.

Removal Actions and Institutional Controls

Kevin Mould
EPA HQ
Office of Emergency Management

What are removal actions?

Under section 104(a) of CERCLA, EPA conducts Fund-lead removal actions to address releases and threats of releases that pose threat to public health or welfare or the environment.

What are removal actions?

The National Contingency Plan provides the details on how EPA uses CERCLA authority in sections 300.400 through 300.415.

The NCP has separate sections (300.420 through 300.435) that describe remedial actions.

EPA must consult with States on all removal actions (NCP 300.525)

How Many EPA funded Removals?

In a year, EPA spends over $100 million:

1. Completes 175 +/- fund-lead removals
    1. 85% at non-NPL sites
    2. 40% take < 1 month
    3. 75% take < 6 months
    4. 90% take < 1 year.

Examples of Removals

Following slides show some examples of the range of sites (from mercury houses, to small drum jobs, to plating shops to large excavation)

Drum Jobs

Mercury Spills

Plating Shops

Bigger Sites

Does the NCP address ICs?

1. Yes. But the NCP only mentions Institutional Controls in those sections that describe CERCLA *remedial* actions.
2. There is no mention of Institutional Controls as part of a *removal* action

What if a Removal Leaves Waste on Site?

1. The NCP generally limits the funding and duration of EPA-funded removal actions (12 months $2 Million)
2. The NCP encourages EPA to work with PRPs, the State or local government, or the EPA remedial program to have one of those entities provide "post removal site control" [300.415(l)].

Is there EPA Guidance?

"Policy on Management of Post-Removal Site Control" (OSWER 9360.2-02)

1. Before starting a removal, "inform States of any decision or recommendation concerning the use of institutional controls following removal actions"
2. But… "No State commitment for institutional controls is required prior to the initiation of Fund-financed removal activities"
3. And… "Where there are no other options, EPA will respond only to the initial threat, ensuring that the emergency created by the release or threat of release has been mitigated."

Is there Other Guidance?

ASTSWMO guidance: "Guide for Coordination of Federal Removal Actions with State Remedial Activities"

Recommends procedures for EPA and States to ensure good transition after EPA removal actions

Prime Western Smelter, KS

Prime Western Smelter, KS

STRATEGIC PLAN OF OPERATION
BETWEEN
U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)
AND
KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT (KDHE)

REGARDING ROLES AND RESPONSIBILITIES FOR THE REMOVAL AND POST-REMOVAL ACTIVITIES OF THE PRIME WESTERN SMELTER SITE.

The EPA and KDHE (agencies) concur that Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) hazardous substances at the Prime Western Smelter Site, Gas, Kansas, present an imminent and substantial threat to human health and the environment. Both agencies have respective statutory authority and responsibilities for the containment, cleanup and safe disposal of hazardous waste contamination when it threatens public health or the environment.

To ensure coordination of efforts in managing the cleanup of contamination at the Prime Western Smelter Site, the agencies will consult with each other on all removal and post-removal tasks to assure compliance with all federal and state laws. The agencies agree to share copies of correspondence and technical documents and to consider each other's comments on such documents. The agencies also agree to divide the following duties to provide for the most efficient use of state and federal expertise and authorities:

1. The EPA will further assess the extent of contamination and establish boundaries using the extended site inspection report prepared by KDHE.

2. The EPA will conduct the immediate removal action to excavate and deposit lead-contaminated soils above the action levels in an established repository within an area of contamination consistent with federal law. Action levels for areas zoned as residential and agricultural is 400 mg/kg; and for areas zoned as industrial is 1,000 mg/kg. Soils will be treated as necessary using universal treatment standards of 7.5 milligrams per liter. The repository will be capped with a vegetative cover to minimize erosion, promote good surface drainage and maximize surface runoff to prohibit seeping of contaminated material.

3. On September 24, 2002, KDHE entered into a long-term care agreement with Mr. Paul Dix, the landowner of the most heavily contaminated property, who has agreed to maintain a waste repository on his property. The KDHE will provide periodic site inspections of the Dix property to enforce the conditions of the long-term care agreement. Mr. Dix and successors are bound to routinely inspect and maintain the protective barrier of the waste repository, annually inspect the protective barrier and repair any conditions that could negatively impact the integrity of the protective barrier.

Access on the site will be necessary to complete the above tasks. The agencies may utilize the most effective state or federal authorities to ensure access to the site is provided and to avoid any delay in completing the above tasks.

Nothing in this strategic plan of operation shall limit either party's legal authority to investigate and/or conduct appropriate response actions under state or federal law.

6/10/03 — Date

Andrea Jirka
Acting Director, Superfund Division
U.S. Environmental Protection Agency
Region 7

6/10/03 — Date

Ronald F. Hammerschmidt Ph.D
Director, Division of Environment
Kansas Department of Health and Environment

Prime Western Smelter, KS

3. On September 24, 2002, KDHE entered into a long-term care agreement with Mr. Paul Dix, the landowner of the most heavily contaminated property, who has agreed to maintain a waste repository on his property. The KDHE will provide periodic site inspections of the Dix property to enforce the conditions of the long-term care agreement. Mr. Dix and successors are bound to routinely inspect and maintain the protective barrier of the waste repository, annually inspect the protective barrier and repair any conditions that could negatively impact the integrity of the protective barrier.

Institutional Controls for Buried Radioactive Wastes at Removal Sites in Chicago

Sherry L. Estes
Associate Regional Counsel
Region 5

Lindsay Light Company

Chicago Removal Sites

Chicago Streeterville

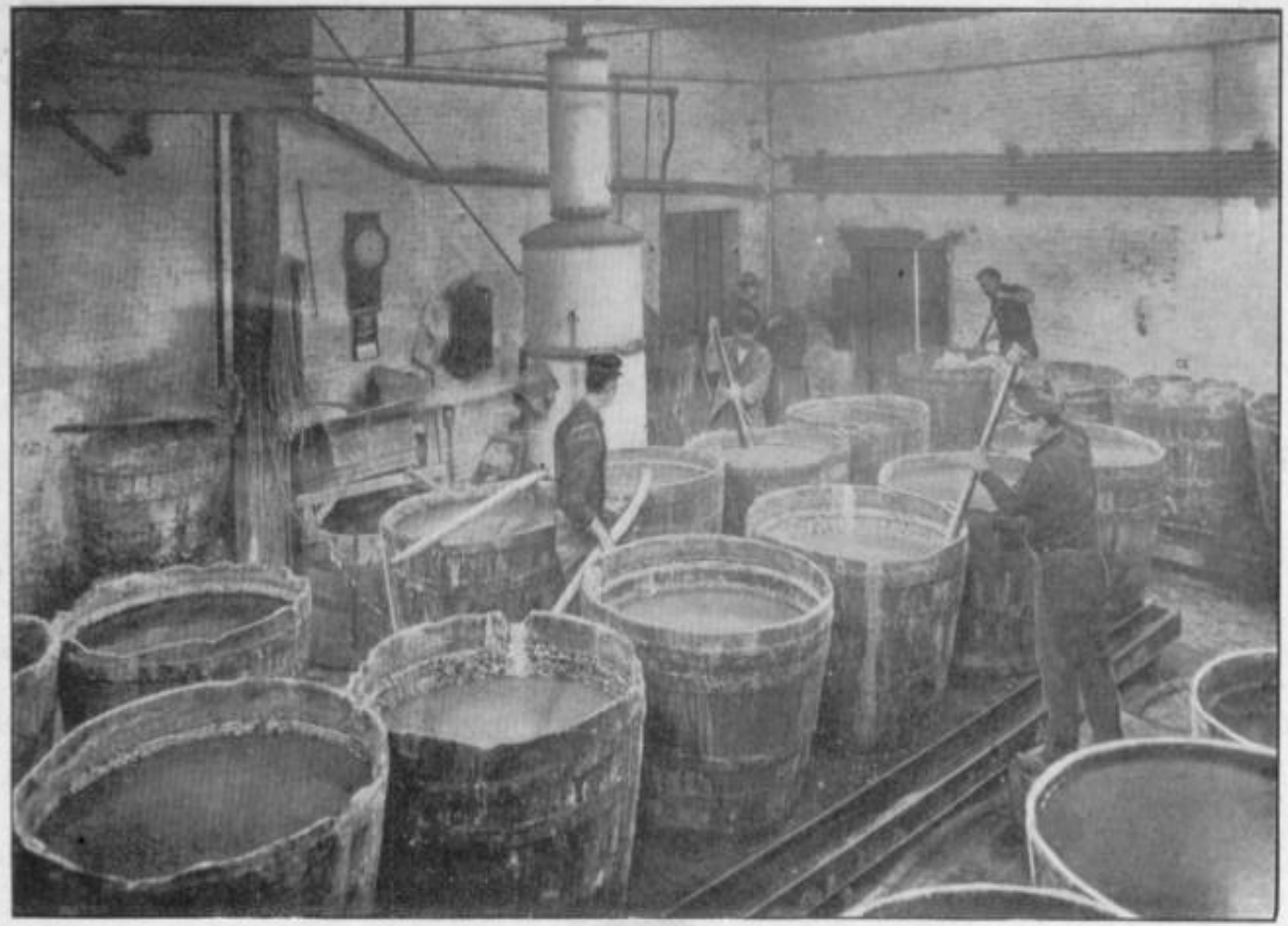
Richard M. Daley

Lindsay Light Company

Lindsay Light Building

Gas Mantle

Chemical Processing



Welsbach Factory, Gloucester, N. J Tub Room—Thorium Nitrate Department.

Mouth of Chicago River 1937

Lindsay Light Chicago Facilities

22 W. Hubbard

161 E. Grand

316 E. Illinois

Identified Thorium Contamination

Lindsay Light Removal Sites

1. 12 contaminated properties to date, >25 investigated properties, >55,000 cu. yds. removed
2. Proximity to Lindsay operation varies
3. No direct information on disposal activities
4. Difficult to detect buried contamination
5. Before You Dig brochure advises developers and utilities to survey for thorium to protect workers and public from uncontrolled exposure or release

Streeterville Removals and ICs

1. A 1996 ‘Friendly’ UAO compelled removal cleanup of former thorium ore processing at 316 E. Illinois

2. Recorded 1999 ROW agreement among Lindsay successor (fka Kerr-McGee), developer and Chicago was prerequisite to U.S. EPA completion letter

3. Subsequent removals under Amended UAO, AAOC or voluntary

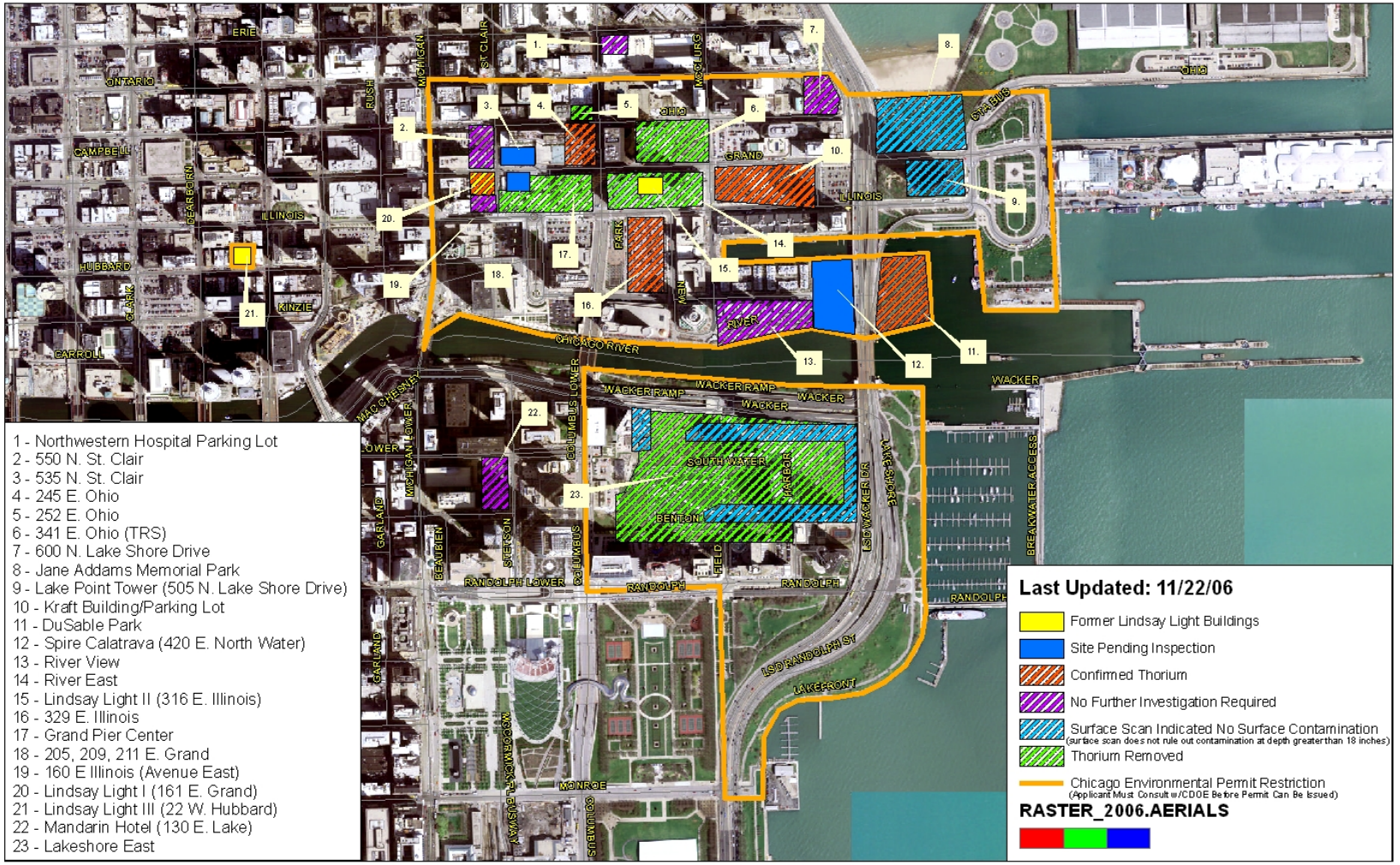
4. EPA provides oversight, developer/owner pays costs

5. Lindsay successor (fka Kerr-McGee) transports and disposes contaminated soils

Contaminated Construction Site


City Right of Way
15 1:10PM

Streeterville Thorium Investigation



City of Chicago
Richard M. Daley
Mayor

Department of
Environment
Sadhu A. Johnston
Commissioner

LakeShore East

26 acre mixed-use development along Chicago's lakefront (former Illinois Central RR Terminal and 1990s Golf Course)

Slip Areas

3 historical shipping slips in Site boundary were filled during Lindsay Light era

Developer decided slip areas could be subject to institutional controls rather than conduct surveillance to native soils

1. Condo Development
2. Individual Titles Refer to Master Declaration but do not themselves contain environmental restrictions

Lake Shore East (former boat slips, Ill Central RR terminal and golf course)

Removal by Action Memorandum

1. no order issued or signed
2. no General Notice letter

EPA recouped past costs by 122(h) agreement

Removal Lessons Learned

1. City and private parties are motivated by potential toxic tort liability to remove contamination and protect workers and public.
2. Piecemeal removal actions in heavily urbanized areas may not adequately characterize extent of contamination and increase the need for effective ICs.
3. Where property values are high, developers and owners may be willing to conduct cleanup to avoid the taint of an ICs for radioactive waste.
4. Stiff stipulated penalties are essential to protection of workers. Developers may save money by incurring penalties rather than delay work.

INSTITUTIONAL CONTROLS IN REMOVAL ACTIONS

Michael A. Hendershot
Senior Assistant Regional Counsel
U.S. Environmental Protection Agency
Region III

WHAT WE'LL COVER

1. Site conditions and exposure pathways giving rise to a time-critical removal.

2. The terms of EPA's agreement with the owner (a farmer) to implement the removal action, including ICs.

3. How the agreement protected the environment in a cost-effective way which allowed the owner to continue farming.

WHAT WE'LL COVER (CON'T)

1. How ICs were implemented through the Consent Order, Post-Removal Site Control Agreement and an easement and covenant between the site owner and the state.

2. The ICs provided layering (redundancy), thereby increasing their reliability.

THE SITUATION AT THE SITE

1. The site was used as recreational shooting range by the American Legion 20-30 years ago.

2. Now used for farming.

3. In migratory pathway for tundra swans.

THE SITUATION AT THE SITE (CON'T)

1. Bird watchers found many injured swans in ponded water at the site.
2. Emergency medical attention provided.
3. Twenty-two were saved; forty-one died.
4. All died of acute lead poisoning.
5. Necropsy on four swans found three had died from lead from the same source.

EXPOSURE PATHWAY AT THE SITE

1. Site used for farming of rotating crops. Tilling of soil increases likelihood of exposing lead shot. Tilling can also cause ponding of water.

2. Area is flat and expansive. Open to weather year-round. Rain and wind can further disperse lead shot.

3. Ponded water attracted swans initially. Swans seek lead shot for food because of its grittiness and texture—like seeds.

TIME-CRITICAL REMOVAL ACTION MEMORANDUM

1. Remove lead shot so that remaining lead shot does not exceed 1 shot for every square foot.

2. Replace removed lead shot and soil with clean soil.

3. Perform confirmatory testing.

4. No limits on future use.

THE OWNER'S PROPOSAL

1. Reconsider selected removal action.

2. Consider a more cost-effective action that would protect the environment and allow him to continue farming.

TERMS OF THE CONSENT ORDER

1. Provide a soil cover over the “Lead Shot Area” (LSA) in order to prevent contact with and ingestion of lead by migratory birds.

2. Comply with the terms of the “Farm Management and Soil Conservation Plan (Management Plan),” submitted pursuant to the Response Action Plan (RAP).

3. Implement ICs (Removal no longer supports UU/UE).

4. Implement Post-Removal Site Controls.

MANAGEMENT PLAN

1. Blueprint for proper land management of LSA.
2. Make lead shot unavailable to migratory birds.
3. Determines proper thickness and maintenance of soil cover and prevent erosion (vegetation).
4. Make LSA unattractive to such birds (convert from agriculture to silviculture—no seed-producing crops or production of grains; prevent ponding).

INSTITUTIONAL CONTROLS IN CONSENT ORDER

1. Don’t take any actions in the LSA in any manner inconsistent with the Management Plan.

2. Place a covenant on the deed for the LSA which prohibits those activities (What’s that mean?).

POST-REMOVAL SITE CONTROLS

1. Agreement between Owner and State (DNREC).

2. Comply with RAP and Management Plan.

3. Convey to DNREC an Environmental Restoration Easement and Declaration of Restrictive Covenants (Easement).

THE EASEMENT—BASED UPON EPA MODEL

APPENDIX B

ENVIRONMENTAL PROTECTION EASEMENT
AND
DECLARATION OF RESTRICTIVE COVENANTS

1. This Environmental Protection Easement and Declaration of Restrictive Covenants is made this ____ day of _____, 19___, by and between _____, ("Grantor"), having an address of _____, and, _____ _____("Grantee"), having an address of _____.

WITNESSETH:

TERMS OF THE EASEMENT

1. No actions shall be taken which would alter, damage or otherwise impair the integrity of the soil cover.

2. No actions shall be taken which are inconsistent with the RAP/Management Plan.

TERMS OF THE EASEMENT (CON'T)

1. Provides DNREC with access to inspect the cap and overseeing requirements of the RAP/Management Plan.

2. Easement runs with the land and binds owner.

3. Expressly enforceable by DNREC.

WHAT WE COVERED

1. Site conditions and exposure pathways giving rise to a time-critical removal.

2. The terms of EPA's agreement with the owner (a farmer) to implement the removal action, including ICs.

3. The agreement protected the environment in a cost-effective way which allowed the owner to continue farming.

WHAT WE COVERED (CON'T)

1. ICs were implemented through the Consent Order, Post-Removal Site Control Agreement and an easement and covenant between the site owner and the state.

2. The ICs provided layering (redundancy), thereby increasing their reliability.

Central Eureka Mine: Implementing a Permanent Remedy through Time Critical Removal Action and Institutional Controls

Jim Tjosvold

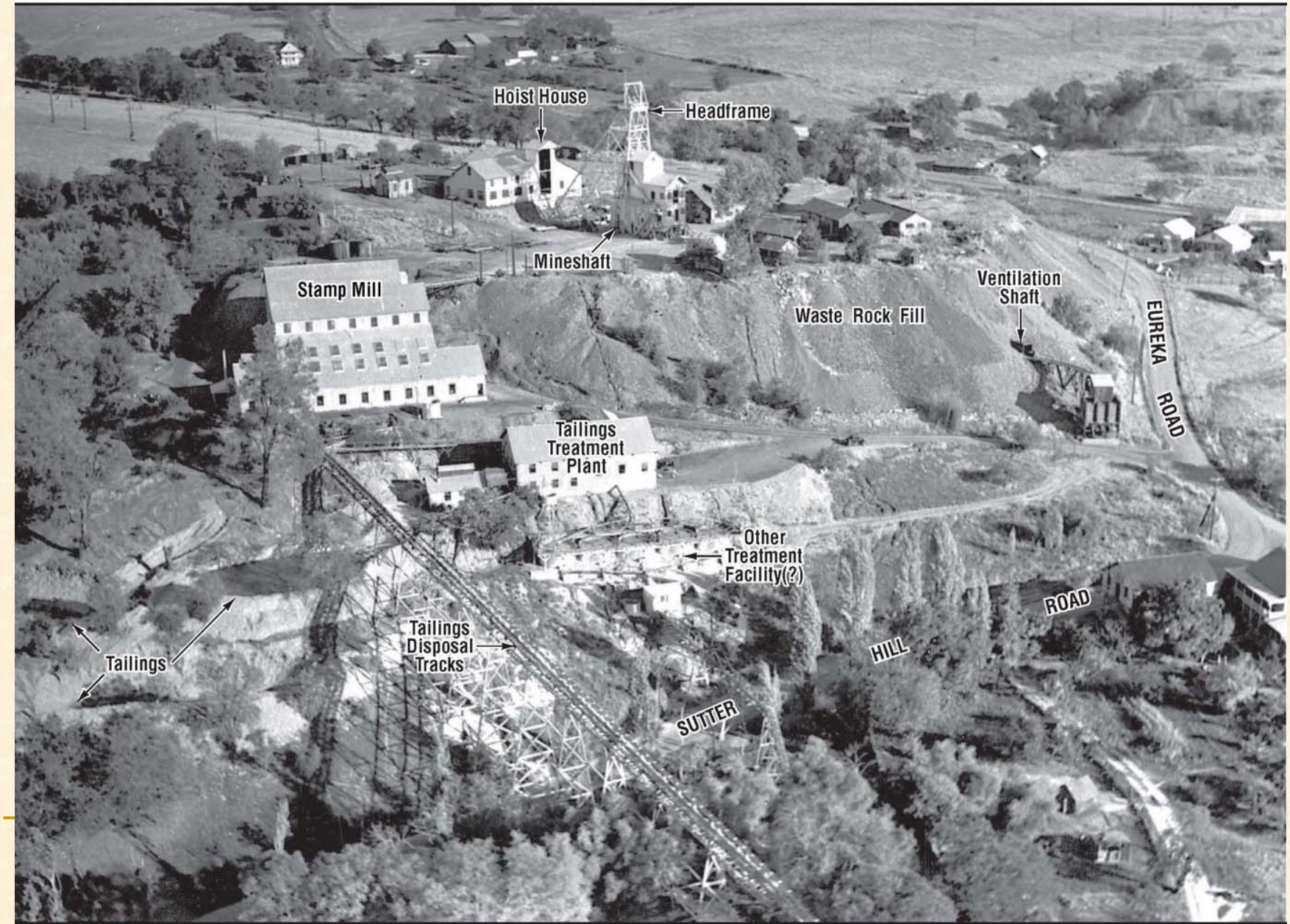
Regional Site Mitigation Branch Chief

California Department of Toxic Substances Control

Case Study-
Central Eureka Mine

1. Case Study of successful combination of Time Critical Removal Actions and ICs to provide a health protective permanent remedy
2. Central Eureka Mine, City of Sutter Creek, Amador County, California
3. Gold mine operated from 1855 to 1953

Central Eureka Mine circa 1930s



Site Operable Units

1. Ore was processed at a stamp mill at the minehead and transported downslope to various locations.
2. The Site primarily consists of three areas: Minehead, Residential Subdivisions and Allen Ranch Tailings Pile.

Mesa de Oro Subdivision

Residential subdivision built on mine tailings pile.

Mesa de Oro Subdivision

Black lab retrieving in backyard

1. Arsenic was the primary chemical of concern
2. DTSC evaluated the risk to residents due to high arsenic in the mine tailings and referred site to EPA ER.

Removal Actions

1. Time Critical Removal Actions were conducted by EPA ER and by Responsible Parties under the direction of EPA from 1994 to 2000.
2. Tailings were removed from the residences and drainages and consolidated and capped with other tailings on the Allen Ranch.
3. On the Mesa, tailings were capped with up to 2 feet of clean soil or slope stabilizing geoweb.
4. Drainage improvements will prevent erosion.

Removal in Action

Removal in Action

Removal in Action

Removal in Action

Long Term Stewardship Issues

1. Residences: homeowners potential future exposure to tailings through digging and landscaping
2. New residential construction and demolition
3. Underground utility maintenance and new construction
4. Erosion and degradation of soil cover, engineered slopes, caps, and drainage system.
5. Additional work necessary at the Minehead.

Minehead Site

Headframe

Building Foundations

Tailings Pond

Institutional Controls

1. Minehead-Fence and post. DTSC will be the lead agency on further work.
2. Allen Ranch
   a. O&M Agreement
   b. Deed Restriction
3. Residential Subdivisons
   a. O&M Agreement: Honeywell (successor to the mine operator)
   b. Mesa de Oro Homeowners Association
      1. Deed Restriction on common/non-residential land including road and slopes
      2. Maintenance agreement on slope
   c. City of Sutter Creek
      1. Ordinance
      2. Intergovernmental Agreement with DTSC

City Institutional Controls

1. Ordinance: Special Building and Land Use Standards for the residential area
   a. Permits required for activities such as digging, landscaping, building construction and demolition that may encounter tailings
   b. Standard procedures for handling and disposal of tailings established.
2. Intergovernmental Agreement
   a. City will enforce the ordinance, monitor excavation and construction activities
   b. City will develop and maintain procedures in consultation with DTSC

Conclusions

1. Central Eureka Mine time critical removal actions required ICs to provide long term protectiveness.
2. Layers of ICs were applied to provide cost-effective protection for the residential area.
3. Good example of working relationship and transitions of lead agency role between US EPA and a state.

Transfer of Long-Term Response Actions (LTRA) to States

Mike Hurd

Office of Superfund Remediation and Technology Innovation

EPA

Course Overview

1. Background and Definitions
2. Preparing for the LTRA Transfer and the Transition to Operation and Maintenance (O&M)
3. References/Contact Information
4. New Superfund Guidance under Development

EPA

Key Documents

1. "Transfer of Long-Term Response Action (LTRA) Projects to States"
   a. July 2003, OSWER 9355.0-81FS

2. "Operation and Maintenance in the Superfund Program"
   a. May 2001, OSWER 9200.1-37FS

EPA

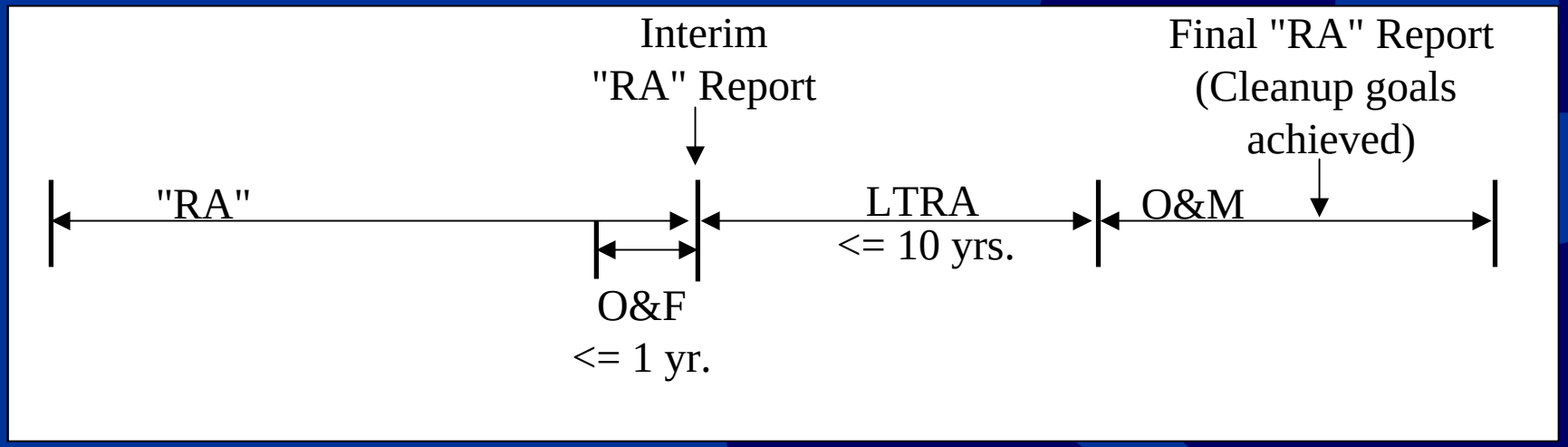
CERCLA and NCP Requirements Related to LTRA

1. CERCLA §104(c)(6) is the statutory basis for the transfer of fund-financed groundwater and surface water restoration projects from EPA to State O&M

- Sections 300.5 and 300.435(f) of the NCP clarify the transfer of fund-financed ground water and surface water restoration projects by defining several key terms

EPA

Fund-Lead Ground Water and Surface Water Restoration Pipeline



LTRA Considerations During RD and "RA"

1. Remedial Design (RD) Phase:
   a. Development of the O&M Plan
   b. Superfund State Contract/Cooperative Agreement

- Remedial Action ("RA") Phase:
   a. Updated O&M Plan
   b. Finalize O&M Manual
   c. Joint inspection of completed remedy and O&F determination
   d. Draft Interim "RA" Report

EPA

Long-Term Response Action (LTRA)

1. Limited to fund-financed ground water and surface water **restoration** remedies.
    a. The objective of a restoration remedy is to return all or part of a surface water body or ground water aquifer to the protective cleanup levels that were specified in the ROD.

2. EPA pays 90% of the costs, and the State pays 10% during LTRA.

Further Explanation of the LTRA

1. LTRA begins when the Operational and Functional (O&F) determination is made.
2. LTRA ends:
   a. Up to ten years after the LTRA begins, **or**
   b. When the remedial action objectives (RAOs) and remediation goals have been met.
3. Operation and Maintenance (O&M) begins when the LTRA ends.

EPA

Operational & Functional Determination

1. O&F determination occurs either:
   a. One year after construction is complete, or
   b. When the remedy is determined to be functioning properly & performing as designed, whichever is earlier.
2. EPA may grant extensions to the one year O&F period.
3. O&F begins the 10-year LTRA period.

EPA

Documenting the O&F Determination

1. Memo recommended upon completion of the joint inspection to mark the start of "shakedown" period.
2. Final O&F determination documented by letter to appropriate parties (e.g., State).
    a. Date is also documented in the Interim Remedial Action report within 90 days after the remedy is O&F
3. O&F completion is documented and entered into WasteLAN/CERCLIS.

EPA

Superfund State Contracts

1. Signed before EPA can provide funds for remedial action
2. Assures State will implement and fund all O&M activities
3. Should include language to clarify:
   a. The process for the O&F determination
   b. A written O&M plan that identifies EPA and State administrative and technical obligations
   c. Disposition of real property
   d. Reporting and recordkeeping requirements during O&M
   e. Institutional Controls

EPA

Typical O&M Plan Elements to Consider for LTRA

1. Designation of the organizational unit of the State government responsible for O&M
2. Identification of the availability of State funding mechanisms for O&M
3. Milestone dates for State assumption of O&M responsibilities
4. Criteria for the determination of O&F
5. Description and duration of O&M activities
6. Summary of O&M staffing needs (including training and certification requirements)
7. Summary of O&M performance standards
8. Contingency plan for handling emergency and abnormal occurrences

EPA

Typical O&M Plan Elements to Consider for LTRA (con't.)

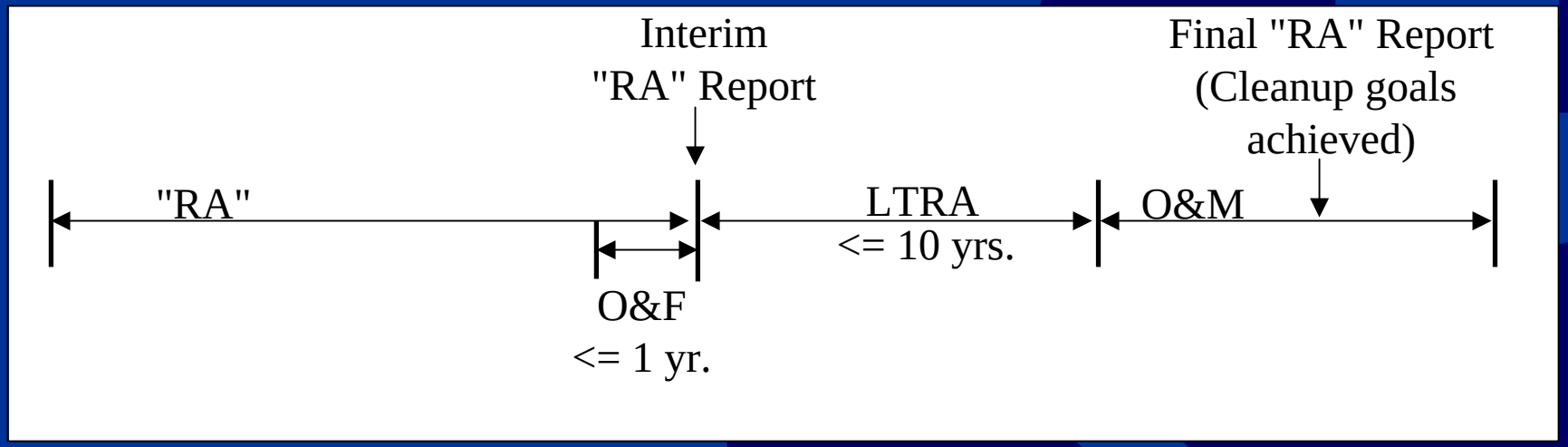
9. Safety requirements for O&M activities
10. Equipment and material requirements
11. Estimates of annual O&M costs
12. Reporting requirements
13. Conditions for O&M termination
14. Description of site use and disposition of facilities following completion of O&M
15. Modification of existing site health and safety plan and quality assurance project plan
16. Access and property issues
17. Description of all required institutional controls

Typical O&M Manual Elements to Consider for LTRA

1. Remedy description – design, operation and control of the facilities
2. Personnel (staffing and training)
3. Permits
4. Records (operations and inspection logs)
5. Laboratory testing requirements
6. Maintenance (equipment replacement, monitoring of ICs)
7. Emergency operating and response program (fire and police)

EPA

Fund-Lead Ground Water and Surface Water Restoration Pipeline



LTRA Considerations After the O&F Determination Through Year 10

OF- Year 6

1. EPA (state) operates system; make adjustments and repairs as needed
2. Conduct 5-year review
3. Consider optimization review

Year 7

1. Notify state of date of LTRA transfer
2. State should initiate funding request

Year 8

1. Review property transfer and site access requirements
2. Identify equipment for repair or replacement
3. State begins staffing activities for O&M
4. Consider optimization review if not previously performed

Year 9

1. Notify state again by letter of date of LTRA transfer
2. Design and construct changes to system
3. Revise all manuals and plans
4. Prepare transfer permits, warranties, and other agreements

Year 10

1. State completes arrangements for conducting O&M
2. State personnel or contractors receive training
3. Complete all documents and arrangements
4. EPA sends final letter confirming transfer and schedule for remaining actions

Optimization Reviews During LTRA

1. Used to enhance effectiveness of the system, speed clean up, and reduce costs

2. Remediation System Evaluation (RSE)

3. Appropriate for more complex, longer-term projects that require more O&M funds

EPA

Documentation Needed for LTRA Transfer

1. Update O&M Plan and Manual
2. RD documents with updated as-built drawings
3. "RA" Reports
4. Monitoring results
5. Site Inspection Reports
6. Transfer documents for all permits, warranties, access arrangements, and leases
7. Description of all required institutional controls

EPA

Transitioning from LTRA to O&M

1. States should have a clear understanding of the cost, and the technical and performance requirements

2. EPA remains responsible for oversight of O&M after transfer

During the O&M Period

1. State assumes responsibility for conducting O&M
2. State provides progress reports to EPA as agreed
3. EPA (or State) conducts subsequent five-year reviews
4. State and EPA determine when cleanup goals have been achieved
5. State or EPA prepares final "RA" report

EPA

Oversight of O&M

1. EPA is responsible for assuring O&M is performed by State and that required progress reports are submitted.
   a. Routine and Special Reports prepared by the State
   b. EPA inspections
   c. O&M Manual and Plan are up-to-date
2. EPA funds and conducts the five-year reviews or provides concurrence if conducted by the State

EPA

Summary

1. Superfund State Contract
2. Document O&F Determination
3. Early State Involvement and Notification
4. Optimization Review
5. Documentation Needed for the Transfer
6. O&M is Conducted by the State
7. EPA Oversight of O&M

EPA

References

1. EPA's Post-construction website - http://www.epa.gov/superfund/action/postconstruction/index.htm
2. EPA's LTRA guidance – "Transfer of Long-Term Response Action (LTRA) Projects to States"
    1. July 2003, OSWER 9355.0-81FS
3. EPA's O&M guidance – "Operation and Maintenance in the Superfund Program"
    1. May 2001, OSWER 9200.1-37FS

EPA

OSRTI Guidance Under Development

1. Draft OSWER Directive #9375.2-12, “Directive on Paying for Remedy Repairs or Modifications during the State Funded Period of Operation and Maintenance (O&M)”

2. OSWER Directive #9355.0-109, (June 2006), “Policy on Recalculating the Long-Term Response Action (LTRA) Ten-Year Time Period”

3. Draft OSWER Directive #9355.0-87, “Annual O&M/Remedy Evaluation Checklist”
   - » Annual review and tracking of post-construction sites

EPA

Contact Information

HQ Regional Coordinator for your Region

or

Mike Hurd
EPA-HQ/OSRTI
hurd.michael@epa.gov
703-603-8836

Regions 1,2,6,9 and 10 Support Branch

http://www.epa.gov/superfund/partners/oerr/support1/index.htm

EPA

Long-Term Stewardship Roundtable and Training
April 4-5, 2007
San Diego, California
Session Summary

Session Title:	**LTS Data Exchange**
Date and Time:	Thursday, April 5, 2007, 10:15 a.m., Session A
Speakers:	Bob Wenzlau, Terradex, Inc.
	Vincent Nathan, Detroit Department of Environmental Affairs
	Peter Wright, Dow Chemical Company

Presentations

Peter Wright Presentation

RCRA Correction Action Project – Tracking of Institutional Controls

- Industry's perspective and industry's recommendation about ICs.
- Failure of ICs may result from the absence of available information; failure to remember to impose and maintain; real property transfer laws (deficiencies) may not address subdivision of property; intentional violation; removal of ICs due to local pressure to develop; lack of effective oversight and review.
- Conflict between federal and local expectations.
- Key point: systems need to be effective in tracking changes. Compliance is high the first time around; subsequent transfers are complicated by a lack of historical information.
- Advantage of having one central agency for oversight is consistency (nationally based single system is more consistent than 50 different systems for 50 states).

Questions related to the presentation were as follows:

- Were the white paper reports referenced in the presentation assessments or recommendations?
  - The white papers have not yet been released. They cover basic overviews of the topics, and tend to be less controversial than the financial perspective.

- Do the reports represent consensus from industry?
  - They represent a product developed from brainstorming. The value is in the identification of issues as a basis to move forward.

- Would the database handle orphan sites?
  - Why not? A more common interface would allow for more variability. The database was created for industrial sites that are identified. The point would be to avoid surprises.

Bob Wenzlau Presentation

Monitoring Institutional Controls Through Land Use and Activity Monitoring

- Theory is that states are structuring databases and implementing ways to build on them and make information accessible.
- Example of "One-Call Excavation Clearance."
- Identifies sensitive uses, sensitive locations or sensitive issues.
- Uses Google Earth as platform to provide an overview of land activities.
- The ability to monitor IC information could be available at the desks of local government employees.
- An excavation alert could be sent as an email notification to another office to inform it of potential ICs in place they may not know about.
- Key steps and components: setup, monitor, alert, track response, modest pricing as service.

Vincent Nathan Presentation

Institutional Controls & Local Government

- Use of non-engineered instruments to limit exposure and protect the integrity of the ICs.
- How to factor in human behavior in relationship to ICs.
- Is relying on ICs a remedy for not cleaning up the site?
- Reasonable compensation is allowed related to restrictive covenants.
- Recommendations:
  - Community advisory committee's discussions should include ICs.
  - Local government should be part of planning related to ICs.
  - Not clear who is responsible for tracking and enforcement.
  - Local unit of government has final approval of ICs.
- There is a common interest between industry and government.
- There is a need for a robust tracking system.

Questions and Comments

- What has been the reaction to the data standard?
  - (Wright) The standard serves as a useful basis for moving forward. It covers some of what is necessary, but it is not sufficient. The first step is developing a consistent data standard.
  - (Wenzlau) Standardization adds efficiency. Vendors develop methodologies to control pricing. The One-Call data system is easily manageable and does not "make waves." The disadvantage to One-Call is that it cannot catch something at the last minute. Transparency is a key part of information dissemination.

- Problems can arise when the system is aimed at private industry whose interest is in generating money. Confidentiality of information becomes very important. Is there an industry preference for information to be made available to the public? Who is the customer?
  - The responsible party hires and prevents the IC breech.
  - The responsible party prefers transparency only if the problem is not solved.
  - Alerts escalate if problems are not solved.
  - State agencies desire a high degree of transparency.

- The issue of regulated versus non-regulated sites presents a dilemma. There are many more sites where cleanups are happening without any regulation.
- Voluntary cleanup programs present a problem.

- How is the city institutionalizing the use of this database?
  - There is still a need to authorize the release of city-owned property information. This information needs to be transparent and made available to the public.

- Breaches of ICs can be prevented using the Terradex system. What are the statistics on successes?
  - There are five major success stories of prevention through monitoring of 100,000 land activities. There is more success with sensitive uses such as schools and daycares. Terradex does not pick up much from building permits, however. What may be a more effective solution is through real estate transfers and conveying notice of responsibility for a stewardship activity.

- Land activity data is imprecise, both locationally and activity-wise. Transparency may need to be qualified in case we are reporting inaccurate information. For example, more than 80 percent of sites with soil contamination are less than five feet in depth. This does not indicate significant threat to ground water.

- What is the viability of the Terradex model for private industry?
  - The database is live. Sometimes, there is reticence by large companies to move properties back into reuse. The Terradex model is one step. Amazingly few people are dedicated to real estate and tracking historical information related to individual parcels. The greater influence for private industry is the headline risk, based on the fear of "bad press". The ability to manage that information would allow some action before lawsuits arise.

Institutional Controls & Local Government

Vincent R. Nathan, PhD, MPH
Director
Department of Environmental Affairs
Detroit, Michigan

NEXT DETROIT

USEPA

1. USEPA says ICs are “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.”
2. ICs work by limiting land or resource use and by providing information that helps modify or guide human behavior at properties where hazardous substances prevent unlimited use and unrestricted exposure.

USEPA Key Points

1. ICs are legal and administrative tools used to maintain protection of human health and the environment at sites.
2. ICs are often an important part of the overall cleanup at a site.
3. ICs can be used for many reasons and come in different types. These include restricting site use, modifying behavior, and providing information to people.

4 general types of ICs

1. ***governmental,***
2. ***proprietary,***
3. ***enforcement, and***
4. ***informational.***

IC are Used When:

1. Contamination is left onsite;
2. There is a limit to activities that can safely take place onsite; and
3. When cleanup equipment remains onsite.

Michigan

1. The MDEQ does not encourage or discourage LUGs to enact an ordinance as an institutional control (unless the DEQ is conducting a cleanup, in which case it may approach a LUG).

2. It is up to the community to determine if enacting a groundwater use restriction ordinance is in its best interests. A LUG that is considering an LO, or has been asked by a person conducting a cleanup to enact an LO, is encouraged to contact the appropriate DEQ Division as early in the process as possible to facilitate communication about the issues involved with LO development.

Michigan

1. The DEQ will not review an LO proposed by a person conducting a cleanup unless the LUG is involved in the review process.

Michigan

1. The DEQ can only recognize an LO as “acceptable” in the context of a specific RAP, IRDC, or CAP. Before the MDEQ can approve an LO or other IC, it must make a finding that it is impractical to accomplish the necessary use restrictions through restrictive covenants.

2. The person proposing an IC to the MDEQ must generally document what efforts have been made to secure the necessary restrictive covenants, including offers of reasonable compensation to the affected property owners.

Michigan

1. If the MDEQ has determined that the impracticality test has been met, Parts 201 and 213 require the department to determine, on a facility-by-facility basis, whether an LO is reliable and effective in controlling exposure to groundwater at a particular location.

Michigan

1. If there are unacceptable exposures that are not adequately controlled by the LO, the RAP, IRDC, or CAP must provide for other means of eliminating the unacceptable exposures.

2. When the MDEQ undertakes a review of a draft ordinance prior to a full analysis of all of the various exposure control options available under Parts 201 and 213, that review should not be taken as an indication that using an IC has already been chosen as the preferred remedy at any particular facility.

Community Input

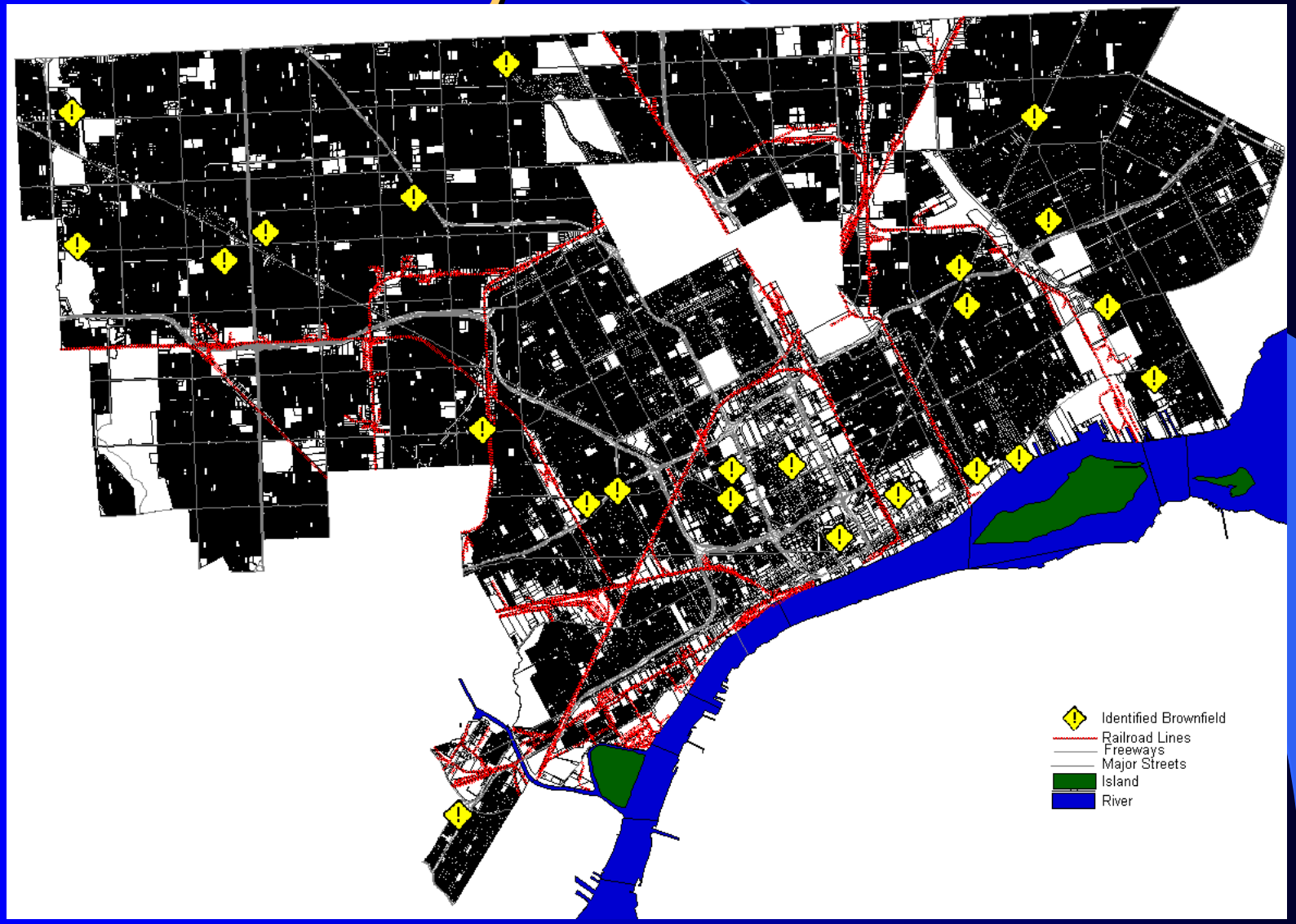
1. Community input can be essential to selecting, using, and monitoring ICs that are the best fit for the community and the protectiveness of the remedy.

2. This input should be early, with mutual respect, trust, and open and timely communication.

Community Input

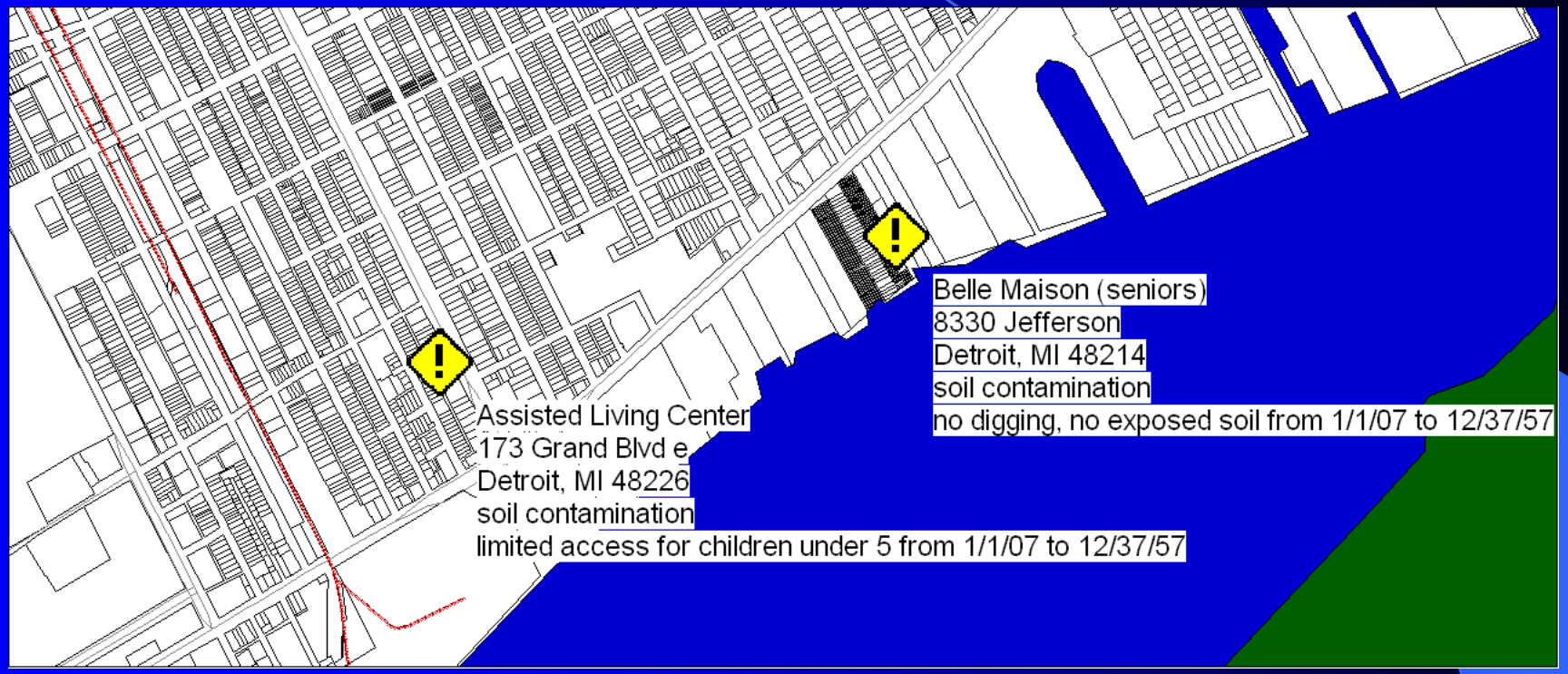
1. Master planning meetings,
2. Zoning hearings,
3. Land-use planning meetings,
4. Site investigations, and
5. Remedy selection.

City of Detroit



Two Parcels

Two Parcels With Info



Data Table

Date	Address	Notes	begindate	enddate	restriction
20041126	14900 Stahelin	soil contamination	1/1/07	12/37/57	
20041127	1224 Randolph	soil contamination	1/1/07	12/37/57	limited access for children under 5
20041127	12328 Maiden	soil contamination	1/1/07	12/37/57	
20041204	19966 Livernois	soil contamination	1/1/07	12/37/57	
20041205	15432 Oakfield	soil contamination	1/1/07	12/37/57	
20041210	9641 Harper	soil contamination	1/1/07	12/37/57	
20050118	4 Alexandrine e	soil contamination	1/1/07	12/37/57	
20050119	3901 Grand River W	soil contamination	1/1/07	12/37/57	
20050120	4500 Trumbull	soil contamination	1/1/07	12/37/57	
20050127	12801 Mack	soil contamination	1/1/07	12/37/57	
20050128	8330 Jefferson	soil contamination	1/1/07	12/37/57	no digging, no exposed soil
20050211	173 Grand Blvd e	soil contamination	1/1/07	12/37/57	limited access for children under 5
20050217	800 Dickerson	soil contamination	1/1/07	12/37/57	
20050224	1401 Chene	soil contamination	1/1/07	12/37/57	no digging, no exposed soil

RCRA Corrective Action Project – Tracking of Institutional Controls

Peter C. Wright
The Dow Chemical Company
April 5, 2007
Long Term Stewardship Conference
San Diego, California

RCAP Overview

RCRA Corrective Action Project

1. Formed in 1998 by Fortune 50 companies
2. Current members - Ashland, BP, Chevron, ConocoPhillips, Delphi Automotive Systems, Dow Chemical, E.I. duPont de Nemours & Co., General Electric, General Motors, Pfizer, Sunoco, U.S. Steel, United Technologies, and Waste Management
3. Project contacts Michael Steinberg, Marianne Horinko or Linda Eaton

RCAP LTS Summit

1. RCAP hosted a Long Term Stewardship Summit in November 2006 for Federal, State, Local Government officials and RCAP representatives
2. Workgroups focused on 4 topics
    1. Roles & Responsibilities;
    2. Institutional Controls;
    3. Financial Assurance and Liability
    4. Liability and Enforcement

RCAP LTS Summit

In preparation for the Summit RCAP developed five White Papers

1. Tracking of Institutional Controls
2. Financial Assurance & Liability
3. Implementation & Enforcement of Institutional Controls
4. Liability & Enforcement
5. Roles & Responsibilities.

Tracking of Institutional Controls

The failure of ICs may result from:

1. The absence of readily available information on the ICs
2. Failure of the responsible party to "remember" to impose or maintain ICs, especially during property transactions
3. Intentional violation of ICs by land users;
4. Removal of ICs under local pressures for development
5. Lack of effective oversight and review

Tracking of Institutional Controls

An effective tracking system would track and notify:

1. What ICs are required at a specific property
2. Who is the responsible party and oversight governmental agencies
3. When there are changes (in property ownership, responsible party and ICs)
4. When transactions occur that might signal a change in property use
5. Where the location is for historical background information and information related to active management of a site

Tracking of Institutional Controls

Database features

1. Property name and location
2. Hazard description, including media affected and exposure pathways
3. Figures showing the property boundaries and physical location of any restrictions
4. References/links to maps and documentation
5. Controls and restrictions, including category, type, and brief textual explanation of restrictions
6. Contact information for Responsible Party and oversight agencies
7. Key information that could signal a change in site use, such as transfers of title, construction/building permits and changes in deed restrictions
8. Notification function to alert responsible parties and oversight agencies of “key information” above

Tracking of Institutional Controls

Limitations on the database requirements

1. No need to provide all information required by the responsible parties and the overseeing regulatory agency to actively manage a site
2. The tracking system would not need to be a repository for all historical site information
3. The tracking system could provide links to site operating and historical information

Tracking Institutional Controls

The IC tracking system should be operated as a national one stop system administered by a not-for-profit

1. Responsible parties would pay an initial fee to register a site with the entity and a small annual maintenance fee thereafter.
2. The fee structure could be tiered to account for differences in site size, complexity, participant's revenue and factors.
3. The responsible party and the agency overseeing the site remediation would determine what information would be entered into the system for each site.
4. The oversight agencies would bare the burden of ensuring that sites were registered in the tracking system.

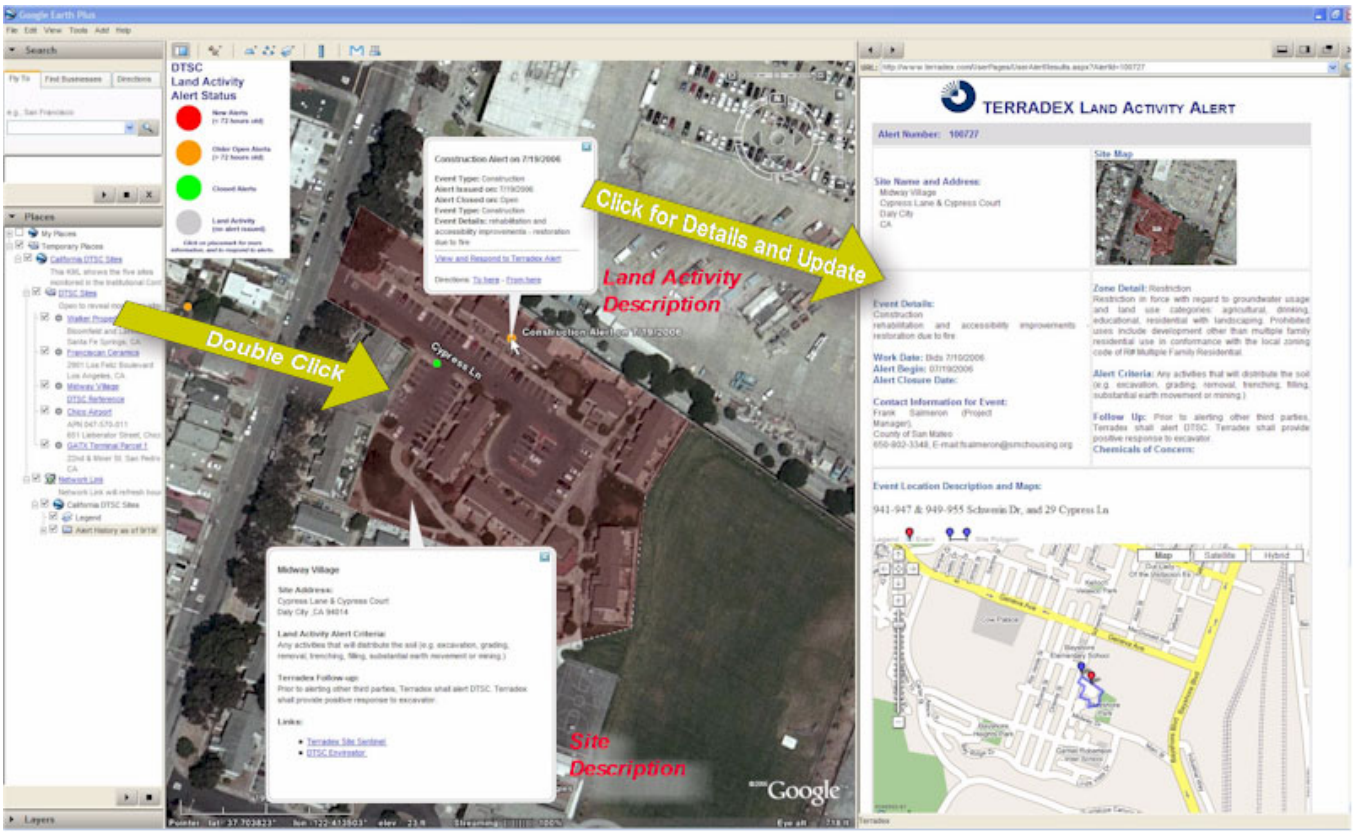
Tracking Institutional Controls

1. The IC tracking system would be web-based and publicly accessible by any party
2. Only the IC tracking entity would have the ability to input or change key data in the system
3. Other descriptive information (such as the nature and extent of controls, contact information, etc.) could only be changed by agreement of both the responsible party and overseeing government body

Institutional Control Tracking Through Land Use and Activity Monitoring[1]

2007 Long Term Stewardship Roundtable

Bob Wenzlau, P.E.
Terradex, Inc.



Description of Technology:

Terradex Institutional Control Tracking is a commerical service that monitors information on land activity alert about potential land activities that could compromise the integrity of site-specific institutional controls. The Terradex service assists intuitional control users and stakeholders through increasing the ongoing effectiveness of institutional controls. Terradex defines a *user* as an owner or environmental regulator interested in effective institutional control implementation, a *stakeholder* as a party that receives notice of the existence and ramification of

[1] This is extracted from a pending compilation of Institutional Control technology practice by the Brownfield Committee of the Interstate Technology & Regulatory Council (ITRC). No endorsement by ITRC is expressed in this document.

an institutional control. Stakeholders may typically be local government officials, potential purchasers, developers, contractors and the general public. The technology developed by Terradex is a web-based database complimented with systems for land activity record collection.

Terradex Institutional Control Tracking requires the following initial input by the user:

- The location of the parcel(s) with an institutional control. The location can be by parcel number, street address or GIS Shape File.
- The activity or use restrictions (*e.g.* no excavation, no residential use)
- The follow-up actions if a breach is detected.
- The parties to be notified of a potential breach of an instituional control

The following are some examples of potential land activity data for monitoring by Terradex:

- **Excavation Clearance.** Alerts from One-Call excavation clearance centers of new excavations.
- **Real Estate.** New commercial and residential multiple listings for property transactions, and records of completed transactions.
- **New Construction Forecasts.** Future construction leads used by contractors / architects but repurposed to institutional control
- **Building Applications and Permits.** Records of applications for and or permits issued by local building departments.
- **Zoning Modifications.** Tracked through state repositories of zoning changes
- **Sensitive Uses.** Water well permits, day care permits and other sensitive uses collected from state or local websites

Terradex has found numerous efficient and relatively inexpensive methods to collect land activity data. For example, excavation clearances are collected by Terradex becoming a member of an excavation clearance system. Terradex then electronically receives notice of an excavator's pending excavation to in a zone that has an institutional control – a method analogous to how a owner of a buried utility would be alerted. Terradex automatically processes the notice, and determines which institutional control has been affected. Then

Terradex can provide information to the excavator of specific hazards, and to the responsible party and regulator of the potential breach of an institutional control

After activation of the monitoring service, the most common interaction from Terradex to a *user* is through an emailed "Activity Alert." An email alert is sent when a land activity *reasonably* appears to have conflicted with an institutional control. The email alert carries a link to the website where a map of the institutional control boundary is displayed with the location of the future land use activity. The email (albeit simple) is shown at the right.

The user is required to review the email, and works with Terradex to determine if the land activity breaches the IC. This may entail directing Terradex to contact the *stakeholder* to learn more of their actions. If the activity would potentially breach the institutional control, Terradex would notify the stakeholder. Alternately, the *user* may choose to notify the *stakeholder*. All interactions are recorded into a conversation "blog" around the alert, creating a record of consideration and actions around the alert. This approach was developed with the USEPA pilot as an idea to consolidate feedback that might come from multiple sources (USEPA; Summary Pilot Report; February 2006).

The Terradex system maintains a website that can be accessed either through Google Earth or through www.terradex.com. The Google Earth version is shown at the beginning of the description. On the right side is listed the sites monitored, in the center is the boundary of the site, with icons for the various land activities, and on the left side is a web page created for each activity alert. It is on the activity alert web page that the user enters their consideration of the emailed activity alert. The Google Earth version is convenient when users are managing multiple portfolios, or can take advantage of the faster aerial photography

browsing. The Internet version still has the advantages of the Google Maps (aerial and map), and can work through a browser.

A *stakeholder* would discover the Terradex service through the receipt of a notice. The strength of the Terradex approach is that a *stakeholder* would not have had to know about web sites holding institutional control lists (or even what an institutional control is), but instead would receive a phone call, fax or email from Terradex (or the user) informing them of an activity or use limitation that they might in the context of the stakeholder's pending activity. For example, an excavator would learn of the instituional control based upon the information they submit to the One Call Center, and the notice they receive back shows their future excavation location relative to the boundaries of the institutional control. The stakeholder (for example, and excavator) could be directed to an agency website to learn more, or to call the responsible party. Typically *stakeholders* have been very understanding and responsive to alerts.

The intial information on the institutional controls tracked by Terradex are provided by the customer. When the customer is a state agency, then the "set-up" of Terradex is through synchronization to existing data registries a state agency may hold for institutional controls. The state agency serves as the "registry" of the site with an institutional control, and Terradex serves as the "monitoring and tracking service" for land uses and activities around these sites with institutional controls. When the user is a responsible party, the set—up is typically made from documents associated with an Institutional Control Implementation Plan, an emerging feature of site remedy documents.

Features of Technology

- Alerts users of activities (e.g., real estate transactions, building permit issuance, etc.) that have or are planned to occur on a property with institutional controls.
- Stakeholders are provided with notices from multiple means: a phone call, fax and/or email, informing them of use limitations they may breach.
- Stakeholders directed to agency website or to call the responsible party.
- All interactions between user and stakeholder are recorded in conversation "blog".

- Documentation is generated of institutional control compliance
- Available for any site within the United States, though certain land activity data sources will vary based upon state circumstances.

Technology Platform

The Terradex service has been hosted by Terradex for five years, and is accessible to a user through an Internet browser and/or Google Earth. There are not hardware requirements for the user other than an Internet connection. Because the service is web-based, it may be initally configured to meet a state or or responsible party's requirements. For example, if the service is used as part of a state-wide insittuional control tracking system, the website may be presented with the look of the state's environmental agency.

Costs Associated with Implementation

The fees for the service are paid typically on an annual subscription. Terradex will typically offer a demonstration site for a client to test the service for no charge. The fees depend upon the number of sites, the size of a site, and the data sources monitored.

- When a large number of sites are monitored (greater than 50), the fees are $500 or less per site per year.
- When a large Superfund site is monitored with extensive support, the fees are higher ranging from $10,000 to $20,000 per year.
- Typically, regulatory agencies with large portfolios and simpler data source requests operate near the $500/site per year range.
- Terradex may also request an activation fee to begin the service that is variable depending upon the customization a user requests.

The Terradex service can be affiliated with a funding trust or structured settlement to facilitate long-term operation. Terradex introduces the user to third parties who specialize in this financial and insurance service, and are also familiar with the Terradex model.

Advantages

- Compliments existing IC registries by providing notice to *stakeholders* who may otherwise not discover the repository's existence.
- Can be applied to areas where ICs may not exist, i.e. providing notice of impaired aquifers. This aspect has been applied routinely around sites wher there is concern that water well installed as far away as one mile might destabilize a groundwater contamination plume. While it may be impractical to place an instiitiutional control over such a broad area, the detection and mitigation of new water wells can offer equivalent protection without the burden of recording to potentially hundreds of property records.
- Screens land activities, so the *user* is alerted only when land use activities are at risk.
- Can be procured by a responsible party, but allow state regulatory agencies access to monitoring and alert data.
- Available nation-wide, and ready to be applied within weeks of a request.
- Can be accessed either through Google Earth or through www.terradex.com.

Limitations

- This notification tool is not an IC repository, and relies on others to serve as that repository (*i.e.* see separate Google Earth Technology Profile)
- Does not provide field inspections that might be a component of IC implementation (though it can track their fulfillment)

Users

This tool can be accessed by various stakeholders that register for the service.

Case Study

Project Location: Del Amo Super Fund Site, Torrance, California

Project Team: Del Amo Superfund Potential Responsible Parties

Description of Technology Implementation: Multi-year engagment for institutional control implementation at an large urban Superfund site. Land activities monitored include real estate, building permits, sensitive uses and excavation.

Project Outcome/Lessons Learned: Serivce has been successful in preventing land use activities that would other wise have breached institutional controls. In particular, one excavation was averted that would have caused a cathodic well to peforate a confining clay layer potentially causing contamination to leach to underly potable water aquifers.

Project Location: State of California

Project Team: California Department of Toxic Substances Control

Description of Technology Implementation: Terradex monitored a portfolio of properties across the state to evaluate the technology. The users were the project environmental staff of the Department of Toxic Substances Control. The staff were oriented to the service, provided account access to their site information, and received updates to land use and activites at and near sites with instituional controls.

Project Outcome/Lessons Learned: The state plans to proceed with a broader systematic deployment of institutional control tracking and monitoring.

A USEPA issued a 2006 report evaluating the Terradex technology. The report can be viewed at

http://www.terradex.com/PublicPages/Download/USEPAOneCallTerradexReport.pdf

Terradex will arrange guest user access to review the system based upon request

References:

Contact:

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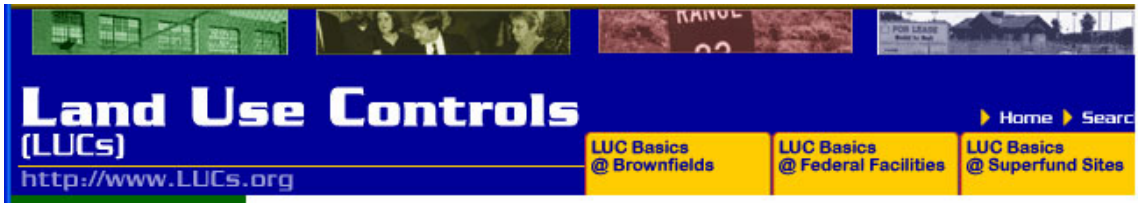
Terradex, Inc.
650-328-6140
bob@terradex.com
www.terradex.com



News

Directions to Solutions: ICs and Excavation One Call Systems; Why Can't We Be Friends?

*LUC.org introduces **Directions to Solutions**, an opinion column on how things should work in the world of environmental land use controls. If you are interested in contributing a similar Op Ed piece, please e-mail us with your idea at dborak@icma.org or ssmith218@csc.com and we will work with you to publish it. The views or opinions expressed herein do not necessarily represent those of the US EPA, ICMA, or CSC.*

By Bob Wenzlau, Chief Executive Officer and Founder of Terradex

Prologue. *The excavation limits of a new water main are marked on the street. Consistent with state regulation, the excavator calls in the excavation limits to the One-Call System. Soon the street is marked with utility locations. Surprisingly, the excavator receives a fax describing that the excavation site as occurring in a zone of environmental contamination. The responsible party who faxed the notice of contamination is pleased to have averted a hazardous substance release and to have protected the excavators and the public from harm. The excavator, however, is not pleased; their fixed bid did not anticipate the cost of handling contamination and work delays. Can we improve the use of One-Call Systems, and have these two stakeholders be friends?*

Overview

This article describes the appeal and the challenge of using One-Call Systems to notify those who need to know of the existence and location of engineering controls (ECs) and institutional controls (ICs). The article is divided into seven sections:

- Background on ECs and ICs
- The Need to Protect ECs and ICs from Excavation
- Why Can't Excavators Call Before They Dig?
- Benefits of Using One-Call Systems to Protect ECs and ICs
- Experience with Using One-Call Centers – the One-Call Pilots
- Excavation Contractor Concerns and Issues
- Next Steps

Background on ECs and ICs

ECs and ICs exist because of risk-based cleanups. Underground environmental pollution is older than the industrialization of civilization, and it used to be largely ignored. Within the United States there are 500,000 to 750,000 sites with underground contamination. Now that cities need to reduce sprawl, and clean up old industrial land for redevelopment, underground pollution is increasingly problematic to ignore. Fortunately, with an information-based economy, the Internet, and online GIS-enabled databases, information technology can help protect human health and the environment from underground pollution. It has become a matter of getting the right information to the right people at the right time.

Why is information on underground pollution needed? Why not just clean it all up? Information on underground pollution is needed because such information has become a key component of containing the risk in risk-based cleanups. Risk-based cleanups anticipate some future industrial or commercial land use scenario. Based on this scenario – which the community agrees upon – ECs and ICs contain contamination and therefore reduce risk enough to levels that are safe for the community's new land use scenario. Other factors beside the recent flurry of Brownfields and Superfund cleanups (e.g., more infill development, underground utilities, and transportation construction) increase the need to protect future construction from breaching the containment that ECs and ICs provide, defeating the remedy, harming people, and increasing construction contractors' liability exposure.

The Need to Protect ECs and ICs from Excavation

While most contamination originates from a discrete source, it can spread through the movement of ground water into large areas that underlie other property and public rights-of-way. Whether contamination would expose excavators to harm depends upon the location and depth of the excavation and on whether information gets to the right people at the right time (such information would consist of a series of EC and IC warnings that are "layered" so that the first warning goes to the engineers that design the excavation). Contractors are at the front line, and unknowingly can expose their employees, as well as the public, to buried hazardous substances if they damage an EC or inadvertently mismanage the disposal of soil or dewatering fluids.

Why Can't Excavators Call Before They Dig?

Nationwide, approximately 50 million excavations each year are cleared by regional notification centers. Buried infrastructure owners are required to confidentially store their underground utility locations in a database maintained by the notification center. Before excavating, an excavator marks the location of an excavation with paint on the street, and then calls the notification center with the location and timing of the excavation. The clearance center then notifies the utility owners who have the responsibility to inform the excavator about utilities they may encounter. These clearance centers are funded through fees paid by the owners of underground utilities.

States developed One-Call Centers pursuant to legislation drafted to prevent inadvertent damage to buried infrastructure -- not to ECs and ICs. Yet, ECs and ICs share many common elements with underground infrastructure; they are generally undetectable at the surface, typically have an owner, and cause tremendous economic, safety and environmental impact if breached. Because of these common elements, there has been a growing interest in using the already existing One-Call systems to provide one layer – the last layer of defense to prevent the breach of ECs and ICs. Should protocols be crafted to recognize the pervasiveness of risk-based cleanups and prevent inadvertent damage to ECs and ICs by including them in One-Call Systems?

Benefits of Using One-Call Centers for ECs and ICs

- **High Compliance of Users**. The statutory obligation coupled with a high awareness of the system, makes a most excavators use the One-Call Centers. It would be difficult to replicate the One-Call system for management of ICs.
- **Large Service Area**. With approximately 60 One-Call Centers nationwide, using this large existing infrastructure offers a more efficient data transfer channel than attempting to create something new to serve the 45,000 local governments in the nation.
- **Target Audience.** The One-Call Centers are targeted on the exact activities that would likely breach ECs and ICs.
- **Understood Costs**. Because the One-Call Centers have an established fee basis, the costs of utilization are understood and predicable.

Experience with Using One-Call Centers – the One-Call Pilots

There have been several attempts to transmit ICs and ECs through One-Call Centers.

- **Oregon**. The City of Portland entered 10 sites into their One-Call system. The City then faxed summary site notifications to the excavators. Unfortunately, this successful project was halted due to lack of funding.
- **Wisconsin**. The Wisconsin Department of Natural Resources (DNR) joined the "Diggers Hotline." In the project, they successfully provided site boundary information (latitude & longitude plus a radius buffer). DNR performed hotline member obligations including receiving and screening the location of tickets that were received by fax. The excavator was contacted if a conflict existed. DNR screened tickets only to prevent water well installations. DNR ceased because they could not discern the depth of the excavation, and the manual review of the many tickets they received was burdensome and costly.
- **Pennsylvania**. This pilot combines the efforts of EPA, the Pennsylvania Department of Environmental Protection (PA DEP), and Pennsylvania One-Call System, Inc. (POCS). This pilot is evaluating the feasibility and impact of regulatory or legislative changes that would expand the Pennsylvania One-Call legislation to expressly cover subsurface contamination, or otherwise require residually contaminated sites to join POCS. Such amendments would mark the first step, nationwide; to formally require owners/operators of residually contaminated sites to join the One-Call system.
- **California**. Terradex, Inc. joined as a locator on behalf of the Owner/Operator of the ECs and ICs. Terradex performs geo-spatial comparison of excavation, and reviews excavation attributes to determine if a conflict exists. Terradex contacts the excavator for more information, typically excavation depth, if warranted. If a conflict exists, Terradex alerts the excavator, the owner/operator and the oversight agency. Terradex became a member of USA South and USA North, and provides positive responses to all tickets received consistent with guidelines. Through an EPA pilot, and more recently for commercial clients, Terradex has screened thousands of excavation notices.

Excavation Contractor Concerns & Issues

Contractors have raised various concerns about the use of the One-Call System for transmitting EC and IC location information.

- **Inadequate Notice Period**. The convention is to provide two business days notice before excavation proceeds. Receiving the first notice of and existing environmental hazard less than two days before work is disruptive and expensive. By this time, all permits have been issued, and fees negotiated for the project. Requirements to manage environmental contamination should have been developed by the engineer or owner.
- **Regulatory Oversight Not Welcome**. The excavator wishes to proceed with work expeditiously, and the potential for environmental regulatory involvement just prior to digging is not perceived constructively.
- **Responsibility of Others**. By only providing notice to the excavation contractor, sole reliance on the One-Call System shifts the burden of managing environmental contamination to the excavator. Excavation contractors argue that the permit writers, developers, engineers, and drafters should have notice of the location of the ECs and ICs.
- **EC and IC Location Can Be Vague**. Different than the fixed location of a pipe, the occurrence of environmental hazards can be uncertain. Suspected contamination may or may not be encountered in a given excavation.
- **Risk of Over Notification**. The number of excavation tickets in conjunction with the number of contaminated sites could generate too much notice and trivialize the process, as in the Wisconsin pilot.
- **ECs and ICs are Not the Intent of the One-Call System**. Excavators have agreed to participate in order to prevent damage to underground infrastructure. Introduction of environmental hazards constitutes an expansion of the One-Call System to a different type of damage and a different type of infrastructure.

Next Steps

A principal premise for the excavation and contracting industry is providing for the safety of their work force. When information about ECs and ICs can be delivered in a constructive manner into the project, construction can be safer. As an approach is developed, several premises should guide its design:

- **Layered Approach Where One-Call Notification is The Last Step**. ICs must be revealed earlier in the development process. ICs should be discovered within the design phase, and be considered in the bid process. Therefore, the owner or engineer of the project would be better informed than the excavator. Contractors have invited a national one-stop registry for ICs and ECs.
- **ICs Should Be Available to the Design Community**. The ICs should be available to engineers in the planning stage of a project. If the ICs were planned for, then receiving notice of ICs would not be burdensome to the excavator. Contractors are encouraging the creation of a geospatial registry of ECs and ICs

that could be accessed by designers and contractors early in the design process and long before the clearance call is made to the One-Call System.

- **ICs Should Be Available In Building Permit Process**. The building permit process provides an earlier stage to check for the occurrence of underground environmental hazards.
- **ICs Should Be Useful and Relevant to the Excavator**. Where possible, information conveyed to the excavator should transmit what media is contaminated (soil, groundwater, vapor), the depth of contamination, and available contacts.

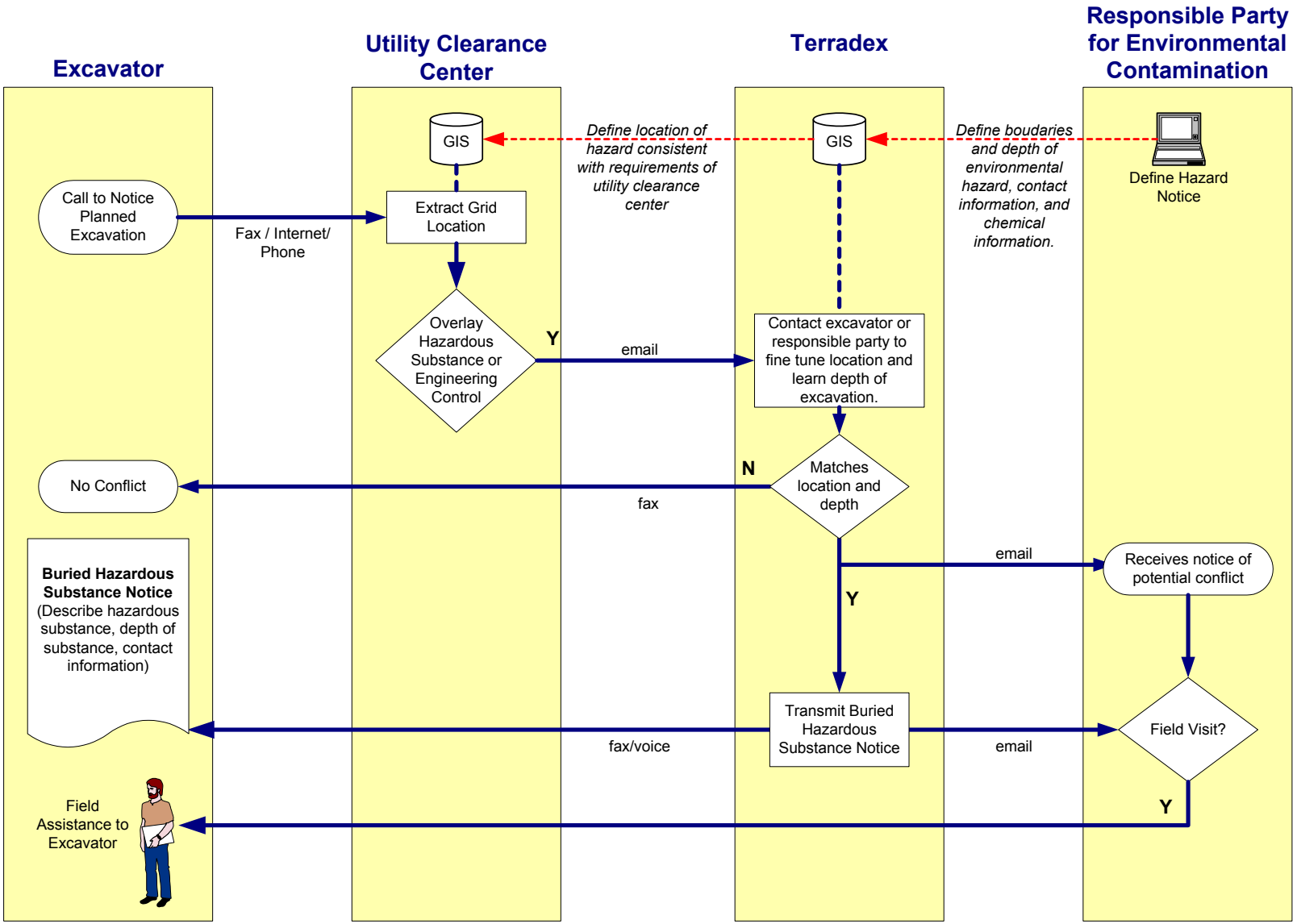
In the long-run, statutory changes will be needed to legitimize the use of One-Call Systems for transmitting the location of ECs and ICs. First, the storage of the boundaries of ICs should be permitted to be placed within One-Call System databases; now the systems are typically limited to the boundaries of underground physical infrastructure. Similarly, the party responsible for the residual contamination (or their designee) should be allowed to be a member of the One-Call System. It is expected that the liability protections accorded to excavators and members would be extended as possible to encompass the management of underground environmental hazards.Other next steps that should be considered include the following:

- **Develop a Working Paper with the Common Ground Alliance**. The Common Ground Alliance (CGA) is a national organization representing the stakeholders of the One Call Systems. With the help of CGA, and through the creation of a Working Paper, improvements to the One-Call Systems could be considered, as well as ways to promote IC and EC registries within the design and excavation community.
- **Encourage Pilots. Support One-Call Systems that choose to participate in pilots transmitting the ICs**. These pilots would constitute research and development activity within CGA. Allow some discretion of One-Call Centers that chose to experiment with ICs. To date, it appears that the chance for work interruption is relatively remote, and that a third party – possibly a commercial venture – is valuable to screen the continuous flow of excavation tickets.
- **Critique on Model Designs for Notices of ICs and ECs within the One Call System**. This would help assure that the information provided to design professionals, owners, and ultimately an excavator is useful in the construction process.

The article has some exhibits (see the attachment below) built during Terradex's pilot with USEPA. For more information contact Bob Wenzlau at Terradex at bob@terradex.com or 650-328-6140. Terradex has prepared model state legistlation that is available upon request.

Epilogue. *In the future we revisit our excavator as a result of successful collaboration to build a mechanism to transmit information about ICs and ECs to the design and construction community. Through a geospatial registry of ICs and ECs, the project engineer has realized that the route of the water main passes through a zone of contamination, and the water main's design must protect existing ECs and accommodate limitations posed by an IC. This time around, the excavator's bid planned for the impact that the ICs and ECs have on the project. There were no surprises when One-Call System faxed notice of the ICs and ECs to the excavator. The responsible party used the notice to dispatch field staff to provide assistance to the excavator.*

Process Overview of the Use of the Excvation Clearance System for Protection of Institutional Controls



Long-Term Stewardship Roundtable and Training
April 4-5, 2007
San Diego, California
Session Summary

Session Title:	**Operation and Maintenance Costs to States at Cleanup Projects: How to Financially Guarantee Long Term Stewardship Obligations**
Date and Time:	Thursday, April 5, 2007, 10:15 a.m., Session B
Speakers:	Heidi Sorin, Ohio EPA, ASTSWMO LTS Task Force Jim Carroll, MDE Paul Lesti, Structured Settlements

Presentations

Heidi Sorin and Jim Carroll Presentation
ASTSWMO LTS Focus Group/Ongoing O&M Cost Project

The ASTSWMO LTS Focus Group has been working on an O&M Cost Project to develop a model to help states predict costs for LTS obligations at NPL sites.

- Post-construction completion O&M obligations fall to states at fund-lead sites. Post-removal O&M also falls to states. State resources must be adequate to cover long-term O&M costs.
- Project process: participants have collected and compiled data on states' costs and built a database. Current efforts are underway to identify trends. A report on the project findings will be available on ASTSWMO's website in July 2007.
- Hard data and anecdotal data have been collected from most states. Preliminary findings have been developed based on an interpretation of anecdotal data.
- Findings suggest that the following factors tend to effect costs: ground water remediation is more expensive than other remedial approaches for other media; land use changes tend to lead to increased costs; and changes in technology may have the capacity to decrease long-term O&M costs.
- Other key findings of the project include:
  - O&M costs evaluated during remedy selection and documented in RODs are not generally suitable for use as a baseline cost estimate.
  - Five-Year Review optimization studies are helping to reduce long-term O&M costs.
  - Fund borrowing, legislative decisions to borrow from pots of money set aside to cover O&M costs, present financial assurance challenges to many states.

Questions and comments related to the presentation were as follows:

- Did findings clarify why ground water remedy components are so much more expensive than other remedy components?

- Ground water was the primary media-based driver of cost difference between different remedies. Changes in technology may also contribute to more costly O&M obligations.

- Is there a plan to compare the results of this study with RCRA site post-closure cost estimates?
  - So far the scope of the project has focused on NPL sites and site documents.

- ICs tend to require a nuanced analysis and place an intangible burden on property owners. EPA OSRTI and the National ICs program are working on costing guidance, which does consider social costs of ICs. Up front life-cycle costing could help inform better and more cost effective decision making during remedy selection.

- In the future it may be necessary to use cost benefit analyses that characterize O&M costs for ICs under state cleanup or Brownfield programs parallel to CERCLA remedy selection.

Paul Lesti Presentation

Environmental Structured Settlements

EPA has been interested in using annuities to financially guarantee long-term O&M costs. Mr. Lesti outlined an approach developed by Lesti Structured Settlements that provides financial assurance for long-term O&M costs based on establishing an annuity contract with large life insurance companies.

- A key parameter is that money needs to be provided upfront to pre-fund annuity contracts. Tasks and cost-flows need to be characterized. Stewardship agreements are required (e.g., consent decrees, long-term O&M cooperative agreements).
- Benefits of an environmental structured settlement
  - Recapture of funds: incentives to use new technology for more efficient cleanups.
  - Security in funding: prevents legislative borrowing from O&M set-asides.

Questions related to the presentation were as follows:

- How do structured settlements address issues about the accuracy of O&M cost estimates for up front payment? How do you mitigate cost overrun risk?
  - Structured settlements provides access to a pre-paid guaranteed funding stream to finance the implementation of ICs. This is not a guarantee of the ICs. Site characterization and cleanup plans need to be stable and straightforward. Extra insurance may be required to mitigate against cost overrun risks that cannot be managed through stewardship contracts.

- How does the annuity work?
  - With a life insurance annuity, the client wins if he or she lives longer than his or her assumed life expectancy. Insurance companies build conservative models that are applicable for use in establishing secure funding mechanisms for other

investments like O&M costs. State or local governments can be the recipients of O&M funds paid out by a trust. In an environmental structured settlement, a trust functions like a legislative appropriation that is protected from legislative raiding.

- How does a structured settlement compare with a finite risk environmental insurance product?
  - There are several differences between life insurance annuities and other insurance products. Insurance annuities are based on pre-paying the present value of long-term obligations up to 50 years. This approach presents an alternative approach to a finite risk-based environmental insurance product. Environmental structured settlements guarantee that clients get the money they have invested without having to sue in order to get it when they file a claim.

Group Discussion

- Participants discussed the advantages of using environmental structured settlements at PRP-lead sites.

- Participants also discussed the use of structured settlements to fund O&M obligations for a global institutional control arrangement.

Operation and Maintenance Costs at Fund-Lead Sites:

Future Costs for States

Long Term Stewardship Roundtable

San Diego, California

April 05, 2007

Long Term Stewardship Focus Group

Purpose

Promote reliable and protective long term stewardship at contaminated sites by States and Territories

Association of State and Territorial
ASTSWMO
Solid Waste Management Officials

O&M Cost Project

1. How accurate are estimated Operations and Maintenance (O&M) Costs at National Priorities List (NPL) sites?
2. How do States and Territories prepare to fund these O&M costs?

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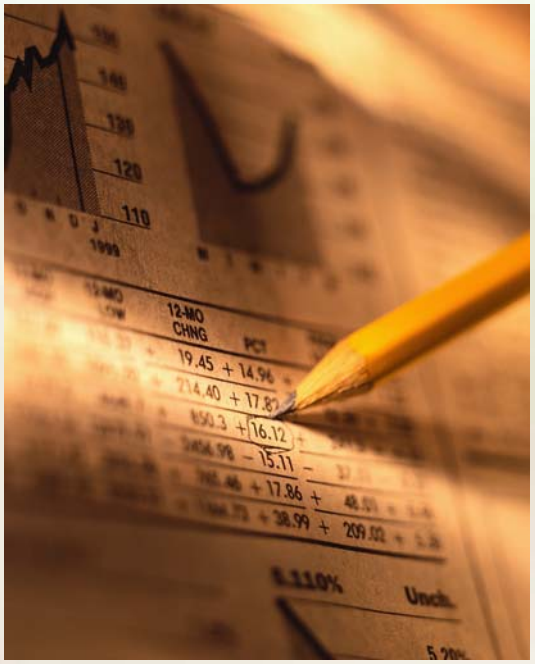
O&M Cost Project

1. Collect data on state and territories' costs for long-term monitoring and maintenance activities at sites on the NPL.
2. Compile and evaluate cost data from construction complete sites currently in O&M.



What We Hoped to do With Data

1. Develop System for Predicting Long-term Stewardship Costs
2. Identify Issues/concerns Regarding Current or Future O&M Liability
3. Identify Future Issues to Research

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Process

Define Universe by Querying CERCLIS

Fund-lead (NPL or Removal)	Post Construction Completion w/State Conducting O&M

Collect Data Using Standardized Process

- Site Demographics
- Contaminants and Media
- Site Remedy (Description/Background)
- Estimated and Actual Annual Costs
- Description of Data Anomalies

Evaluate Data

- Determine Trends/Anomalies in Data
- Identify Factors Impacting Long-Term O&M Costs
- Identify Innovative Funding & Implementation Mechanisms

Issue Final Report

- Report Due Out by June 30, 2007

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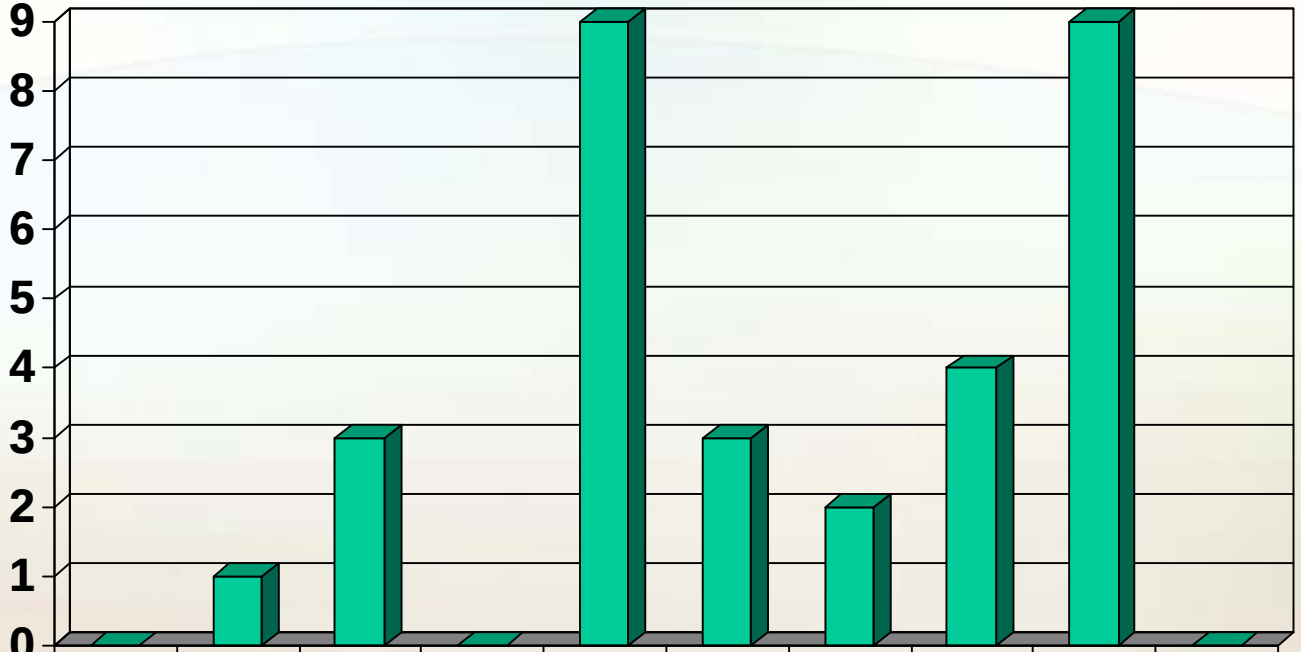
Response to Date



	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	Region 10
No. of Responses	0	1	3	0	9	3	2	4	9	0

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Preliminary Findings

Factors affecting cost

1. GW more expensive than soil
2. Change in technology & application of technology
3. Modifications
   a. Land Use Change
   b. 5 Yr. Review/Optimization Review
   c. Additional source areas identified
   d. PRP involvement changing over time

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Preliminary Findings

1. Methods of estimating long term O&M costs have not effectively predicted actual costs
   a. Cost estimates limited by quality of input data and conditions changing over time
2. States can reduce costs through remedy and O&M optimization and fine tuning efforts

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Preliminary Findings

3. Ground water and surface water appear to be most common O&M drivers.

Preliminary Findings

4. Limited Data on Estimated Costs
5. Concerns over fund "borrowing"
    a. May result in short-term planning with little use for long-term (life cycle cost) considerations.
6. Limited data on estimated costs may hamper optimization efforts

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Benefits to States and Territories

1. Learn from other states' experiences (scenario planning)
2. Allow planning for budgets
3. Make data available that will provide a level of predictability in costing O&M
4. Provide data for future decision making

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Future Activities

1. Look for the report on ASTSWMO's web page after July 1, 2007.

2. What would you like to see?

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Is There More Data Out There?

We can take your state's data until April 13, 2007!

Ask any focus group member for an input form.

George Klein, NJ
Catherine LeCours, MT
Catherine Sharp, OK
Trey Hess, MS
Robert Stout, MO

Paul Locke, MA
Jim Carroll, MD
Greg Light, AK
Mark Berscheid, CA
Heidi Sorin, OH

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Environmental Structured Settlements

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Guaranteed funding of Long Term Stewardship obligations

Potential recapture of funds

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Problem

1. Lack of a large financial institution to guarantee payment
2. Currently difficult to guarantee long term obligations - longer than 10 years
3. Owners or consultants do not benefit from new technology or being efficient

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Solution

Environmental Structured Settlement

1. Provides guaranteed payments from a Fortune 50 Company
2. Can currently guarantee payments for 50 years (looking at longer periods)
3. Potential recapture of funds

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Structured Settlements Since 1982

1. Oriented towards physical injury torts.
2. $6 billion last year.
3. 1995 EPA Memo advocating Structured Settlements

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New and Innovative Assignment Product

1. Can now do assignment such that Regulator / Government Authority does not have to own the Annuity.
2. First full year of production $75 million.
3. Now almost $1 billion under contract.
4. New entrants eager to enter market

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Security of Transaction

1. Annuity Transaction
2. U.S. Life Insurance Company issues the Annuity Contract
3. U.S. Life Insurance Company guarantees the payments.

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Payments Guaranteed

1. Strong Large U.S. Life Insurance Company
   a. Issues the annuity contract
   b. Guarantees the Assignment Company
   c. Rated A+, size XV (the highest) AM Best Company
   d. Fortune 50 Company

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Ideal Situations

1. Have a Long Term Stewardship requirement and plan
2. Post Record of Decision for Superfund and similar sites
3. Operations and Maintenance ideal

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Ideal Sites/Situations

1. Closure of large industrial sites, nuclear, landfills, mines, etc.
2. Change of ownership
3. Manage Earnings
4. Manage disclosures – SOX, FIN 47 & others
5. Cleanup funds already paid from others

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How it Works

1. The payments are agreed upon in Stewardship type agreement.
2. Responsible party assigns obligation to make future payments.
3. Assignee purchases annuity that pays periodic payments.
4. Large US life insurer guarantees assignee.

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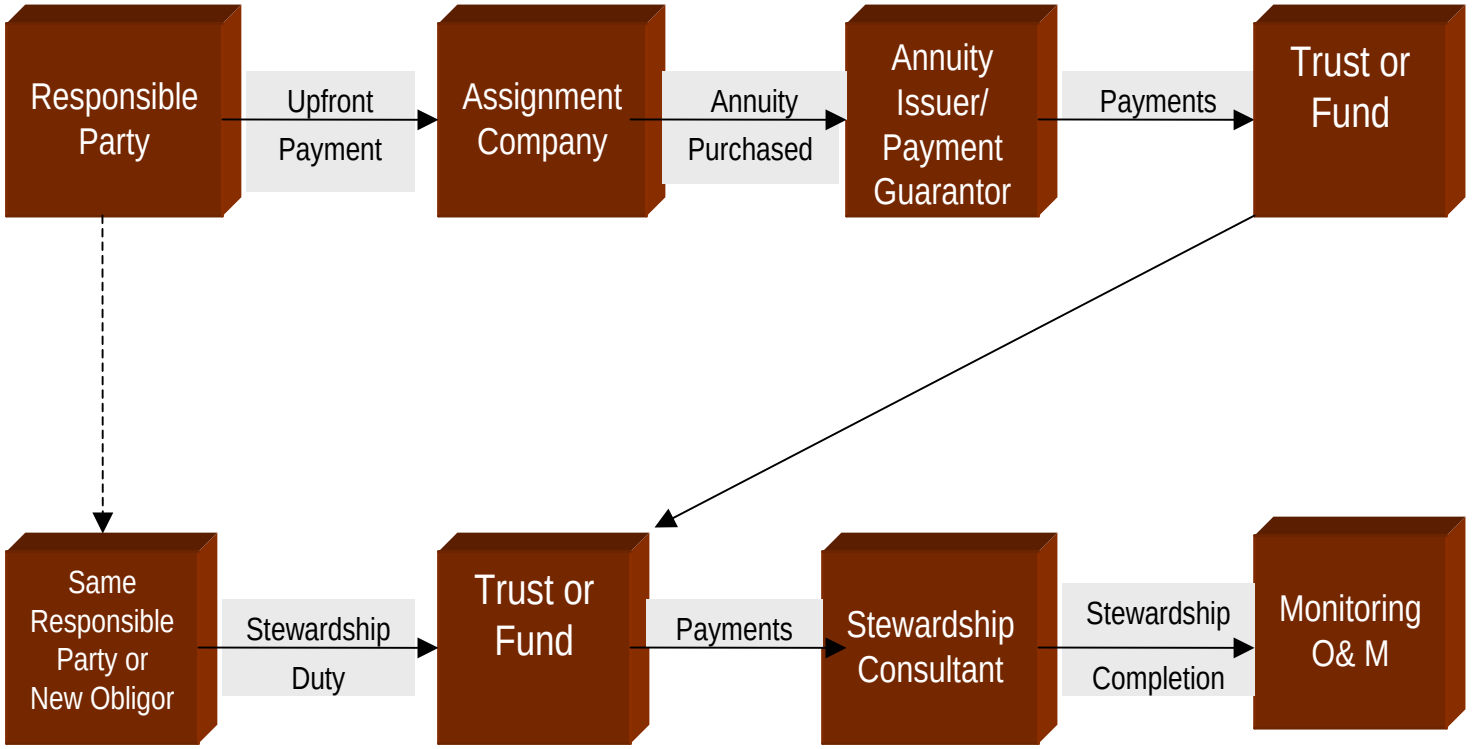
Transaction Flow



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Meeting Needs

Recapture of funds

As new technologies/techniques reduce the time and cost of oversight or cleanup
- Owner/Consultant repaid the savings

This gives an inherent incentive to innovate – to use new technology / techniques to reduce cost / time of Long Term Stewardship and cleanup obligation.

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Inherent Incentive to Innovate

The "Triple i" concept:

Marketplace of new cleanup technologies and techniques allows recapture funds

Also application of existing technologies and techniques such as Triad, allows for cleanup savings

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Meeting Regulators' Needs

1. **Secure funding**

   Large U.S. life insurance company guarantees payments

1. **Safe from legislative raiding**

2. **Can meet budgetary cycles of funding every 2 or 5 years e.g.**

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Meeting Regulators' Needs

Cleanup performed faster

Inspire new technology / techniques or share cleanup savings specific new technology innovation

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Responsible Parties Needs

1. Sarbanes- Oxley “SOX”
2. FIN 47
3. FASB 143 – Accounting for Asset Retirement Obligations
4. Explicit reference to include unasserted legal obligation, I.e. environmental cleanup
5. FASB 404 – Independent review of process.

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Responsible Parties Needs

1. End of Mothballing assets requiring cleanup
2. Manage Risk
   a. Sell asset - avoids cleanup risk
   b. Keep it and maintain liability – insure against risk
   c. Keep asset and assign cleanup risk

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Different than other Insurance Programs

Strong Large U.S. Life Insurance Company

1. Actual annuity contract issued
2. Payments may be accelerated upon no further action or similar finding.
3. Recapture possible
4. No need to make a claim.

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Different Than Other Insurance Programs

1. Strong owner - avoids consulting company ownership
2. Includes Guarantee – other firms may not have
3. Some firms rated A-, not A+ size XV (the highest) AM Best Company
4. Other transactions - no recapture possible – with a guarantor

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Integration

1. Works in tandem with Guaranteed Fixed Cost Contracts
2. Obtain cost overrun insurance if actual costs are greater than expected
3. Best suited for stable sites

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Summary

1. Guarantee of future payments - large financial institution
2. Pre-fund and guarantee Long Term Institutional Controls up to 50 years
3. Potential for fund recapture

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Long-Term Stewardship Roundtable and Training
April 4-5, 2007
San Diego, California
Session Summary

Session Title:	**Local Government Use of ICs**
Date and Time:	Thursday, April 5, 2007, 10:15 a.m., Session C
Speakers:	Michael Sowinski, DPRA Inc. Joseph J. Biondolillo, Rochester NY DEQ John Ward, British Columbia Ministry of Environment

John Ward Presentation
Linking Local Government Approvals with Provincial Contaminated Sites Requirements

- British Columbia requires site profiles for certain site uses to screen potentially contaminated sites. Performed by the local governments.
- Site profiles may evoke site investigations.
- System works well, although a quarter of the local governments in BC have opted out of using the system.

Questions related to the presentation were as follows:

- How big is your staff?
  - There is a staff of 20 individuals. There are 80 approved professionals that perform the work in the field and we also have a backlog of cases.

- What is the turnaround time for the site profile process (e.g., if I were a developer wanting to develop a site)?
  - The site profile process takes 30 days total, but it can be extended for 30 more.

- What kinds of sites are you examining that are not significant threats or risks?
  - There may be other ways of managing sites when there is contamination. If we give a release, an occupancy permit can be withheld, so the responsibility is passed on to the local government.

- Are there a few examples of the smaller municipalities opting in and doing a good job?
  - It is in the interest of the staff to do a good job, but there is a reeducation problem due to staff turnover. It is also difficult if staff only do one site profile a year.

- Do you involve the provincial health agencies as well?
  - They were involved in developing the regulatory process, but are not usually involved with the site profile work. They are involved occasionally, for example at a mining site and a smelter site.

Joseph Biondolillo Presentation

The City of Rochester New York Environmental Institutional Control System

- Uses electronic red flags to link ICs to the city's permit process.
- System results in good documentation, code enforceable ICs, and in-depth technical knowledge of site conditions.

Questions related to the presentation were as follows:

- Why are developers interested in sites that are burdened with past problems if Rochester is declining in population?
  - Most of the sites in the system have undergone some source cleanup and developers are drawn to the sites because a lot of cleanup is already complete.

- Are there problems with delays in getting states and counties to review permits?
  - The city works with individuals within the counties and states who realize the importance in moving the permits quickly. Joe has not seen delays of more than a week or two.

- Do you use the ICs to require long-term O&M or to refuse building?
  - The city has not yet used the permit system to require long-term O&M. Agencies such as the county and state require it.

Mike Sowinski Presentation

State and Local IC Cooperation in California

- California requires Web registry of ICs.
- California's SB 429 encourages local government involvement.

Questions related to the presentation were as follows:

- The city of Denver decided to notify the state if there was a red flag, but they did not have the authority to deny the permit. What is the difference between notification and regulation?
  - A new regulation would allow the local governments to deny permits. The regulation allows leeway to leave it up to the state as well.

- Where are the attorneys for the local municipalities? How do you know you aren't liable by taking on this responsibility? There is a potential risk with doing this.
  - (Joe) Rochester did consult with the legal department and also the mayor and legal counsel to ensure buy-in and discuss potential liability issues.
  - (John) BC's legislation has a special provision whereby they are granted special immunity.
  - (Mike) This is an interesting issue because people are worried about getting involved with ICs because of the liability issues.

- Are there any sites where you are dealing with mining areas and restrictions associated with attics?

- (John) People are taught how to vacuum and clean their homes through a public health program.
- (Audience member) There were requirements where she lived in Australia. Those requirements were instituted by the local government.

State and Local IC Cooperation in California

Presented By:
J. Michael Sowinski Jr.

Long Term Stewardship Roundtable and Training

US EPA, ECOS, ATSWMO, NALGEP

San Diego, California
April 5, 2007

Local Government and ICs

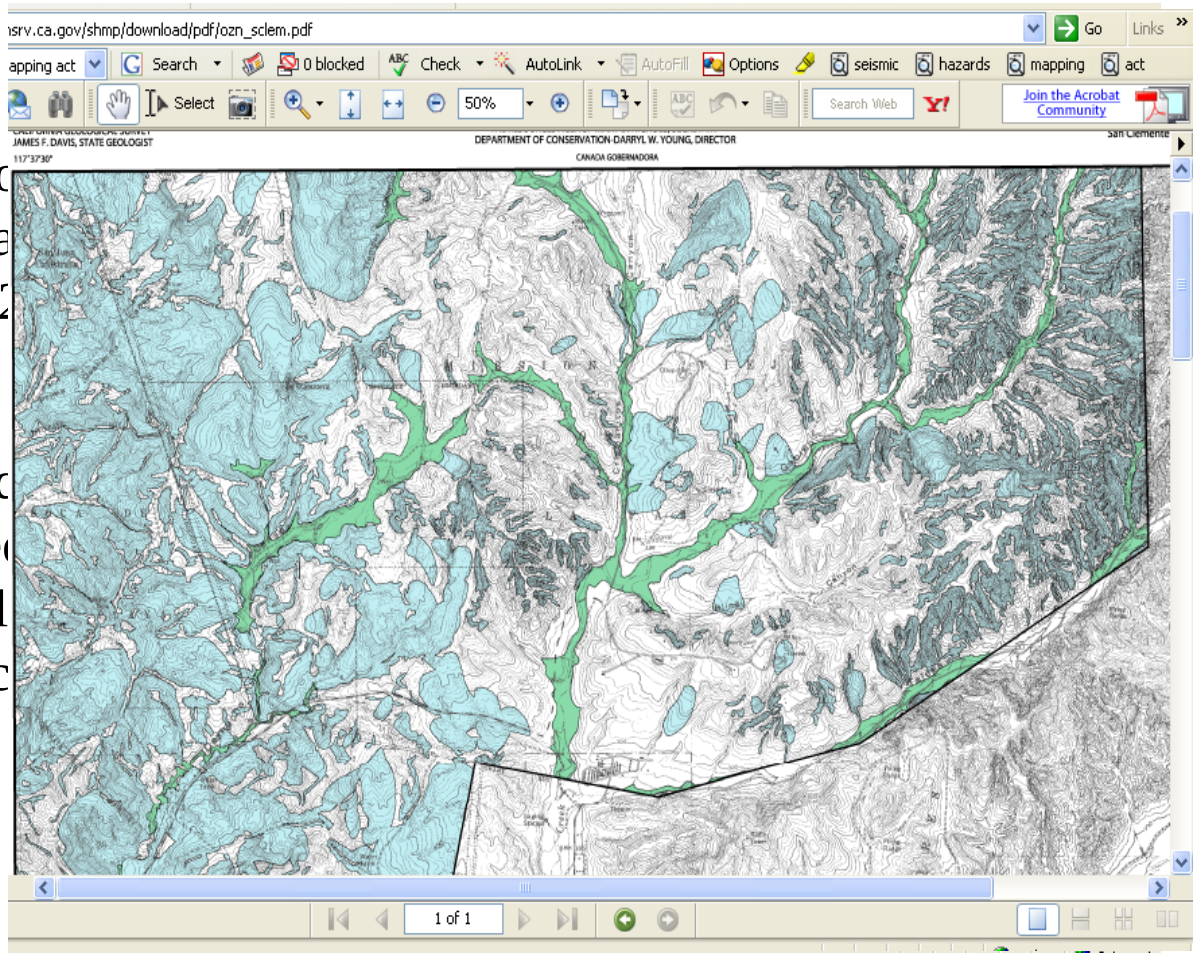
Whether and How Should Local Governments Participate in IC Stewardship?

Other Land Use Control Schemes

Seismic Zone Building Restrictions

The State Geologist shall co
maps identifying seismic ha
zones. Cal Pub. Res. Code 2

Cities and counties shall rec
approval of a project locate
hazard zone, a geotechnical
and delineating any seismic
Res. Code 2697(a).



Other Land Use Control Schemes

Storm Water Impact Development Restrictions

b. ENVIRONMENTAL REVIEW PROCESS

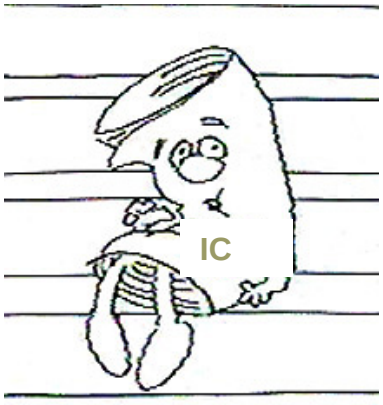
Each Copermittee shall revise as needed their current environmental review processes to accurately evaluate water quality impacts and cumulative impacts and identify appropriate measures to avoid, minimize and mitigate those impacts for all Development Projects.

c. APPROVAL PROCESS CRITERIA AND REQUIREMENTS FOR ALL DEVELOPMENT PROJECTS

For all proposed Development Projects, each Copermittee during the planning process and prior to project approval and issuance of local permits shall prescribe the necessary requirements so that Development Project discharges of pollutants from the MS4 will be reduced to the MEP, will not cause or contribute to a violation of water quality standards, and will comply with Copermittee's ordinances, permits, plans, and requirements, and with this Order. The requirements shall include, but not be limited to, implementation by the project proponent of the following:

(1) Source control BMPs that reduce storm water pollutants of concern in urban runoff, including storm drain system stenciling and signage, properly designed outdoor material storage areas, properly designed trash storage areas, and implementation of efficient irrigation systems;
(2) LID BMPs where feasible which maximize infiltration, provide retention, slow runoff, minimize impervious footprint, direct runoff from impervious areas into landscaping, and construct impervious surfaces to minimum widths necessary;
(3) Buffer zones for natural water bodies, where feasible. Where buffer zones are infeasible, require project proponent to implement other buffers such as trees, access restrictions, etc., where feasible;
(4) Measures necessary so that grading or other construction activities meet the provisions specified in section D.2 of this Order; and
(5) Submittal of proof of a mechanism under which ongoing long-term maintenance of all structural post-construction BMPs will be conducted.

Direct LUC Inspection



IC Stewardship

What is the IC Institution?

- -State "Cap Cop"
- -PRP Inspections
- -Self Certifications
- -EPA 5 Yr. Review
- -Local Government?

Property Transaction

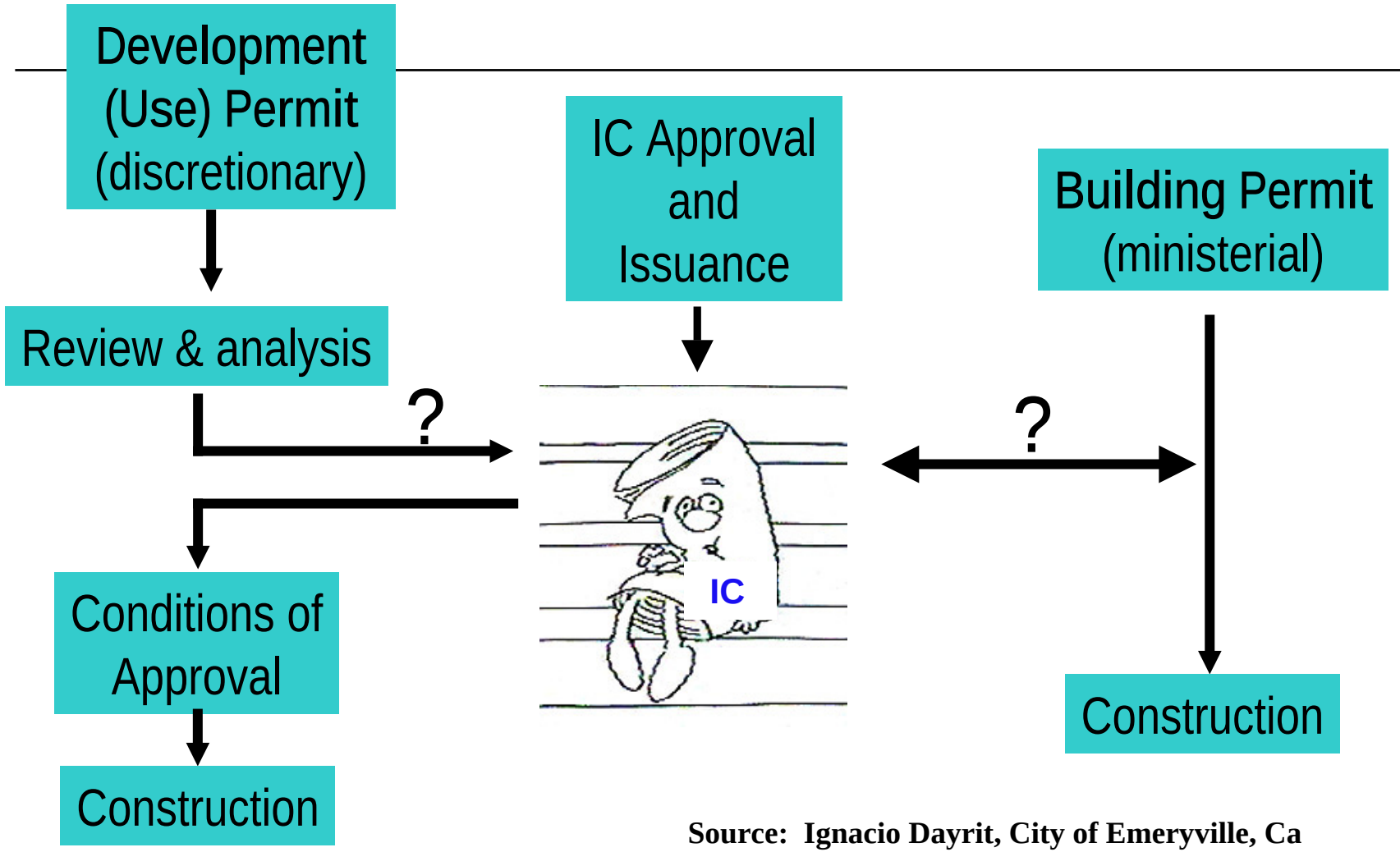
- -Due Diligence(AAI)
- -Title Review
- -LUC Alert Services

Indirect IC Monitoring

Land Use

- -Development Permits
- -Building Permits
- -One Call
- -LUC Alert Services

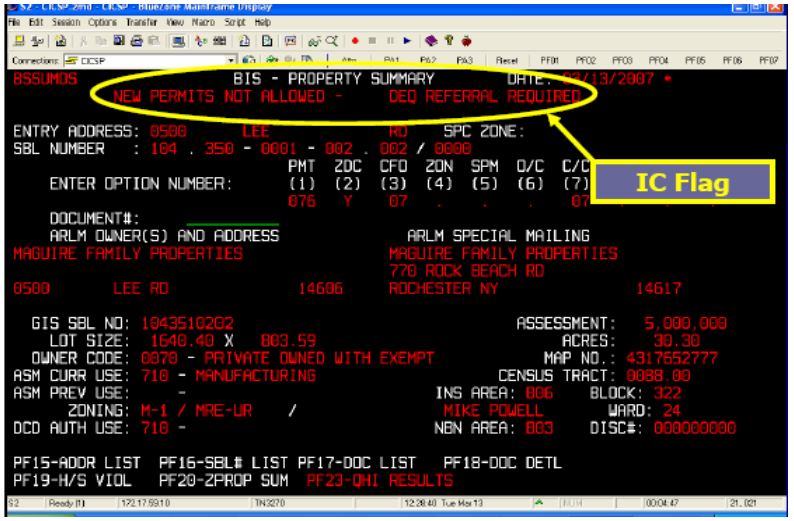
ICs and the Development Process



Source: Ignacio Dayrit, City of Emeryville, Ca

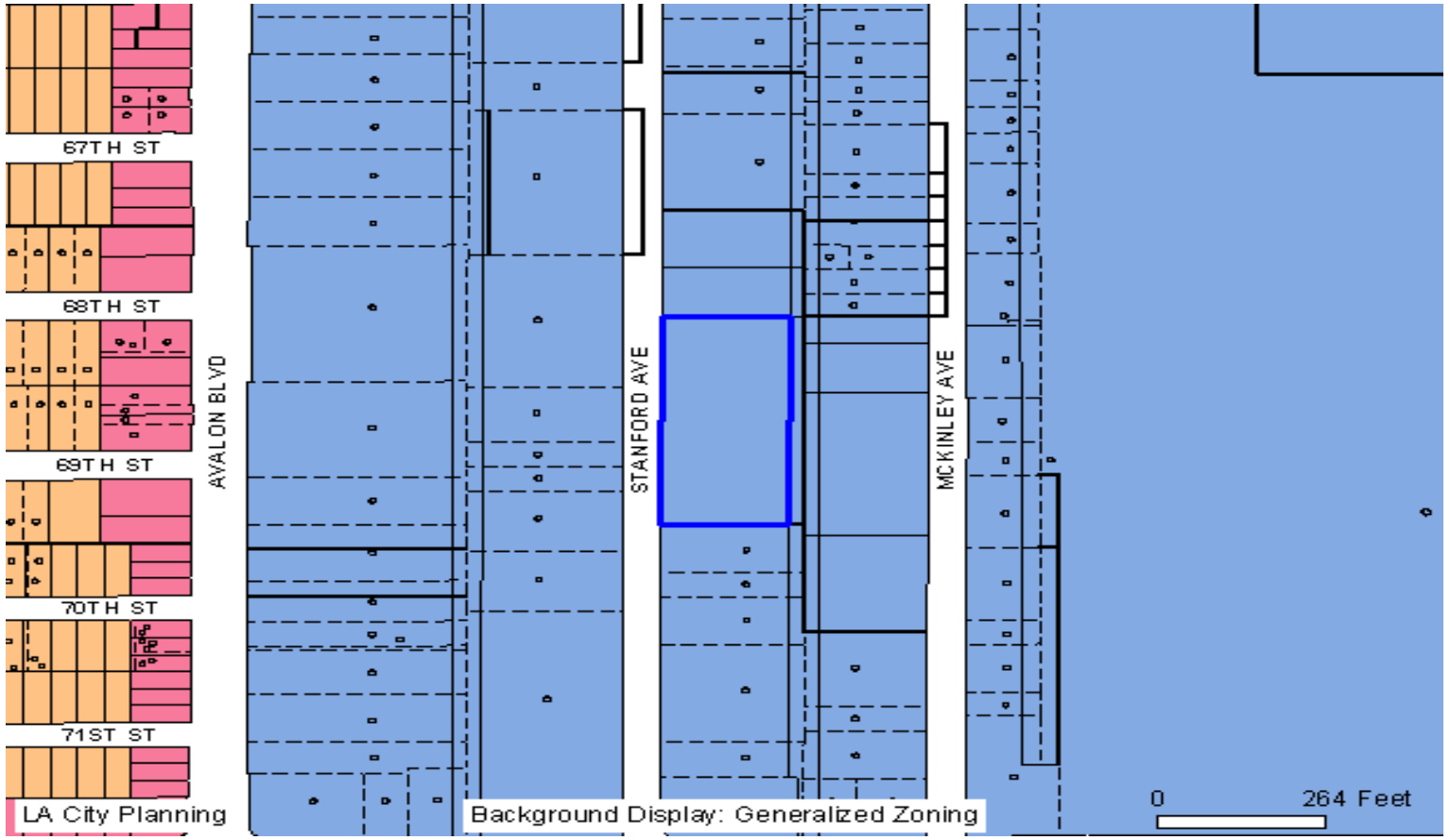
IC Red Flag Systems

1. Cities Update Existing Property Record Software
    1. Rochester, NY
    2. Phoenix, AZ
    3. Oakland, Ca



2. During Permit Application, IC Flag Triggers IC Review

Local Government Permit Tracking



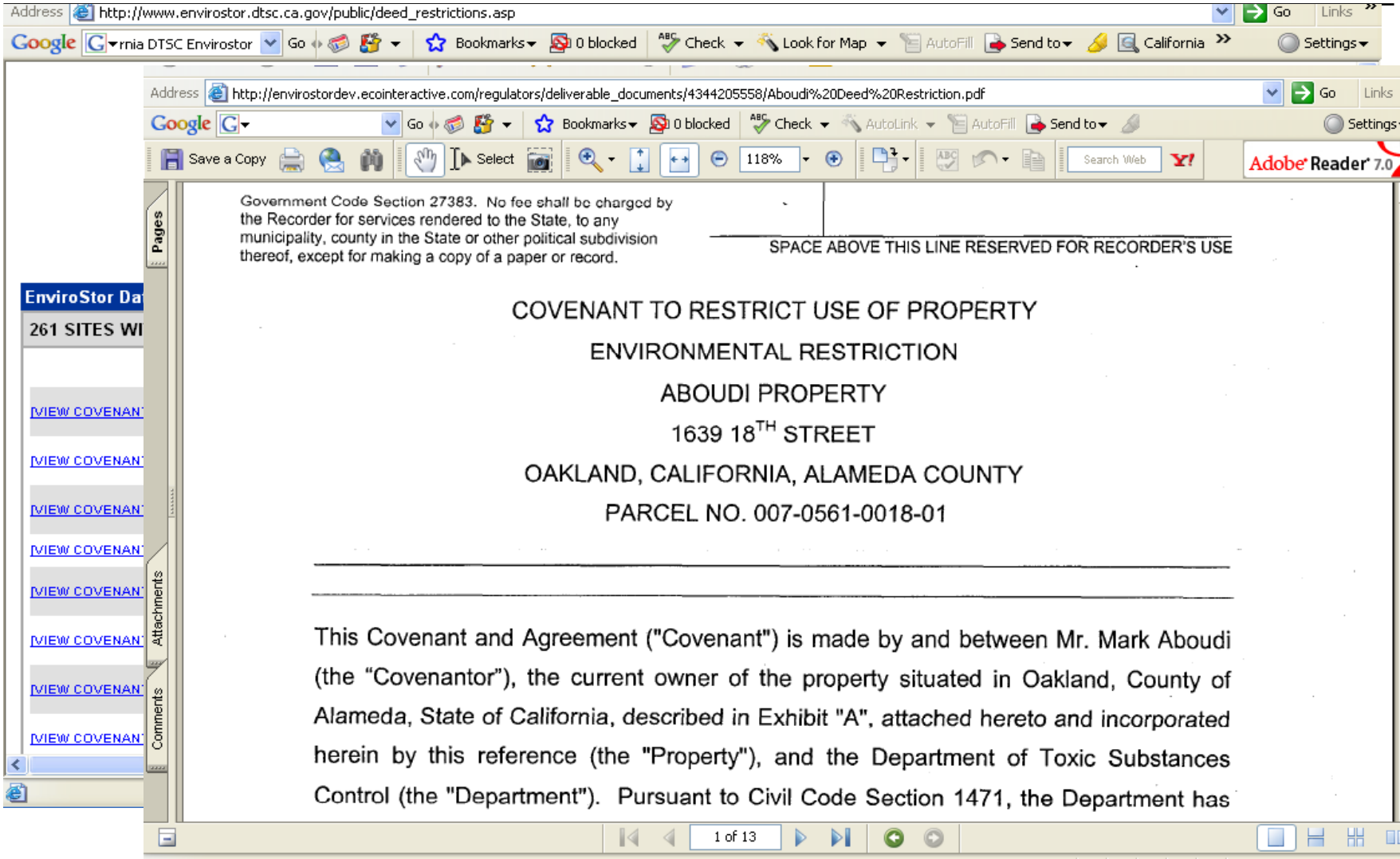
Source: Dan Weissman, City of Los Angeles, Ca

California IC Institution
Environmental Covenants Required

1. Environmental Covenants Required
   a. Water Board-Ordered Cleanups (but not including UST sites). *See* Cal. Wat. Code § 13307.1(c).
   b. DTSC Oversight Cleanups (unless not feasible). *See* 22 CCR § 67391.1(a).
   c. Burn Ash Sites. *See* Cal. Pub. Res. Code § 48022.5 (h).
2. Environmental Covenant Not Necessarily Required
   a. Water Board-Ordered UST Cleanups. (often oversaw by County under Local Oversight Program, *see* Cal. Health & Safety Code § 25297.1)
   b. Local CUPA Oversight Cleanups Under "straight" Voluntary Process, *see* Cal. Health & Safety Code § 101480 et. seq., or Under Site Designation Rules, *see* Cal. Health & Safety Code § 25260 et. seq.
   c. Solid Waste Landfills. *See* Ca. Pub. Res. Code § 48020

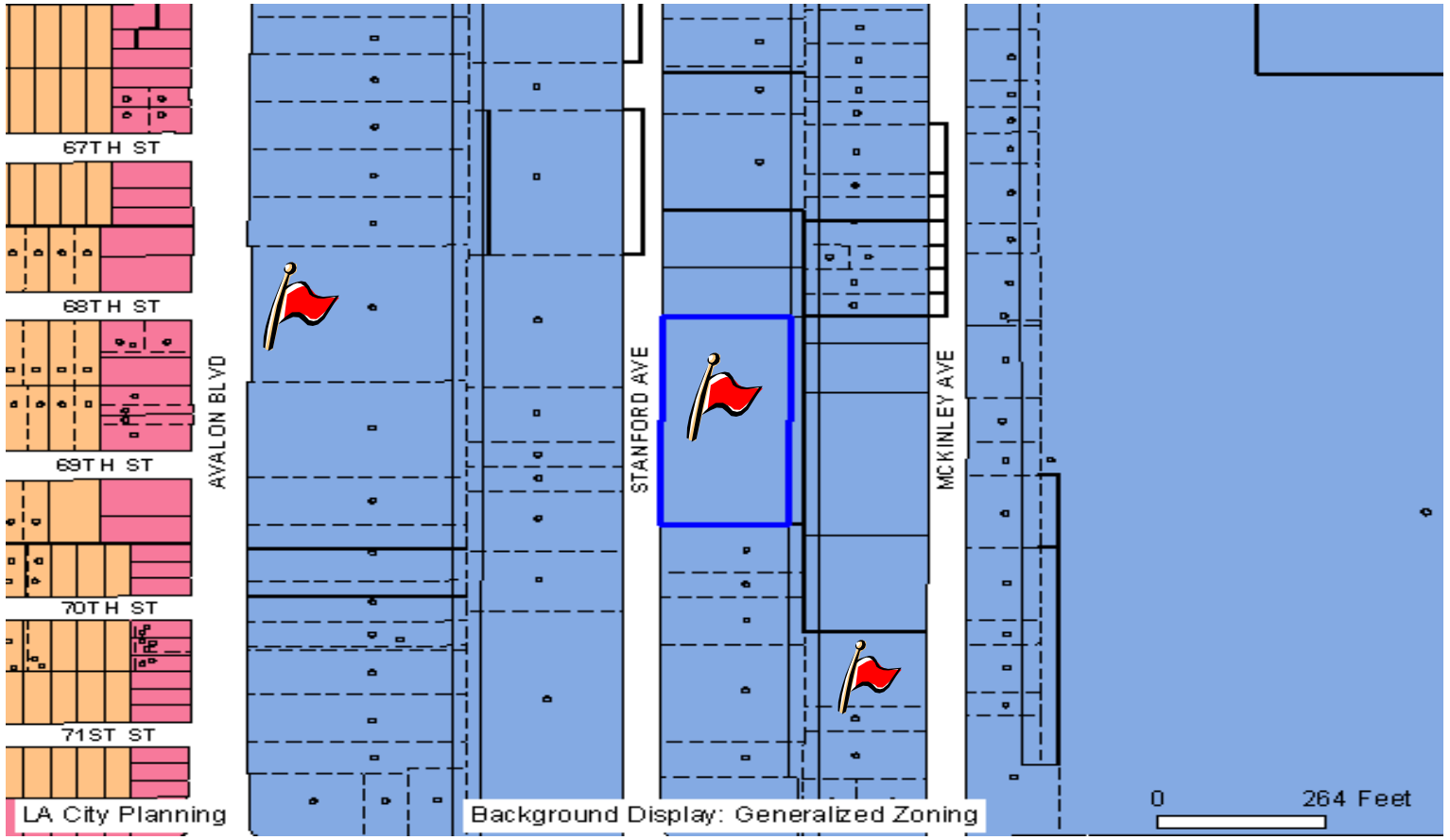
California IC Institution

AB 2413 Requires Web Registry of ICs



California IC Institution

SB 429 Would Encourage Local Involvement



California IC Institution

SB 42

1. IC
   Ag
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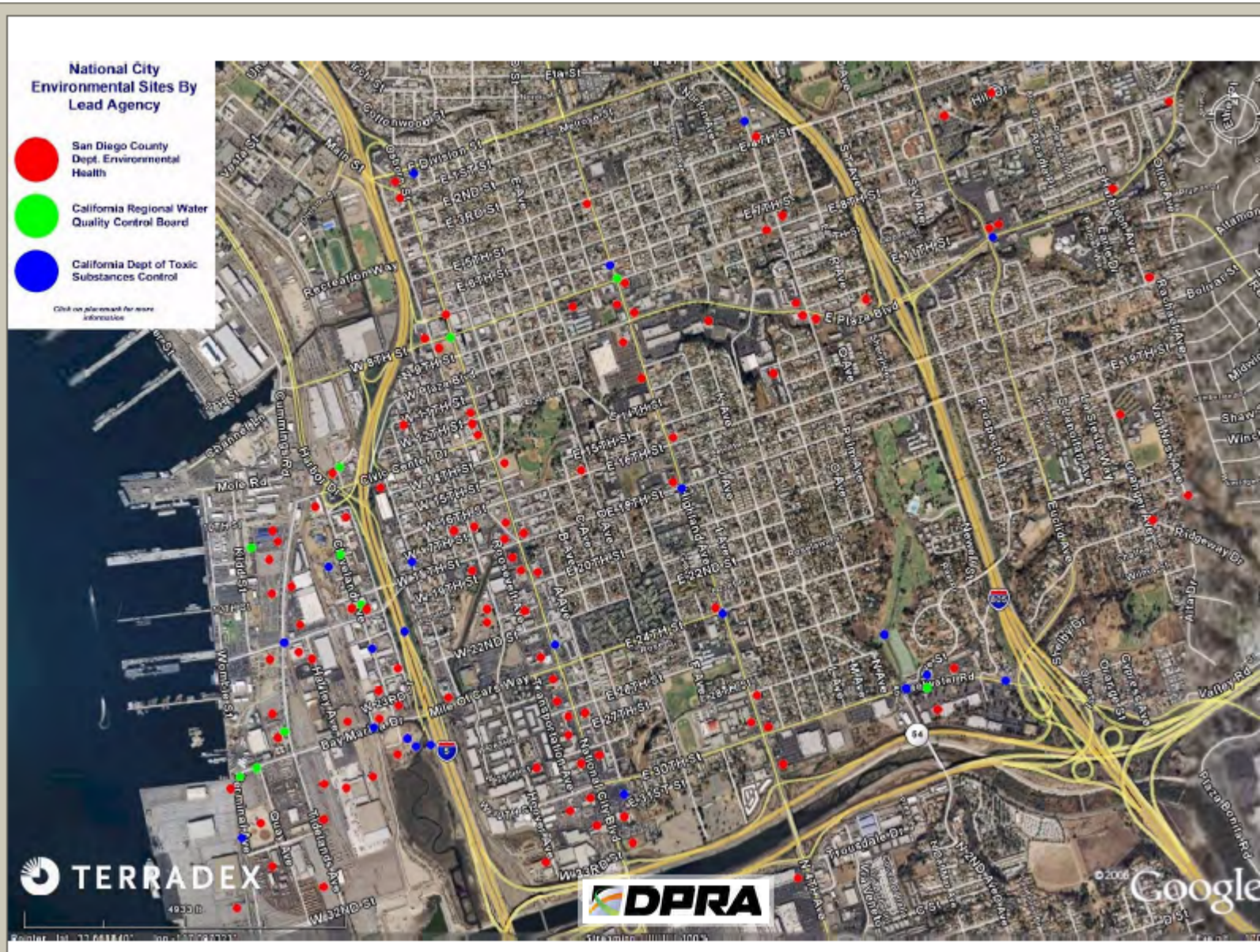
2. Lo
   Pr
   Ag



California IC Institution

SB 429 Would Encourage Local Involvement

1. Upon Request from Local Agency, IC Issuing Agency Must Offer an Opinion on Whether Proposed Activity Conforms to IC.

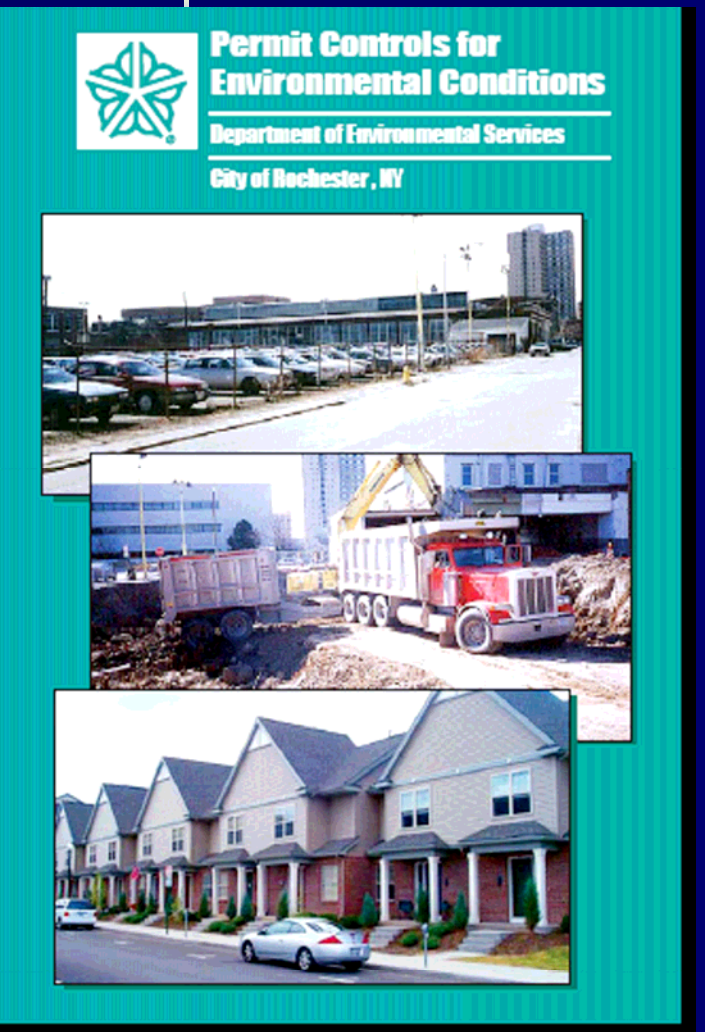
2. Local Agencies Granted “Safe Haven” to Operate – no Liability for IC Process or Related Permitting at IC Sites.

Thank You!

J. Michael Sowinski Jr.

msowinski@envirolawyer.com

The City of Rochester New York Environmental Institutional Control System



Prepared By:
Joseph Biondolillo
City of Rochester, New York
Division of Environmental Quality
March 2007

City of Rochester

Creation of the City's Environmental Institutional Control (IC) System

1. **1940s – 1970s:** City Operates a 230-Acre Municipal Solid Waste Landfill. Solid Waste Incinerated and Ash Buried.

2. **1970s-1980s:** Landfill Closes and Redevelopment Begins Mostly as Industrial Park and a City High School Complex.

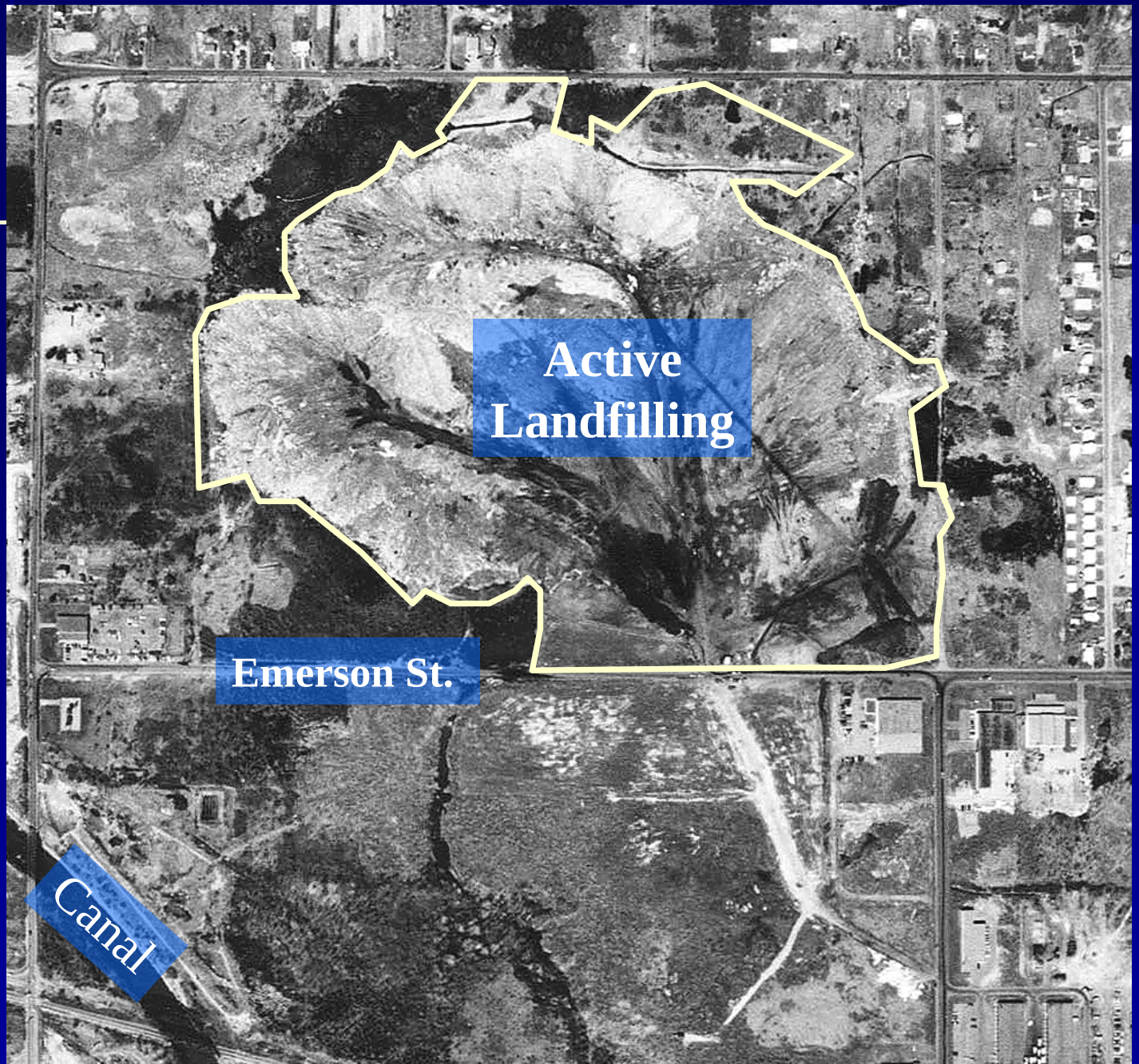
3. **Late 1980's:** New York State Department of Environmental Conservation (NYSDEC) Classifies Former Emerson Street Landfill As Hazardous Waste Site – Redevelopment Slows.

4. **1990-1995:** City Performs Environmental Investigations & Interim Remedial Measures to Address Hazardous Waste.

5. **1993-1995:** City Petitions NYSDEC for removal of >90% of Former Emerson Street Landfill from Hazardous Waste Registry

6. **1995-1996:** NYSDEC Delisting Action Conditioned – City Must Implement Developmental Control System

1970 Aerial Photograph of Former Emerson Street Landfill

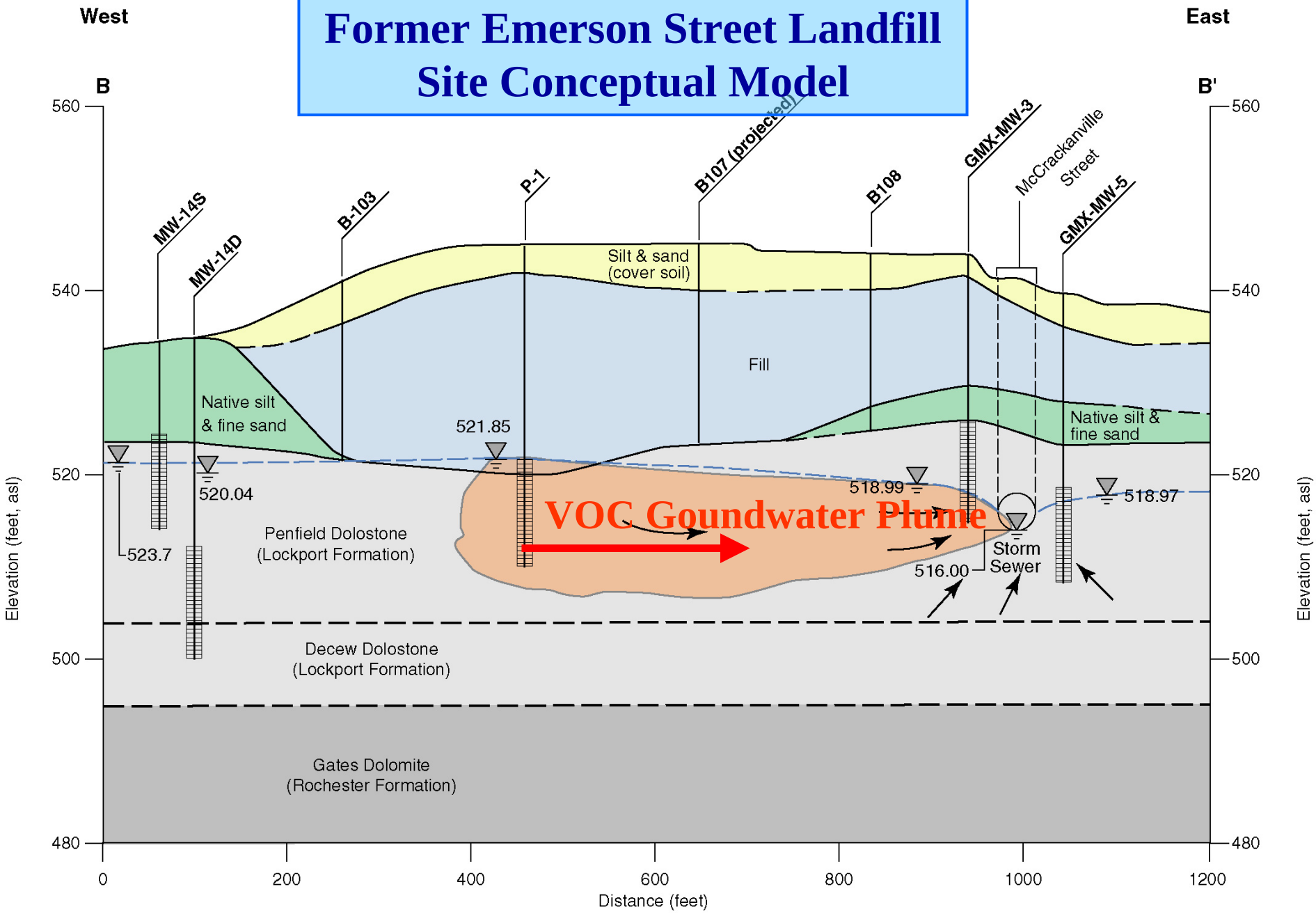


2001 Aerial Photograph of Former Emerson Street Landfill

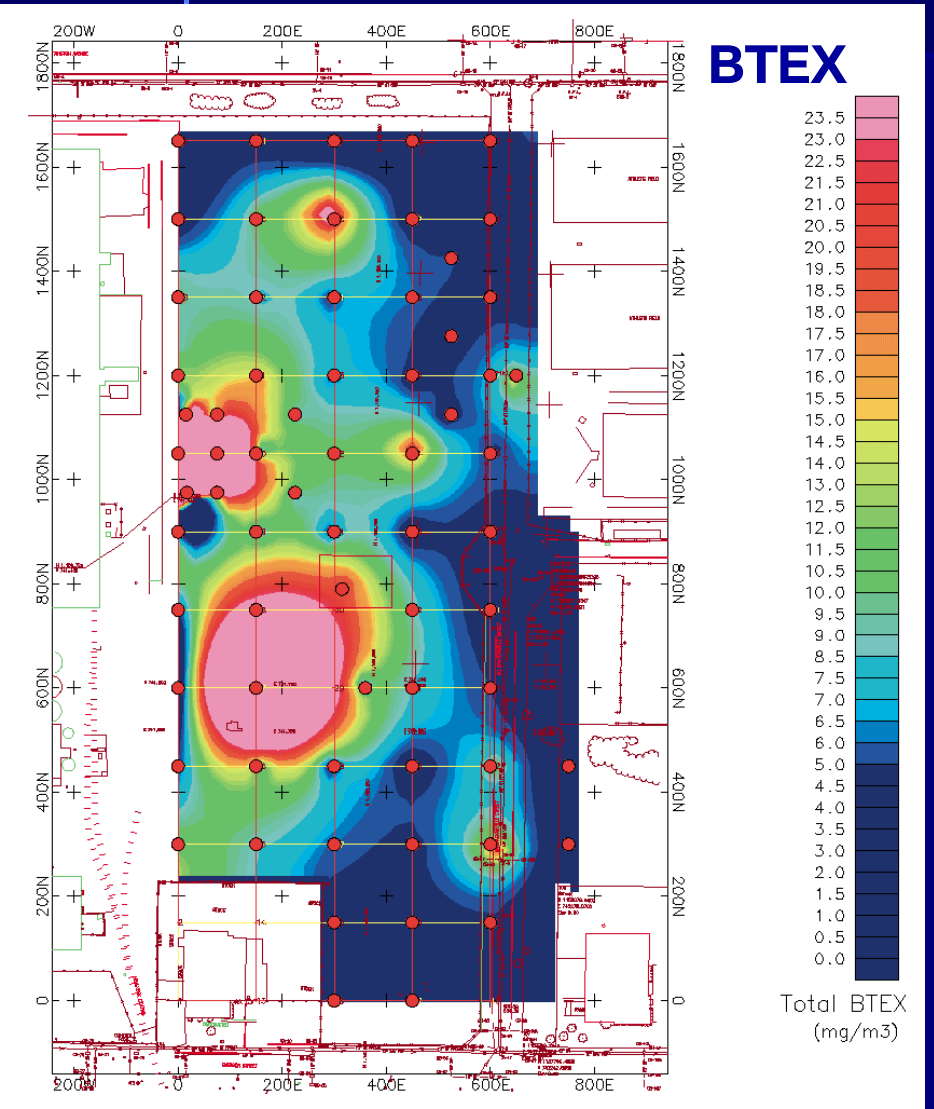
Landfill Media Investigated

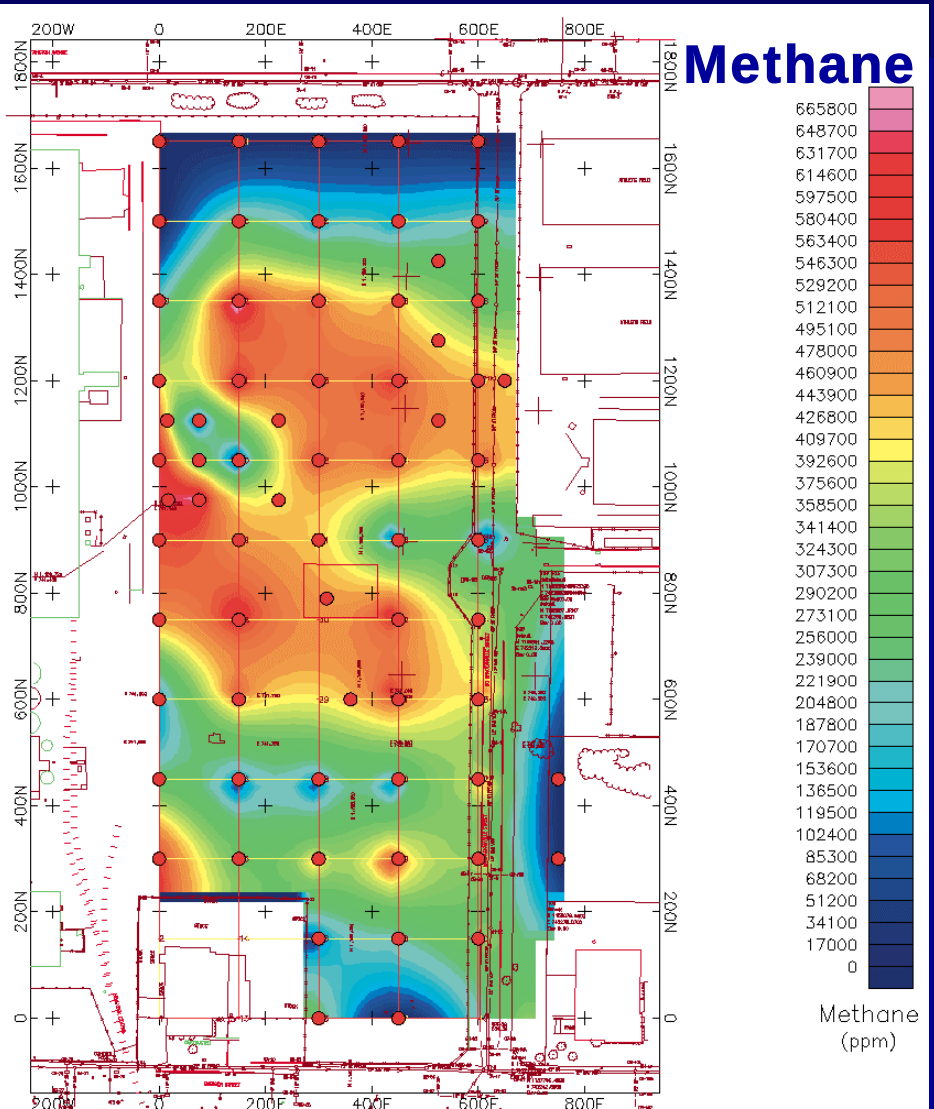
1. Landfill Gas/Ambient Air
2. Surface and Subsurface Soil
3. Subsurface Fill (Regulated Solid Waste)
4. Storm Sewer Water & Canal Water
5. Groundwater

Former Emerson Street Landfill Site Conceptual Model



Soil Gas Survey Results





Primary Purpose of City's Environmental IC System

1. Develop Written Environmental Management Plan (EMP) to Alert Owners, Prospective Purchasers, Designers, and Contractors of Existing Environmental (& Geotechnical) Site Conditions.

2. Provide Information which can be utilized to Protect Workers and the Health and Safety of Occupants.

3. Ensure that new Facilities Mitigate Environmental Conditions in their Design and Construction (e.g. sub-slab vapor mitigation system).

4. Ensure Proper Characterization and Management of Regulated Solid Waste and other Site Contaminants.

Key Features of IC System

1. Use Electronic **Red Flags** to Link IC's to the City's Permit Application Process.

2. Why Link to Permit Applicant Process?
   a. City Permits are Required for Most Intrusive Activities.
   b. IC's are Highly Visible to both City and Applicant at the Initial Stages of the Project.

3. City Permit Application Process Stops until City DEQ Determines If Permit Activities Trigger the IC.

The IC Process

1. Site Undergoes Environmental Cleanup with the Approval of Environmental Regulatory Agencies.

2. Remediation Closure Report Documents Residual Contamination Present at Site, On-going Remediation Systems, and any Environmental Engineering Controls.

3. IC Process Begins with the Development of a **Site-Specific** EMP or Guidance Document.

4. Written Request (Application) for Environmental IC (or Activity Use Limitation).

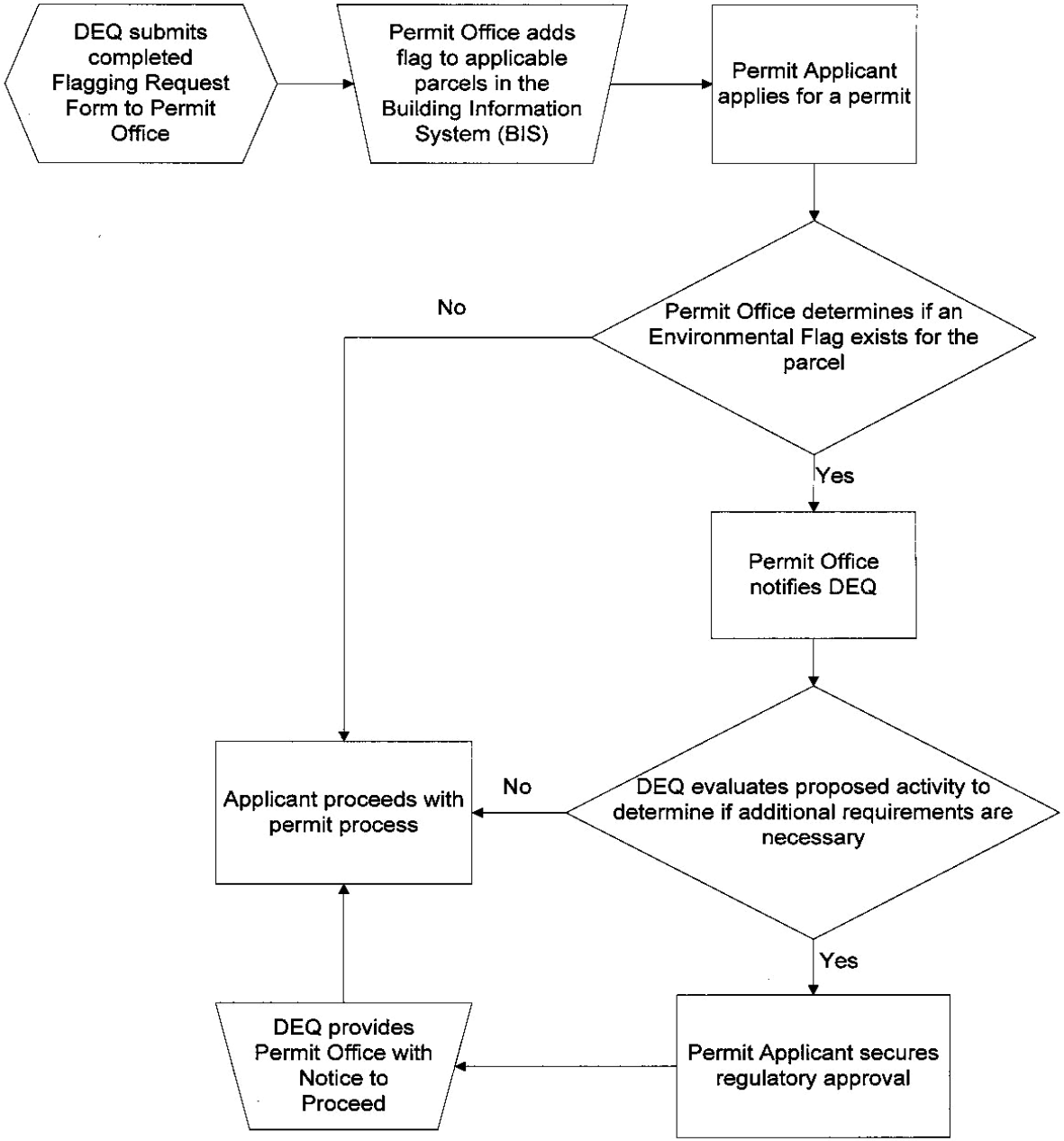
5. City Building Information System (Permit) System is Electronically Flagged with Warning Notification.

6. City Reviews Parcel Information on the Permit Application to Determine if Parcel Contains an IC (Flagged).

IC Process continued…

1. If Flagged, DEQ Staff is Immediately Contacted By City Plan Reviewer.
2. DEQ Reviews Proposed Permit Activities (site plans) & Interviews Permit Applicant.
3. Applicant Provided with EMP or Guidance Documents if IC/AUL Thresholds Are Met.
4. Using Existing EMP as Template, a Site-Specific EMP Is Prepared by Permit Applicant and Submitted for Review.
5. City Coordinates with NYSDEC and Department of Health on Approvals.
6. Permit Issued - With Conditions

City of Rochester Environmental Institutional Control Process



City of Rochester

FAX (716) 428-6010
TDD/Voice 232-3260

Department of Environmental Services

Office of the Commissioner
Division of Environmental Quality
30 Church Street, Rm 300B
Rochester, New York 14614-1278
Tel#: (716) 428-6011

Division of Environmental Quality
Request for Environmental Activity Use Limitation (AUL)

Date of Request: 10/21/99

Person Requesting the AUL: Jane MH Forbes

Property Address: 500 Lee Road
Rochester, NY

Property S.B.L. #: 104.350-0001-002.001/0000 comes up as 104.350-0001-002.002/0000

Property Acreage: 54.18 acres

Property Owner: NYS Urban Development Corp.

Reason for AUL: City of Rochester requires AUL to notify future owners, tenants, developers and general site workers that residual petroleum, contamination exists on a portion of the site.

AUL Time Period: Indefinite

AUL Triggers: Any future excavation, construction, change in zoning, change in land use or other proposed activity that may disturb the residual petroleum and chemical contamination present in the Remediation Area (see attched drawing)

AUL Applicability: All of the Property: [yes]
or
Portion of Property: [ ] Portion to Be Flagged: Entire parcel

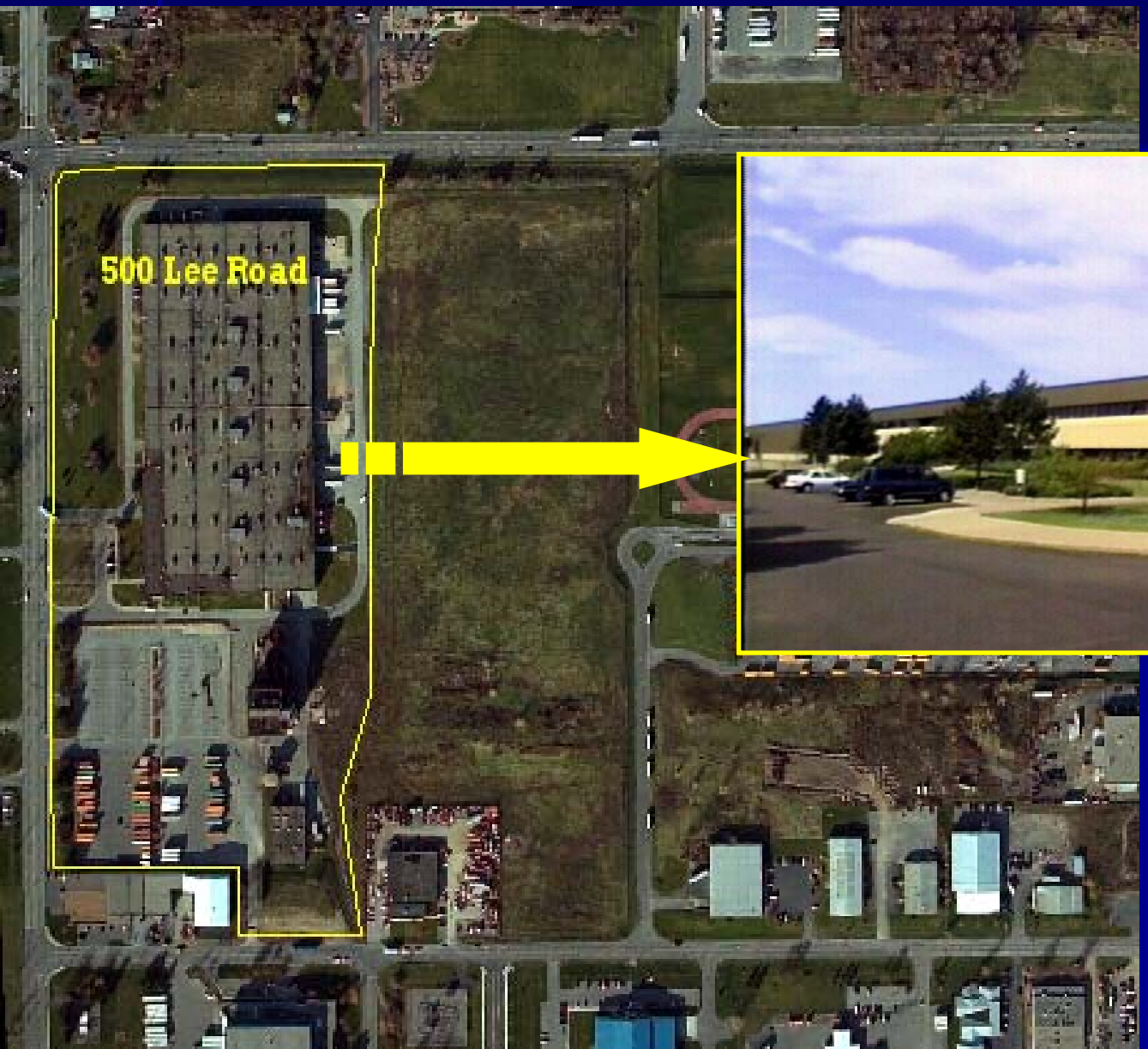
Internal System for Identification of AUL: Flagging of property in BIS system by Buildings and Zoning

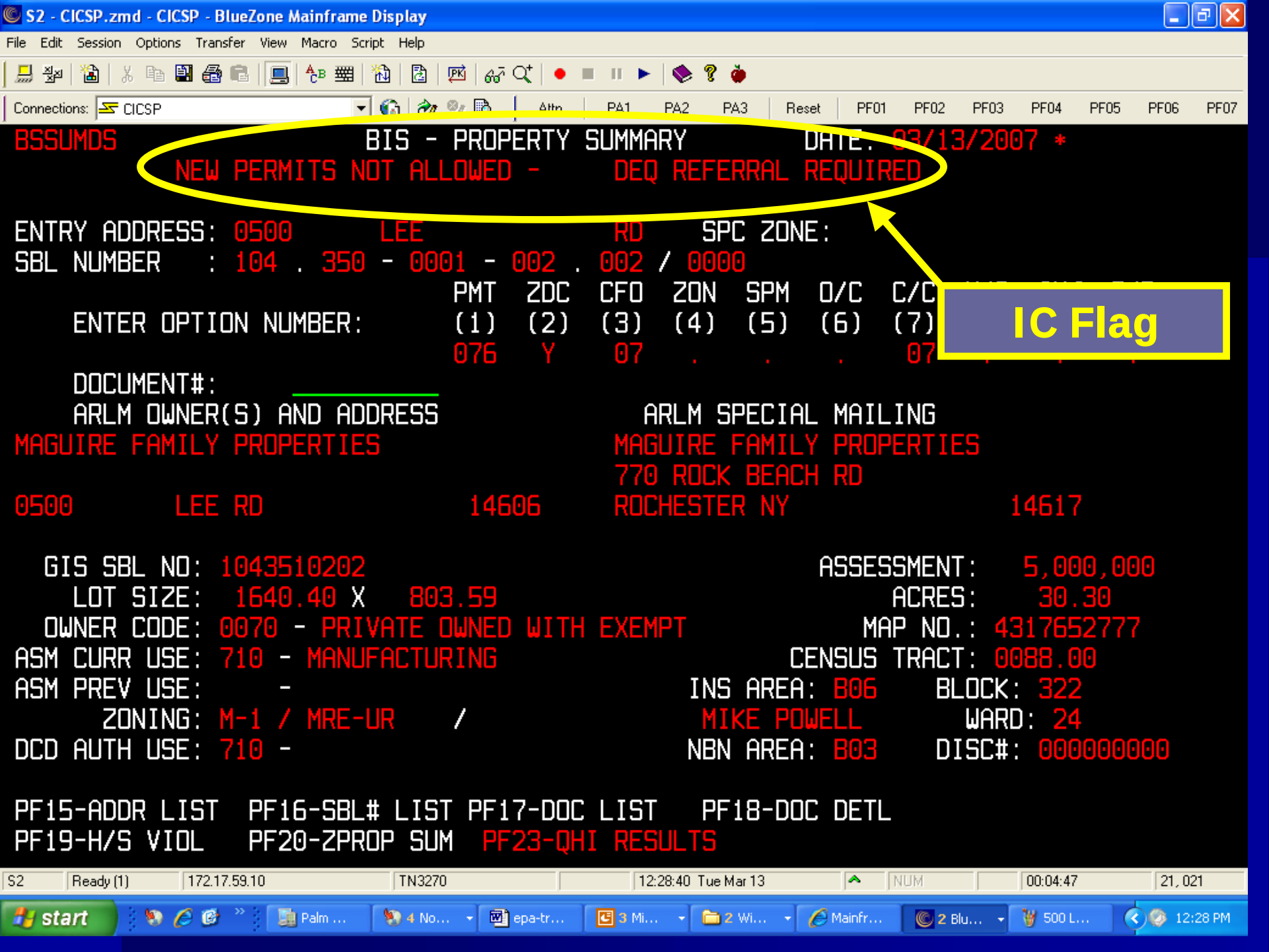
Attachments:
1.) BIS Property Summary (10/20/99)
2.) Tax Map
3.) Drawing showing Remediation Area

Comments:

DEQ Referral Contact: Jane MH Forbes (x7892) or Mark Gregor (x5978)

IC Examples




S2 - CICSP.zmd - CICSP - BlueZone Mainframe Display
File Edit Session Options Transfer View Macro Script Help
Connections: CICSP
PA1 PA2 PA3 Reset PF01 PF02 PF03 PF04 PF05 PF06 PF07
BSSUMDS BIS - PROPERTY SUMMARY DATE: 03/13/2007 *
NEW PERMITS NOT ALLOWED - DEQ REFERRAL REQUIRED
ENTRY ADDRESS: 0500 LEE RD SPC ZONE:
SBL NUMBER : 104 . 350 - 0001 - 002 . 002 / 0000
PMT ZDC CFO ZON SPM O/C C/C
ENTER OPTION NUMBER: (1) (2) (3) (4) (5) (6) (7)
076 Y 07 . . . 07
IC Flag
DOCUMENT#:
ARLM OWNER(S) AND ADDRESS
ARLM SPECIAL MAILING
MAGUIRE FAMILY PROPERTIES
MAGUIRE FAMILY PROPERTIES
770 ROCK BEACH RD
0500 LEE RD 14606
ROCHESTER NY 14617
GIS SBL NO: 1043510202
ASSESSMENT: 5,000,000
LOT SIZE: 1640.40 X 803.59
ACRES: 30.30
OWNER CODE: 0070 - PRIVATE OWNED WITH EXEMPT
MAP NO.: 4317652777
ASM CURR USE: 710 - MANUFACTURING
CENSUS TRACT: 0088.00
ASM PREV USE: -
INS AREA: B06
BLOCK: 322
ZONING: M-1 / MRE-UR /
MIKE POWELL
WARD: 24
DCD AUTH USE: 710 -
NBN AREA: B03
DISC#: 000000000
PF15-ADDR LIST PF16-SBL# LIST PF17-DOC LIST PF18-DOC DETL
PF19-H/S VIOL PF20-ZPROP SUM PF23-QHI RESULTS
S2 Ready (1) 172.17.59.10 TN3270 12:28:40 Tue Mar 13 NUM 00:04:47 21, 021
start
Palm ... 4 No... epa-tr... 3 Mi... 2 Wi... Mainfr... 2 Blu... 500 L...
12:28 PM

Permit Event List

09:42:06 Wed Oct 06, 2004

BPEVTDS **BIS - BUILDING PERMIT EVENT LIST** **DATE:** 10/06/2004 *

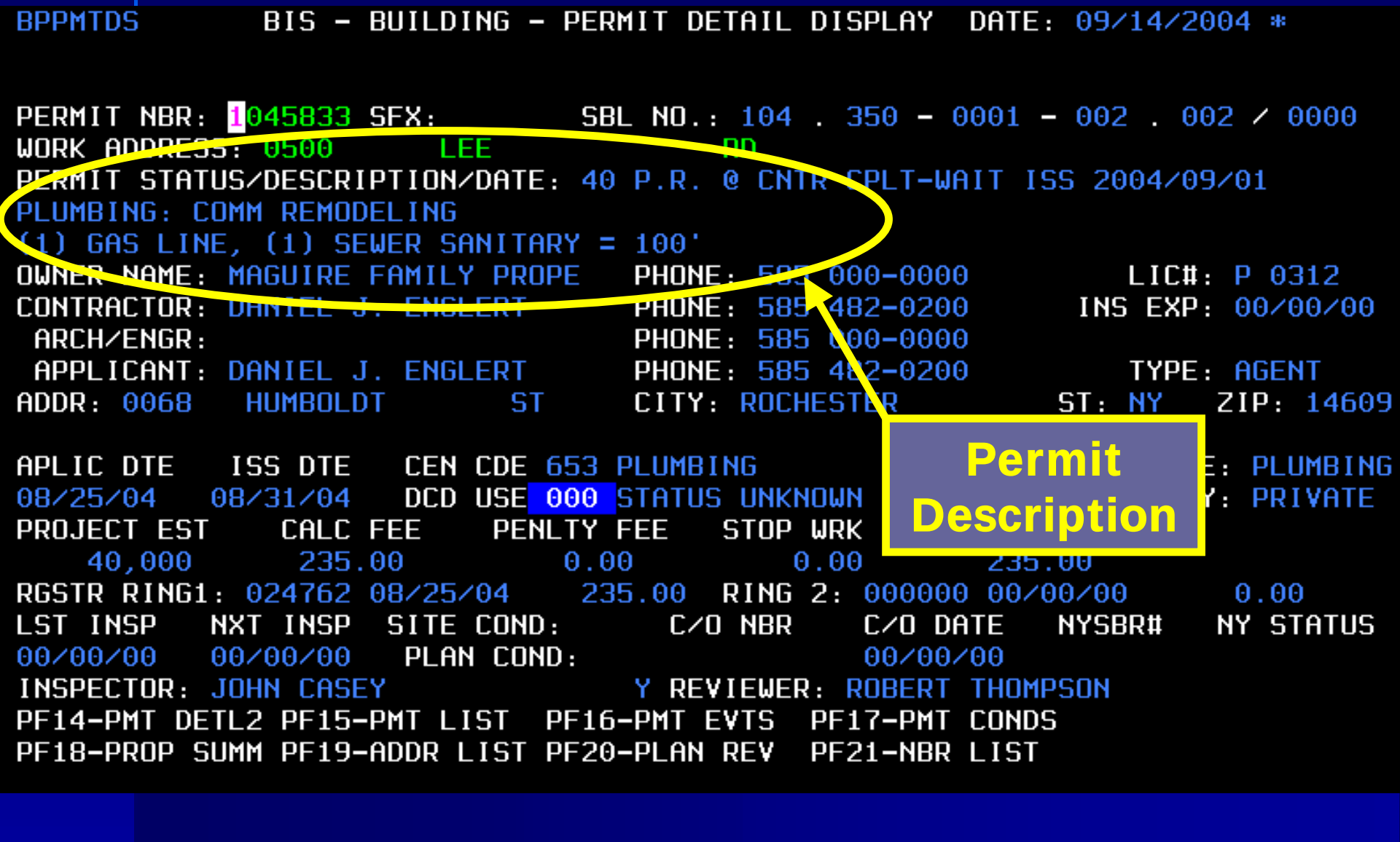
PERMIT#: 1045833 **SFX:** **ADDRESS:** 0500 LEE RD

EVT	DATE	TIME	RESP EMP	CODE	DESCRIPTION	CLERK
0010	09/01/04	11:24	315	080	COMMENT/PROBLEM ADDED	315
	IN HOLD FILE UNTIL FLAG ISSUE IS RESOLVED. CV					
0009	09/01/04	11:23	000	106	SETBACK TO PRE ISSUE	315
0008	08/31/04	15:47	372	105	INITIAL ISS- INSP ASSGN	372
0007	08/31/04	15:46	372	090	CASH RGSTR#1 ENTRIES CHGD	372
	OLD # 000000 DT 000000 AMT 0000000 NEW # 024762 DT 082504 AMT 0023500					
0006	08/31/04	15:46	372	100	PLN REV COMPLT WAITNG ISS	372
0005	08/25/04	14:42	372	093	PROJ EST &/ FEES UPDATED	372

	PROJ$	CFEE	STFEE	PNFEE	FEEDU
OLD:	00040000	0021500	0000000	0000000	0021500
NEW:	00040000	0023500	0000000	0000000	0023500

PF14-PMT DETL **PF15-PMT LIST** **PF17-PMT CONDS**
PF18-PROP SUM **PF19-ADDR LIST** **PF20-ZONE RTN** **PF21-EVT UPD**

Permit Detail Screen



CITY OF ROCHESTER, NEW YORK
PLAN REVIEW RECORD / PERMIT CONDITIONS RECORD

DEPARTMENT OF COMMUNITY DEVELOPMENT
BUREAU OF BUILDINGS AND ZONING
ROOM: 121-B TELEPHONE: 428-6526
30 CHURCH ST. CITY HALL

PERMIT NUMBER: 1061412A **WORK LOCATION:** 0085 EXCEL DR **PAGE:** 1

ITEM ID	PERMIT CONDITIONS
A01	THIS PERMIT IS FOR FOUNDATION ONLY. ALL WORK SHOWN ON SHEETS ST-1 & ST-2 IS AUTHORIZED. NO OTHER WORK SHALL BEGIN UNTIL PERMIT #1061412 IS ISSUED.
A02	ALL WORK SHALL BE PERFORMED IN GENERAL ACCORDANCE WITH ENVIRONMENTAL MANAGEMENT PLAN, 424-500 NORTON STREET, ROCHESTER, NEW YORK {REVISED 1-28-00}, OR A SITE-SPECIFIC ENVIRONMENTAL MANAGEMENT PLAN PREPARED BY THE PERMIT APPLICANT AND APPROVED BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION AND THE MONROE COUNTY DEPARTMENT OF HEALTH.
A03	IF SUSPICIOUS AND/OR HAZARDOUS MATERIAL IS ENCOUNTERED DURING CONSTRUCTION, ALL WORK SHALL STOP AND THE MONROE COUNTY DEPARTMENT OF HEALTH AND NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION SHALL BE NOTIFIED IMMEDIATELY. WORK SHALL NOT RESUME UNTIL THE DESIGN ENGINEER HAS OUTLINED APPROPRIATE ACTION FOR DEALING WITH THE WASTE MATERIAL AND PLANS ARE MODIFIED AS MAY BE NECESSARY. PLEASE CONTACT JOSPEH ALBERT AT {585} 753-5904.

A Permit issued does not relieve the owner, his agent, the applicant, any architect, professional engineer or contractor from complying with the building code {CHAPTER 39} and other applicable laws; whether stated, implied or omitted in this Plan Review Record and in any accompanying plans and specifications submitted.

I understand all the conditions and I will assume the responsibility to see that the listed permit conditions are carried out in the proposed work.

Reviewer **Date** **Applicant** **Date**

IC Permit Conditions

City & Applicant Signatures

CITY OF ROCHESTER, NEW YORK
APPLICATION FOR PERMIT

BUILDING 437

DEPARTMENT OF COMMUNITY DEVELOPMENT
BUREAU OF BUILDINGS AND ZONING
ROOM: 121-B TELEPHONE: 428-6526
30 CHURCH ST. CITY HALL

WORK LOCATION:	0524 OAK	ST		**DATE:** 07/28/04
OWNER NAME:	CITY OF ROCHESTER	585 000-0000		
CONTRACTOR NAME:	UNKNOWN	585 000-0000		**APPLICATION NUMBER:**
ARCH./ENG. NAME:	LABELLA ASSOC.	585 454-6110		
APPLICANT NAME:	MICHAEL SCHAFFRON	585 454-6110		1045089
APPLICANT ADDRESS:	300 STATE	ST ROCH	NY 14614	**CERTIFICATE OF OCCUPANCY:**

PERMIT DESCRIPTION:
CONSTRUCT SOCCER STADIUM

CZC SUBJECT TO:

PROPOSED WORK: NEW CONSTR	**APPROVALS:**	**COST ESTIMATE:** EXCLUDE electrical & plumbing work INCLUDE heating air conditioning etc
CONSTRUCTION TYPE: NOT APPLICABLE	Spc Pmt CZC 1041464 Zon Dist. ERIE CANAL URD	$ 1
OCCUPANCY OR USE:	P/L N HTD	**PERMIT FEE:**
PRESENT USE:	C of A Var	Base pmt fee 1.00 Penalty fee 0.00 Stop work fee 0.00 TOTAL 1.00
Proposed use:	Site pl 0020405	

CERTIFICATION: I am the owner/contractor/architect/engineer/or owners agent authorized to make this application

Applicants Signature _____ **Date** _____

APPROVALS:

Zoning	Date
Fire Safety	Date
Plumbing	Date
D.E.S	Date 8/30/04
Housing & Project Development	Date
Property Conservation	Date
Buildings	Date

for Commisioner of Community Development

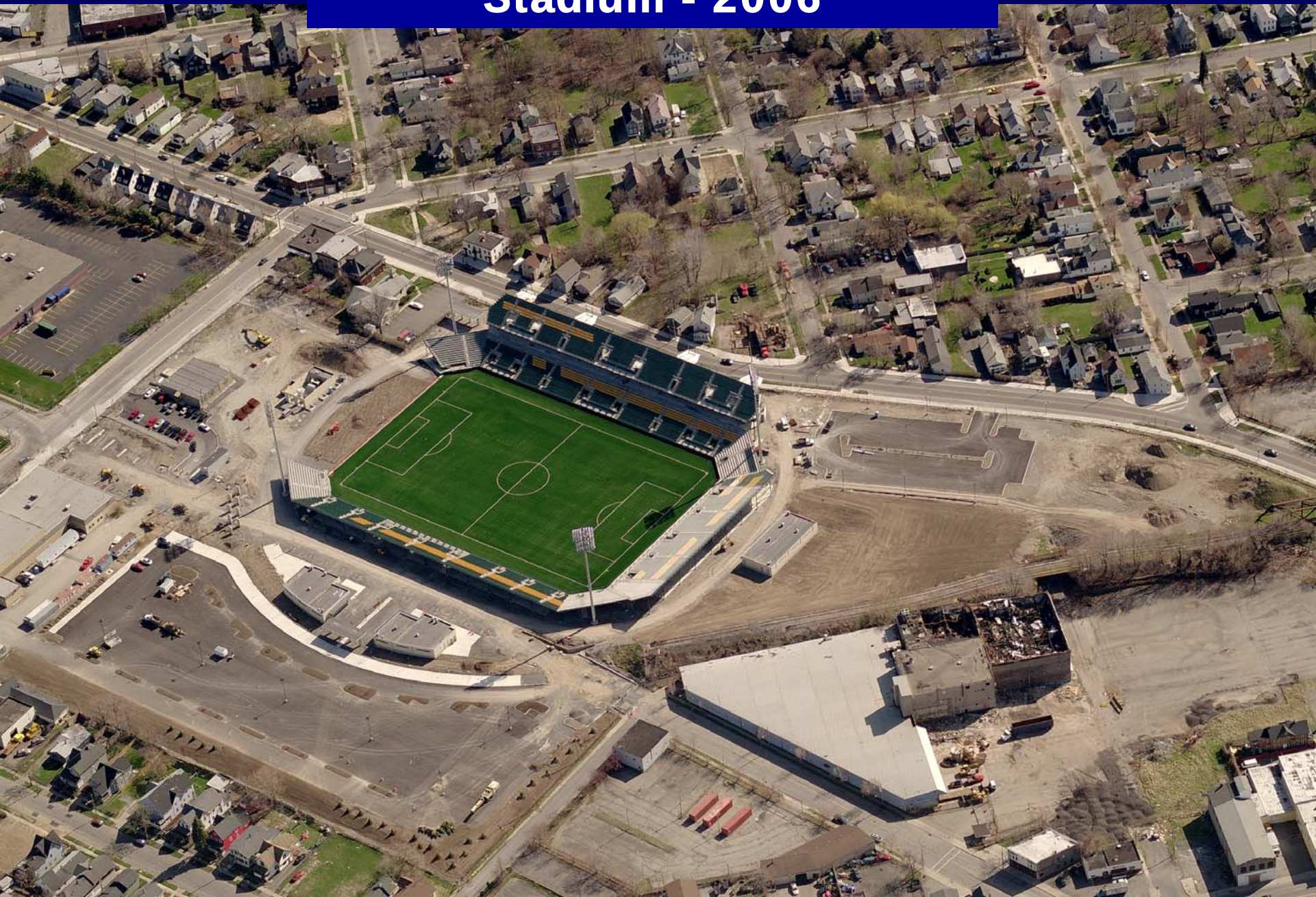
FEE PAID

INSURANCE:
OPEN CASE: 000000
 # OF PLANS: 0
BB / IS / FS

PERMIT B PS

Permit Approval by City DEQ

Rochester Raging Rhinos Stadium - 2006



Problems

1. Flags are Ignored or Not Observed – Make Highly Visible
2. Flags are Erroneous
3. Flags are “Missing”
4. City Staff is Unaware of Process - Train Your Staff !
5. Real Property Changes - Subdivision of Parcel with IC

IC Quality Controls

1. Permit Activity Report
2. Parcel Status Report
3. Review of Subdivision Changes
4. Real-Time GIS Shapefile of Current ICs
5. Staff Training

Parcel Status Report

BIS PROPERTIES WITH NEW PERMITS NOT ALLOWED FLAG
SELECTED 'DES-ENVIRONMENTAL REVIEW'

DATE: 13SEP04 PAGE: 1
PROGRAM: RL_25595

ADDRESS		SBL NUMBER	FLAG REASON	PERMIT#	STATUS	DATE	CASE#
0015	BROOKS AV	13534000030230000000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
0014	CHARLOTTE ST	10681000020360010000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
0026	CHARLOTTE ST	10681000020390000000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
0028	CHARLOTTE ST	10681000020400000000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
0032	CHARLOTTE ST	10681000020410000000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
0036	CHARLOTTE ST	10681000020420000000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
0042	CHARLOTTE ST	10681000020430000000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
0048	CHARLOTTE ST	10681000020450010000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
0110	COLFAX ST	10545000010010010000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
0145	COLFAX ST	10452000010050010000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
0225	COLFAX ST	10452000010040010000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
0305	COLFAX ST	10452000010040020000	DES-ENIVRONMENTAL REVIEW	1044168	CLOSED	06/30/04	.
0351	COLFAX ST	10452000010020000000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
0361	COLFAX ST	10452000010010010000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
0395	COLFAX ST	10444000010170000000	DES-ENIVRONMENTAL REVIEW	1044758	VOIDED/CANCELLED	07/29/04	.
0535	COLFAX ST	10436000020170010000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
0575	COLFAX ST	10436000010390010000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
0200	EAST AV	12125000010160000000	DES-ENIVRONMENTAL REVIEW	986384	PENDING	11/05/98	.
0200	EAST AV	12125000010160000000	DES-ENIVRONMENTAL REVIEW	1024219	PENDING	06/25/02	.
0200	EAST AV	12125000010160000000	DES-ENIVRONMENTAL REVIEW	1032187	PENDING	08/29/03	.
0150	ELMWOOD AV	13551000010010000000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
1181	EMERSON ST	10537000010220000000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
1335	EMERSON ST	10537000010250000000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
1345	EMERSON ST	10537000010230010000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
1360	EMERSON ST	10537000010060000000	DES-ENIVRONMENTAL REVIEW	.	.	.	.
1365	EMERSON ST	10537000010260000000	DES-ENIVRONMENTAL REVIEW	1043615	CLOSED	06/09/04	.
1425	EMERSON ST	10444000010140010000	DES-ENIVRONMENTAL REVIEW	.	.	.	.

Visualizing ICs in GIS

Parcels with ICs

Port of Rochester
Environmental Management Plan

Location:

Port of Rochester
Rochester, New York 14612

Prepared For:

City of Rochester Division of Environmental Quality
30 Church Street
Room 300B
Rochester, New York 14614

LaBella Project No. 205182

July 2005

City IC System Summary

1. City IC System in Place for 10 Years
2. Approximately 116 Parcels Flagged with ICs
3. Permit-Based Process Results in Good Documentation and Rapid City Response
4. Permit-Based ICs: Code Enforceable
5. State and County Regulatory Agency Acceptance
6. City DEQ In-Depth Technical Knowledge of Site Conditions
7. City DEQ Uses Discretion in Referring Permit Applicant to Regulatory Agencies

Future Changes ?

1. City's Environmental IC Process Easily Adapted to NYSDEC's Mandate for Local Municipality Management of NYSDEC Brownfield Cleanup Program Environmental Easements.

2. Recent NYSDEC Request for ICs for Petroleum Spill Sites.

3. ICMA/EPA EE Implementation Plan & Cost Tracking Project.

End Of Presentation

BRITISH COLUMBIA
The Best Place on Earth

Ministry of Environment

Site Profiles

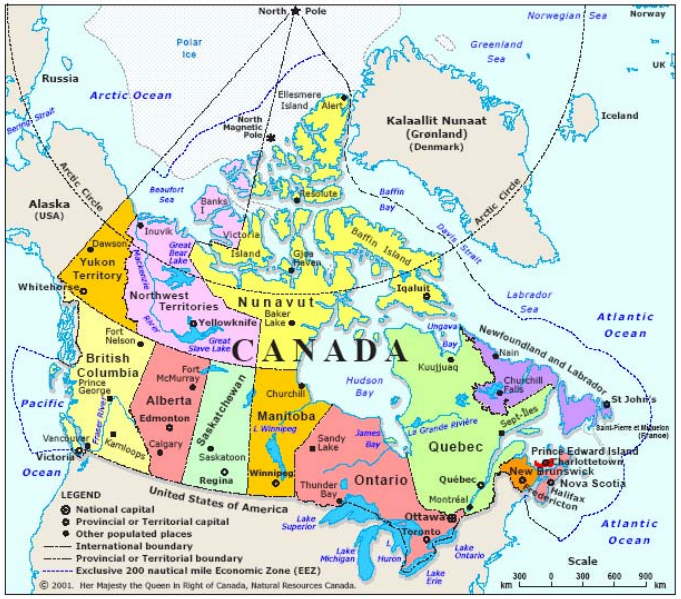
Linking Local Government Approvals with Provincial Contaminated Sites Requirements

Main topics

1. About British Columbia
2. Our contaminated sites system
3. Site profiles
   a. How they are used
   b. How they link to local government processes
   c. How they help ensure sites are cleaned up before redevelopment occurs
4. Rough spots in the system
   a. Possible solutions

Where we are

2007-04-05



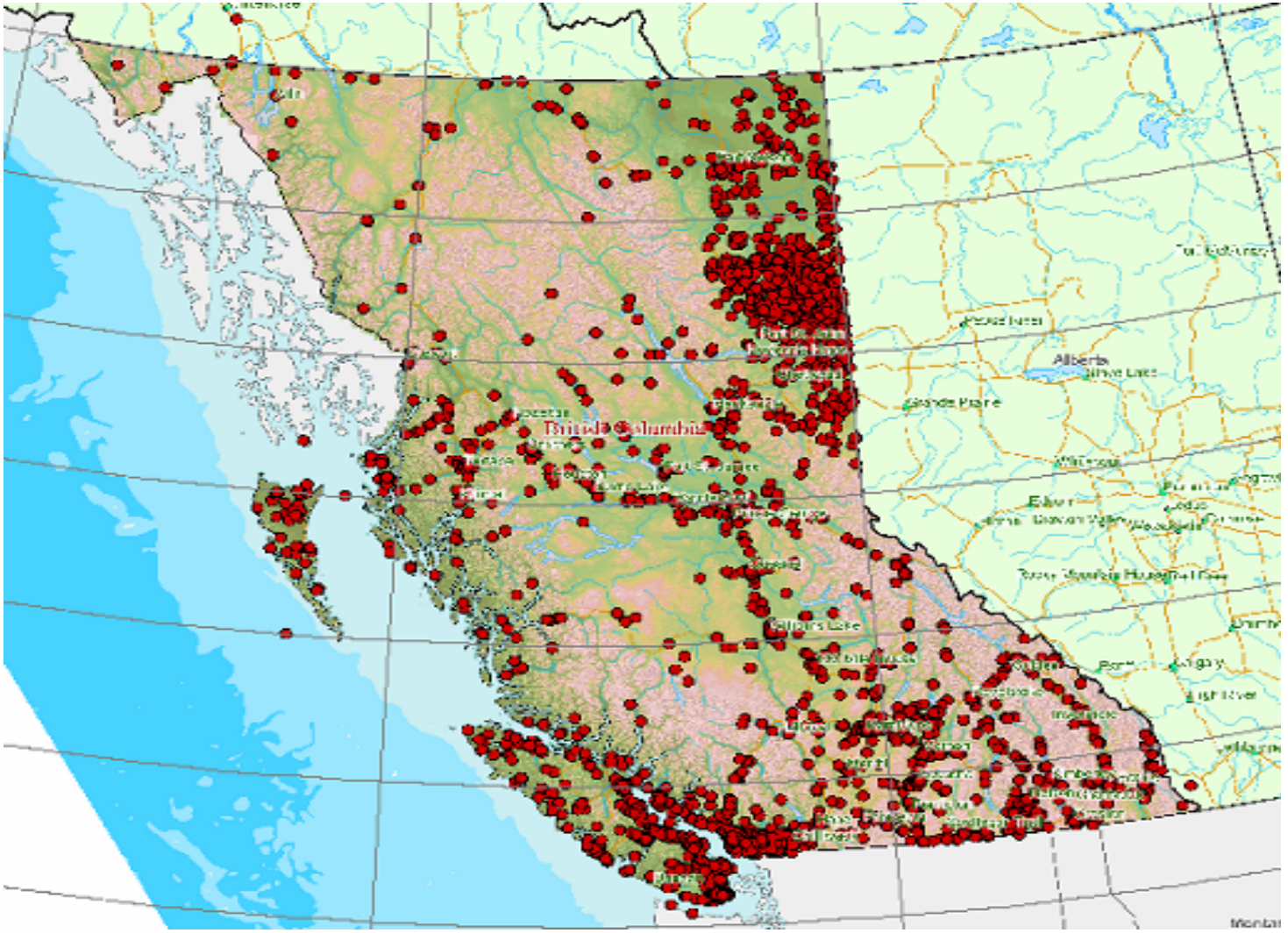
British Columbia highlights

2007-04-05

1. Capital city: Victoria on Vancouver Island
2. Population: 3,907,738 (California 36,132,000)
3. Total Area: 364,764 square miles (California 158,302 square miles)
4. Highest Point: Fairweather Mountain 15,299 feet (California Mount Whitney 14,494 feet)
5. Only province in Canada with a "West Coast special": ski and golf in the same day

Locations of sites in BC

2007-04-05



Contaminated sites highlights

2007-04-05

1. First site reviewed in 1983
2. Cleanup of Expo ’86 site (25 year project)
3. Legal requirements passed in 1997
4. Over 8500 sites in our records
5. Low and medium risk sites handled by Approved Professionals (65% of submissions to the ministry)

Our legal requirements

2007-04-05

1. *Environmental Management Act (EMA)*
2. Contaminated Sites Regulation (CSR)
3. Hazardous Waste Regulation
4. Protocols signed by the Director of Waste Management

Key features of legislation

2007-04-05

1. Site screening (site profiles)
2. Site investigations guidance
3. Standards for soil, water, sediment
4. Remediation approval, confirmation
5. Soil relocation requirements
6. Site information (Site Registry)
7. Extensive liability provisions
8. Fees

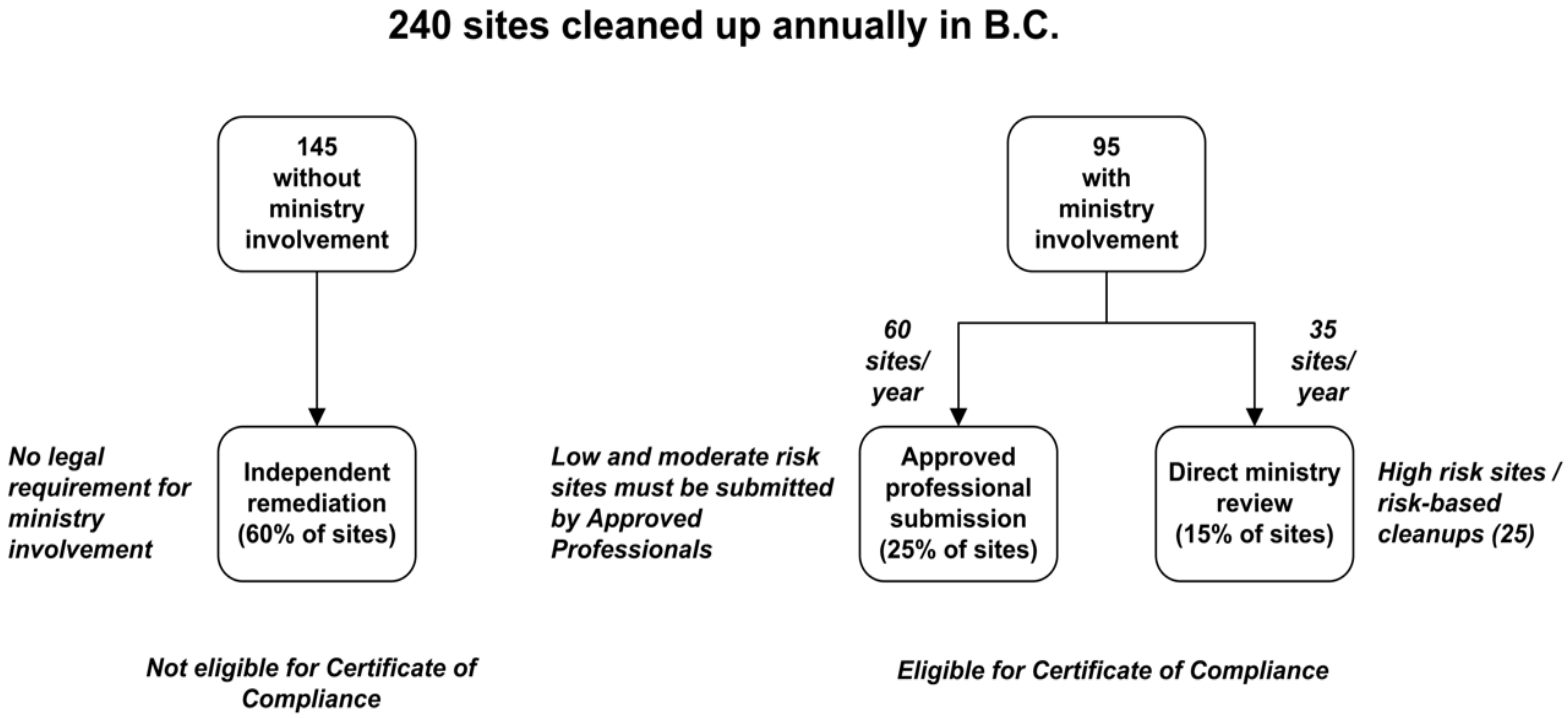
Key legal instruments

2007-04-05

1. Site profiles
2. Approvals in Principle
3. Certificates of Compliance
4. Contaminated Soil Relocation Agreements
5. Voluntary Remediation Agreements
6. *Summaries of Site Condition*

Routes to remediation

2007-04-05



Key site profile topics

2007-04-05

1. What are site profiles?
2. Why were they created?
3. When are they required?
4. What about the option to opt out of site profile administration?
5. How does the freeze and release of applications work?
6. Have many been submitted?

Why were site profiles created?

2007-04-05

1. Consultations on proposed legislation for contaminated sites
2. Local governments wanted a process to screen potentially contaminated sites
   a. Uniform
   b. Legally defined
3. Idea was to avoid inappropriate development on contaminated land

Site profiles – the basics

2007-04-05

1. Schedule 1 of the *Environmental Management Act*
2. Forms filled out by site owners, operators, vendors
3. For sites used for specific activities — Schedule 2
4. Four pages— questions on site description and past uses
5. Submission triggers site investigation decisions by Director

Opt out option

2007-04-05

1. Contaminated Sites Regulation offers a site profile exemption
2. Local governments may opt out of administering site profiles
3. About ¼ of local governments opted out to date
4. Mainly small regional districts, villages and towns

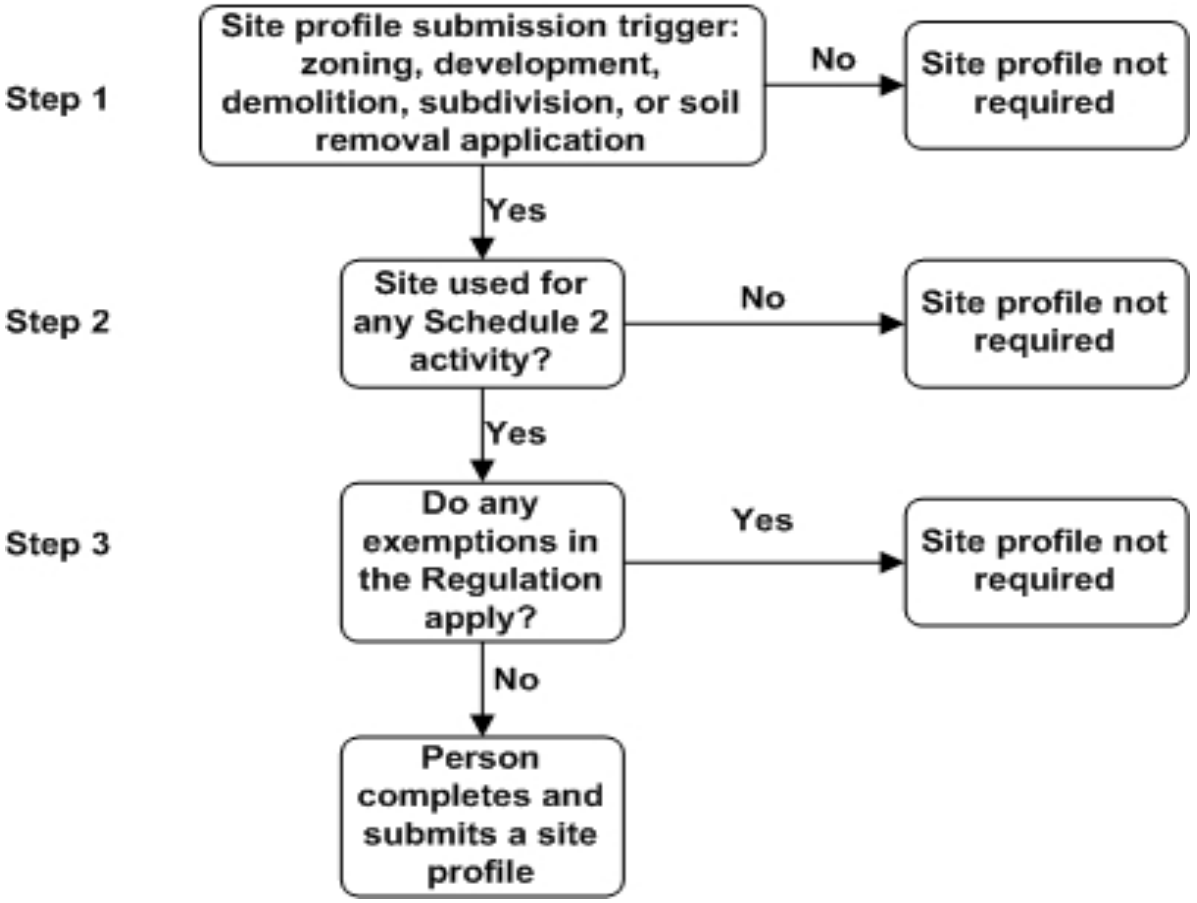
Triggers for submission

2007-04-05

1. To the approving officer, if applying for subdivision
2. To the applicable municipality, if applying for development, rezoning, demolition, or soil removal
3. To a prospective purchaser by a vendor, before transfer of property
4. To the ministry within 10 days of decommissioning or dismantling a structure
5. To the ministry from a trustee within 10 days of taking control
6. To the ministry if ordered

Is a site profile required?

2007-04-05



Step 1.

1. Is a relevant application or activity involved?
2. Submit to the approving officer, if applying for subdivision
3. Submit to the applicable municipality, if applying for development, rezoning, demolition, or soil removal
4. Submit to the ministry for other triggers

Step 2.

1. Have any of the activities in Schedule 2 occurred?
2. Commercial and industrial activities and purposes
3. Associated with probability of finding contamination
4. Various types of uses, e.g.
   a. Chemical industries
   b. Electrical equipment industries
   c. Metal smelting

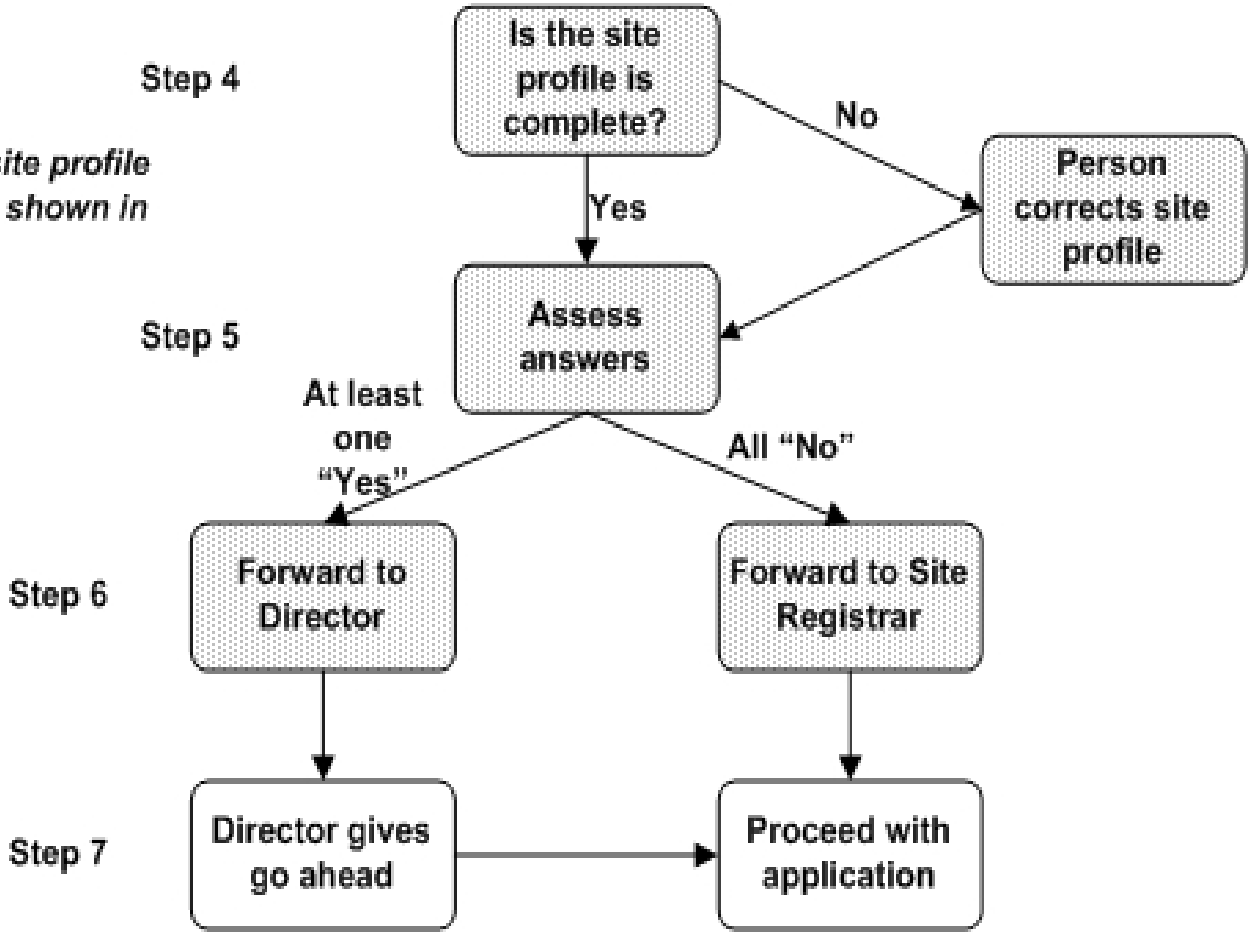
Step 3.

1. Decide if any exemptions apply
2. Over 10 exemptions available, e.g.
   a. Current accurate site profile on Site Registry
   b. Site is under investigation order
   c. Site has an Approval in Principle
   d. Site has a Certificate of Compliance

Assessing / forwarding site profiles

2007-04-05

Local government's site profile administration duties shown in the shaded boxes



Links to agency approvals

2007-04-05

1. Agency is forbidden from approving applications where a site profile is required
2. Agency is released to approve applications if one or more of seven criteria are met
3. Referred to “freeze and release” provisions

Release criteria

1. The site profile is not required to be forwarded to the ministry
2. The ministry has notified the agency that a site investigation is not required
3. The agency has received a final determination that the site is not contaminated

Release criteria

The agency has received notice from the ministry that:

1. the “site would not pose a significant threat or risk if the application were approved”
2. the ministry has received and accepted notice of independent remediation
3. the ministry has entered into a Voluntary Remediation Agreement

Release criteria

The agency has received for the site

1. An Approval in Principle
2. A Certificate of Compliance

Site profile statistics

1. 5500 received between April 1997 and March 2007
2. 43% result in decisions that site investigations are required
3. Account for 20% of sites made known to ministry

Rough spots

1. Too time consuming for ministry to provide “not a significant threat or risk” releases – many negotiations with clients and agencies
2. No guarantee that remediation under Approval in Principle will occur
3. Lack of uniformity across B.C. due to opt out option

Possible solutions

1. Implement staff procedures which rely on simple decision criteria, not negotiations
2. Amend Approval in Principle process to include requirements to implement remediation plan, with penalties for failure to comply

Conclusions

1. Site profile system works well
2. Needs tune up to ensure that evolving goals are met

Long-Term Stewardship Roundtable and Training
April 4-5, 2007
San Diego, California
Session Summary

Session Title: **UECA – One Size Does Not Fit All**
Date and Time: Thursday, April 5, 2007, 10:15 a.m., Session D
Speakers: Kieran Marion, NCCUSL
Erica Dameron, VA DEQ
Darsi Foss, WI DNR

Kieran Marion Presentation
UECA The Uniform Environmental Covenants Act

- UECA reflects a balanced approach which promotes and protects the interest of owners, lenders, regulators, local governments and other stakeholders in ensuring that real property-based land use controls remain intact and enforceable as long as necessary to protect human health and the environment.
- Four issues that UECA resolves are: creation of an EC; legal problems in making an EC valid and enforceable; modifying or terminating an EC; and enforcing an EC.

Erica Dameron Presentation
Virginia's Strategies for IC/ECs Implementation & Monitoring Without an UECA

- As written in HB 2384, the bill only impacts two programs that are risk-based: the Voluntary Remediation Program (VRP) and the Underground Storage Tank Program (UST).
- Virginia's strategies: VRP recording certification; physical survey for evaluating IC/EC implementation; VDEQ Web base access information; Virginia GIS system overlay; and Virginia/VRP remote electronic information availability.

Comments related to the presentation were as follows:

- Virginia has not seen the need to introduce UECA, because it sees no value added to the program that is already established in Virginia.

- There is no Superfund law in Virginia. The lead agency is EPA unless it is an NPL site.

- There are only two programs for being able to do risk-based cleanup: the UST and voluntary program.

- Under hazardous waste regulations, there is no ground water classification system.

- If the bill passed, it would apply to EPA managed sites.

- Common law is available for EPA's use.

Darsi Foss Presentation
Wisconsin's Approach to Land Use Controls: Life Without UECA

- Through tracking, implementation, monitoring, and enforcement, Wisconsin's goals are to develop a statewide, comprehensive LUC program to ensure that the public can find information in a simple format; that information is readily used to make sound land use and real estate decisions; and that protectiveness is maintained.

Questions and comments related to the presentation were as follows:

- How do closure letters work and who files for them?
  - The person responsible for cleanup tells Wisconsin DNR that cleanup is complete and Wisconsin DNR puts together a closure letter. If you own the property and a neighbor spills onto it, you would need to signoff on the letter as well. Both parties are responsible for maintaining the LUCs.

- When property transfers, how does the notification occur?
  - In Virginia, a certificate would be attached to a deed. In Wisconsin, there is a GIS registry that has sites with deed restrictions. It is up to people to look at the database to realize what they are buying.

- How is enforcement performed?
  - There is a stepped enforcement process. People remedy the problem with the lender issues.

- How do governmental controls play a role in the Wisconsin scheme?
  - A Wisconsin diggers hotline was created, but it failed. All ground water is drinkable, so the ordinance does not work for ground water. In Virginia, if the local government has an issue, they will start implementing their own building requirements. Some localities are more aware, especially in high growth areas. In New York, they are attaching requirements to building permits.

- Is there an authority to assess penalties? Would you bring civil or administrative charges?
  - Enforcement actions are available if needed.

- The obligation to maintain the remedy runs with the land.

- There is no liability for the title insurance company. It is just trying to make sure the title is free and clear.

Virginia's Strategies for IC/ECs Implementation & Monitoring Without an EUCA

Erica S. Dameron
ARARs Coordinator
Office of Remediation Programs

Uniform Environmental Covenants Act

1. Model to standardize the enforceability of institutional controls where contamination remains.
2. Many states have no laws concerning the specifics of how ICs are enforced.

IC/ECs Enforceability

Depends on :

1. The Real estate laws of the state
2. The Environmental laws of the state

IC/ECs Enforceability (cont'd)

3. Some states have common law doctrine that restrict the application of similar obiligations.

4. Other reasons include the legal and political realities of state administration.

IC/ECs Enforceability (cont'd)

5. Many Federal Agencies have very robust IC/EC policies, such as:
   a. EPA
   b. DOD
   c. DOE

6. These do not address state properties.

UECA

1. Enacted in 14 states and DC and VI.
2. 20 states planned to introduce legislation in 2007.
3. VA introduced HB 814 in 2006 sent to committee for study and held over.
4. VA introduced again as HB 2384 and tabled.

UECA in Virginia as proposed by HB 2384

1. Authorize VDEQ to enter into environmental covenants.
2. The bill spells out the recordation process and notice.
3. VDEQ would create and maintain an electronic registry containing all environmental covenants.

UECA in Virginia as proposed by HB 2384

4. Originally, it was thought that it would impact a broad range of facilities (BF,HW,SW,FF,CERCLA, VRP,UST)
5. Was supported by the VA Petroleum Council.
6. VA Bar Association and VDEQ were neutral.

UECA in Virginia as proposed by HB 2384 Concerns

1. Create a bureaucracy for environmental covenants.
2. Require VDEQ to review and sign environmental covenants slowing down commercial transactions.
3. Title companies would have to review to ensure compliance with all requirements outlined in the bill for enforceability.

HB 2384 (cont'd)

4. As written the bill only impacts two programs that are risk-based:

   a. Voluntary Remediation Program (VRP)

   b. Underground Storage Tank Program (UST)

“If it ain’t broke don’t fix it” said a prominent Virginia Environmental Attorney

“We are not aware of great difficulties in enforcing institutional controls in Virginia”

Virginia's Strategies

1. VRP Recordation Certification
2. Physical Survey for evaluating IC/EC implementation
3. VDEQ web base access information
4. Virginia GIS system overlay
5. Virginia/VRP remote electronic information availability

Strategy 1 - Voluntary Remediation Program

1. Statute implemented in July 1995
2. Regulations promulgated in 1997
3. Memorandum of Agreement with EPA 2001
4. Program is risk-based allowing IC/ECs
5. Recordation of the Certificate of Satisfactory Completion necessary within 90 days for validation

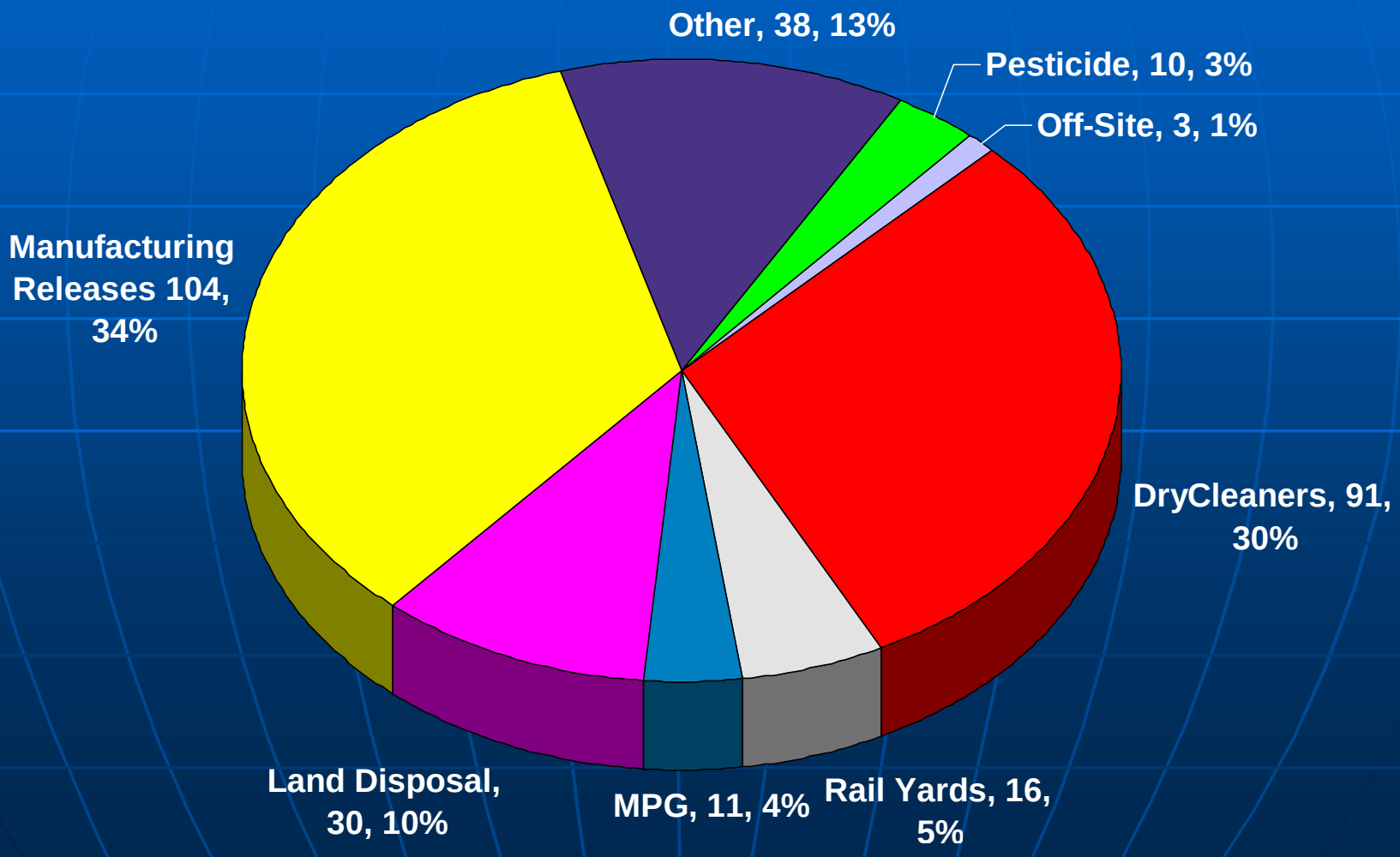
Strategy 1 - Future

1. Monitor the progress of recordation of the Certificate of Satisfactory Completion with IC/ECs
2. Notification is made when recordation is not received within 90 days for validation
3. Formal notification is sent and certificate is terminated

VRP

1. 303 sites in our active site database
2. To date 145 sites with Certificates of Satisfactory Completion of Remediation
3. Averaging about 12 Certificates a year – 20 in 2006

Types of VRP Sites (303)




CLEANERS
LEANERS
6610DT


VIRGINIA SCRAP IRON
ENTRANCE
AND OFFICE
SCRAP METALS

Certificates & Institutional Controls (total 145)

1. Groundwater Use restriction-109 75%
2. Residential use restriction-70 48%
3. No institutional controls- 27 19%
4. Excavation Limitation- 21 14%
5. Other -25 17%

Strategy 2 - Institutional Control Survey

1. Preparation – file documents, on line locality GIS, Web based mapping
2. Site Inspections – “Drive by” inspection from public areas due to time constraints
3. Land Records / Deed Searches – Courthouse
4. Completion – hardcopy of Site and electronic documentation

Virginia DEQ - Online Geographic Information System - Microsoft Internet Explorer

Select your application here: What's in My Backyard (All available layers)

Navigation

FULL STATE VIEW

ZOOM IN

ZOOM OUT

PAN

Select from Active Theme

SELECT FEATURE

FIND

SELECT CIRCLE

Additional Tools

SEARCH ADDRESS

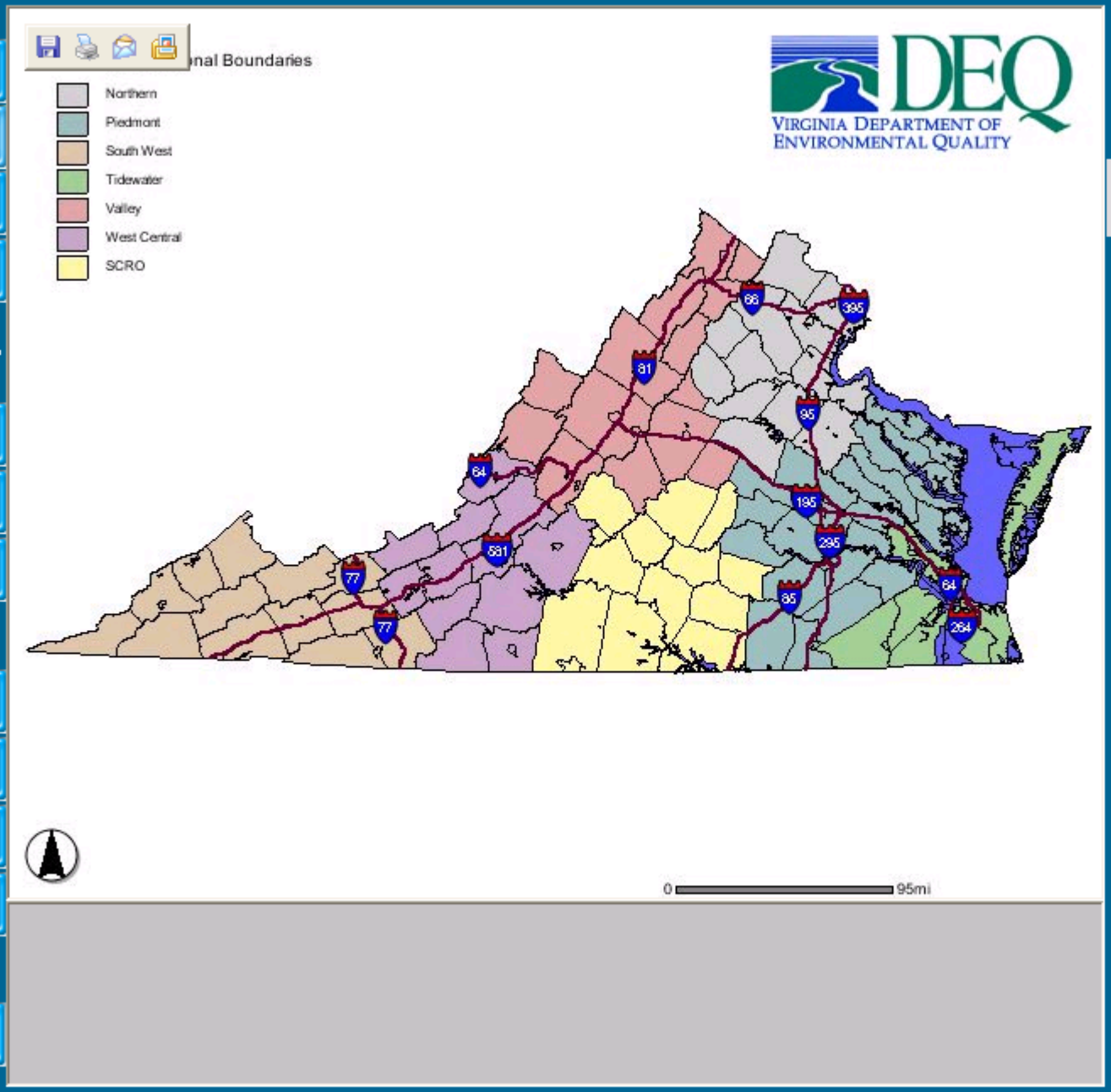
MEASURE

CLEAR SELECTION

PRINT MAP

Help

HELP



Refresh Map

Click on a layer below to make it active

Visible Legend

Regional Boundaries

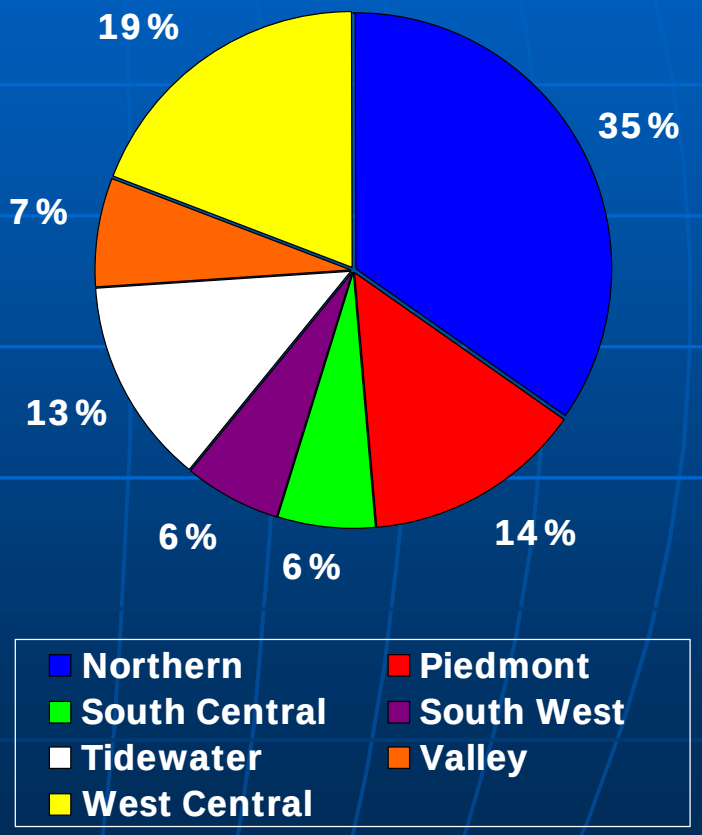
Current Tool: Zoom In

Questions or Comments? Send email to howard@deq.virginia.gov

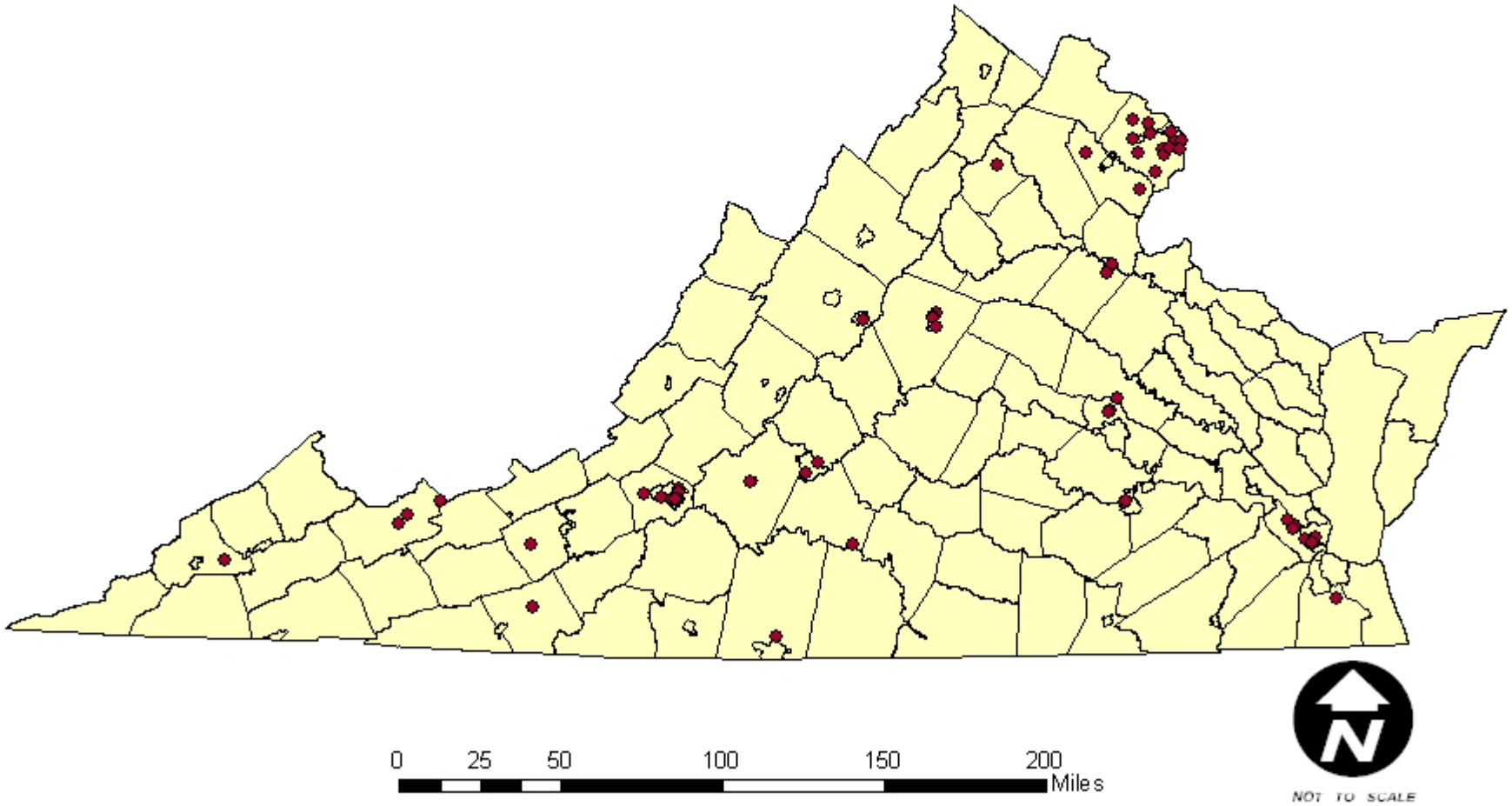
Sites with Restrictions Breakdown by Region

118 Sites Total

Northern - 40
Piedmont - 16
South Central - 7
South West - 7
Tidewater - 15
Valley - 8
West Central - 22



Inspected Voluntary Remediation Sites
Summer 2005



Strategy 2 - Results Summary

1. Locations confirmed for GIS mapping
2. Electronic records enhanced
3. Digital photos of sites for tracking site conditions
4. No Major Problems – All sites in compliance w/ Certificate per inspections.
5. Minor issues noted
6. Verification is not that difficult
7. Use of part-time employees can accomplish goals.
8. Tracking system “added on” to existing database
9. Costs-total $16,000

Strategy 2 - Future

1. Evaluate how to conduct future site inspections
   a. Full-time staff or part-time
   b. Event basis
   c. Rotating basis (5 years?)
   d. Risk basis or redevelopment potential
   e. How to fund
   f. Integrate tracking system with inspection program
2. How to continue to improve both inspections and enhance tracking through field verification and electronic means

Strategy 3 - DEQ Web Based Public Information

1. Database Summary Reports
   a. Lists all sites in program (www.deq.virginia.gov/vrp)
2. Planned Sites and Completed Sites Report
   a. Site detail including IC/EC information
   b. Public Notices – Web posting

VDEQ Web Application VRPSEARCH

Connected to our site database

1. Search for sites by:
   - Site Number
   - Site Name
   - County or City
2. Returns fact sheets for selected sites
3. Provides links to Certificates

email: Kevin Greene

VRP Home

VRP Process

Risk Assessment

Guidance and Regulations

Public Information

Tax Incentives

Contact Us

Brownfields/Land Renewal

Waste Home

Voluntary Remediation Program

The purpose of the Voluntary Remediation Program is to encourage hazardous substance cleanups that might not otherwise take place. The program is a streamlined mechanism for site owners or operators to voluntarily address contamination at sites with concurrence from the Virginia Department of Environmental Quality.

When the remediation is satisfactorily completed, DEQ issues a "certification of satisfactory completion of remediation." This certification provides assurance that the remediated site will not later become the subject of a DEQ enforcement action unless new issues are discovered.

It is anticipated that the VRP will facilitate the sale and reuse of industrial and commercial properties in the Commonwealth, which is an important benefit to all Virginia residents. As the potential environmental liabilities of reusing or further developing existing commercial properties diminishes, economic benefits are expected for both the buyer and seller. An added benefit is the decrease of expansion of commercial sites onto pristine lands.

By overseeing the process, DEQ is able to ensure that the cleanup achieves a satisfactory level of human health and environmental protection. The program is not intended to serve as an alternative to or refuge from applicable laws, regulatory requirements or enforcement actions.

What's new?

You can now search the VRP Site Database for Up To Date Information on enrolled and completed sites through our new VRPSEARCH page

VRP sites that have received Certificates of Satisfactory Completion from 1995 through 2002 are now included in DEQ's interactive GIS mapping application What's In My Backyard.

An updated list of planned and completed sites as of 02/14/06 is now available in Public Information.

The Voluntary Remediation Program Database Summary for the Fourth Quarter of 2005 is now available in Public Information.



DEQ Virginia Department of Environmental Quality

VRP SITE FACT SHEET

VRP Number:	VRP00299
Site Name:	Brookneal Flooring
Address:	103 Mattox Street and Route 501 Brookneal
Local Government:	Campbell County
Enrollment Status :	Certificate Issued Certificate Recorded
Date of Enrollment :	August 22, 2001
Date of Certificate :	March 24, 2005
PDF Of Certificate :	VRP00299certificate.pdf
Site Type:	Industry
Description of Remedial Measures:	No Excavation in 0.10 acre former AST area
Established Deed Restrictions:	Groundwater Use Restriction Residential Use Restriction Excavation Restriction

Strategy 3 - Future

1. Get VRPSEARCH online.
2. Improve VRPSEARCH application with more search parameters.
   a. Constituents of Concern
   b. Site Type
   c. Type of Remediation

Strategy 4 - GIS

What's In My Backyard

1. Contains info on a number of different types of DEQ Sites, including:
    a. USTs
    b. Solid Waste Facilities
    c. Water Quality Monitoring Stations
    d. Completed VRP Sites 1995-2002

Edit View Favorites Tools Help

Back Search Favorites Media

http://gisweb.deq.state.va.us/ Go

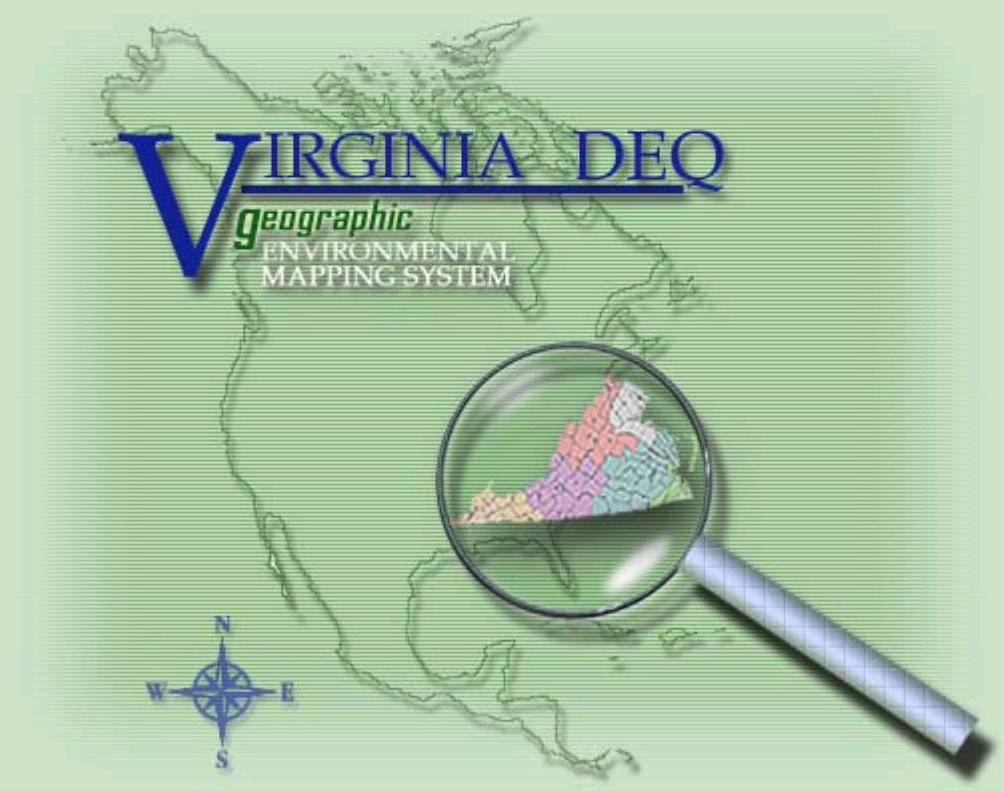
Search 2209 blocked Check AutoLink AutoFill Options

NOTE: This site is designed for Microsoft Internet Explorer version 5.0 or higher. Click the icon to download the latest version.

Internet Explorer

Your Current Browser is **Microsoft Internet Explorer 6 (Fully Supported)**

Launch Your Application From Here



...discover Virginia's environment through the new geographic mapping application!

Trusted sites

Virginia DEQ - Online Geographic Information System - Microsoft Internet Explorer

Select your application here: What's in My Backyard (All available layers)

Navigation

FULL STATE VIEW

ZOOM IN

ZOOM OUT

PAN

Select from Active Theme

SELECT FEATURE

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SELECT CIRCLE

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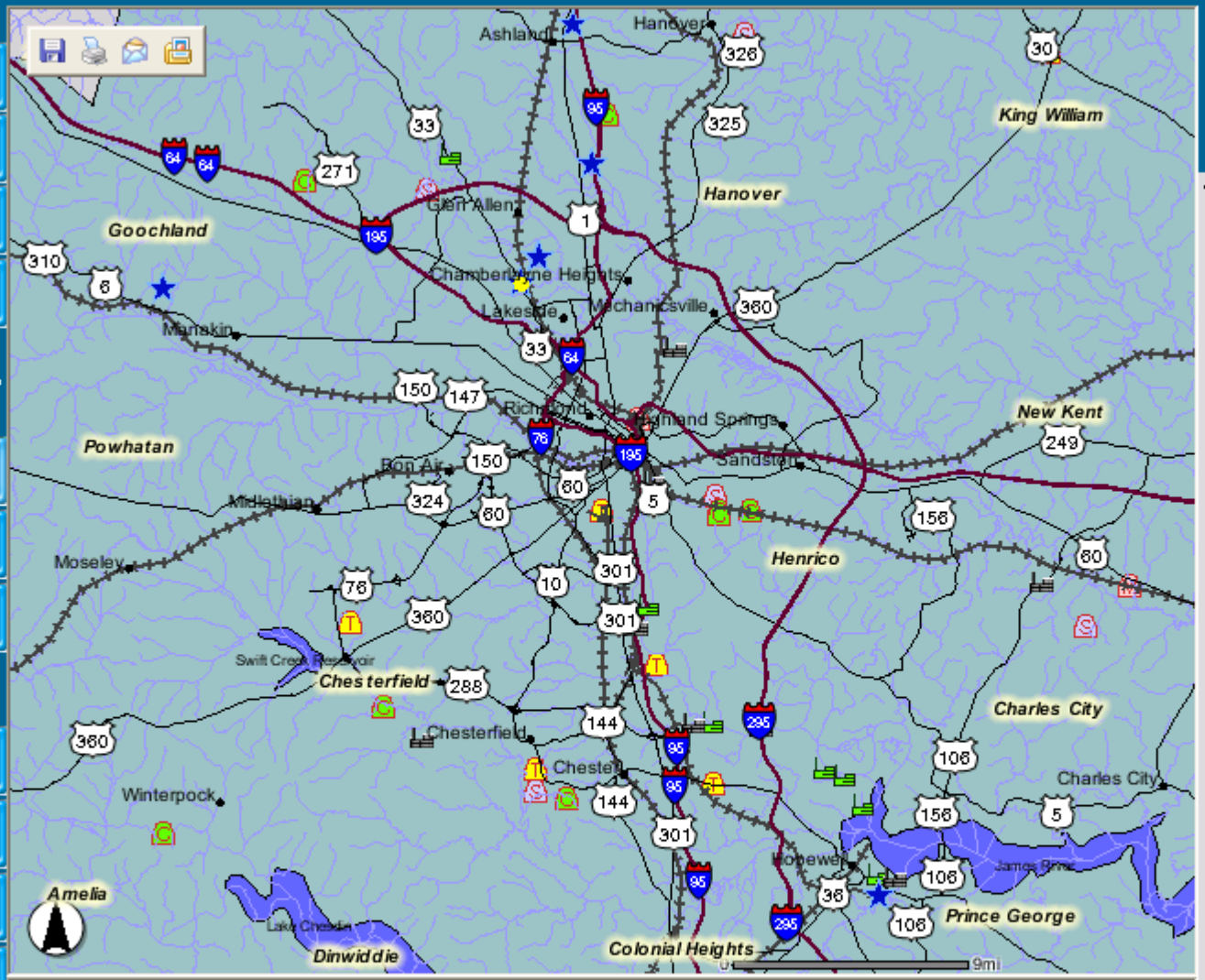


Refresh Map

Click on a layer below to make it active

Visible Legend

- ☐ Petroleum Releases — Current as of 2003
- ☐ VPDES Permits
- ☑ **Completed VRP Sites 1995-2002**
- ☐ Assessment Monitoring Stations
  - Ambient
  - Citizen
  - Federal
  - Fish Tissue
  - Biological
  - Ambient/Fish
  - Ambient/Bio
  - Ambient/Fish/Bio
  - Ambient/Federal
  - Ambient/Fish/Fed.
  - Fish/Bio
- ☑ Significant Dischargers
  - Industrial
  - Municipal
- ☐ 303d Rivers and Streams
  - Impaired Riverine Waters

Completed VRP Sites 1995-2002

Record Number	VRP_NUMBER	SITE_NAME	SITE_TYPE	CERT_DATE
1	VRP00317	Colony Cleaners	Dry Cleaner	Tue, 31 Dec 2002 00:00:00

Current Tool: Select Rectangle

Questions or Comments? Send email to howard@deq.virginia.gov

Strategy 4 - Future

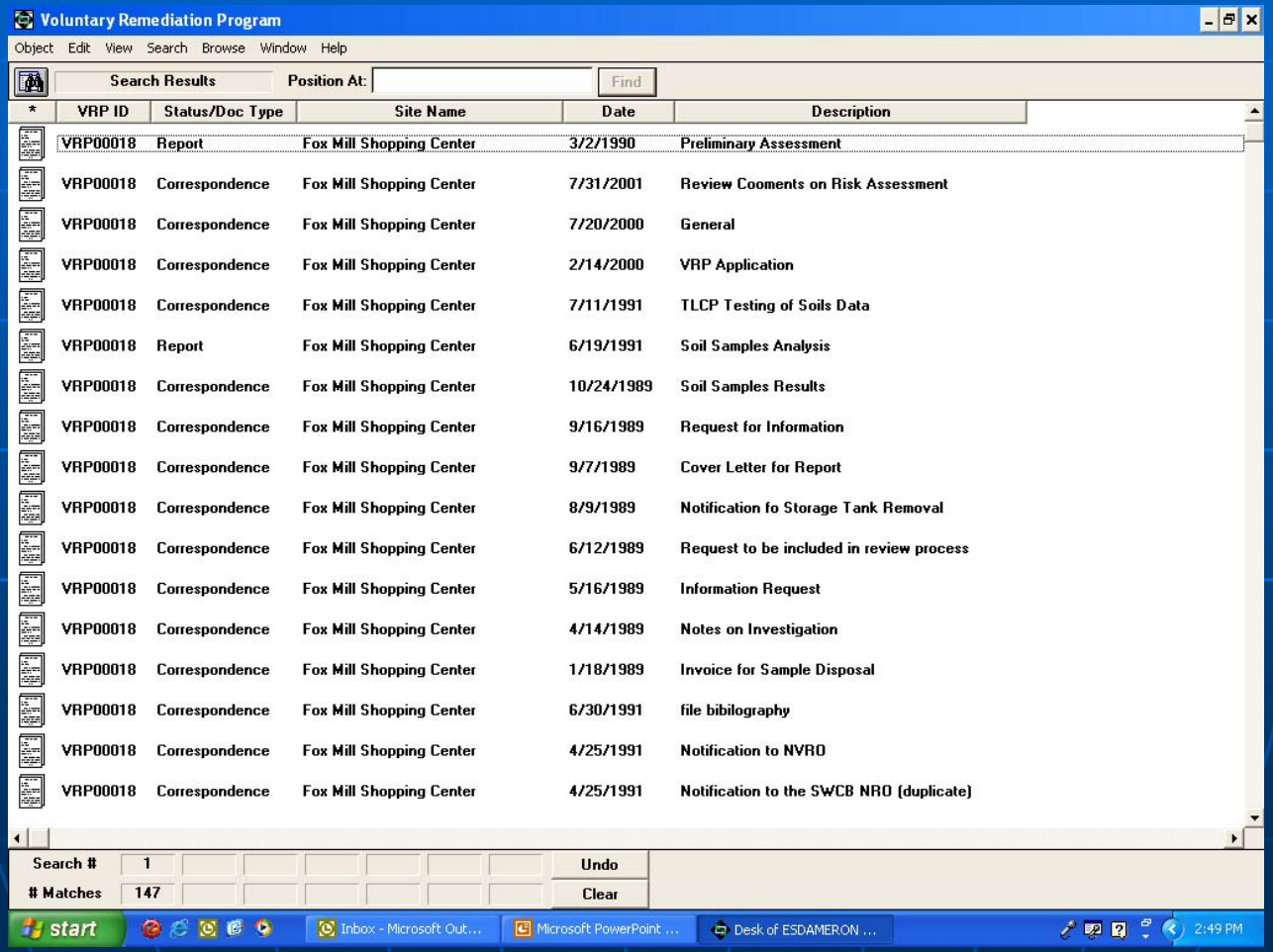
1. Better GIS integration with VRPSEARCH
2. Link fact sheets and Certificates to GIS.

Strategy 5 - In Development Electronic Records Management System for Virginia

VRP Program

1. Scanning of all reports and documents related to a site
2. Electronic Records Management of files
3. Electronic Storage of files
4. Remote Access to file images
5. Progress to Date for VRP Program
   a. 45 % of the files completed
   b. 100 % of the archived files

Electronic Records Management



Prepared by: Virginia Department of Environmental Quality
629 E. Main Street
Richmond, Virginia 23219
(804) 698-4000

Grantor: Harley-Davidson Bayside
Grantee: Harley-Davidson Bayside

COMMONWEALTH OF VIRGINIA
VOLUNTARY REMEDIATION PROGRAM
CERTIFICATION OF
SATISFACTORY COMPLETION OF REMEDIATION

Program Participants:	Harley-Davidson Bayside
	SPSA (former Owner)
Site Owner:	Harley-Davidson Bayside
Site Name:	Frederick Boulevard Property
Site Location: (plat attached)	2219 Frederick Boulevard Portsmouth, VA
VRP Site ID Number:	VRP00364
Deed Book and Page Number of Site Owner's Title:	Deed Book 962 Page 100
County of Record:	City of Portsmouth
Description of Property:	± 7.783 Acres
Current Zoning:	M-1
Proposed Use of Property:	Commercial
Conditions of Issuance (if any):	Institutional Controls - deed

County of Record:	City of Portsmouth
Description of Property:	± 7.783 Acres
Current Zoning:	M-1
Proposed Use of Property:	Commercial
Conditions of Issuance (if any):	Institutional Controls - deed restrictions incorporated in the Declaration of Restrictive Covenants require that: (1) ground water beneath the Site shall not be used for any purpose other than environmental monitoring and testing; (2) the Site shall not be used for residential purposes or for children's (under the age of 16) daycare facilities, schools or playground purposes (although hotels and motels are not prohibited), and (3) excavation activities shall not be permitted in areas where the engineering controls are in place.
Other Encumbrances on Site:	None

provided that the institutional and engineering controls and their maintenance remain in place.

In consideration of the above, the Director has accepted the conclusions of the Report.

This Certificate is conditioned upon its being signed by the Participant and owner, and recorded within 90 calendar days of its issuance, in the land records of City of Portsmouth, Virginia. A certified copy of the Certificate as recorded must be submitted to the Department of Environmental Quality, P.O. Box 10009, Richmond, VA 23240-0009, ATTN: Voluntary Remediation Program.

David K. Paylor, Director
Department of Environmental Quality

Date: 2/9/06

BY: _____
Robert J. Weld, Office Director
Office of Remediation Programs

Date: 2/12/06

BY: _____
Maurice D. Slaughter
President

COMMONWEALTH OF VIRGINIA,
City of Portsmouth, to-wit:

The foregoing instrument was acknowledged before me this 12th day of February, 2006 by Maurice D. Slaughter, President of Harley-Davidson Bayside

Instrument Control Number

000004504

Commonwealth of Virginia
Land Record Instruments
Cover Sheet – Form A

[ILS VLR Cover Sheet Agent 1.0.59]

TAX EXEMPT | CORR

Date of Instrument: [3-1-06]

Instrument Type: [OTHER]

Number of Parcels [ONE]

Number of Pages [7]

City [X] County [ ] [PORTSMOUTH]

(Box for Deed Stamp Only)

First and Second Grantors

	Last Name - (ALL CAPS)	First Name	Middle Name or Initial	Suffix
[ ] [ ]	VDEQ			
[ ] [ ]				

First and Second Grantees

	Last Name - (ALL CAPS)	First Name	Middle Name or Initial	Suffix
[ ] [ ]	SLAUGHTER	MAURICE	D.	
[ ] [ ]				

Grantee Address
(Name) [SPARTACUS]
(Address 1) [229 Hwy 17]
(Address 2) [ ]
(City, State, Zip) [PORTSMOUTH, VA 23707] [ ] [ ]

Consideration [ ] Existing Debt [ ] Assumption Balance [ ]

Prior Inst. Recorded at: City [X] County [ ] [PORTSMOUTH] Percent. In this Juris. [ ]
Book [ ] Page [ ] Instr. No [ ]
Parcel Identification No (PIN) [ ]
Tax Map Num. (If different than PIN) [ ]
Short Property Description [ ]
[ ]


MOTOR
BAYSIDE
2211

Virginia's Strategies

1. VRP Recordation Certification
2. Physical Survey for evaluating IC/EC implementation
3. VDEQ web base access information
4. Virginia GIS system overlay
5. Virginia/VRP remote electronic information availability

Conclusions

1. Virginia's Strategies have taken many pathways.
2. Technology advancements and state requirements have made it necessary to continue different approaches.
3. Flexibility is necessary to obtain the most accurate information.

“If it ain’t broke don’t fix it” said a prominent Virginia Environmental Attorney

“We are not aware of great difficulties in enforcing institutional controls in Virginia”

Wisconsin's Approach to Land Use Controls: Life without UECA

EPA Conference on
Long-term Stewardship
April 5, 2007
Darsi Foss, WDNR

Wisconsin's Approach

1. Reasons for change
2. Summary of new legislation
   a. S. 292.12, Wisconsin Statutes
   b. Life without UECA and Deed Restrictions
3. T.I.M.E issues
4. Future plans

Before legislation:

Relied on deed restrictions:

1. Became part of program gradually
2. Allowed us to leave residuals behind
3. Served as both enforceable tool and as public notice
4. Filled void in law and rules

Before new legislation:

1. Enhanced web system in 2002
2. Created GIS Registry of Closed Sites
3. Sites with deed restrictions and residuals concerns placed on web-based registry

Universe of Sites with Residual Concerns

1. 19,000 state clean up approvals
2. Since 2002:
   a. 5,000 sites on GIS Registry due to residual contamination concerns
   b. Almost 600 of those sites were deed restriction situations
3. More historic sites in data base

Why the Change?

National questions on deed restrictions:

“Do they apply to all landowners or only the person that filed the restriction?”

Why the Change?

1. EPA starts to question states on RCRA and Superfund sites
2. UECA arrives on scene to address concerns
3. States start to evaluate UECA model

Why the Change?

1. Costs of deed restriction process
2. Public perception
3. Sites in regulatory limbo

Why the Change?

1. Wisconsin evaluates UECA
2. Receives feedback from Brownfields Study Group on UECA
3. Conclusion: agree with UECA goals, but not with methods to achieve goals

Why the Change?

Wisconsin concludes UECA:

1. Is too administratively challenging
2. Would slow down clean ups and redevelopment
3. Would increase the cost of brownfields transactions
4. Deviates from brownfields philosophy

Wisconsin's New Approach

Wisconsin goals of new approach:

1. Streamline administrative process
2. Eliminate sites in regulatory limbo
3. Remove negative perception of deed restrictions
4. Enhance public access and usability

Wisconsin's New Approach

Wisconsin goals of new approach:

1. Clarify that environmental obligation applies to landowner
2. Did not change the situations where obligation applies
3. Rely on web and outreach to notify

Wisconsin's New Approach

1. Rely on specific state law
2. Eliminate use of deed restrictions
3. Serve dual purpose of enforceability and public notice
4. Consistent with continuing obligations in other environmental laws

Wisconsin's New Approach

1. Applies to all clean ups by any state agency
2. Clarifies that the landowner is responsible for the continuing environmental obligation
3. Are publicly available on the web
4. Requires state approval to change

Wisconsin's New Approach:

3 situations addressed by new LUC law:

1. Require an engineering control.
2. Unable to finish site investigation or clean up.
3. Other factors, such as closed as an industrial site.
4. This is status quo from "old" system.

Not covered by new law:

1. Management of solid or hazardous waste,
2. Residual groundwater above standards, and
3. Other environmental issues already covered by other state or federal laws

What is on DNR's Registry

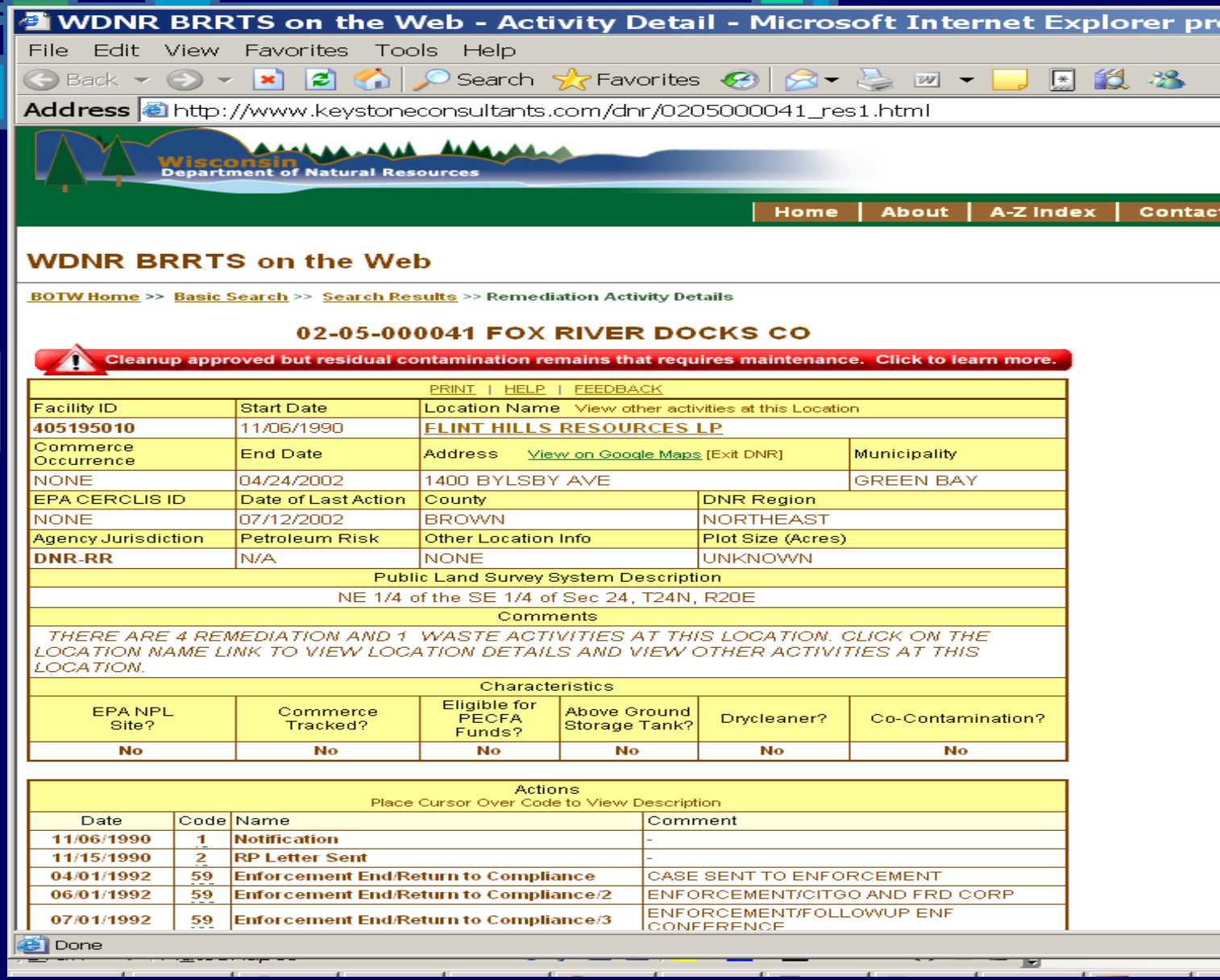
Closure Scenario	292.12 LUC?	On Web?	Authority?	Obligation?
Engineering Control	Yes	Yes	292.12	Maintain
Structural Impediment	Yes	Yes	292.12	Maintain Notice
Groundwater exceedance	No	Yes	State GW Law	Well casing Approval
Soil at Depth	No	Yes	State SW Law	Manage as SW

T.I.M.E.

1. Tracking
2. Implementation
3. Monitoring
4. Enforcement

Tracking: Web-based

1. Using our existing web-based and GIS-based system
2. Creating new codes and enhancements for staff and public for our web-based data system
3. Working on enhancing system for public



WDNR BRRTS on the Web - Activity Detail - Microsoft Internet Explorer pr

File Edit View Favorites Tools Help

Back Search Favorites

Address http://www.keystoneconsultants.com/dnr/0205000041_res1.html

Wisconsin Department of Natural Resources

Home | About | A-Z Index | Contac

WDNR BRRTS on the Web

BOTW Home >> Basic Search >> Search Results >> Remediation Activity Details

02-05-000041 FOX RIVER DOCKS CO

Cleanup approved but residual contamination remains that requires maintenance. Click to learn more.

PRINT | HELP | FEEDBACK

Facility ID	Start Date	Location Name View other activities at this Location	
405195010	11/06/1990	FLINT HILLS RESOURCES LP	
Commerce Occurrence	End Date	Address View on Google Maps [Exit DNR]	Municipality
NONE	04/24/2002	1400 BYLSBY AVE	GREEN BAY
EPA CERCLIS ID	Date of Last Action	County	DNR Region
NONE	07/12/2002	BROWN	NORTHEAST
Agency Jurisdiction	Petroleum Risk	Other Location Info	Plot Size (Acres)
DNR-RR	N/A	NONE	UNKNOWN

Public Land Survey System Description

NE 1/4 of the SE 1/4 of Sec 24, T24N, R20E

Comments

THERE ARE 4 REMEDIATION AND 1 WASTE ACTIVITIES AT THIS LOCATION. CLICK ON THE LOCATION NAME LINK TO VIEW LOCATION DETAILS AND VIEW OTHER ACTIVITIES AT THIS LOCATION.

Characteristics

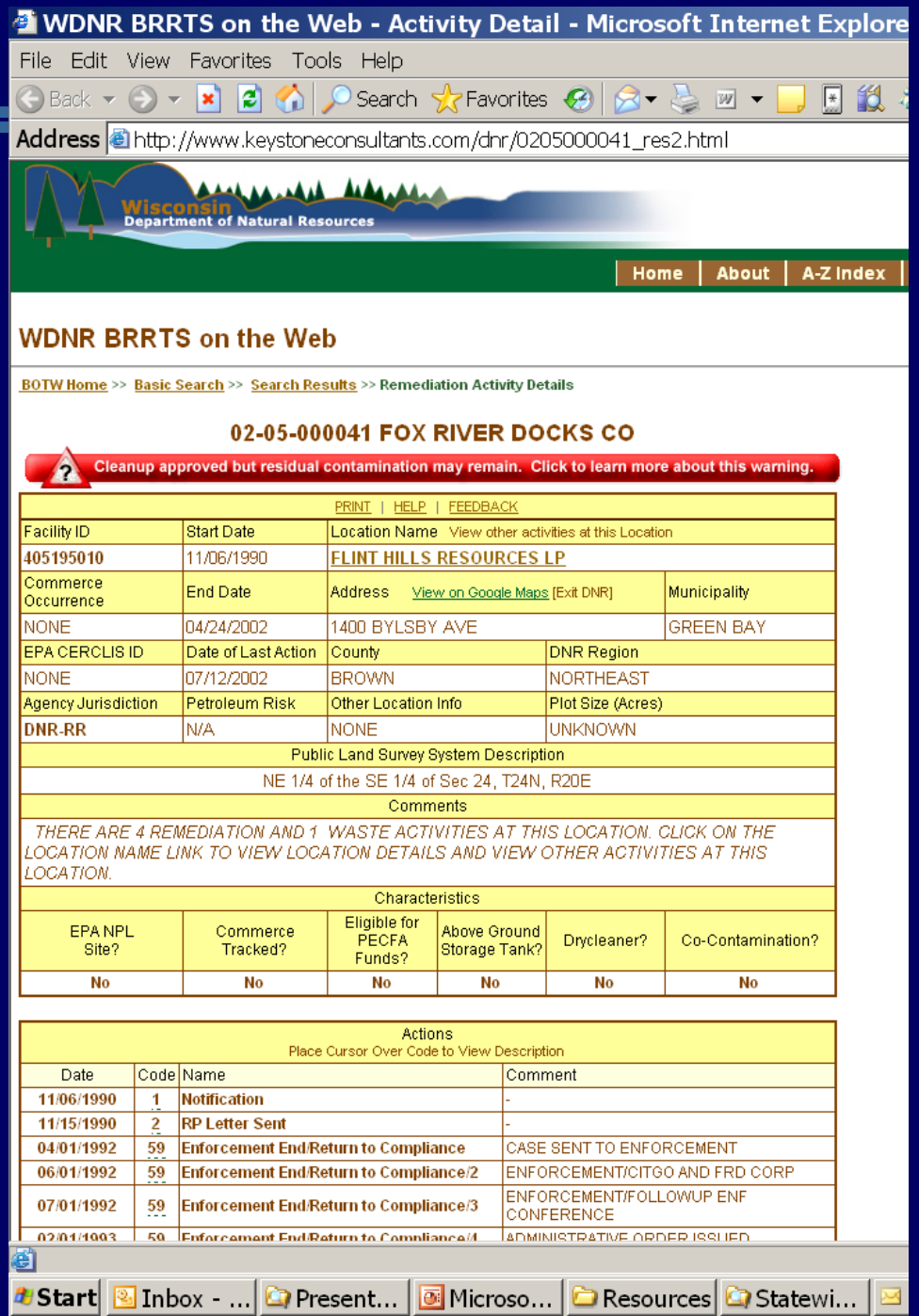
EPA NPL Site?	Commerce Tracked?	Eligible for PECFA Funds?	Above Ground Storage Tank?	Drycleaner?	Co-Contamination?
No	No	No	No	No	No

Actions

Place Cursor Over Code to View Description

Date	Code	Name	Comment
11/06/1990	1	Notification	-
11/15/1990	2	RP Letter Sent	-
04/01/1992	59	Enforcement End/Return to Compliance	CASE SENT TO ENFORCEMENT
06/01/1992	59	Enforcement End/Return to Compliance/2	ENFORCEMENT/CITGO AND FRD CORP
07/01/1992	59	Enforcement End/Return to Compliance/3	ENFORCEMENT/FOLLOWUP ENF CONFERENCE

Done

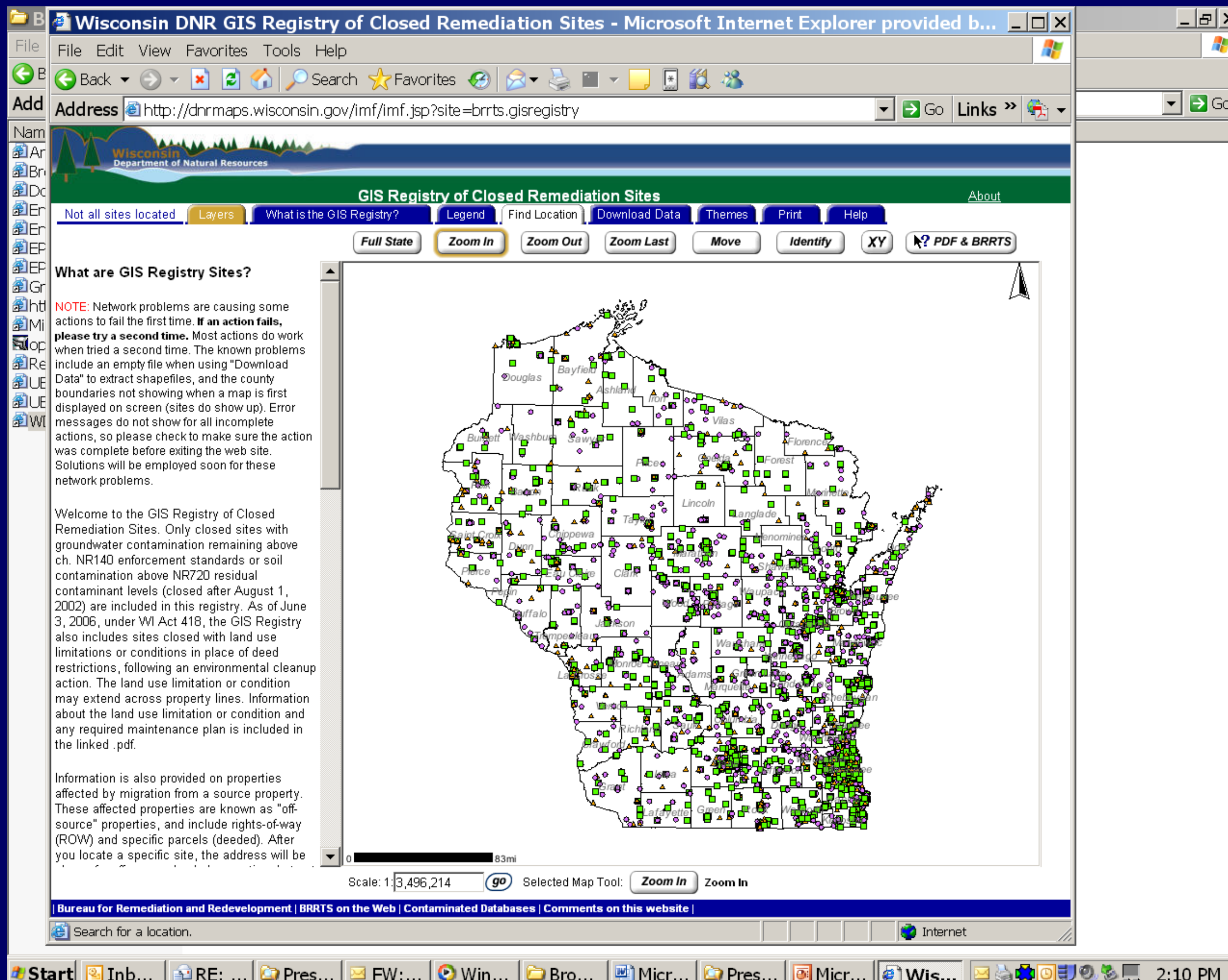

WDNR BRRTS on the Web - Activity Detail - Microsoft Internet Explore
File Edit View Favorites Tools Help
Back Search Favorites
Address http://www.keystoneconsultants.com/dnr/0205000041_res2.html
Wisconsin Department of Natural Resources
Home About A-Z Index
WDNR BRRTS on the Web
BOTW Home >> Basic Search >> Search Results >> Remediation Activity Details
02-05-000041 FOX RIVER DOCKS CO
Cleanup approved but residual contamination may remain. Click to learn more about this warning.
PRINT | HELP | FEEDBACK
Facility ID
405195010
Start Date
11/06/1990
Location Name View other activities at this Location
FLINT HILLS RESOURCES LP
Commerce Occurrence
NONE
End Date
04/24/2002
Address View on Google Maps [Exit DNR]
1400 BYLSBY AVE
Municipality
GREEN BAY
EPA CERCLIS ID
NONE
Date of Last Action
07/12/2002
County
BROWN
DNR Region
NORTHEAST
Agency Jurisdiction
DNR-RR
Petroleum Risk
N/A
Other Location Info
NONE
Plot Size (Acres)
UNKNOWN
Public Land Survey System Description
NE 1/4 of the SE 1/4 of Sec 24, T24N, R20E
Comments
THERE ARE 4 REMEDIATION AND 1 WASTE ACTIVITIES AT THIS LOCATION. CLICK ON THE LOCATION NAME LINK TO VIEW LOCATION DETAILS AND VIEW OTHER ACTIVITIES AT THIS LOCATION.
Characteristics
EPA NPL Site? No
Commerce Tracked? No
Eligible for PECFA Funds? No
Above Ground Storage Tank? No
Drycleaner? No
Co-Contamination? No
Actions
Place Cursor Over Code to View Description
Date Code Name Comment
11/06/1990 1 Notification -
11/15/1990 2 RP Letter Sent -
04/01/1992 59 Enforcement End/Return to Compliance CASE SENT TO ENFORCEMENT
06/01/1992 59 Enforcement End/Return to Compliance/2 ENFORCEMENT/CITGO AND FRD CORP
07/01/1992 59 Enforcement End/Return to Compliance/3 ENFORCEMENT/FOLLOWUP ENF CONFERENCE
02/01/1993 59 Enforcement End/Return to Compliance/4 ADMINISTRATIVE ORDER ISSUED
Start Inbox - ... Present... Microso... Resources Statewi...

Implementation

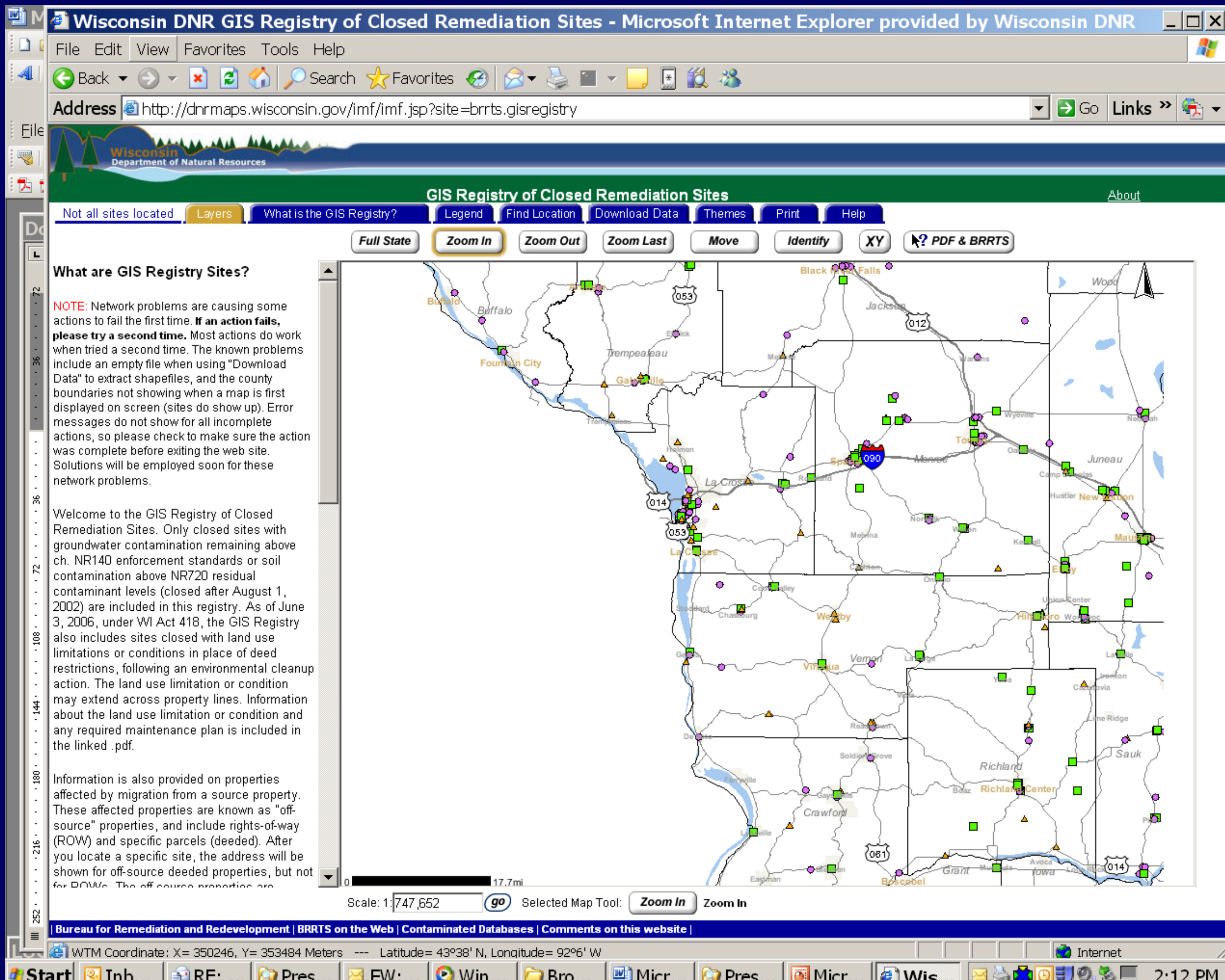
1. Controls or obligations listed in closure letter
2. Processing fee required
3. Documents are placed on web
4. Downloadable
5. Sites are geo-located on state map

What is available on web?

1. Site location on map
2. Closure letter and maintenance plan
3. Deed
4. Certified Survey Map
5. Analytical results
6. Soil sample map
7. List of off-site, impacted property owners
8. More….



Wisconsin DNR GIS Registry of Closed Remediation Sites - Microsoft Internet Explorer provided b...
File Edit View Favorites Tools Help
Back
Search
Favorites
Address http://dnrmaps.wisconsin.gov/imf/imf.jsp?site=brrts.gisregistry
Go
Links
Wisconsin Department of Natural Resources
GIS Registry of Closed Remediation Sites
About
Not all sites located
Layers
What is the GIS Registry?
Legend
Find Location
Download Data
Themes
Print
Help
Full State
Zoom In
Zoom Out
Zoom Last
Move
Identify
XY
PDF & BRRTS
What are GIS Registry Sites?
NOTE: Network problems are causing some actions to fail the first time. If an action fails, please try a second time. Most actions do work when tried a second time. The known problems include an empty file when using "Download Data" to extract shapefiles, and the county boundaries not showing when a map is first displayed on screen (sites do show up). Error messages do not show for all incomplete actions, so please check to make sure the action was complete before exiting the web site. Solutions will be employed soon for these network problems.
Welcome to the GIS Registry of Closed Remediation Sites. Only closed sites with groundwater contamination remaining above ch. NR140 enforcement standards or soil contamination above NR720 residual contaminant levels (closed after August 1, 2002) are included in this registry. As of June 3, 2006, under WI Act 418, the GIS Registry also includes sites closed with land use limitations or conditions in place of deed restrictions, following an environmental cleanup action. The land use limitation or condition may extend across property lines. Information about the land use limitation or condition and any required maintenance plan is included in the linked .pdf.
Information is also provided on properties affected by migration from a source property. These affected properties are known as "off-source" properties, and include rights-of-way (ROW) and specific parcels (deeded). After you locate a specific site, the address will be
Douglas
Bayfield
Ashland
Iron
Vilas
Florence
Forest
Burnett
Washburn
Sawyer
Price
Oneida
Marinette
Lincoln
Langlade
Taylor
Chippewa
Menominee
Polk
Saint Croix
Dunn
Clark
Shawano
Pierce
Pepin
Waupaca
Buffalo
Jackson
La Crosse
Monroe
Adams
Marquette
Richland
Crawford
Grant
Iowa
Lafayette
Green
0
83mi
Scale: 1: 3,496,214
go
Selected Map Tool:
Zoom In
Zoom In
| Bureau for Remediation and Redevelopment | BRRTS on the Web | Contaminated Databases | Comments on this website |
Search for a location.
Internet
Start
Inb...
RE: ...
Pres...
FW:...
Win...
Bro...
Micr...
Pres...
Micr...
Wis...
2:10 PM


Wisconsin DNR GIS Registry of Closed Remediation Sites - Microsoft Internet Explorer provided by Wisconsin DNR
File Edit View Favorites Tools Help
Back Search Favorites
Address http://dnrmaps.wisconsin.gov/imf/imf.jsp?site=brrts.gisregistry
Go Links
Wisconsin Department of Natural Resources
GIS Registry of Closed Remediation Sites
About
Not all sites located
Layers
What is the GIS Registry?
Legend
Find Location
Download Data
Themes
Print
Help
Full State
Zoom In
Zoom Out
Zoom Last
Move
Identify
XY
PDF & BRRTS
What are GIS Registry Sites?
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Black River Falls
Jackson
Buffalo
Trempealeau
Fountain City
La Crosse
Monroe
Juneau
Mauston
Vernon
Richland
Richland Center
Crawford
Sauk
Grant
Iowa
17.7mi
Scale: 1:747,652
go
Selected Map Tool:
Zoom In
Zoom In
| Bureau for Remediation and Redevelopment | BRRTS on the Web | Contaminated Databases | Comments on this website |
WTM Coordinate: X= 350246, Y= 353484 Meters --- Latitude= 43°38' N, Longitude= 92°6' W
Internet
Start
2:12 PM

CENTURYTEL CORP OFFICE
Remediation Activity Details

PRINT | HELP | FEEDBACK

Activity Number and Name	Activity Type	Status
02-32-548165 CENTURYTEL CORP OFFICE	ERP	CLOSED

Facility ID	Start Date	Location Name View other activities at this Location	
632119620	07/29/1999	CENTURYTELL CORP OFFICE	
Commerce Occurrence	End Date	Address Find on Google Maps [Exit DNR]	Municipality
NONE	10/06/2006	333 N FRONT ST	LA CROSSE
EPA CERCLIS ID	Date of Last Action	County	DNR Region
NONE	10/24/2006	LA CROSSE	WEST CNTRL
Agency Jurisdiction	Petroleum Risk	Other Location Info	Plot Size (Acres)
DNR-RR	N/A	NONE	.5
Public Land Survey System Description		PDF Documents	DNR GIS Map Layers
NE 1/4 of the SE 1/4 of Sec 31, T16N, R07W			View on GIS Registry

Comments

XREF VPLE 06-32-227174 RIVERSIDE REDEVELOPMENT; 02-32-548164 CENTURYTEL CORP OFFICE PARKING AREA, 02-32-548166 GRANDSTAY RESIDENTIAL SUITES, & 02-32-548167 THREE RIVERS, LLC. THERE IS ONE REMEDIATION ACTIVITY AND NO WASTE ACTIVITIES AT THIS LOCATION. CLICK ON THE LOCATION NAME LINK TO VIEW LOCATION DETAILS AND VIEW OTHER ACTIVITIES AT THIS LOCATION.

Characteristics

EPA NPL Site?	Commerce Tracked?	Eligible for PECFA Funds?	Above Ground Storage Tank?	Drycleaner?	Co-Contamination?
No	No	No	No	No	No

Actions

Wisconsin DNR GIS Registry of Closed Remediation Sites - Microsoft Internet Explorer provided by Wisconsin DNR

File Edit View Favorites Tools Help

Address http://maps.dnr.state.wi.us/imf/dnrimf.jsp?site=brrts.gisregistry&qlyr=00bbrts_sv&qzoom=true&qbuf=500&qry=DETAIL_SEQ_NO=548165 Go

Wisconsin Department of Natural Resources

GIS Registry of Closed Remediation Sites

About

Not all sites located | Layers | What is the GIS Registry? | Legend | Find Location | Download Data | Themes | Print | Help

Full State | Zoom In | Zoom Out | Zoom Last | Move | Identify | XY | PDF & BRRTS

Coordinate Position

Lat/Lon: 91° 15' 15.1" W
43° 48' 59.1" N

UTM (x, y): 640399, 4852967
(zone 15)

WTM: 419135, 372250

Municipalities

Name: La Crosse

County Boundary

Name: La Crosse

County FIPS: 063

Region Name: West Central Region

Sites Closed with Residual Contamination

ACTIVITY_DETAIL_NAME:	CENTURYTEL CORP OFFICE
ACTIVITY_DETAIL_NO:	0232548165
Facility ID No:	632119620
Facility Name:	CENTURYTELL CORP OFFICE
Address:	333 N FRONT ST
Date Action Opened:	Jul 29, 1999
Date Closed:	Oct 6, 2006
Public Survey Unit:	NESE3116N07W
Activity Type Open Closed:	ERP closed
Contaminated Media:	Groundwater and Soil
Offsource Contamination:	RIGHT_OF_WAY

Scale: 1:2,901 go Selected Map Tool: Identify **Drill Down Identify**

| Bureau for Remediation and Redevelopment | BRRTS on the Web | Contaminated Databases | Comments on this website |

WTM Coordinate: X= 419025, Y= 372336 Meters --- Latitude= 43°49'1.9" N, Longitude= 91°15'20.1" W

Local intranet

Start | Inbox - Microsoft Outlook | Microsoft PowerPoint - ... | WDNR BRRTS on the ... | Wisconsin DNR GIS Re... | Wisconsin DNR GIS ... | 11:24 AM

Wisconsin DNR GIS Registry of Closed Remediation Sites - Microsoft Internet Explorer provided by Wisconsin DNR

File Edit View Favorites Tools Help

Back Search Favorites Media

Address http://maps.dnr.state.wi.us/imf/dnrimf.jsp?site=brrts.gisregistry&qlyr=00bbrts_sv&qzoom=true&qbuf=500&qry=DETAIL_SEQ_NO=548165 Go

Wisconsin Department of Natural Resources

GIS Registry of Closed Remediation Sites

About

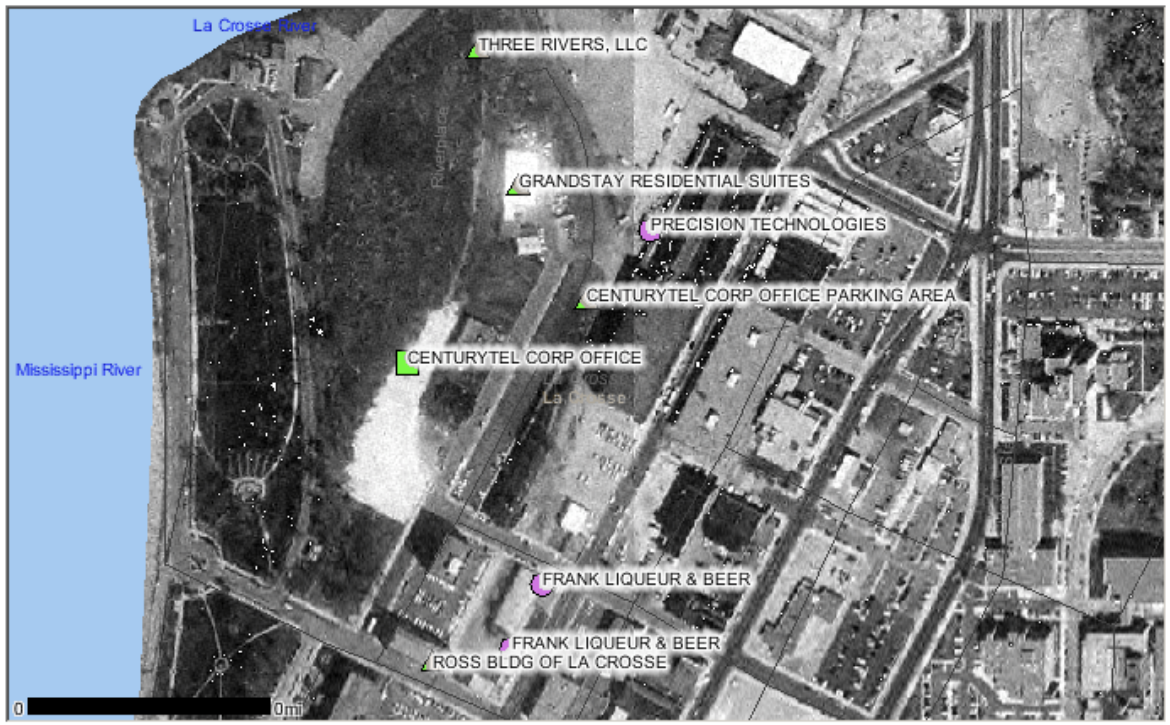
Not all sites located | Layers | What is the GIS Registry? | Legend | Find Location | Download Data | Themes | Print | Help

Full State | Zoom In | Zoom Out | Zoom Last | Move | Identify | XY | PDF & BRRTS

BRRTS Activity Info

BRRTS Activities:

Activity Detail No.: 0232548165
Name: CENTURYTEL CORP OFFICE
Link to BRRTS db: Info on activity 0232548165
Link to PDF: 0232548165.pdf



Scale: 1: 4,598 go Selected Map Tool: PDF & BRRTS **Identify Sites Closed with Residual Contamination**

| Bureau for Remediation and Redevelopment | BRRTS on the Web | Contaminated Databases | Comments on this website |

WTM Coordinate: X= 419073, Y= 372267 Meters --- Latitude= 43°48'59.7" N, Longitude= 91°15'18.0" W

Local intranet

Start | Inbox - Microsoft Outlook | Microsoft PowerPoint - ... | WDNR BRRTS on the ... | Wisconsin DNR GIS ... | http://maps.dnr.state.... | 11:03 AM

WISCONSIN DEPT. OF NATURAL RESOURCES

Jim Doyle, Governor
Scott Hassett, Secretary
Scott Humrickhouse, Regional Director

West Central Region Headquarters
1300 W. Clairemont Avenue
PO Box 4001
Eau Claire, Wisconsin 54702-4001
Telephone 715-839-3700
FAX 715-839-6076
TTY Access via relay - 711

October 6, 2006

Mr. Gordon Bernice
CenturyTel
100 Century Dr.
Monroe, LA 71203

SUBJECT: Final Case Closure
CenturyTel Corporate Office Property Located at 333 N. Front St., La Crosse, WI
WDNR BRRTS Activity # 02-32-548165

Dear Mr. Bernice:

On September 14, 2006, the West Central Region's Closure Committee reviewed the above referenced case for closure. This committee reviews environmental remediation cases for compliance with state laws and standards to maintain consistency in the closure of these cases. Based on the correspondence and data provided, it appears your case has been remediated to Department standards in accordance with s. NR 726.05, Wisconsin Administrative Code. The Department considers this case closed and no further investigation or remediation is required at this time. This site was reviewed for closure by the Department at the formal request of the Redevelopment Authority of the City of La Crosse in association with their Voluntary Party Liability Exemption (VPLE) application. The VPLE site name is the "Riverside Redevelopment Project", BRRTS #06-32-227174.

Please be aware that pursuant to s. 292.12 Wisconsin Statutes, compliance with the requirements of this letter is a responsibility to which you and any subsequent property owners must adhere. If these requirements are not followed or if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety, welfare, or the environment, the Department may take enforcement action under s. 292.11 Wisconsin Statutes to ensure compliance with the specified requirements, limitations or other conditions related to the property or this case may be reopened pursuant to s. NR 726.09, Wis. Adm. Code. It is the Department's intent to conduct inspections in the future to ensure that the conditions included in this letter including compliance with referenced maintenance plans are met.

Pursuant to s. 292.12(2)(a), Wis. Stats., the pavement,building foundation and/or soil cover that currently exists in the location shown on the attached map shall be maintained in compliance with the attached maintenance plan in order to prevent direct contact with residual soil contamination that might otherwise pose a threat to human health. If soil in the specific locations described above is excavated in the future, the property owner at the time of excavation must sample and analyze the excavated soil to determine if residual contamination remains. If sampling confirms that contamination is present the property owner at the time of excavation will need to determine whether the material would be considered solid or hazardous waste and ensure that any storage, treatment or disposal is in compliance with applicable

must adhere. If these requirements are not followed or if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety, welfare, or the environment, the Department may take enforcement action under s. 292.11 Wisconsin Statutes to ensure compliance with the specified requirements, limitations or other conditions related to the property or this case may be reopened pursuant to s. NR 726.09, Wis. Adm. Code. It is the Department's intent to conduct inspections in the future to ensure that the conditions included in this letter including compliance with referenced maintenance plans are met.

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SURFACE COVER AND CAP MAINTENANCE PLAN FOR THE RIVERSIDE REDEVELOPMENT PROJECT

Century Tel Portion

October 9, 2006

Property Located at:

333 Front Street North
La Crosse, Wisconsin
WDNR BRRTS# 06-32-227174 (VPLE)
FID # 632109720

Legal Description: Lot 5 of Certified Survey Map Volume 8, Page 124 (La Crosse County Register of Deeds Office), located in part of the NE ¼ of the SE ¼, Section 31, Township 16 North, Range 7 West, City of La Crosse, La Crosse County, Wisconsin.

The property consists of 5.96 acres.

Purpose:

The purpose of this plan is to state the requirements for soils excavated and/or disturbed during

Monitoring

1. Using s. 128(a) funds to audit 50 LUC sites per year
2. Have found need for follow up on approximately 20% of sites
3. Conclusion, you are an army of one

Enforcement

1. Clear enforcement under state's spill law and regulations
2. Can reopen cases
3. Onus on property owner

Next steps

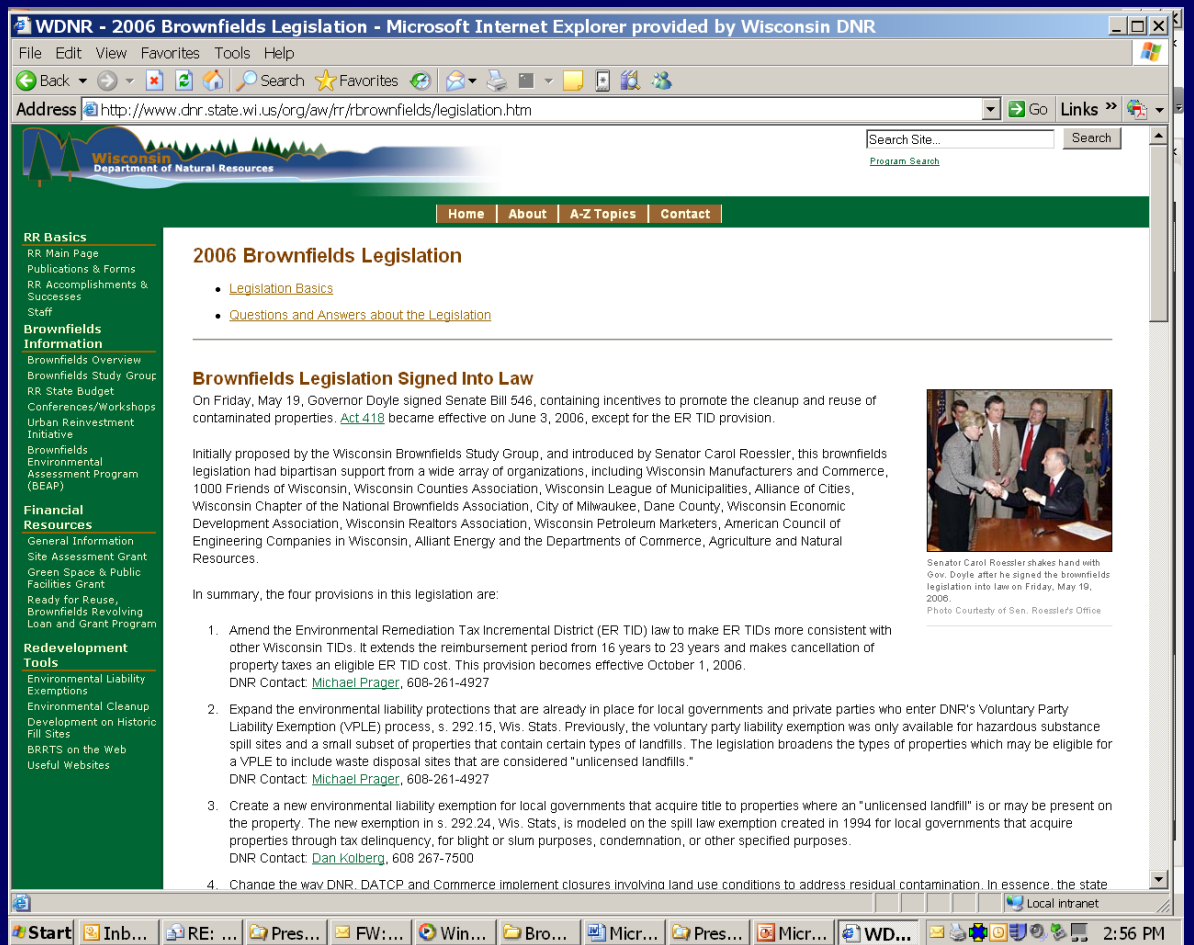
1. Applied for EPA innovations grant
2. Plan to work with targeted groups
3. Develop outreach strategy
4. Adjust program

Goal of Effort

Develop a statewide, comprehensive LUC program to ensure:

1. public can find in a simple format
2. readily used to make sound land use and real estate decisions
3. maintain protectiveness in long run

Questions?


WDNR - 2006 Brownfields Legislation - Microsoft Internet Explorer provided by Wisconsin DNR
File Edit View Favorites Tools Help
Address http://www.dnr.state.wi.us/org/aw/rr/rbrownfields/legislation.htm
Wisconsin Department of Natural Resources
Search Site...
Search
Program Search
Home
About
A-Z Topics
Contact
RR Basics
RR Main Page
Publications & Forms
RR Accomplishments & Successes
Staff
Brownfields Information
Brownfields Overview
Brownfields Study Group
RR State Budget
Conferences/Workshops
Urban Reinvestment Initiative
Brownfields Environmental Assessment Program (BEAP)
Financial Resources
General Information
Site Assessment Grant
Green Space & Public Facilities Grant
Ready for Reuse, Brownfields Revolving Loan and Grant Program
Redevelopment Tools
Environmental Liability Exemptions
Environmental Cleanup
Development on Historic Fill Sites
BRRTS on the Web
Useful Websites
2006 Brownfields Legislation
Legislation Basics
Questions and Answers about the Legislation
Brownfields Legislation Signed Into Law
On Friday, May 19, Governor Doyle signed Senate Bill 546, containing incentives to promote the cleanup and reuse of contaminated properties. Act 418 became effective on June 3, 2006, except for the ER TID provision.
Initially proposed by the Wisconsin Brownfields Study Group, and introduced by Senator Carol Roessler, this brownfields legislation had bipartisan support from a wide array of organizations, including Wisconsin Manufacturers and Commerce, 1000 Friends of Wisconsin, Wisconsin Counties Association, Wisconsin League of Municipalities, Alliance of Cities, Wisconsin Chapter of the National Brownfields Association, City of Milwaukee, Dane County, Wisconsin Economic Development Association, Wisconsin Realtors Association, Wisconsin Petroleum Marketers, American Council of Engineering Companies in Wisconsin, Alliant Energy and the Departments of Commerce, Agriculture and Natural Resources.
Senator Carol Roessler shakes hand with Gov. Doyle after he signed the brownfields legislation into law on Friday, May 19, 2006.
Photo Courtesty of Sen. Roessler's Office
In summary, the four provisions in this legislation are:
1. Amend the Environmental Remediation Tax Incremental District (ER TID) law to make ER TIDs more consistent with other Wisconsin TIDs. It extends the reimbursement period from 16 years to 23 years and makes cancellation of property taxes an eligible ER TID cost. This provision becomes effective October 1, 2006.
DNR Contact: Michael Prager, 608-261-4927
2. Expand the environmental liability protections that are already in place for local governments and private parties who enter DNR's Voluntary Party Liability Exemption (VPLE) process, s. 292.15, Wis. Stats. Previously, the voluntary party liability exemption was only available for hazardous substance spill sites and a small subset of properties that contain certain types of landfills. The legislation broadens the types of properties which may be eligible for a VPLE to include waste disposal sites that are considered "unlicensed landfills."
DNR Contact: Michael Prager, 608-261-4927
3. Create a new environmental liability exemption for local governments that acquire title to properties where an "unlicensed landfill" is or may be present on the property. The new exemption in s. 292.24, Wis. Stats, is modeled on the spill law exemption created in 1994 for local governments that acquire properties through tax delinquency, for blight or slum purposes, condemnation, or other specified purposes.
DNR Contact: Dan Kolberg, 608 267-7500
4. Change the way DNR, DATCP and Commerce implement closures involving land use conditions to address residual contamination. In essence, the state
Local intranet
Start
2:56 PM

UECA

The Uniform Environmental Covenants Act

The National Conference of Commissioners on Uniform State Laws (NCCUSL)

Introduction & Drafting Process

The Uniform Laws Conference-NCCUSL

1. Oldest state governmental association in U.S.
2. NOT an interest group
3. Membership –officially appointed per statute
   a. State Legislators & Legislative/Executive Counsel
   b. Law Professors
   c. State and Federal Judges
   d. Private Practitioners
4. Prior acts of interest (UCEA, UCC, Condo/UCIOA, etc.)

Introduction & Drafting Process

1. Timeline:
   a. Study and Drafting November 2000-August 2003
   b. ABA review and approval, Spring 2004
   c. Active legislative introduction began in 2005

2. Basic Policy:

   UECA reflects a a balanced approach which promotes and protects the interest of owners, lenders, regulators, local governments, and other stakeholders in ensuring that real property-based land use controls remain intact and enforceable as long as necessary to protect human health and the environment.

Advisors & Stakeholders

1. Regulators
    a. State and Federal
2. Property Owners
3. PRP's
4. Lenders
5. "Green" Community
6. Municipalities
7. Title Insurance Companies
8. Real Estate and Environmental Lawyers

What is an “Environmental Covenant”

1. EC’s are land use restrictions or requirements (technically they are a statutorily-defined “servitude”) that are placed on a parcel of property by an agreement that is recorded in the title of the property.
2. Under an EC, the right to do certain things (run a daycare center, dig a drinking water well, remove a berm, e.g.) or to NOT do certain things (file reports, maintain a monitoring system, allow access to regulators, e.g.) which would otherwise be part of the property is transferred from the owner to a holder.

Things To Keep In Mind

1. EC's rely on property rights, not regulatory power, and are enforceable under contract law and property law. UECA provides predictability and stability by working with, rather than against, real property law and expectations.
2. EC's are voluntary tools that do not displace or reduce existing regulatory police powers. As a mandatory party, a state agency's utilization of UECA covenants remains discretionary.
3. Passage of UECA does NOT invalidate prior control instruments or agreements.

Four Issues UECA Resolves

1. Creation of an EC.
2. Legal problems in making an EC valid and enforceable.
3. Modifying or terminating an EC.
4. Enforcing an EC.

Helps Covenants Remain Valid and Enforceable Over the Long Term

1. An EC under UECA ***runs with the land*** and is intended to be perpetual, until terminated under the Act. §5(a) and §9(a)

2. UECA takes care of technical common law rules that would present problems (privity, appurtenance, assignment, touch-and-concern, negative burden, etc.). §5(b)

Helps Covenants Remain Valid and Enforceable Over the Long Term

1. State tax liens and foreclosures, adverse possession, and similar doctrines do not override the covenant. §9(c)
2. Marketable Title Act or Dormant Mineral Interests Acts superseded. §9(d)
3. Eminent domain and the "doctrine of changed circumstances" can override the covenant only in special situations. §§9(a)(5).
4. Properly deals with priority of interests to avoid extinguishment through foreclosure and regulatory takings.

What Is Required For A Covenant? §4(a)

1. Describe the land use restrictions and any affirmative requirements.
2. Agreement by the owner, the agency, and the holder.
3. Recordation in Title. §8
    a. Optional Statewide Registry system. §12

Additional Options For Covenants §4(b)

1. Additional Parties.
2. Notice if change in ownership or land use.
3. Periodic reporting on the land use.
4. Access rights for various parties.
5. Description of the location and details of remaining contaminants, pathways of exposure, exposure limits.
6. Other rights or duties of the holder.

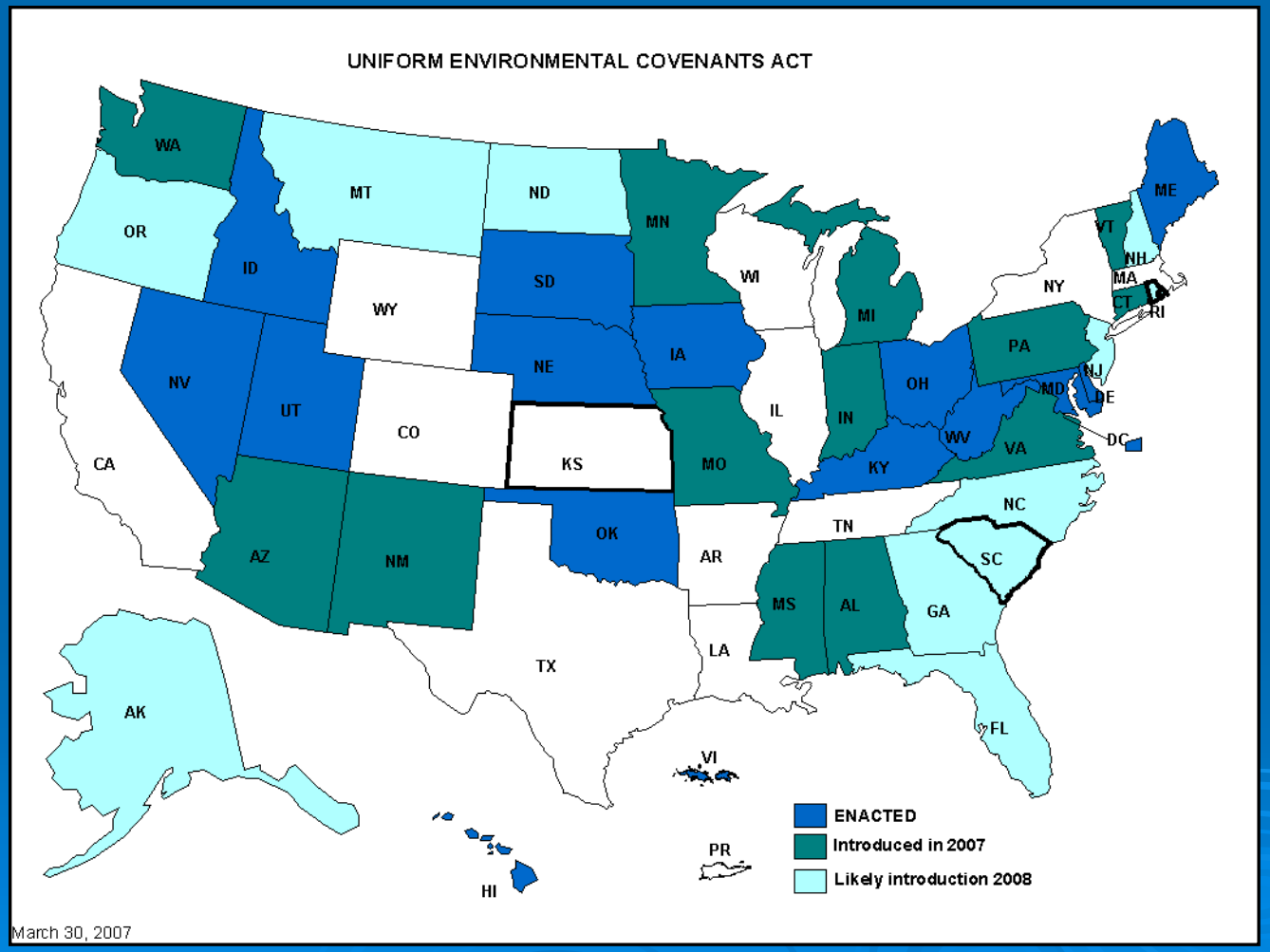
Change, Termination and Enforcement

1. UECA provides practical yet protective methods for modifying or terminating a covenant, either by consent of the parties or through court action.
    a. The act provides procedures if parties cannot be located or when holders change.
    b. Identifies those who can enforce without restricting an agency's enforcement rights under existing environmental laws or cleanup remedies.
2. Regulatory agencies may reopen the underlying cleanup plan under independent regulatory authority, regardless of UECA.

Benefits of Uniformity

1. National guidance
   a. Decisions from other states on novel questions can reduce litigation and administrative hearing costs
   b. With common definitions and rules, forms and administrative procedures used in other states can be more easily adapted and shared
2. Reduced Costs
   a. Shared approach reduces compliance costs for owners with properties in multiple states
   b. Improves climate for the development of national long-term stewardship solutions, such as holding/monitoring entities (i.e. Guardian Trust) and national insurance products.

Enactment Status Map



NCCUSL

The National Conference of Commissioners on Uniform State Laws

www.nccusl.org

For questions, more information, or an update on UECA in your state, please contact:

Kieran P. Marion

kieran.marion@nccusl.org

Michael Kerr

michael.kerr@nccusl.org

ALSO: Visit www.environmentalcovenants.org to subscribe to the UECA Updates newsletter

Evaluation of Institutional Controls during Five Year Review

March 2007

“I’m still bound by these pesky ICs!”

Use of ICs in Remedies and Five Year Reviews under CERCLA

1. ICs are typically used in remedies to supplement engineering controls and to limit land use
2. CERCLA requires a FYR of those remedies that do not allow for unlimited use and unrestricted exposure (UU/UE)
3. ICs and FYR have same trigger: remaining contamination above UU/UE

Course Overview

1. Evaluation
2. Follow up Actions
3. IC Plan
4. Example Protectiveness Determinations
5. PRP Involvement
6. Summary and References

Evaluation & Follow up Actions

1. Physical Area of UU/UE
2. Objectives
3. Legal and Ownership Issues
4. State Statutory Requirements
5. Long Term Stewardship/Monitoring
6. Current compliance

Physical Areas – Current Conditions (RPM lead)

Maps

Areas above UU/UE

a. **Industrial use cleanup levels – Soil**
b. **Groundwater areas that exceed cleanup standards**

Engineered Controls

e.g. Containment Areas, Landfill Caps

Physical Area: Current Conditions - Best Available Map

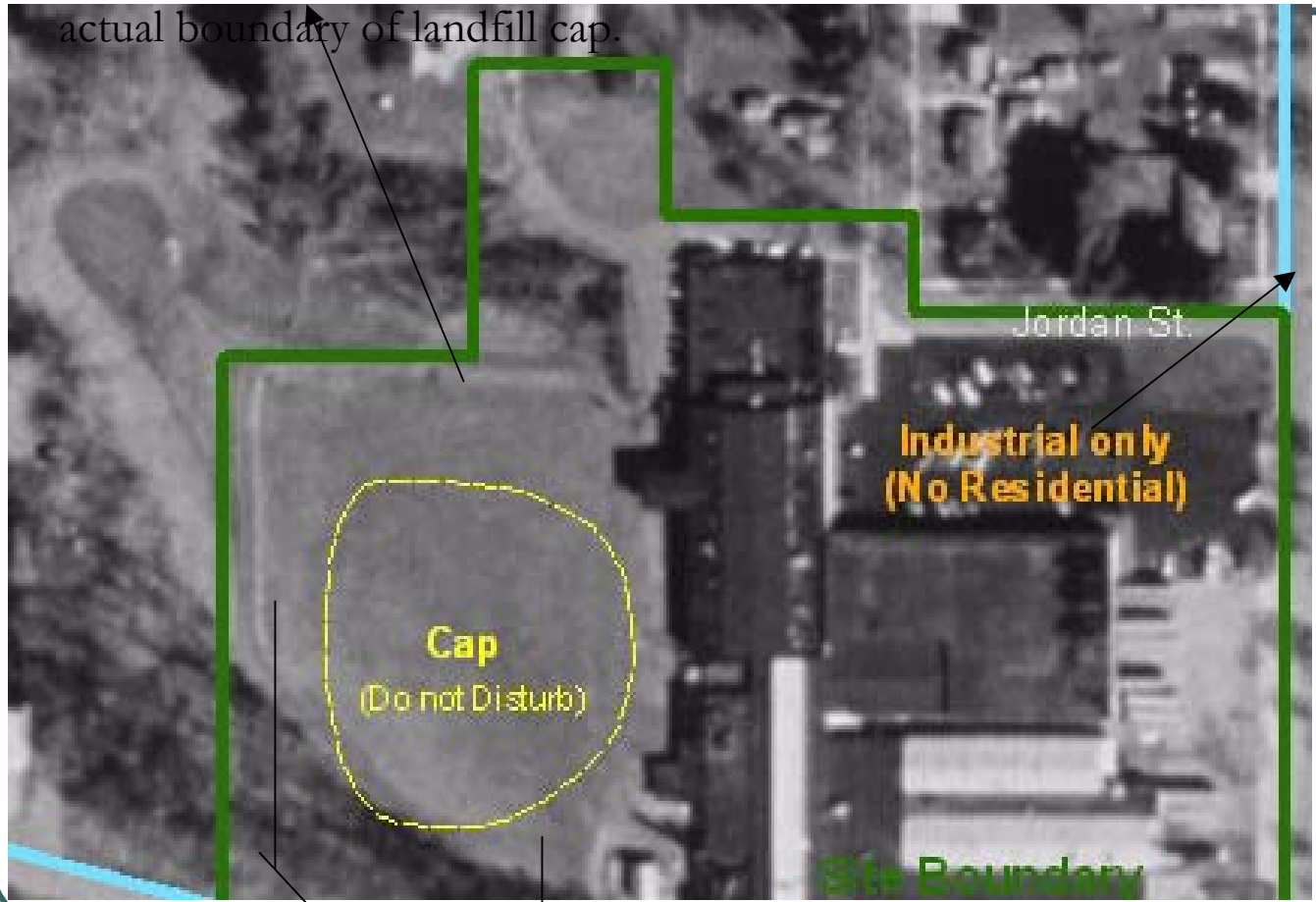
RPM identifies Map of current conditions

1. RODs – probably need updated map
2. Prior FYR: may need to update map
3. CDs, UAOs – probably need to update
4. In house
   a. RPM sketch on aerial map to GEOS
   b. Current Monitoring Information e.g. groundwater plume - GEOS
5. As Built Drawings – this is the best

Physical Area: Compare Current Conditions to restricted area in IC (RPM lead)

1. Proprietary Controls (restrictive covenant)
   a. Does Legal Description cover current area above UU/UE levels – may need to map legal description
2. Governmental Controls & IC Instruments
   a. Does Governmental Control cover current area above UU/UE levels

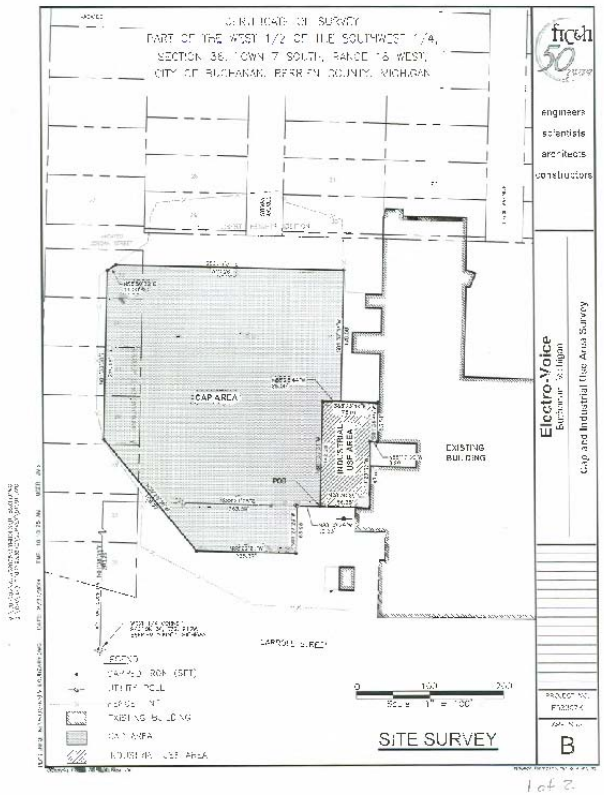
Physical Area: schematic map insufficient – not current conditions



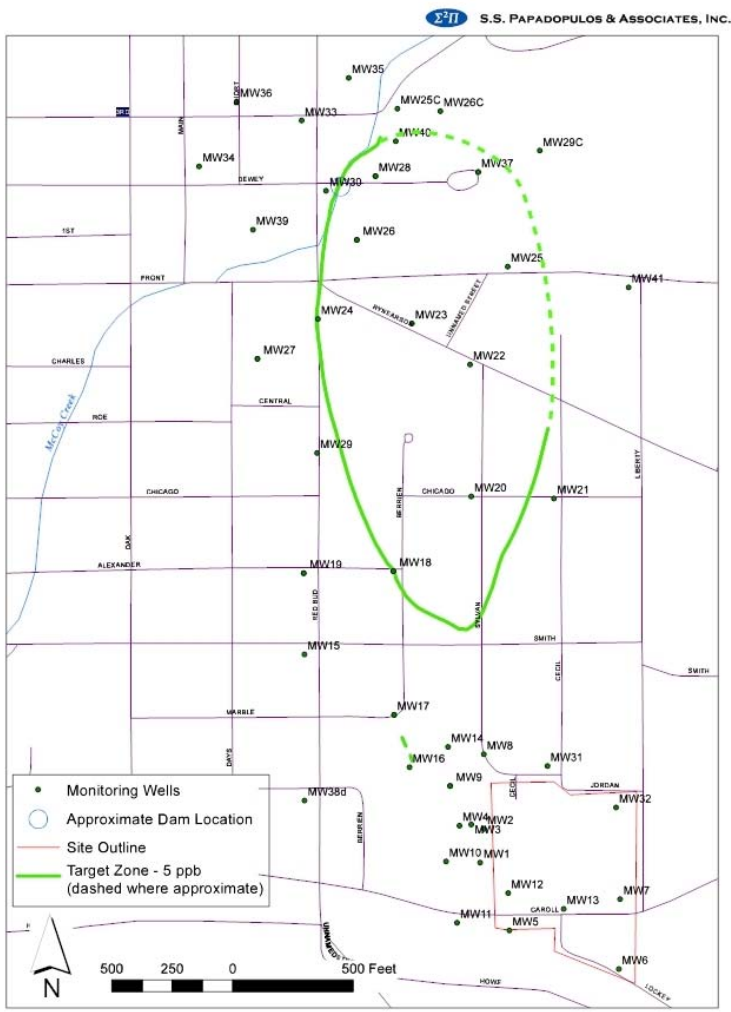
Physical Area – follow up actions

1. Map of Cap as constructed
2. Map of final area treated to performance standards
3. Map of buildings
4. Include in new restrictive covenant

Physical Area: Survey Map



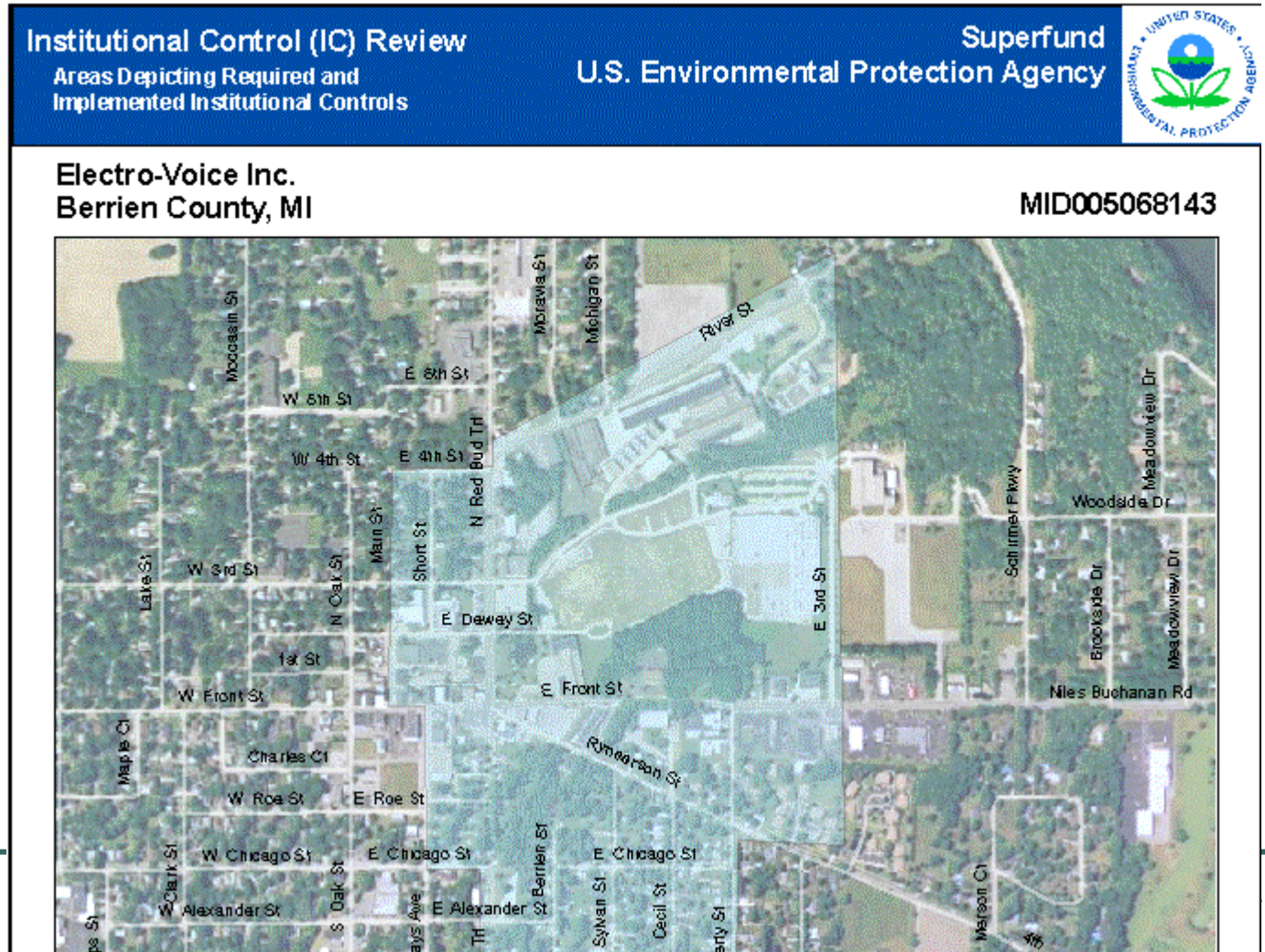
Physical Area: Survey Map



Follow Up Actions

1. Revised Groundwater Map to City
2. Ordinance covers revised groundwater plume area plus buffer

Area Depicting Required and Implemented ICs



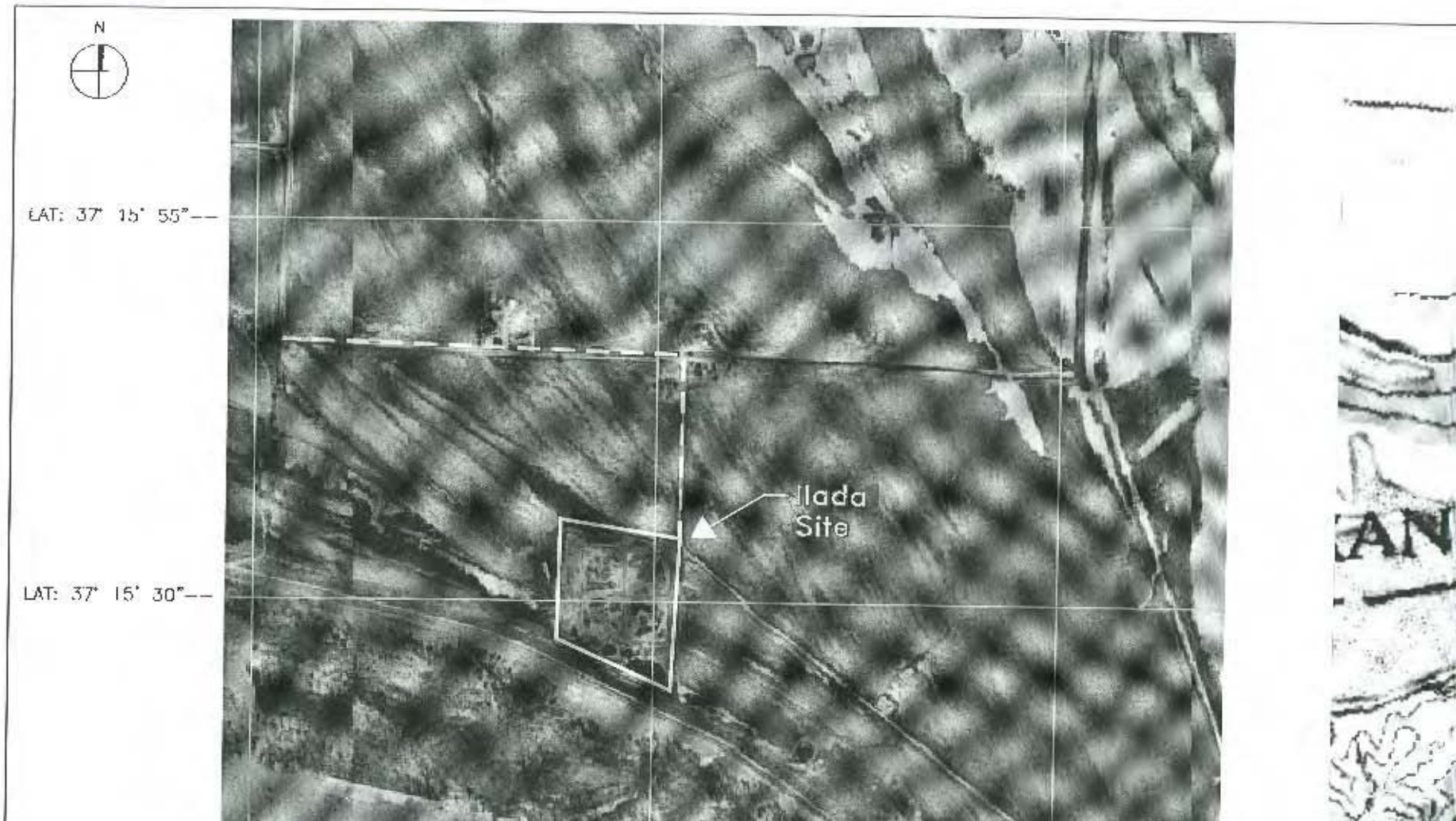
Physical Area: Legal Description in Restrictive Covenant

1. Beginning at the Northwest Corner of said Section 32;
2. thence South 56 degrees East 371 feet to a point, thence South 24 degrees East 215 feet to a point, thence South 39 degrees 30 minutes West 280 feet to a point, thence South 59 degrees West 402 feet, thence North 40 degrees 15 minutes West for 279 feet, thence North 30 degrees East 220 feet, thence North 50 degrees East 265 feet, thence North 76 degrees 185 feet, Thence North 5 degrees 115, thence North 61 degrees 30 minutes East 195 feet.

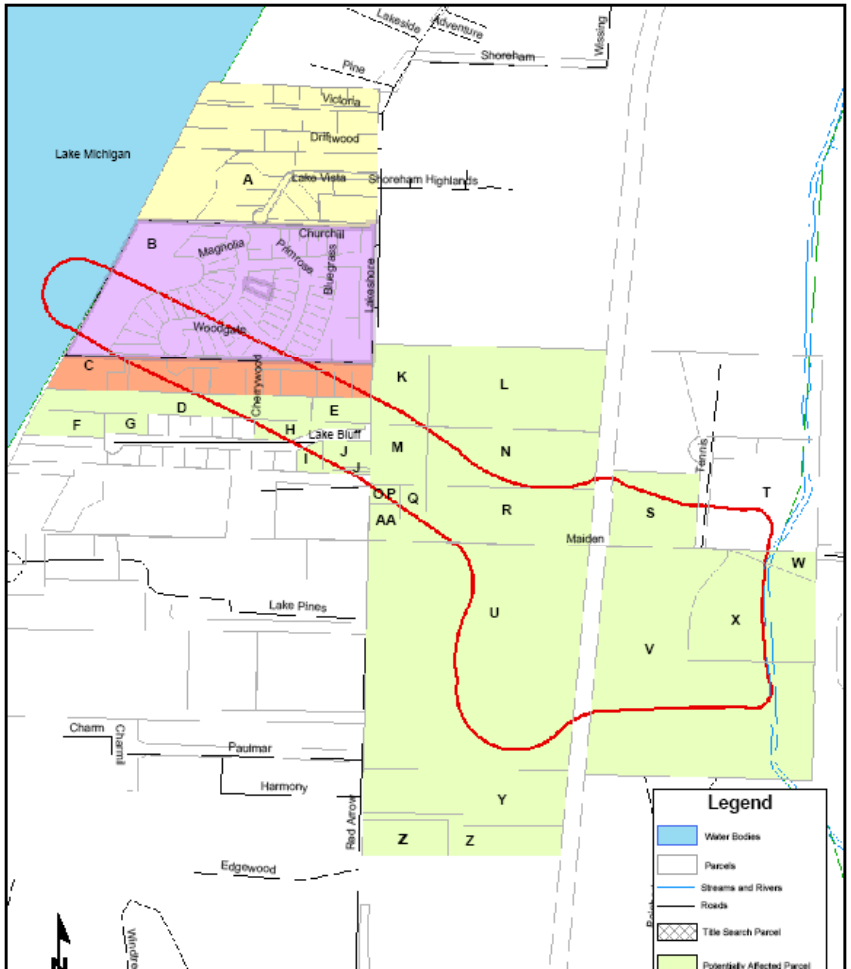
Physical Area: Legal Description – What we comprehend

blah, blah, blah

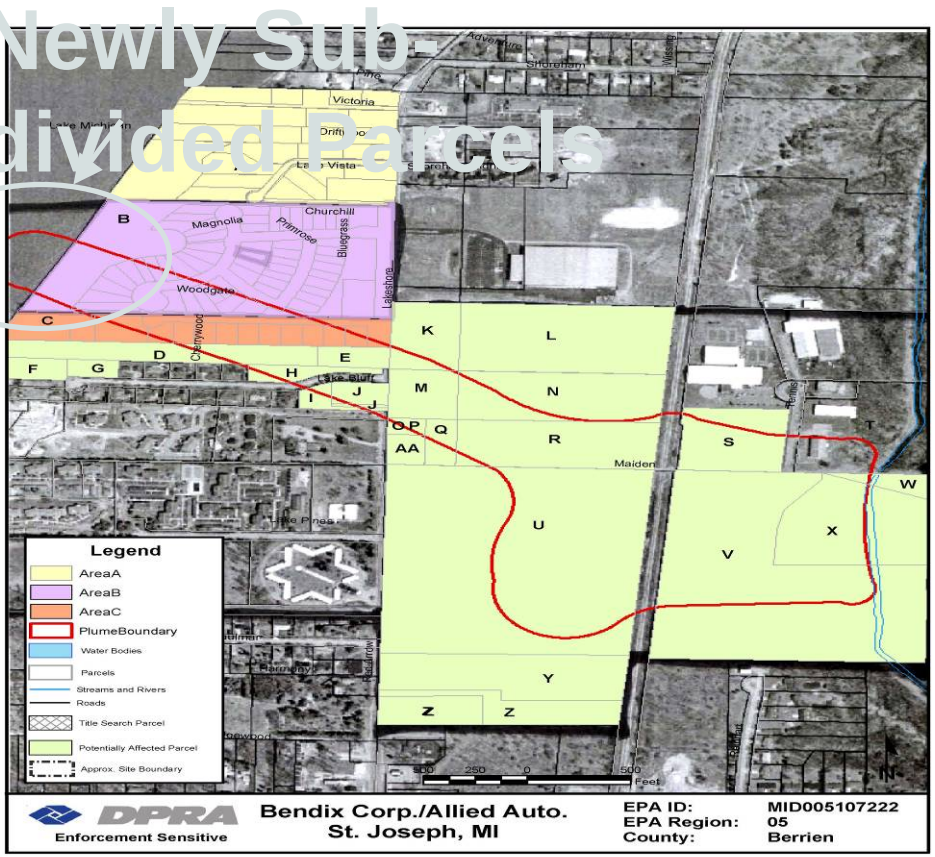
Physical Area: Plot survey on aerial map



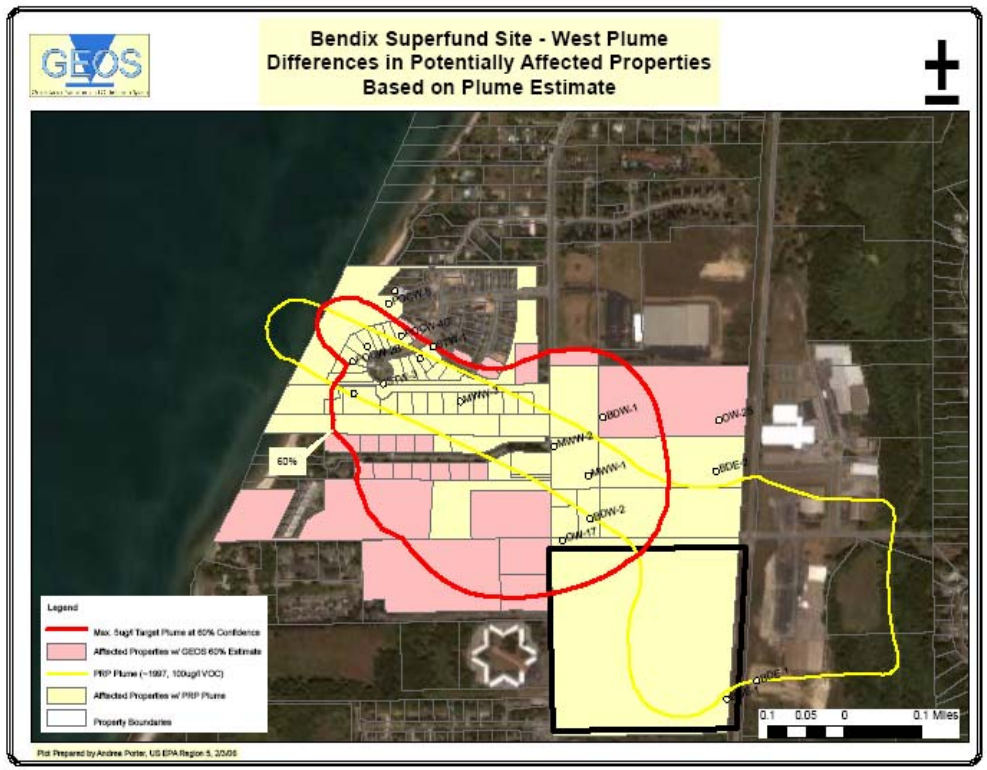
Physical Area: Use most recent monitoring data



Off-site Groundwater May Contaminate Numerous Parcels



Differences in Potentially Affected Properties



Follow Up Actions

1. Remedy selected restrictive covenants over plume area
2. Additional restrictive covenants over new area

Objectives (RPM lead)

1. Objectives: Current conditions
2. Review IC to ensure appropriate objective/restrictions
3. Are objectives for ICs clear and comprehensive and related to RAOs for the site?

IC Objective

Media, Engineered Control – UU/UE	IC Objective (current conditions)	IC Implemented
Hazardous Cap	Prohibit interference	Restrictive Covenant
Buildings	Prohibit interference with foundations	Restrictive Covenant (planned)

IC Objectives/Restrictions

1. Hand Out
2. Sample Objectives/Restrictions in restrictive covenant

Proprietary Controls
Basic Legal Principles: STATE LAW

1. The law of real property is based on state law – either common law or statutory (or both)

2. Traditional Common Law – made proprietary controls difficult to use as an institutional control

3. While courts and state legislatures have moved away from many of these rules, choosing instead to give effect to the intent of the parties, this is not true in every state or for every traditional rule

Proprietary Controls
Common law: Bundle of Sticks

1. **Buyer takes property subject to superior rights** Buyer rarely starts with a full bundle of property rights sticks (e.g., mortgage, utility easements)
2. **Grantor-Grantee** An owner (grantor) can give “sticks” away to others (grantee)
3. **Declaration by Owner may not run with the land** Sticks cannot simply evaporate just because the owner says so
4. **Reservation of right by Owner in Deed** Owner retains a stick

Basic Principles: Proprietary Controls

1. State Statutory Overlay on Common Law
2. Examples:
   a. State Recording Statute
   b. State Covenant Statute
   c. State Superfund Statutes with restrictive covenant provisions
   d. Other State statutes with controls that bind future owners

Regional Statutory Examples: Follow up state specific training

1. Ohio UECA
2. MI Part 201 requires restrictive covenants with containment and limited use remedies
3. MN – MN affidavits and easements run with the land
4. WI – state can be grantee and enforce
5. IN – state can enforce

Follow Up Actions
No IC - need proprietary IC

1. Use state statutory authority
2. State models on g:user/share
3. Grantor/grantee mode

Follow Up Actions

Proprietary IC is notice only

- PRP owner
- Non PRP owner

Proprietary Controls: State Recording Statutes

1. All property records in one place
   a. County Recorders Office
2. Record Grantor and Grantee
3. Priority of Interests
   a. Typically determined by who records first

Proprietary Controls: Recordation

1. Integration of Restrictive Covenants into traditional property system
2. “Constructive Notice” to the world
3. Assure Legal Status of Environmental Covenant

Proprietary Controls: Why Title Commitment?

1. Replicate Title examination – private purchaser
2. Title Company
   a. Independent third party
   b. Standard Format
   c. Comprehensive & Reliable
   d. Underwriting Guidelines
   e. Tort Liability for faulty searches

Proprietary Controls: Title Commitment

1. Current Ownership of Property
2. Demonstrate proper recordation
3. Identify incompatible property interests
    a. notify entities – release or subrogate interests

LandAmerica
Lawyers Title

Lawyers Title Insurance Corporation

Case Number: P-05-1460

COMMITMENT FOR TITLE INSURANCE

SCHEDULE A

1. Effective Date: **October 6, 2005 at 08:00 AM**

2. Policy (or Policies) to be issued: Amount

   (a) Owner's Policy (ALTA Own. Policy (10/17/92)) **$ To Be Determined**

   Proposed Insured:

   GRB Environmental Services, Inc. and/or their nominees

   (b) Loan Policy (ALTA Loan Policy (10/17/92)) **$ NONE**

   Proposed Insured:

   NONE

3. Title to the Fee Simple estate or interest in the land described or referred to in this Commitment is at the Effective Date hereof vested in:

   Alexander County as Trustee

4. The land referred to in this Commitment is described as follows:

   SEE SCHEDULE C ATTACHED HERETO

~ END OF SCHEDULE A ~

Countersigned at:
PALMER AND MURRIE ABSTRACT CO., INC.
506 North Market Street, Marion, IL 62959
Phone: 618-993-3366

Authorized Signature
Curtis E. Palmer/Scott Murrie/Deborah L. Abbott

This Commitment is invalid unless the Insuring Provisions and Schedules A, B and C are attached.

LandAmerica
Lawyers Title

Lawyers Title Insurance Corporation

Case Number: P-05-1460

SCHEDULE B - SECTION 2

EXCEPTIONS

11. We find no financing statements of record in the County of origin affecting real estate described under Schedule C herein. No examination of financing statements was made as to the Secretary of State of the State of Illinois.

12. Subject to Declaration of Covenants dated September 17, 1997, by Harriette H. McCrate, recorded December 15, 1997, in Book 307 Page 840, in the Recorder's Office of Alexander County, Illinois.

13. Easement for Roadway Purposes granted Texas Eastern Transmission Corporation, dated September 11, 1975, Recorded October 14, 1975, in Book 215, Pages 539 and 540, in the Recorder's Office of Alexander County, Illinois.

14. Easement granted East Cape Girardeau and Clear Creek Drainage District, by instrument dated January 7, 1953, recorded January 19, 1953, in Deed Record 160 Pages 145 thru 148, in the Recorder's Office of Alexander County, Illinois.

15. Subject to terms and provisions of Lease dated April 7, 1947, recorded April 24, 1947, in Deed Record 145, Pages 253 thru 256, in the Recorder's Office of Alexander County, Illinois.

16. Easement granted East Cape Girardeau and Clear Creek Drainage District, by instrument dated May 10, 1940, recorded November 6, 1940, in Deed Record 133, Pages 105 and 106, in the Recorder's Office of Alexander County, Illinois.

17. Subject to the interest of Joseph E. McCrate and David P. McCrate, and or their heirs, by virtue of Trustee's Deed dated October 9, 1975, Recorded November 17, 1975, in Deed Record 224 Pages 233 and 234, in the Recorder's Office of Alexander County, Illinois.

18. Subject to terms and provisions as set out in Deed Record 224 Pages 233 and 234, in the Recorder's Office of Alexander County, Illinois.

19. Subject to terms and provisions of Memorandum of Agreement for Warranty Deed by and between Joseph E. McCrate and David P. McCrate, sellers, to Kara Oil Company, buyer, dated October 26, 1979, recorded November 8, 1979, in Book 231 pages 127 and 128, in the Recorder's Office of Alexander County, Illinois. Assigned to Larry Edward Wilson, an individual, by instrument dated March 30, 1981, Recorded August 28, 1981, in Book 244, Pages 103 thru 106, in the Recorder's Office of Alexander

Incompatible Interests (ORC & RPM)

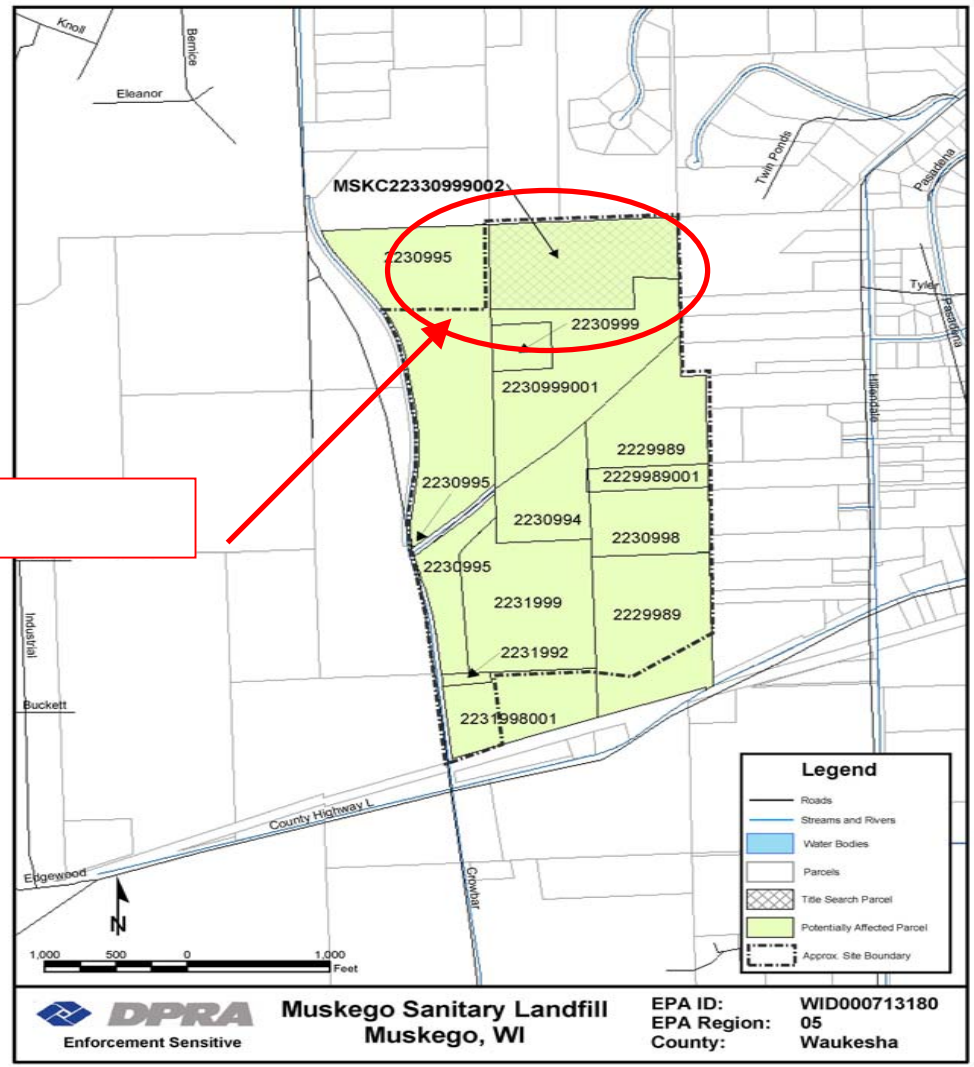
1. Notice to owners of recorded encumbrances
2. Work plans to owners of recorded encumbrances based on site specific issues
3. Examples: utility easements, sewer lines

Proprietary Controls
Title Commitment Pilot

1. Sites in rural areas: Local Title/Abstract Companies
2. Sites in Larger Towns: National Title Company
3. $700 to $1000 per parcel
4. Alternative title search: large sites or those located in rural areas

Proprietary Controls: Identify Parcels of Areas that need restrictions

Landfill area



Long Term Stewardship Monitoring

1. Who is tracking compliance with land and groundwater use restrictions
2. Options:
   a. PRP O & M Plans
   b. Communications Plans
   c. One Call Program

Current Compliance: Questions About ICs During Site Inspection

1. Is property being used in a manner consistent with land or groundwater restrictions?
2. Has the property been sold or leased and are new owners or lessees complying with restrictions?

Compliance: Questions About ICs During Interviews

1. Who should be interviewed about ICs during Five-Year Review interviews?
   a. State and local government agencies
   b. Property owners
   c. Other affected parties

Compliance: Questions About ICs During Interviews

1. What questions should be asked of State/Local agencies
   a. Have any breaches or other IC-related problems been reported?
   b. How does the agency manage IC information? Are there any tracking systems or websites?
   c. How does the State/Local government coordinate between their various departments?
   d. Does the agency have up-to-date maps, knowledge of site activity?

Involving PRPs: Enforcement first

1. PRPs - collect relevant documents
2. EPA, not the PRPs, should determine the role of ICs in the protectiveness determination
3. Sample Study and Implementation letters on g:user/share/models/CERCLA/institutional controls

Assessing the Protectiveness of the Remedy

1. A five year review requires answering three questions:
   a. Question A: Is the remedy functioning as intended by the decision documents?
   b. Question B: Are the exposure assumptions, toxicity data, and remedial action objectives (RAOs) used at the time of remedy selection still valid?
   c. Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

Question A: Is the remedy functioning as intended by the decision document

1. Cleanup goals for soil were based on commercial/industrial use
   a. Achieved?
2. IC required if not UU/UE
   a. evaluated and in place?

Question B: Exposure Assumptions, Toxicity Data, and RAOs Used at the Time of Remedy Selection Still Valid?

1. Cleanup goals for soil were based on commercial/industrial use
   a. Existing and Future land uses compatible?
   b. Toxicity Data still valid?

Question C: Has Any Information Come to Light That Could Call Into Question the Protectiveness of the Remedy?

Consider…

1. Are there any indications that land or other resource uses may be changing in the area?
2. Has State land use law changed in a way that impacts ICs at the site?
3. Have ecological problems been identified requiring ICs?
4. Is vapor intrusion an issue at the site?

Making the Protectiveness Determination

1. Typically, the remedy is protective if answers to Question A, B, and C are *yes, yes, no*
2. If the answers are anything but *yes, yes, no:*
   a. Protective
   b. Will be protective once the remedy is completed (i.e., construction is not yet complete);
   c. Protective in the short-term, however, in order for the remedy to be protective in the long-term, follow-up actions need to be taken;
   d. Not protective, unless the following action(s) are taken in order to ensure protectiveness;
   e. Protectiveness cannot be determined until further information is obtained.

Making the Protectiveness Determination – IC is not in place

Short Term Protectiveness: Depends on the Site specific information

a. Industrial use standards: yes if industrial cleanup standards have been attained and site is currently being used for industrial use
b. Landfill cap: yes if there is no disturbance or interference with landfill cap and use is consistent with the objectives of the landfill cap
c. Groundwater: yes if there is no current consumption of the water

Long Term Protectiveness: No. For the remedy to be protective in the long term, land use restrictions that limit the Site must be implemented and complied with at the Site.

Making the Protectiveness Determination

Some Considerations:

a. That a need to conduct further actions does not necessarily mean the remedy is not protective;

b. The level of risk associated with the exposure pathway the ICs are intended to protect; and

c. The actual potential that people may not comply with the needed restrictions and come in contact with contaminants via exposure pathways meant to be protected by ICs.

Making the Protectiveness Determination

At sites where there is no evidence of exposure, implementing ICs may be needed to ensure long-term protectiveness and the "short-term" protectiveness statement may be used. However, at other such sites having ICs in place may be a enough of a critical protectiveness issue to warrant a "not protective" statement.

Example Protectiveness Determinations: Remedies With ICs

If the remedy involves	And you observe in 5YR	Answers to A,B, &C should be:	Determination should be:	Follow-up actions may include:
Capped area. ICs to prevent disturbance of cap.	**A restrictive covenant is in place that says: a) There shall be no use of the property that interferes with the two foot cap on the property; b) There shall be no residential use of the property.** **No evidence of cracking, sliding, settling of cap, or other indicators of cap breaches.** **No evidence of exposure.**	Yes, Yes, No. ☐	The remedy is protective.	Develop and implement a schedule (with dates and assigned responsibility) and plan for any additional evaluation of the restrictive covenant to determine its adequacy and effectiveness. Considerations for this evaluation should include whether the IC "runs with the land," has been executed correctly, may be negatively impacted by prior-in-time encumbrances.

Review Key Questions

1. Question A: Is the remedy functioning as intended by the decision documents?
2. Question B: Are the exposure assumptions, toxicity data, and remedial action objectives (RAOs) used at the time of remedy selection still valid?
3. Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

Example: Protectiveness Determinations for Remedies- ICs

The remedy involves:	You observe in the FYR:	Answers to Qs A,B, C:	Determination should be:	Follow-up actions:
Capped area. ICs to prevent disturbance of cap, including a restrictive covenant.	The owner has agreed not to disturb the cap pursuant under Consent Decree. The restrictive covenant is not in place. No evidence of cracking, sliding, settling of cap, or other indicators of cap breaches. No evidence of exposure.	**No,** **Yes,** **Yes.**	**The remedy is considered protective in the short-term; however in order for the remedy to be protective in the long-term, follow-up actions need to be taken. In order for the remedy to remain protective in the long-term, ICs that prevent future disturbance of the cap must be complied with to prevent exposure to contaminants.**	**Develop schedule (with dates and assigned responsibility) and plan for implementation of the restrictive covenant and evaluate the need for any additional ICs.** **Evaluate prior-in-time encumbrance to determine if incompatible existing property interests.** **Establish procedures for notification of EPA in the event of a breach.**

Example Protectiveness Determinations Remedies With ICs

The remedy involves:	you observe in the five-year review:	Answers to Questions A,B, and C	Determination should be:	Follow-up actions include:
Soils cleaned up to standards based on industrial use risk assessment.	Soil Cleanup standards achieved. Property is being used for industrial use. No institutional controls.	**No,** **Yes,** **Yes.**	**The remedy is considered protective in the short-term; however in order for the remedy to be protective in the long-term, follow-up actions need to be taken. In order for the remedy to remain protective in the long-term, ICs that prevent residential use must be in place to prevent exposure to contaminants.**	**Develop schedule and plan for implementation of the restrictive covenant and evaluate the need for any additional ICs.** **Work with the owner to ensure the implementation of an effective restrictive covenant that "runs with the land," is not hindered by prior-in-time encumbrances, provides adequate notice to future owners, and will be monitored to ensure its continued existence.** **Establish procedures for notification of EPA in the event of a breach.**

Example Protectiveness Determinations: Remedies With ICs

If the remedy involves:	you observe in the FYR	Answers to Qs A,B,C	Determination should be:	Follow-up actions
Long-term operation of a ground water pump-and-treat system. Restoration of ground water to MCLs. Institutional Controls (ICs) required by the ROD to restrict drilling of ground water wells until MCLs are reached.	Contaminant levels above MCLs. No known current exposure based on site visits and interviews. High potential for near-term future exposure since ICs are not in place and the contaminated aquifer is only 12 ft. below surface.	**No,** **Yes,** **Yes.**	**The remedy is not protective, unless follow-up action is taken in order to ensure protectiveness. ICs need to be in place to prevent exposure to contaminants until ground water cleanup standards are achieved. Once the pump-and-treat system achieves cleanup levels in the ground water, long-term protectiveness will be ensured.**	**Ensure that no owners are using any wells and understand why they should not use ground water from the contaminated aquifer.** **Develop and implement a schedule (with dates and assigned responsibility) and plan for implementation of ICs specified in the ROD.**

Example Protectiveness Determinations for Remedies W/ ICs

If the remedy involves:	you observe in the FRY:	Qs A,B, C:	Determination should be:	Follow-up actions:
Long-term ground water pump-and-treat system. Containment of contaminated ground water plume. ICs required by the ROD to restrict drilling of ground water wells and prohibit ingestion of, or other contact with, ground water.	Contaminated ground water plume is expanding into (newly-identified) previously uncontaminated areas. Evidence of land development in the area where newly-identified contamination is suspected. Potential for exposure since existing ordinance does not cover new area.	**No,** **Yes,** **Yes.**	**A** *protectiveness determination of the remedy cannot be made at this time until further information is obtained.*	**Actions to characterize the extent of migration and to evaluate options for capturing plume.** **Coordination with landowners and local government – sharing revised groundwater plume maps.** **It is expected that these actions will take approximately X months to complete, at which time a protectiveness determination will be made (no later than 1 yr. after the date of this FYR Report).**

References

1. Supplement to the Comprehensive Five-Year Review Guidance: Evaluation of Institutional Controls, OSWER 9355.7-12 (March 2005)
2. Comprehensive Five-Year Review Guidance June 2001, OSWER 9355.7-03B-P, EPA 540-R-01-007