

Long Term Stewardship Roundtable and Training

April 4th and 5th, 2007

Afternoon sessions for
Wednesday, April 4



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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: **Innovative Approaches to Implementing Institutional Controls at Complex Redevelopment Sites**

Date and Time: Wednesday, April 4, 2007, 2:00 p.m., Session A

Speakers: Caren Trgovcich, CA DTSC
 Dennis Crabb, City of Sutter Creek, California
 Dennis Reyling, Hopkins Real Estate Group
 Dante Rodriguez, EPA Region 9

Session Overview by Caren Trgovcich

- Complex redevelopment sites are generally those sites where there are multiple contaminants requiring several different remedial approaches.
- In California, the Department of Toxic Substance Control (DTSC) oversees cleanup activities at approximately 260 properties with over 300 ICs. Localities, state and federal agencies, and private business have been negotiating the challenges of reusing sites with multiple ICs.
- Three presentations will highlight redevelopment projects at sites in various stages in the cleanup and redevelopment process.

Dennis Reyling Presentation

Cal Compact Superfund Site and the Carson Market Place Site Redevelopment

- Cal Compact Superfund Site: former municipal landfill; onsite contaminants include VOCs, metals and oil field wastes; remedial components include landfill cap, methane gas extraction system, ground water control system, building protection system to prevent vapor intrusion; anticipated land use is commercial and residential.
- ICs address soils and ground water contamination at the site.
- Key development dynamics: location has high traffic counts.
- Site plan was coordinated with landfill depth of waste. Residential areas were proposed for shallowest areas of the landfill with low potential for issues with contamination.
- Complete financial assurance was required for funding remedy and ongoing O&M.
- Insurance companies and reinsurers were important players in the project. Environmental insurance has been very expensive, offering less insurance for more money.
- Environmental redevelopment package: Full liability transfer and financial assurance needed to be included in a single package that would provide a 100 percent cost buffer for remedy construction cost overruns. Multiple insurance companies needed to be stacked in order to cover the \$100 million liability price tag for the project.
- O&M funding and implementing ICs over the long-term required the development of a strategy for meeting the needs of lenders and insurance companies.

- The approach at Carson Market Place revolved around the development of a community facilities district (CFD) with taxing authority to exact taxes in order to fund O&M administration, maintenance and monitoring. A public benefit corporation manages the ongoing O&M obligations at the site.
- Future unexpected expenses that fall outside the funding provided by the CFD taxes can be covered by the public benefit corporation that also has the authority to levy taxes to pay for unexpected costs.
- CFD will tax on an annual basis and place tax funding in escrow for use in financing O&M obligations.

Questions related to the presentation were as follows:

- Does the infrastructure that was created for Carson Market Place apply to other areas in the City of Carson?
 - o The CFD-based financing framework can act as a model for helping to incentivize redevelopment at other sites in the City of Carson. Coordination is also required for coordination between the City of Carson and DTSC.
- How is the project being financed?
 - o A public-private partnership is ongoing at this site. The City of Carson redevelopment agency has provided \$110 million. Hopkins and LNR (Lenar Homes commercial real estate development arm) are the private sector partners.
- Is this a new model for addressing IC and long-term stewardship funding strategies?
 - o The model will likely be applicable at other sites in the City of Carson. The basic idea of financing ICs through a taxing district may also be applicable at other sites.
- How are ICs being implemented and tracked on a parcel-by-parcel bases at Carson Marketplace?
 - o Local governments have an obligation to track the land use restrictions required at each of the parcels.

Dennis Crabb Presentation

Reuse at the Mesa de Oro Superfund Site

- Mesa de Oro Superfund site (City of Sutter Creek) is located in a former gold mining area with a strong tradition of private property rights and a general distrust of federal government intervention in local issues.
- A subdivision was built on an arsenic contaminated mine tailings area. Senior citizens inhabited most of the homes in subdivision.
- Remediation of the Mesa de Oro contamination had to be coordinated with residential occupancy and required a relocation of many residents.
- The City of Sutter Creek became interested in pursuing collaborative-based negotiation and decision-making processes to address contamination at the site.

- ICs to protect the site's engineering controls are the responsibility of Sutter Creek's police department. Cap penetration and drainage alteration are the two main concerns.
- Informational ICs are an important component of the Mesa de Oro strategy for long-term stewardship. A homebuilder/contractor training system is in place to help contractors understand how to work with properties at the site. Licensed haulers must manage fill material removed from the site. A list of licensed haulers is publicized and well known by local contractors.
- Sutter Creek required funding from PRP and insurance agencies in order to purchase the subdivision, demolish housing and address additional remediation issues.
- Originally, Sutter Creek planned to limit permits for redevelopment at the site. Sutter Creek's elected officials were concerned about lawsuits due to inverse condemnation (the decrease of property value through change in land use).

Questions related to the presentation were as follows:

- Thirty percent of California's environmental covenants are in unincorporated areas. Is there a difference between a county's and city's perspectives on the implementation and enforcement of environmental covenants?
 - o Private land owners are very important players in rural areas. Land use controls are not easily enforced at the county level, given the typical attitudes toward government intervention in private property issues.
- What does the developer education program in Sutter Creek include?
 - o Building officials work with contractors at association meetings to communicate key information. There is also a community outreach and education component to help identify challenges associated with land use changes in the former gold country areas. Elements of this education program attempt to help people relocating to the area understand the culture and history and dynamics of land use and property ownership issues in the area.

Dante Rodriguez Presentation

Reuse at the Del Amo Superfund Site

- Del Amo Superfund site (Los Angeles, California): former rubber products manufacturing facility; contaminants include BTEX, PAHs, pesticides and metals; three operable units are waste pits, ground water, and soils.
- Site has been redeveloped as a mixed-use complex.
- ICs for waste pit caps to prevent excavation.
- Contamination remains in place beneath existing buildings at the Del Amo site.
- Some parcels were unacceptable for residential uses but suitable for commercial/light industrial uses. Zoning is one of the restrictions, but the future land use plan has an informational IC notifying the locality that the area is a Superfund site and that residential use restrictions should be in place in the future.
- Analysis needed a restrictive covenant or proprietary IC as an additional layer. EPA Region 9 worked with City of Los Angeles' permitting department to incorporate

deed notices and red flags in the City's ZEMUS (GIS land use information system). ZEMUS already had the infrastructure to flag issues that need to be addressed during a permit process. The City notifies EPA Region 9 if permit applications are submitted for parcels at the Del Amo site.

- EPA Region 9 designed a secondary development review process that the Agency implements. EPA analyzes reuse proposals and compares the proposals to the sites' contamination, clarifying when additional sampling may be required.

Questions and comments regarding the presentation were as follows:

- Could existing City of Los Angeles permitting enforcement entities have been required to work with EPA to enforce permits?
 - o That would have required a change of regulations and the city's code. In the end, EPA Region 9 preferred having the authority to conduct the environmental/development review process, which Los Angeles would help it achieve by providing permit applicants.
- Is there a threat to using government controls to restrict residential uses, given that local governments would want to change land uses to residential?
 - o For municipalities, commercial and industrial land uses help build bigger tax bases. The value of residual land in residential reuse projects is much higher than in commercial reuse projects. So there are cases when residential redevelopment is more appealing at highly urbanized redevelopment sites.
- California DTSC is concerned with tracking environmental covenants on thousands of residential properties. Mixed-use commercial redevelopment is more appealing to California DTSC.

Group Discussion

The presentations highlighted three approaches to complex redevelopment projects. Two sites were southern California sites that have been redeveloped for commercial purposes and one site is in a rural setting. The panelists discussed the challenges that had to be addressed at each of the three sites:

- At Sutter Creek conflict was addressed using a collaborative negotiation process.
- At Carson MarketPlace, developers believed they needed a single environmental insurance and long-term financing package. Environmental insurance industry resistance required a new approach. Working with a team led to the development of a more flexible and applicable approach based on the use of a CFD to finance ICs.
- At Del Amo, challenges fell into two categories: short-term and long-term. In the short term, EPA Region 9 assumed that Los Angeles could enforce permit restrictions. The city raised the issue that it could not refuse a permit but could

send permit applicants to EPA. In the long-term, financial assurance is going to be a challenge.

*Innovative Approaches to
Implementing
Institutional Controls at
Complex
Redevelopment Sites*

Long -Term Stewardship Roundtable 2007

Moderators

Caren Trgovcich

*Ca Department of Toxic
Substances Control*

Lou Kerestesy

Consensus Systems

Panelists

Dennis Crabb

*Rollston, Henderson,
Rasmussen & Crabb*

Dante Rodriguez

US EPA

Dennis Reyling

*Hopkins Real Estate
Group*

Key Facts

Carson Marketplace City of Carson

- Contaminants Remaining on Site:
 - Methane
 - Volatile Organic Compounds (VOC's)
 - Some Metals
 - Petroleum Hydrocarbons (oil field wastes)
- Remedial Systems Remaining on Site
 - Landfill Cap
 - Landfill Gas Extraction System
 - Groundwater Control System
 - Building Protection Systems

Carson Marketplace *City of Carson*

- Land Use Anticipated by Remedy Decision
 - Regional retail
 - Neighborhood Retail
 - Office
 - Hospitality
 - Residential (elevated on podium)

Key Facts *Carson Marketplace* *City of Carson*

- Surrounding Property Land Use:
 - Light Industrial
 - Office
 - Regional Retail
 - Neighborhood Retail
 - Residential
 - Recreational

Key Facts

Carson Marketplace City of Carson

- Media Addressed by ICs:
 - Soil
 - Groundwater
- Total Acreage Impacted by ICs:
 - 157

Key Facts

Mesa de Oro

City of Sutter Creek

- Contaminants Remaining on Site
 - Mine tailings containing arsenic
- Remedial Systems Remaining on Site
- Land Use Anticipated by Remedy Decision
 - Residential
- Surrounding Property Land Use
 - Residential

Key Facts

Mesa de Oro

City of Sutter Creek

- Media Addressed by ICs
 - Soil
- Total Acreage Impacted by ICs
 - 100 acres, including two adjacent subdivisions.

Key Facts

*Del Amo Facility
City of Los Angeles*

- Contaminants Remaining on Site
 - Benzene
 - BTEX
 - PAHs
 - other pesticides and metals

Key Facts

Del Amo Facility
City of Los Angeles

- Remedial Systems Remaining on Site
 - Cap (5 acres)
 - SVE in same location as cap,
 - Groundwater pump & treat

Key Facts

Del Amo Facility City of Los Angeles

- Land Use Anticipated by Remedy Decision
 - Commercial/industrial for soil
 - Unrestricted for groundwater outside of source area
- Surrounding Property Land Use
 - Residential
 - Commercial/Industrial

Key Facts

Del Amo Facility City of Los Angeles

- Media Addressed by ICs
 - Soil/Sludge
 - groundwater
- Total Acreage Impacted by ICs
 - 5 acre capped area
 - 280 acres commercial/industrial restriction
 - 600 acre for impacted groundwater

CFD

Community Facilities District which will be established by the Carson RDA to collect tax assessments from future owners of developed parcels to fund long term operations and maintenance at the site. Taxes will be used to fund (1) administrative expenses of the Public Benefit Corporation; (2) the EAA and any unexpected costs related to remedial requirements at the site; and (3) renewal of environmental liability insurance. Tax assessment funds collected by the CFD will be transferred to the Public Benefit Corporation.

Compliance Framework Agreement

The agreement between Carson Marketplace, LLC and the DTSC that sets forth the plan for implementing the Original Consent Decree and Supplemental Consent Decree, including any modifications. It requires, among other things, the provision of adequate financial assurances for the implementation of the approved RAP and long term O&M of the remedial systems, the construction of the remedy by a qualified environmental contractor and the execution of an Environmental Deed Restriction covenant with the DTSC and recordation of Environmental CC&Rs.

Environmental Assurance Agreement (EAA)

A guaranteed fixed price remediation contract for the design, construction and long term operation and maintenance of the remedial systems which contains both financial assurance and risk transfer components. The EAA will be assigned to The Public Benefit Corporation.

Environmental CC&Rs

Environmental covenants, conditions and restrictions which will be recorded after the subdivision of the property and prior to occupancy. The Environmental CC&Rs will be recorded on both the Remediation Lot and Vertical Lot, and any conveyance of ownership, leasehold or possessory interest in the Remediation Lot or the Vertical Lot shall be subject to the Environmental CC&Rs. The Environmental CC&Rs shall expressly state that any purchase, lease or license of any portion of the Remediation Lot or the Vertical Lot constitutes acceptance of the CC&Rs.

Public Benefit Corporation

A non-profit public benefit corporation to be established under Section 501(c)(4) of the Internal Revenue Code by the Carson RDA to assume responsibility for conducting long term operation and maintenance and other remedial requirements at the site, purchase environmental liability insurance, and enforce the environmental CC&Rs. The Public Benefit Corporation will also have the ability to levee assessments directly on the owners of the Vertical Lot in the event that unexpected remedial expenses arise that cannot be addressed through the CFD's tax assessments.

Remediation Lot

A vertical subdivision lot consisting of the new landfill cap, the first two feet of soil cover over the cap, the improvements located below the cap including, without limitation, the landfill gas system, the groundwater treatment system, building piles and pile caps, and other above (such as the operations center) and below ground components of the remedial systems. Ownership of the remediation lot will be transferred to the Public Benefit Corporation.

Vertical Lot

The surface and airspace above the remedial systems that will be developed.

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Session Summary

Session Title: **Monitoring and Auditing LTS Programs**
Date and Time: Wednesday, April 4, 2007, 2:00 p.m., Session B
Speakers: Joyce Munie, IL EPA
 Marie Stewart, WI DNR
 Thomas Potter, MA DEP

Joyce Munie Presentation

Desktop Innovations in Monitoring Institutional Controls and Making Information Publicly Available

- In Illinois:
 - o No further remediation = Ready for Reuse.
 - o All deed restrictions must be “perfected” instruments.
- Steps taken are the inspection process, deed issuance and site inspection (sites are inspected every five years).
- Resource constraints (staff and money) are a problem with meeting this schedule.
- Methods used include:
 - o Payment to title company to ensure perfection of deed as a test for effectiveness.
 - o Remedial applicants pay by hour to cover costs of inspections.
 - o Resources used: Virtual Earth, Google Earth, Flash Earth and the Cook County Assessors office Internet files.
 - o Getting information to the public to give them confidence.

Questions and comments related to the presentation were as follows:

- Do you use state resources and does the responsible party pay for oversight time under voluntary programs? What is the funding source for developing IT and the Web site?
 - o It is funded through an add-on to the responsible party, through the hazardous waste fund (state fund), and through fees and fines (enforcement). At the end of no further remediation the responsible party is also charged \$2,500.
- How many sites are you able to manage using this system?
 - o Illinois has a legislative mandate to record all titles, including those without restrictive covenants. Two percent of all sites have resulted in problems requiring corrective actions.
- An NFR can be voided bringing the site back into the system for inspections and corrections. Does the state take legal action?
 - o The state can file criminal charges. The responsible party is also open to lawsuits filed by citizens. These are related to the liability from the site. Results in self-enforcement and insurance and financing.

- The inventory system is permanent. The database reveals the reason for the property being listed. The enforcement database is also on the Web and includes the record of violations and fines.

Marie Stewart Presentation

Development and Implementation of an Institutional Controls Audit Program in Wisconsin

Process includes: site file review; interview with site owner; site inspection; completion of “Closure Compliance Review” form; entering date in WNDR tracking system; site photos

- Staff time, per audit, has ranged from 6-16 hours, averaging around 14 hours.
- The review documents: site and ownership identification; geospatial coordinates; site restrictions in place, including site maintenance; deed restrictions or property transfers recorded; additional monitoring; changes to performance standard or maintenance agreements; zoning; potential sources of contamination.
- Most issues are related to: failure of concrete and asphalt caps; failure to document maintenance or creation of maintenance plan; new contamination; failure to notify new owners.

Questions related to the presentation were as follows:

- Financial resources are a limitation to enforcement and monitoring. Use of limited time employees adversely impacts long-term audit procedures. Is there affirmative duty for these people to notify in addition to audit information?
 - o It all falls back on staffing in WDNR. Individuals are required to do the maintenance and document. Periodic inspections are still necessary because when property transfers, new owners are not necessarily informed of maintenance and reporting requirements.
- Outreach materials are available at: www.dnr.state.wi.us/org/aw/rr.

Thomas Potter Presentation

Periodic Monitoring & Enforcement of Activity & Use Limitations (AULs) in Massachusetts

- There is a statutory mandate in Massachusetts to audit 20 percent of sites with AULs and conduct enforcement. Sites can be inspected at anytime once an AUL has been filed.
- There is high non-compliance with legal audits.
- The intention is to re-inspect sites every five years with focus on “high concern” sites.
- The database is used to track sites.
- Monitoring tools include “pictometry” (KMZ files used to prioritize inspections).
- How does it work?
 - o Re-inspections at 24 percent of sites have identified violations.
 - o Massachusetts has statutory authority to fine \$25,000 per day for violations.
 - o The class of violation determines the level of the fine.
 - o Press releases can be used to make examples of enforcement activities.
 - o Massachusetts is also including AULs in leases as a further means of monitoring and enforcement.

Comments related to the presentation were as follows:

- Potter stressed the importance of continuing to inspect AUL sites. Resources in staffing and funding limit the ability to continue monitoring and auditing, but inspection is key to catching violations and correcting problems early.
- States are doing this, but not necessarily using the same methods. Funding and resources are ongoing problems.

Desktop Innovations in Monitoring Institutional Controls and Making Information Publicly Available

Joyce L. Munie, P.E.

Illinois Environmental Protection Agency

No Further Remediation Letters

Conditions:

- Land Use
 - Industrial/Commercial (Restricted Use)
 - Residential (Unrestricted Use)
- Institutional Controls
 - Groundwater Use Restrictions
 - Environmental Land Use Controls
 - Highway Authority Agreements
- Engineered Barriers
 - Asphalt
 - Concrete
 - Clean Soil
 - Buildings
 - Geosynthetic Liners

No Further Remediation Letters (continued)

- Every NFR Letter must be perfect

Perfect instrument

An instrument such as a deed or mortgage is said to become perfect or perfected when recorded (or registered) or filed for record, because *it then becomes good as to all the world.* — Black's Law Dictionary

No Further Remediation Letters By the Numbers

- **1854 Total NFR Letters (1997-2007)**
 - 57% Restricted to Industrial/Commercial Use
 - 67% Require Institutional Controls
 - 44% Require Engineered Barriers
- **1654 Total NFR Letters Subject to Inspection (89%)**
 - Each is inspected every five years
 - 509 inspections completed since 2001

NFR Letter Inspection Criteria

- **Property restricted to industrial/commercial use has not been converted to residential use**
- **All institutional controls are being enforced**
- **All engineered barriers are being properly maintained, and**
- **The NFR Letter “is good as to all the world”, i.e., has been correctly and completely recorded**

No Further Remediation Letter Inspections

- **102 Counties in Illinois**
- **62% of all sites are in Cook County**
- **79% of all sites are in Cook and four collar counties**

NFR Letter Inspections have placed a considerable burden on regional Field Operations staff

No Further Remediation Letter Inspections

- **2002-2004 Illinois EPA paid \$98,000 in contractual services to verify that No Further Remediation Letters had been properly recorded.**
- **In 2006, the Recorder's Offices of Cook and four collar Counties initiated electronic search and download capabilities for filed documents.**

No Further Remediation Letter Inspections

- Improvements in the quality of statewide digital ortho-quad photographs have enabled inspection of many engineered barriers from desk top GIS applications.
- The Chicago Urban Area (six counties) is represented by high resolution satellite imagery.
- Additional resources include Virtual Earth, Google Earth, Flash Earth and the Cook County Assessor's Office internet files.

Public Availability of Records

- The IEPA Bureau of Land Inventory System contains electronic records on over 86,000 facilities in Illinois
- In 2006 the IEPA began providing public internet access to these records (<http://epadata.epa.state.il.us/land/inventory/>)
- Records include links to additional webs such as the Site Remediation Program, Leaking UST Program, Permits Database, Facility Compliance Tracking System, and the USEPA's Facility Registry System
- Links to scanned images of No Further Remediation Letters will be added in 2007



Illinois Environmental Protection Agency

www.epa.state.il.us

Rod R. Blagojevich, Governor

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- Tiered Approach to Corrective Action Objective (TACO)

Inventory Search Page

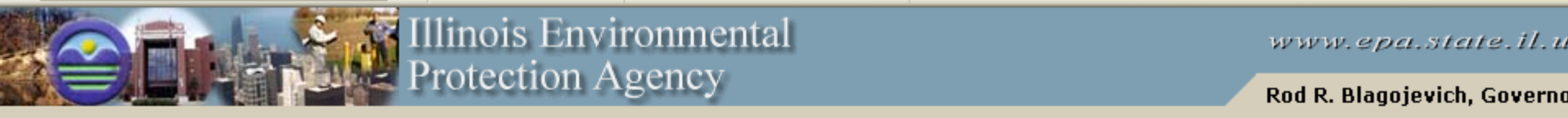
Click on the BOL Inventory # for more information.

BOL Inventory #	Tie File #	Facility Name	Street	City	State
0894835029	1700-0021-2035	Acme Eyelet & Stamping Co	310 Industrial Dr	St Charles	IL

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To report environmental emergencies only, call the Illinois Emergency Management Agency
 1-800-782-7860
 1-782-7860
 (24 hrs/day)



Follow the links below for more information about this Facility. The address listed or Geographic position (Lat/Lon - if available) will attempt to render a map from Google and are not part of the Illinois EPA data systems.

BOL ID #	Facility Name	Street	City	Lat/Lon
0894835029	Acme Eyelet & Stamping Co	310 Industrial Dr	St Charles	41.91814/-88.28499

Site Remediation Program Data

USEPAID	Tie File	Revision Date	Interest Type
ILD005197587	170000212035	7/3/2003	BOL

Affiliation Type: LOCATION CONT. **Phone:** 630-584-3700
Name: Acme Eyelet & Stamping Co **Contact:** Russell Adams
Address: 310 Industrial Dr **Entry Date:** 12/21/1984
St Charles, IL. 60174 **Revision Date:** 7/3/2003

Affiliation Type: OWNER **Phone:** 630-584-3700
Name: Acme Eyelet & Stamping Co **Contact:**
Address: PO Box 609 **Entry Date:** 12/21/1984
St Charles, IL. 60174 **Revision Date:** 7/3/2003

Affiliation Type: OPERATOR **Phone:** 630-584-3700
Name: Acme Eyelet & Stamping Co **Contact:**
Address: PO Box 609 **Entry Date:** 12/21/1984
St Charles, IL. 60174 **Revision Date:** 7/3/2003

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Facility Registry System (FRS)

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Facility Detail Report



FRS

<u>Facility Name:</u>	ACME EYELET & STAMPING CO
<u>Location Address:</u>	310 INDUSTRIAL DR
<u>Supplemental Address:</u>	
<u>City Name:</u>	ST CHARLES
<u>State:</u>	IL
<u>County Name:</u>	KANE
<u>ZIP/Postal Code:</u>	60174
<u>EPA Region:</u>	05
<u>Congressional District Number:</u>	14
<u>Legislative District Number:</u>	
<u>HUC Code:</u>	07120007
<u>Federal Facility:</u>	NO
<u>Tribal Land:</u>	NO
<u>Latitude:</u>	41.918621
<u>Longitude:</u>	-88.28621
<u>Method:</u>	ADDRESS MATCHING-HOUSE NUMBER



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Maps



Directions



Mobile

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Latitude: 41.918141
Longitude: -88.284994
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Geographic Information Systems

- **2007 Internet Map Server application**
 - **Site Remediation Program projects**
 - **Leaking UST Program projects**
 - **Features will be hyperlinked to the Bureau of Land Inventory System web**
 - **Selectable geospatial feature layers**
- **2007 Downloadable KMZ files for mapping with Google Earth**

Development and Implementation of an Institutional Controls Audit Program in Wisconsin

By Marie Stewart and Mark Gordon, Wis. DNR
EPA – ASTSWMO LTS Roundtable Conference
San Diego, CA
April 3-4, 2007

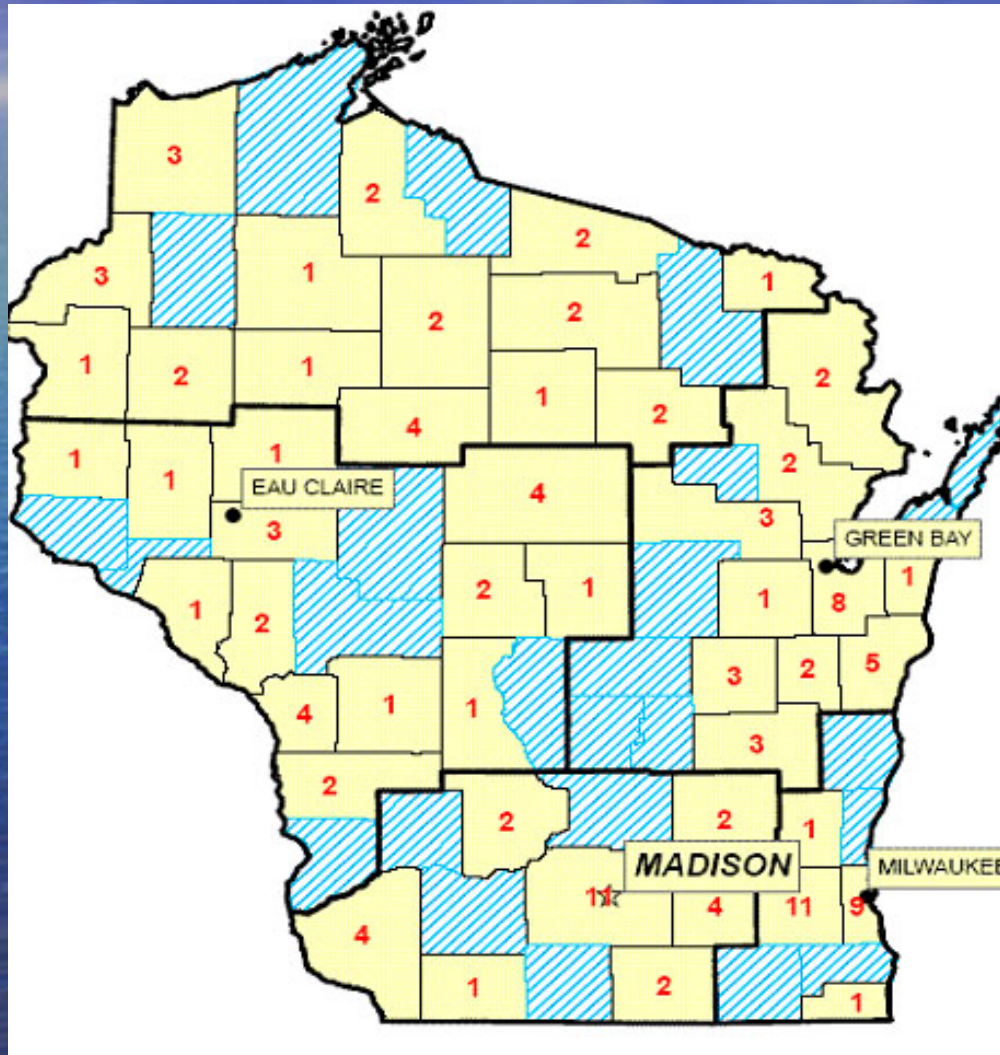
History of the Wisconsin Institutional Controls (IC) Audit Program

- Initial WDNR discussions began, during the late 1990's, about the need for audits to confirm compliance at closed facilities with "institutional controls" in place (e.g., deed restrictions).
- In 2001 WDNR prepared a preliminary process for compliance review for closed deed restricted sites.
- WNDNR decides not to pursue an audit program because funding and adequate staffing not available.

- In September of 2003 Federal "Section 128(a)" Brownfields grant money became available and WDNR decides to use a portion of this funding to develop and implement an "IC" audit program.
- Reviewed what other states (NJ, IN, IL, MN & OH) were doing and developed the Wisconsin audit program.

- In 2004 we conducted 25 audits.
- Approximately 130 audits have been conducted since then in Wisconsin.
- Approximately 2/3 of the audited sites have been UST sites and about 1/3 have been other types of “industrial” sites.

IC Audits Completed By County



Amoco Station Near Green Bay



Auto Salvage Yard - Direct Contact Barrier Over PAH Soils



Criteria and Selection of Sites to be Audited

- It was decided to audit sites with “engineered” caps, or other covers, since there were significant numbers of them listed on WDNR’s tracking system.
- Sites must have been closed a minimum of 3 years and have a deed restriction.
- Use the WDNR’s electronic tracking system to generate a list of potential audit sites using the system’s “action codes”.
- WDNR field staff would make “random” selections of sites from generated list in their geographical area.

Process for Site Evaluations

- Site file review
- Interview with site owner
- Site inspection
- Complete “Closure Compliance Review” form
- Enter data into WDNR’s tracking system
- Staff time, per audit, has ranged from 6-16 hours, averaging around 14 hours to complete each audit.

The Site "Closure Compliance Review" Form

This form contains the basic information from the file review for the site including:

- Site identification and ownership info
- Coordinates - if geo-located
- Close-out letter requirements, if any

- Closure site restrictions in place (i.e., pavement, soil or other cover; structural impediment; industrial land use restriction or other performance standard) including a site maintenance plan, if applicable.
- Any Deed restrictions or property transfers that may be recorded.
- Any other impacted properties associated with the site (off-site properties) that may be affected by the site.

Site Owner Interview and Site Inspection

- Any changed site conditions, since closure, that would affect the site restrictions
- Any additional monitoring that has been done
- Any changes to a performance standard or maintenance agreement that occurred
- Any local zoning changes that could affect site restriction effectiveness

- Any potential sources of contamination discovered and is sampling needed?
- Is the site in “general compliance” with the closure approval?
- Is contaminated soil located beneath an existing structure and is the structure still in place”?
- Is an asphalt cap or soil cover removed or in disrepair?

- Does additional soil monitoring need to be done to determine a direct contact threat (if restrictions were modified)?
- Any additional actions/follow-up warranted?
- Has the appropriate info been entered into the WDNR tracking system?
- Take site photos.

Summary of the Wisconsin Audit Findings So Far

- The vast majority of sites audited have been in compliance with their site restrictions and maintenance plans (approximately 90% since the program began).
- Most issues found have revolved around asphalt/concrete “caps” with cracks that need repair.
- A few site owners failed to prepare a maintenance plan or document the maintenance of their site.
- One site appeared to contain new contamination that needed to be addressed and, of the new sites being audited, one has failed to complete installation of the cap.
- At least one site had the cover removed without notifying the DNR and obtaining approval up-front.
- Follow-up actions were needed to get the caps/covers replaced.

Another Gas Station & Convenience Store Near Green Bay



Dairy Parking Lot – Sealed & Re-Sealed Pavement Cracks



Former School Site Where Fuel Oil UST, Solid Waste and Methane Gas Discovered



New Contamination at a Milwaukee Scrap Yard



Future of Institutional Controls Audits in Wisconsin?

- Continue the program for as long as funding is available.
- Evaluate whether other sites should be audited such as sites with groundwater use restrictions.

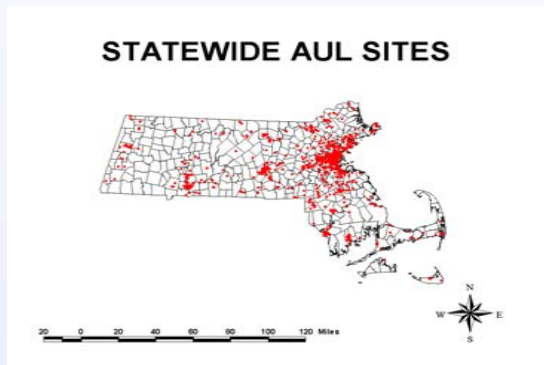
Link to Additional WDNR Remediation & Redevelopment Information

Wisconsin R&R Web Site Address:

WWW.dnr.state.wi.us/org/aw/rr

Periodic Monitoring & Enforcement of Activity & Use
Limitations (AULs) in Massachusetts
Wednesday, 04 April 2007

Institutional Controls Roundtable & Training
Co-sponsors: EPA, ASTSWMO and ICMA
April 4-6 2007 – San Diego, California



Thomas M. Potter
Section Chief, Audit Coordinator
Commonwealth of Massachusetts
Department of Environmental Protection
Bureau of Waste Site Cleanup
One Winter Street, 7th Floor, Boston, MA 02108
Phone: (617) 292-5628

Email: Thomas.Potter@state.ma.us

Web: <http://www.mass.gov/dep/cleanup/compliance/audits.htm>

Mass Background

- A **Privatized** Waste Site Cleanup program for state sites established in 1993.
- Established a “**Licensed Site Professional**” (LSP) to manage cleanups on behalf of state.
- MA Institutional Controls implemented at **Cleanup End Point** (Response Action Outcome)
- **Activity & Use Limitations** or AULs are Massachusetts Institutional Controls.
- Requirement to **Audit** sites and AULs.



Massachusetts AULs

- Total Notices of AUL = ~ 2,100
- Implemented at ~9% of waste sites achieving a Cleanup End Point or RAO
- 91% on commercial or industrial properties
- 9% on residential properties
- ~ 100 filed each year (declining)



AUDITS OF AULS



STATUTORY MANDATE

M.G.L. c. 21E § 3A(0)

- Mandates that MassDEP audit a minimum of 20% of all sites for which annual compliance assurance fees are required to be paid.

Chapter 206 of the Acts of 1998 (“Brownfields” Legislation)

- MassDEP shall perform a targeted audit on all sites at which an activity and use limitation has been implemented in order to ensure that response actions not overseen or conducted by the department are performed in compliance with chapter 21E and regulations promulgated thereunder. In the event the department determines that a targeted site is not in compliance with chapter 21E, it shall take any and all action it deems appropriate to enforce the provisions of said chapter.

REGULATORY REQUIREMENT

310 CMR 40.1100

- MassDEP may initiate, at any time, a Random or Targeted Audit of any site subject to an Activity & Use Limitation.

Massachusetts Department
of

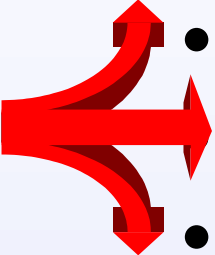
ENVIRONMENTAL PROTECTION



AUDIT FOCUS

Every site with an AUL is audited once . . .

3 Components:

- 
- Technical Work [RAO*]
 - Legal Instrument [AUL Notice]
 - Obligation & Maintenance Conditions [AUL Notice]

* RAO = Response Action Outcome Statement or Close Out Report



Audit Goals & Tools

- File REVIEW
 - 100% of Technical Work through **L1 AUDIT FORM**
 - 100% of Legal Instruments (NOTICE) through **L1 AUDIT FORM**
- Site INSPECTION
 - 50% of Obligation & Maintenance (O&M) Conditions through **L2 Audit**
- Comprehensive REVIEW & INSPECTION
 - 20% of all components through **L3 Audit**



Technical Audit Results

- **50% of RAO's Required Follow-up Actions**
- **Follow-up Actions**
 - **40% More Work**
 - **10% Retraction**



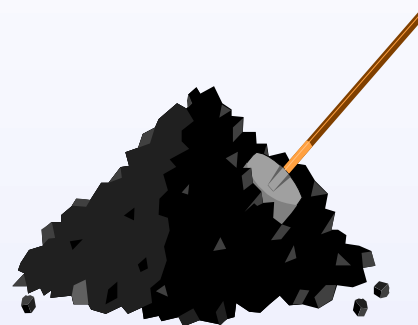
Legal (NOTICE) Audit Results

- 64% Required Follow-Up Actions
- Follow-Up Actions:
 - Failure to Define AUL Area
 - Not Authorized to Sign
 - Altered Notice (boilerplate in Regulations)
 - Language Unclear (e.g. “MCP speak”)



O&M Inspection Audit Results

- 80%+ in compliance
- Problems Identified:
 - Failure to Maintain Pavement or Cap
 - Excavation in AUL Area



Long-Term Monitoring Program

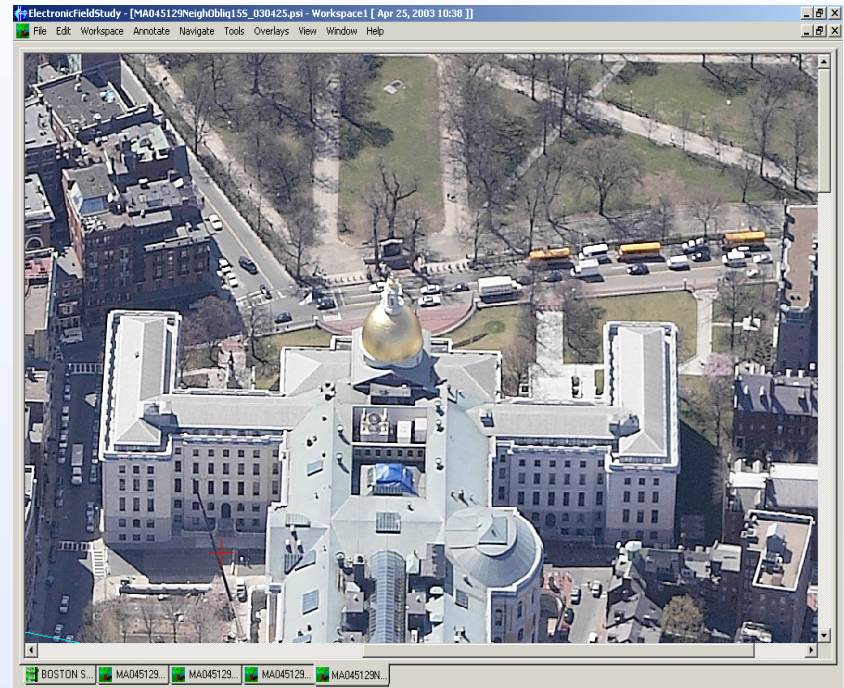
. . . and then audited again!

- Developed an Internal “Re-inspection” Program
 - Intent to re-inspect sites every 5-years
 - And/or focus on “high concern” sites
 - Issue bi-annual inspection assignments based on last inspection date.



Monitoring Tools

- Re-use O&M Inspection L2 Audit Forms for on-going inspections
- Use Pictometry complimented by GIS for “desktop” inspections
 - 2003 flyover
 - Allows pre-inspections of site
 - Helps prioritize inspections and resources



Re-inspection Audit Results

- 24% identify violations
- Most common problem is “failure to comply with terms of AUL”, which are primarily compromised barriers (when required) such as pavement
- Although there is “Higher level enforcement” exposure (\$\$\$), mostly involves “lower level enforcement” (warning).



ENFORCEMENT OF AULS



- MassDEP shall perform a targeted audit . . . shall take any and all action it deems appropriate **TO ENFORCE** the provisions of said chapter.
- Statutory Mandate (1998 Brownfields)
M.G.L. c. 21A § 16

Allows MassDEP to assess a civil administrative penalty up to **\$25,000 per day** for “failure to comply with the terms of an activity and use limitation” per c. 21E



Enforcement Response Guidance

Class I Violations (Up to \$25,000 per day, maximum DEP penalties):

- Any release without MassDEP approval.
- Engaging in any business or activity without a license or other approval when required.
- Failure to report unauthorized disposal of hazardous waste to MassDEP.
- Failure to report unauthorized release or discharge of oil* or hazardous materials. **VIOLATIONS OF AN ACTIVITY AND USE LIMITATION THAT UNDERMINE CONDITIONS INTENDED TO MAINTAIN A CONDITION OF NO SIGNIFICANT RISK.** Failure to maintain a Remedy Operation Status treatment system.

Class II Violations (Up to \$1,000 per day, maximum DEP penalties):

- Failure to comply with an operating condition or other prescribed best management practice designed to prevent actual and/or potential harm to public health, safety and the environment.
- Violations of requirements designed to detect harm, but are not specifically designed to prevent harm from occurring (e.g., failure to submit monitoring reports).
- Violations of statutory or regulatory requirements, the specific intent of which is to foster essential programmatic goals, other than directly preventing the release of contaminants into the environment. Include measures to reduce the potential for harm or risk and remedy harm that has already occurred.

Class III Violations (Up to \$1,000 per day, maximum DEP penalties):

- Violations involving failure to submit administratively complete reports or transmittal forms, or technical deficiencies in record keeping and reporting requirements. Examples include, but are not limited to late submittals, missing signatures, failure to provide written notification within the required deadline following prompt oral notification of a release, discharge or disposal, or failure to retain records for required time when required to do so.



What Happens when a violation is observed?

Class I Observed:

- Higher Level Enforcement
- Administrative Consent Order
 - Correct violation
 - Return to compliance
 - Penalty \$\$\$ for noncompliance and/or
 - Penalty \$\$\$
- Other Requests (SEP)

Class II or III Observed:

- Lower Level Enforcement
- Notice of Noncompliance
 - Correct violation
 - Return to compliance
- Potential for HLE
 - If noncompliance
- “Speeding Ticket”



CLASS 1 AUL Violations:

REQUIREMENTS:

- Requires the maintenance of pavement in the area of the AUL to prevent access to underlying contaminated soil.
- Requires the maintenance of pavement in the area of the AUL to prevent access to underlying contaminated soil.
- Requires that contaminated soil in the area of the AUL [*at xx feet depth*] remain inaccessible.

OBSERVATION:

- The pavement in the area of the AUL was observed to be *moderate, to severely* cracked. (e.g. equal to or greater than 1 cm or diameter of a “dime”.)
- Advanced vegetative growth was observed within the cracks.
- Soil underlying the pavement [*or in the AUL area*] was readily accessible to dermal contact.



CLASS 1 AUL Violations (cont.):

REQUIREMENTS:

- Requires the presence of *landscaping* in the area subject to the AUL to prevent access to underlying contaminated soil.
- Requires the presence of a *geotextile marker layer* in the area subject to the AUL to prevent access to underlying contaminated soil.
- Lists [*residential use; use as a daycare, school, playground; or other specific activity/use*] as an inconsistent use/activity for the site.

OBSERVATION:

- The area subject to the AUL was not landscaped as required.
- The geotextile marker layer was [*accessible or damaged*] and underlying soil accessible.
- A [*residential home, school, daycare, playground, or other activity*] was observed.



CLASS 1 AUL Violations (cont.):

REQUIREMENTS:

- Prohibits excavation within the area subject to the AUL [*at depths greater than xx feet below surface grade*] [*without a prior LSP Opinion or Health & Safety Plan or Soil Management Plan*].

OBSERVATION:

- Excavation [*disturbance of soil or a soil stockpile*] [*to an approximate depth of xx feet below surface grade*] was observed in the area subject to the AUL.



2006 AUL Enforcement Examples

- **[MULTIPLE VIOLATIONS]** MassDEP entered into an agreement for a **\$55,000 penalty** with the owner of a property for failure to implement and adhere to a notice of AUL. An AUL Audit noted that the area subject to the AUL could not be identified, a building was constructed in the AUL area without proper oversight and/or soil management. Furthermore, conflicting reports indicated that a level of no significant risk may not have been achieved at the site even with the AUL.
- **[EXCAVATION]** MassDEP entered into an agreement for a **\$25,885 penalty** with a realty trust for violating the terms of an AUL that had been recorded for the property. An AUL audit inspection observed significant construction in the AUL area where soil was removed at depth and relocated on-site without knowledge of the AUL. In addition, the AUL was not noted in the tenants lease. MassDEP agreed to suspend \$15,000 of the penalty provided all terms of the agreement are met. ACOP-NE-06-3A014 (August 2006)



2006 AUL Enforcement Examples (cont.)

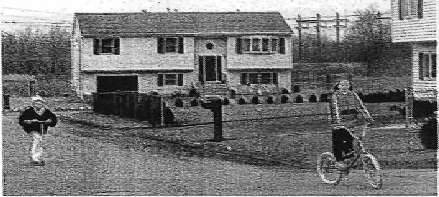
- **[PAVEMENT]** MassDEP entered into an agreement for a **\$5,200 penalty** with the owner of a property for failure to implement and adhere to a notice of Activity and Use Limitation (AUL). An AUL was recorded and filed by a former property owner on in June 2001. During a MassDEP audit inspection in January 2005, the restricted areas were found to be neither paved nor landscaped in a manner consistent with the AUL requirements. ACOP-CE-06-3A001 (May 2006)



Cause for Alarm (see handout copy)

THE BOSTON GLOBE SATURDAY, FEBRUARY 28, 2002

When they bought the house, they were assured it was safe



Now it has a hazardous gas collection system



Bernadine and Maria Figueiredo moved into their Fall River home in 1998 before learning that it was built on contaminated land. A hot real estate market added pressure to build on marginal properties.

Without warning

Fall River case shows flaws in state's toxic cleanup law

By Christopher Rowland
FALL RIVER — In the housing boom on state markets of 1998, it was all a middle-aged couple living on disability checks could afford. A vinyl-sided raised ranch close to power lines and a five-lane highway.

Maria and Bernardino Figueiredo started looking on a down payment and turned the house into a home. They hung cherished family photographs in the living room. Along a chain-link fence in the backyard, Maria planted tomatoes, kale, and basil.

The ground beneath the house had been leased to a contractor's worth of industrial companies using toxic chemicals. But the contamination had been cleaned up, the Figueiredos were told, and the land had been certified for housing by the city of Fall River.

More than three years later, a routine state audit revealed a phone of potential

by dangerous asbestos still in the ground. Digging from their home by toxic fumes, the Figueiredos spent three weeks in a hotel last month and have hired a lawyer to sue the developers who sold the house.

The case exposes what critics say are gaps in the state's decade-old system for cleaning up contaminated waste sites, a system that has resulted in the redevelopment of 1,200 contaminated sites and been touted as a national model.

"They checked us from the beginning," Maria Figueiredo, a Portuguese-speaking immigrant from the Azores, said through an interpreter. "No one would ever buy this house, the way it was."

The Figueiredos live in a neighborhood of modest ranch homes and small cottages at various times since the turn of the century, the land housed a lawnmower facility, a wedding mill, a fur factory, an electrical motor shop, and a restaurant.

The dry cleaning agent tetrachloroethylene, commonly called TCE, is allowed to remain in soil at limited concentrations.

ALLOWABLE LIMIT IN SOIL
1,000
 micrograms

AMOUNT FOUND AT FIGUEIREDO PROPERTY
2,900
 micrograms

DEP (Department of Environmental Protection)

CONTAMINATION, Page B4

Fall River case exposes flaws in state's toxic cleanup law

CONTAMINATION
 Continued from Page B1

an electrical contractor, and a commercial laundry. There is no record of when chemicals were dumped on the site, or who dumped them, but they were first detected when workers dug a trench in 1994 and released a powerful smell of solvents.

Before 1998, developers building on such sites had to apply to the Department of Environmental Protection, then follow steps carefully prescribed by the agency. In 1993, a new state law gave developers and polluters the authority to decide the course of cleanup. DEP would serve as a backstop, auditing paperwork and ensuring that any remaining contamination did not exceed allowable levels.

Intended to help speed redevelopment and clear the state's huge backlog of environmental cases, the new law was a major reform trumpeted by the administration of Republican Governor William Weld.

But the real estate boom of the late 1990s brought greater pressure to build houses on marginal properties. And the DEP had been stretched thin, causing advocates to worry that it can't check cleanups adequately, thereby exposing homeowners like the Figueiredos to contamination.

"There is a lot of active property out there that doesn't meet the standards," said Gretchen Lattowsky, an activist and member of a state board that oversees environmental consultants.

The developer who sold the Figueiredos their house, Antonio Alberto, said he and a partner, Daniel Quintal, were aware the site was polluted and paid to have it cleaned up.

"I can assure you that Dan Quintal and myself feel really bad about this situation," Alberto said. "We are also victims of this."

Alberto blames the cleanup problems on the environmental consultant they hired: a former DEP official named Theodore Kaegel Jr. Kaegel worked for the DEP for 17 years, five of those years as chief of the emergency

cleanup response unit, before starting his own consulting firm. On the land where the Figueiredos would eventually buy a house, Kaegel supervised removal of 84 tons of soil and conducted tests on soil and groundwater at an estimated cost of \$344,000, according to DEP records. Before the property was sold, a fresh layer of topsoil was spread on the site.

Kaegel filed the required paperwork with the DEP, saying the property was clean enough for residents to move in. Based on those findings, city officials issued an occupancy permit.

"We did everything according to Hoyle," Kaegel said in a brief interview. He did not dispute the DEP's latest findings but declined to discuss the case in detail because of pending lawsuits.

Maria Figueiredo, who worked in a sewing factory in New Bedford, said she and her husband, a disabled fiberglass worker, asked Alberto about pollution on the property and were told it had been removed.

A year after the Figueiredos moved in, the DEP conducted a routine audit of paperwork and started turning up problems. The agency found that a list of restrictions for use of the land, common in polluted sites that have been redeveloped, had been signed by Alberto, not by the new owners, the Figueiredos. The restrictions included a prohibition on growing vegetables and digging deeper than 1 foot beneath the yard.

The DEP also said that detailed data submitted by Kaegel indicated contamination in the ground exceeded allowable limits.

Maria Figueiredo said the developers never mentioned restrictions on the land. By the time the DEP discovered last November that toxic fumes from an underground plume of tetrachloroethylene had seeped into their house, the Figueiredos had lived there for more than three years.

DEP officials acknowledge that there are some problem cases like the Figueiredos', but they insist that the privatized system has worked well overall.

"Prior to the program, getting started, there were piles of contaminated soil sitting around town that were covered with plastic," said Terrence Hayes, director of public health in Chatham and a member of a DEP study group. "You don't see that any more."

In the last three years, the agency has stepped up its efforts to audit sites targeted for redevelopment. Out of 1,250 such sites, 893 audits have been conducted and 116 were found to be in violation of state regulations. Four hundred sites have not been audited, although the department said 50 to 100 audits are under way.

In many cases, the after-the-fact audits have uncovered problems years after properties were redeveloped. In Holden, the discovery of irregularities and polluted groundwater at a former truck facility on Main Street led the DEP to dig out the paperwork and conduct audits at five other locations cleaned by the same consultant, Bartlett W. Peabody Jr. of Grotton. It found violations at all five, dating as far back as 1996. In a consent agreement in 1998, Peabody agreed to surrender his license.

In Rockport, a 2000 DEP audit discovered numerous violations at a former circus-playing site supposedly cleaned up for redevelopment two years earlier. In a high-profile case, residents of a 35-lot subdivision in Methuen called River's Edge have found glass and auto parts, including an engine head, axles, and a car seat, beneath their backyards. The subdivision was built on a former automobile junkyard in the mid-1990s, and the DEP didn't perform an audit until the summer of 2000.

Case files reviewed by the Globe indicate the DEP's environmental crime strike force has been investigating the Figueiredo case since November. Deputy Commissioner Edward Kline refused to comment on the investigation, except to say, "We are not happy with what happened at that site."

For now, the Figueiredos are back in their home. So are the two families in the duplex next door, who were also affected by the plume and lived in a hotel for five weeks.



The Fall River, MA Case

- Industrial Property to Small Residential Subdivision with AUL.
- Mandated AUL Audit noted:
 - Significant Solvent Contamination in Soil/GW
 - Confirmed Indoor Air Exposures
 - AUL Notice implemented following property sale



The Fall River, MA Case (cont.)

The Response:

- MassDEP evacuated residences
- MassDEP installed sub-slab vapor systems
- RAO/AUL Terminated
- LSP License Revoked
- Case referred to MassDEP Strike Force & Attorney General's Office
- Multi-lawsuits Pending



Monitoring & Enforcement Challenges

- Increasing number of sites requiring inspection. Not able to meet LTM goal of every 5-years.
- Staff Resources

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

Session Title: **California Dreaming: Reforming Comprehensive Plans, Environmental Assessments, and Zoning Codes to Facilitate LTS**

Date and Time: Wednesday, April 4, 2007, 2:00 p.m., Session C

Speakers: Joseph Schilling, Metropolitan Institute at Virginia Tech
Richard Opper, Opper & Varco

Joseph Schilling Presentation

California Dreaming – the reform of plans, zoning ordinances, and development review processes.

- Land use decisions must be consistent with general plans (zoning, subdivision approvals, developer agreements, etc.)
- California’s General Plan (GP) is a blueprint that governs all existing and future development; strategic plans and policies; seven mandatory elements; and specific plans.
- GP mandatory elements: land use, circulation, housing, conservation, open space, noise, and safety. GP optional elements: energy, infrastructure, redevelopment, and economic development.

Questions and comments related to the presentation were as follows:

- Could existing regulations be adapted for land use changes or would they require changes in state law?
 - o Maybe with natural hazards. Others you could get by changing your program.
- How does California look at municipal initiated zoning?
 - o Usually it is from the developer.
- Should a zoning ordinance be in a particular part of the code?
 - o Some might be in environmental health regulations.
- Records of Decision are written with an old view of zoning. How do you reconcile unlimited use when properties can be used (if properly)? Now there are many mixed-use developments. The market place is going there, but Records of Decision are using the assumption that all zoning and developments are separate.
 - o This can be done through site-specific zoning and planned unit development. There is a need to talk to local governments to figure out what is going on.
- How do you incorporate green and open space with planned unit development?

- o Engineering controls can help with this more than zoning.
- Zoning and planning go hand in hand.
- To anticipate other types of use for the future, any zoning ordinance could have a preamble that includes the history of site to let future users know what is on site.

Richard Opper Presentation

The Next Step for Institutional Controls: “Connecting the Dots”

- California Senate Bill 429 would encourage and enable, not mandate.
- SB 429 requires notice to cities with ICs to accommodate the varieties in size and sophistication of California cities (cities choose how to react to noted ICs).
- SB 429 authorizes (but does not require) cities to suspend the permitting process while ICs are cleared.
- Requires Agency response to IC inquiry within 30 days.

Questions and comments related to the presentation were as follows:

- The bill authorizes cities to suspend the permitting process while ICs are cleared, but while the responsibility is put on the state agencies, the fees are paid to the local agencies. Where does the state get the money?
 - o It is presumed that the department and water boards have the authority to charge fees for the work that they do. This will only work if the project proponent handles the cost.
- How is a city going to know the details of complicated ICs (i.e., you cannot install a pool because of XYZ)?
 - o Part of the solution to that problem is happening now because ICs are getting simpler and plainer. Regulators should make decisions (i.e., this area is a no dig zone).
- Will there be an obligation for local agencies to notice the IC when permitting?
 - o Under this bill, there is an obligation to track an IC, but it is up to the city.
- What is the likelihood of this legislation passing?
 - o California has a history of trouble with Brownfield legislation.
- The bill is being carried by Senator Ducheny.
- Cities are under a lot of pressure to push these things through because of mandatory processing times.
- Part of the goal behind this legislation is to minimize the opportunities for error. Stakes are higher with brownfield cleanups because of potential exposure. With a

menu of different options, you are decreasing the risk of the permit being issued in error.

- Suggestion to leave the decisions at the right locations and take advantage of strengths of particular levels of government.

California Dreaming—*the reform of plans, zoning ordinances, and development review processes*



EPA's Institutional Controls Roundtable

April 4th, 2007 San Diego, CA

Joseph Schilling (jms33@vt.edu)

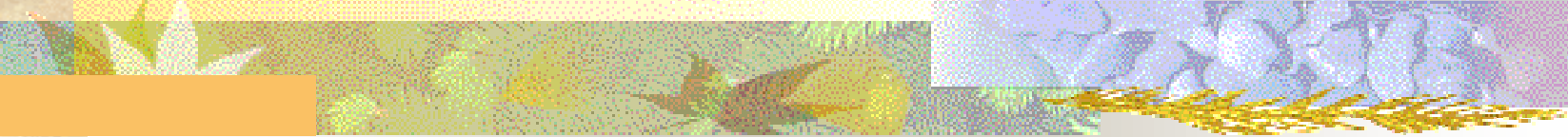
Metropolitan Institute at Virginia Tech



Metropolitan Environmental Collaboratory

- Brownfields and superfund policy research
- Training, workshops, and technical assistance
- Co-leaders—Joe Schilling and Kris Wernstedt

www.mi.vt.edu



Navigating the Waters of Land Use Planning—what every regulator needs to know (Tucson 2006)

- Growth and development is inevitable
- Land Use decision-making is Controversial and Complex
- Strong respect for private property rights
- Fiscalization of land use decisions



Critical Questions for Engaging in Land Development Processes

- WHO are the players? Who are the decision makers?
- WHAT land use regulation is in play?
- WHAT is the process/procedures for approval?
- WHERE is the proposal in the process?
- WHAT are the implications for the existing remedy and remaining contamination?
- HOW are you going to share your perspectives?



Today's Game Plan

- Comprehensive Planning
- Zoning
- State IC Notification Statutes (Richard)—
California Senate Bill 429
- Next time—CEQA, Subdivision Map Acts,
Developer Agreements, etc.



IC Observations—Assumptions

- Most remediation involves ICs
- Network of institutions—layering
- Menu of strategies and tools
 - UECA
 - Tracking systems and One Call
 - Local land use controls (planning & zoning)
- Land use controls implementation plans (LUCIPS)



Policy Agenda for IC Land Use Reforms

- Adapt general plans and specific plans to include references to ICs
- Modify zoning codes to implement new plans that are IC-Friendly
- Allocate additional resources (staff and training) to ensure implementation and enforcement of plans and ordinances

EPA and the States Must Build the Capacity of Local & Community Institutions





Institutional Controls Pilot Grants

- Tracking and inventory systems
- LUCIP design and implementation
- State—local govt. notification statutes
- One call coordination
- IC development impact fee
- Network of IC Pilot Communities
- Policy research on and dissemination of model practices—enhance LUCS.org



California's Planning Legacy

- Requirement for local govts. to plan
- Land use decisions **must** be consistent with general plans (zoning, subdivision approvals, developer agreements, etc.)
- Judicial respect for local govt. land use powers
- Extensive family of land use controls



California & Waves of Planning Reform

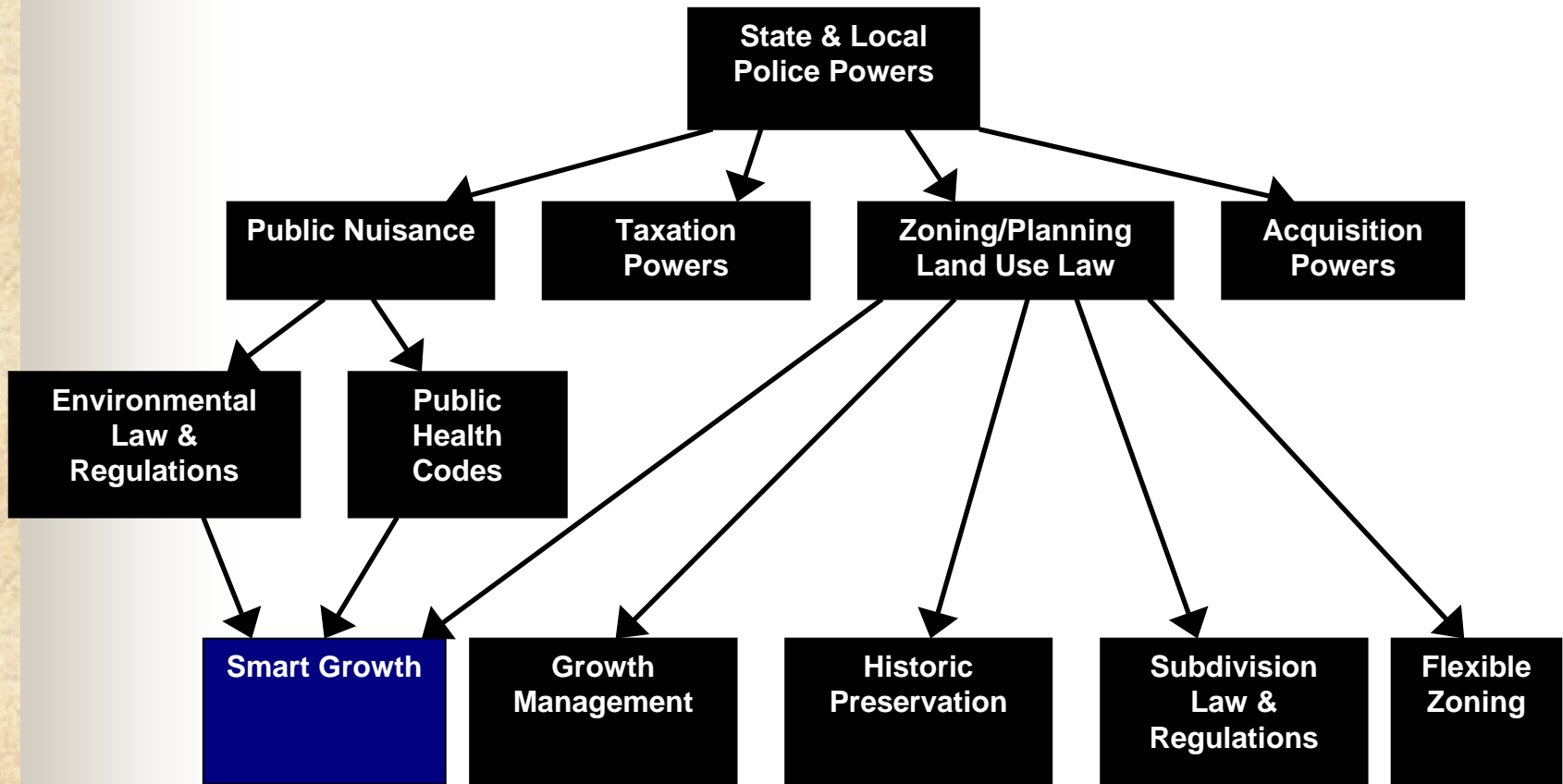
- First wave states—California and Oregon
- Second wave states— Florida and New Jersey
- Next Generation—Maryland’s SG Law, Washington, Wisconsin’s Comp Planning Law of 1999
- Rural vs. Suburban vs. Urban Planning Capacity



California's Planning Family

- General plans—Govt. Code section 65100
- Specific plans—GC section 65300
- Zoning regs—GC section 65800
- Subdivision map act—GC section 66410
- Development agreements—GC 65864
- CEQA—Public Resources Code 2100
- Permit Streamlining Act—GC 65920

Land Use Powers Genealogy

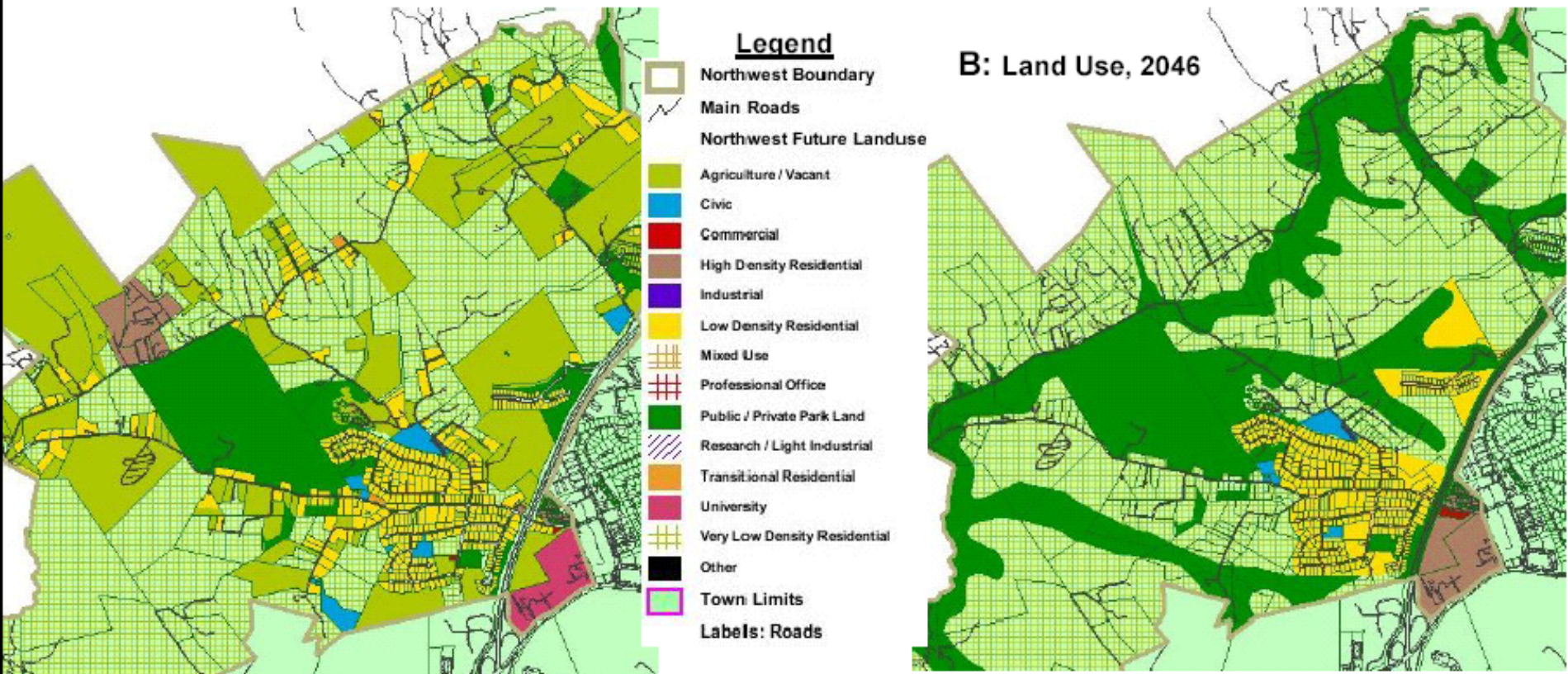


California's General Plan aka Comprehensive Plan

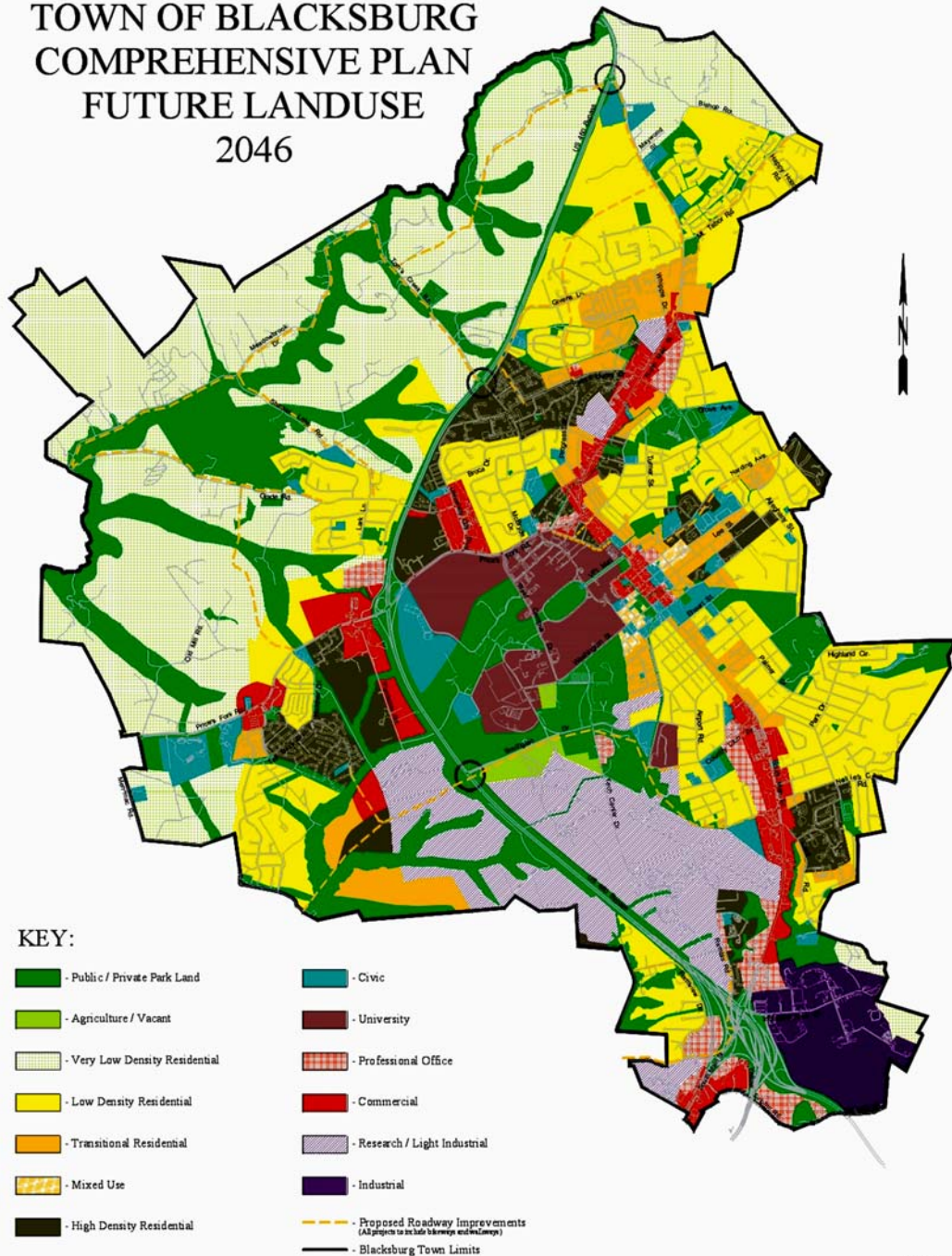
- Blueprint that governs all existing and future development
- Strategic plans and policies—goals, objectives, implementation strategies
- Seven mandatory elements
- Specific plans

“GP is the constitution for all future development and must be consistent...”

Figure 7.2 User Products of Blacksburg's Comp. Plan's Interactive WebGIS. A: Land Use 2000, B: Land Use 2046



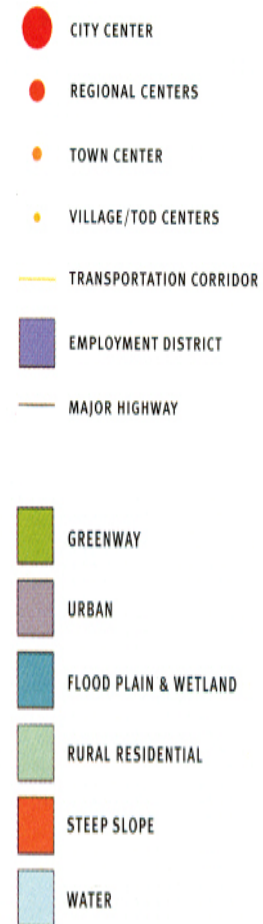
TOWN OF BLACKSBURG COMPREHENSIVE PLAN FUTURE LANDUSE 2046



KEY:

- | | |
|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  - Public / Private Park Land |  - Civic |
|  - Agriculture / Vacant |  - University |
|  - Very Low Density Residential |  - Professional Office |
|  - Low Density Residential |  - Commercial |
|  - Transitional Residential |  - Research / Light Industrial |
|  - Mixed Use |  - Industrial |
|  - High Density Residential |  - Proposed Roadway Improvements
(All projects to include bikeways and bus lanes) |
| |  - Blacksburg Town Limits |

Portland's 2040 Framework Plan





California General Plan Mandatory Elements

- Land Use
- Circulation (aka transportation)
- Housing
- Conservation (natural resources)
- Open Space
- Noise
- Safety
- **Optional elements: energy, infrastructure, redevelopment, economic development**



The IC Potential of General Plan Elements

- Land Use Element:
 - Military installations 65302
 - Design and urban form 65302.4
 - Flooding
- Office of Planning & Research (OPR) 2003 Guidelines: EJ, affordable housing, public participation



Housing Element—GC 655803

- Inventory of suitable lands
- Identify specific actions—policies and programs
- Review a minimum of once every 5 years
- State HCD review of housing elements



Possible IC Linkages

- Conservation Element addresses air and water pollution
- Safety Element
 - Designate seismic safety areas
 - Identify natural hazards (fault lines, mudslides, brush fires, etc.)
- Exactions, dedications, and impact fees
- Growth management
- Economic Development Plans—
Post Kelo World



General Plan Adoption Process

- Public hearings
- Planning Commission and City Council adopt and do annual implementation review
- CEQA review
- Amend mandatory elements 4 times per yr.
- Consult with other cities
- Review by other state agencies



Consistency Doctrine

- Internal consistency—among the elements and within each element
- Local land use decisions must “*further the objectives and polices of the general plan.*”
 - Subdivision approvals
 - Zoning
 - Development agreements
- Any resident or property owner can file court action to enforce consistency requirement



Redevelopment Plans

- Valid general plan under California Redevelopment law (Health & Safety Code section 33331)
- Redevelopment plan must be consistent with the general plan and planning commission must report on conformity
- Local zoning and building codes must be consistent with redevelopment plan



California's Specific Plans

- Implement general plan in geographical areas—Govt. Code section 65450
- Consistency requirement
- Includes text, diagrams, program implementation, and reference to GP
- **May address other subjects necessary for implementation (65452)**



Zoning

- Conventional zoning governs land uses, regulates building size, placement, etc.
- Overlay zoning: creates supplemental restrictions on special areas
- Conditional zoning—development approvals
- Zoning administration: variances, conditional use permits, enforcement, etc.
- Flexible zoning: cluster and planned developments



Zoning California Style—Govt. Code section 65800 et seq.

- Consistency required for General Law cities vs. optional for Home Rule cities
- Zoning process applies to all cities
- Judicial deference and presumption of validity—but zoning ordinances must be reasonable related to public welfare



Zoning Changes & Due Process

- Reclassify zoning to specific property
- Changes to the zoning use or regulations—
Text Amendments
- Minimum due process—notice and hearing
- Zoning by initiative and referendum



Administrative Relief

- Variances (GC 65906)—use vs. development regs
- Undue hardship caused by the properties unique physical conditions
- Conditional use permits (GC 65901)



Innovative Zoning

- Planned Unit Development –allows a single zoning district to combine a variety of uses and can be “restriction” on property
- Inclusionary Zoning for Affordable Housing

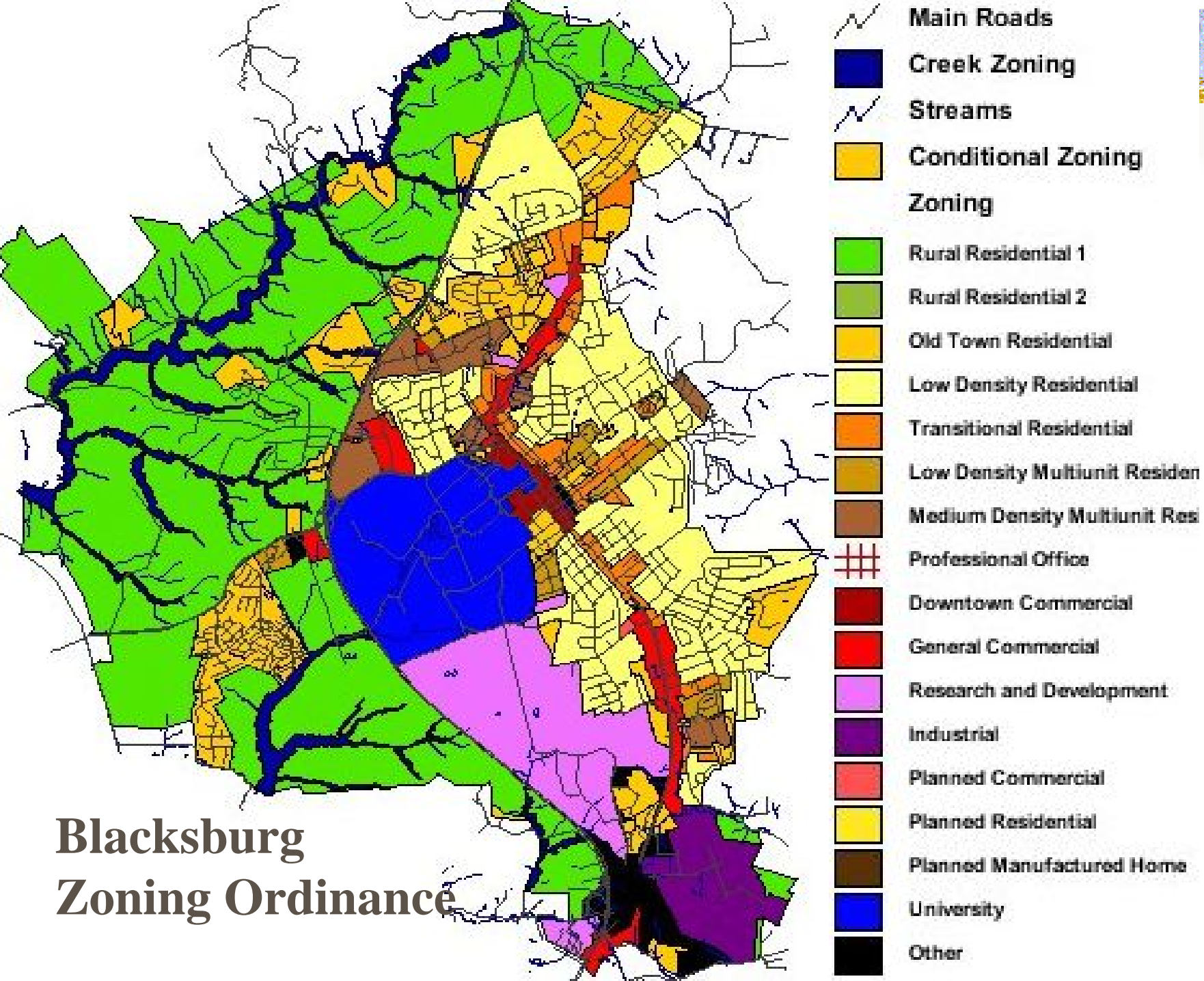
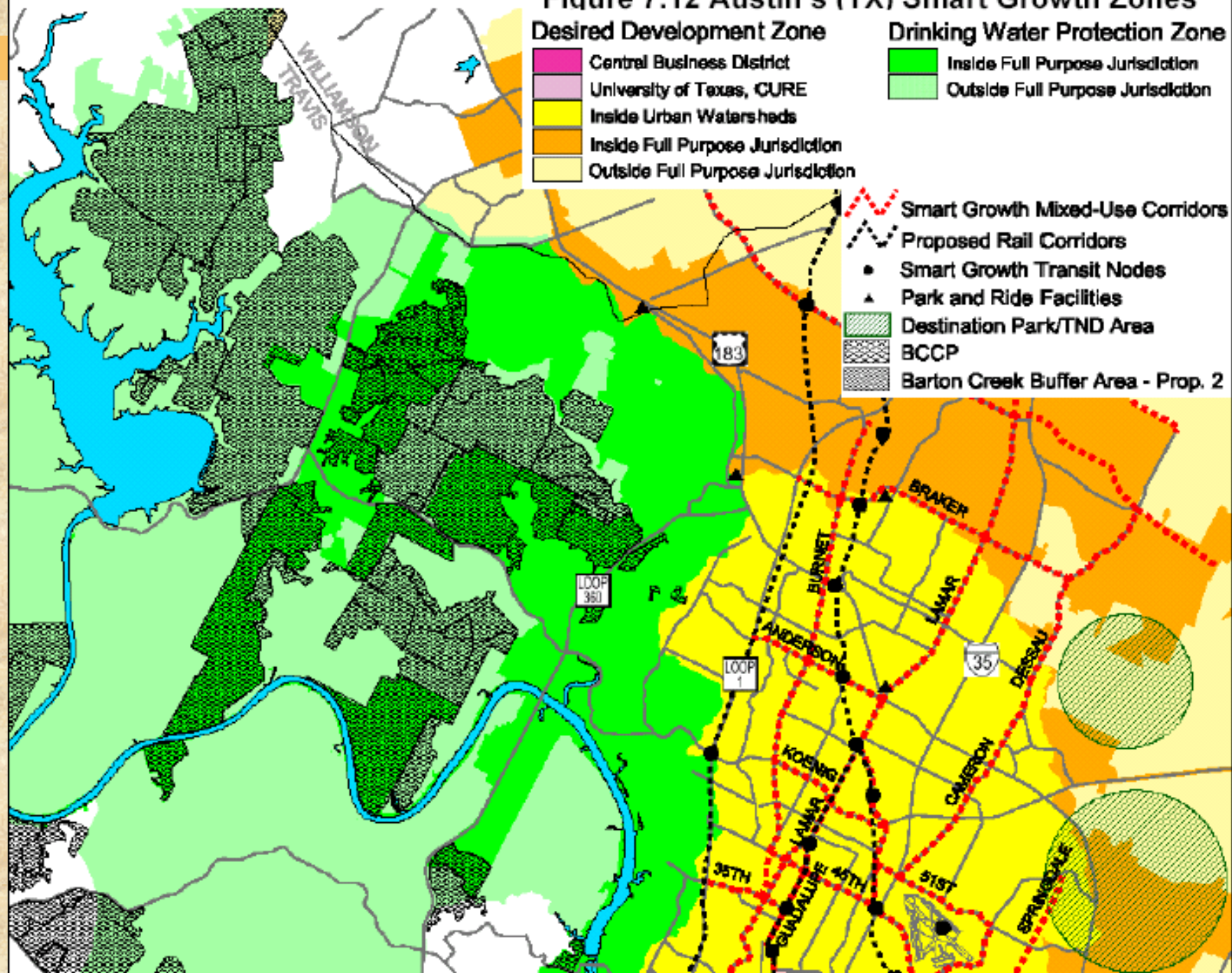
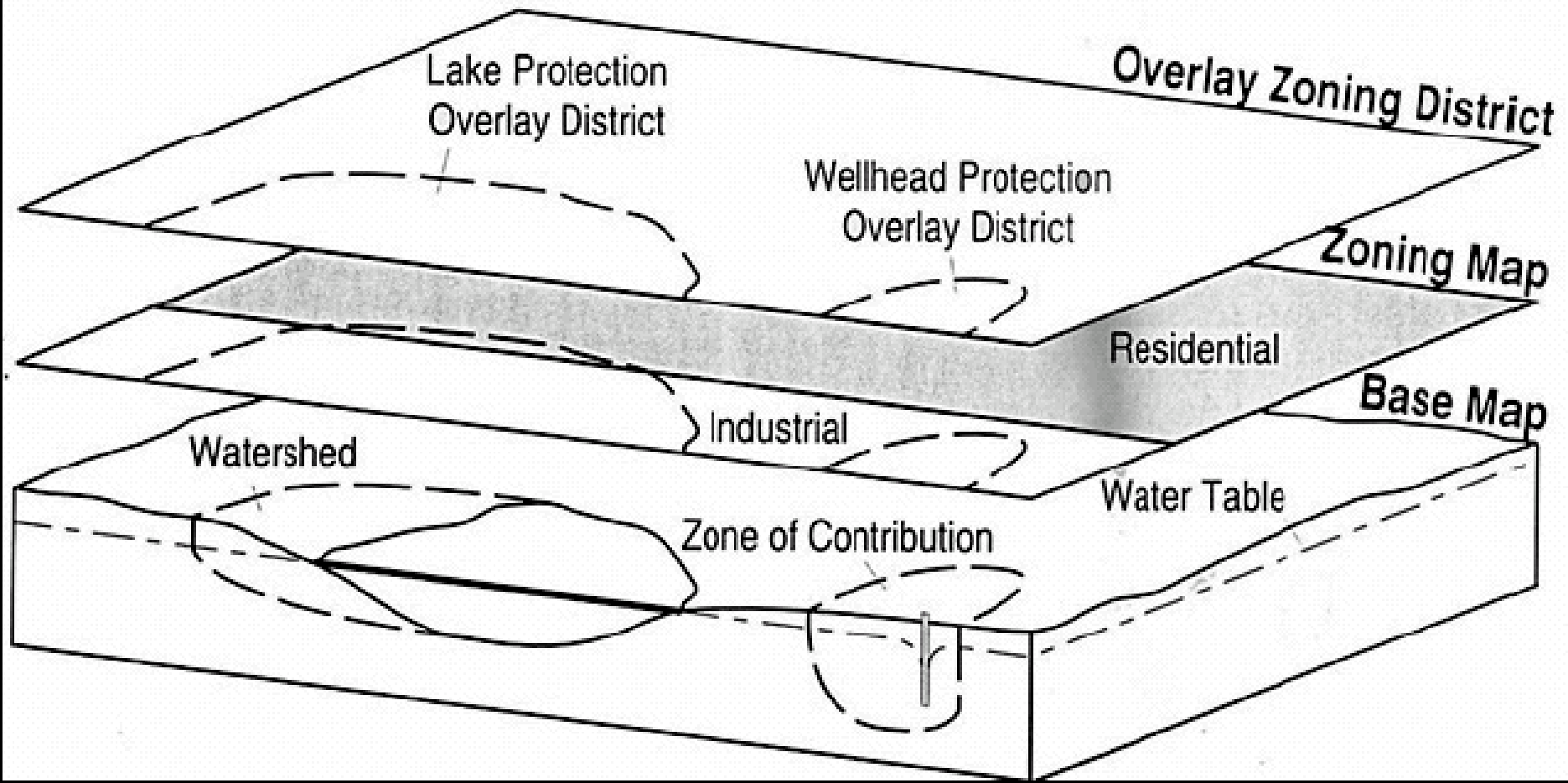


Figure 7.12 Austin's (TX) Smart Growth Zones

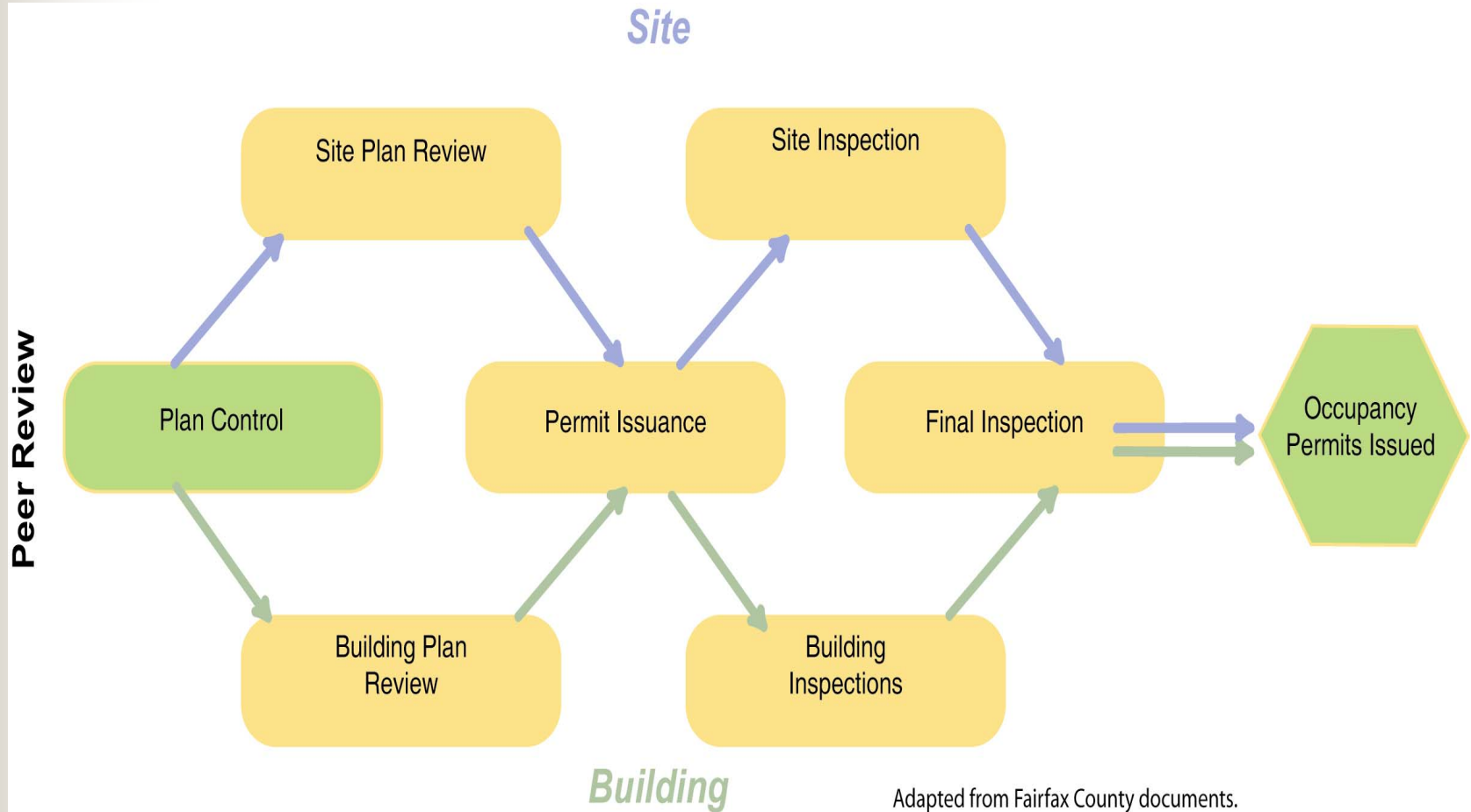


Overlay Zoning

Figure 7.7 Overlay Zoning for Wellhead and Lake Watershed Protection



Generic Development Review Process



Adapted from Fairfax County documents.
Copyright 2005 Metropolitan Institute at Virginia Tech

The Next Step for Institutional Controls:

“Connecting the Dots”

SB 429

**OPPER
&
VARCO
LLP**

**THE ENVIRONMENTAL LAW
GROUP**

Presented at:

Informational Management Network
“Forum on Urban Rejuvenation and
Brownfields”

April 4, 2007

**OPPER
&
VARCO
LLP**

**THE ENVIRONMENTAL LAW
GROUP**

Presented by:

Richard G. Oppen

Oppen & Varco LLP

www.envirolawyer.com

Connecting the dots

“To IC, or not to IC?”

Who answers this question?

- **Environmental regulators**
(federal, state and sometimes local agencies in California....)

Connecting the dots

- **“To dig here, or not to dig here?”**
 - **Who answers this question?**
- **Mostly municipal agencies**
(Building Dept.s, Planning Dept.s, Development Dept.s and others....)

Connecting the dots

How are these functions connected?

- **Recorded covenants**
- **Web-based systems**
- **Other**

Connecting the dots

- **Policy alternatives for connections:**
 - Mandate
 - Stick
 - Carrot

SB 429

Connecting the dots.

- Encourage and enable, not mandate
- “Safe haven” for cities to act
 - Liability protection
 - Service fees

SB 429

- Requires notice to cities of ICs
- Accommodates the varieties in size and sophistication of California cities (cities choose how to react to noted ICs.)

SB 429

- Authorizes (but does not require) cities to suspend permitting process while ICs are "cleared"
- Requires Agency response to inquiry re ICs in 30 days.

Urban Renewal

- **Brownfield redevelopment is a critical component of Smart Growth**
- **Not all cleanups will result in the status quo ante**
- **ICs are an important tool for those sites**
- **If the dots are connected!**

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

Session Title: **Contaminated Groundwater and LTS**
Date and Time: Wednesday, April 4, 2007, 2:00 p.m., Session D
Speakers: Michael Scherer, MA DEP
Wendy March, DE DNREC
John Gillespie, U.S. Air Force

Michael Scherer Presentation

Optimal Closure, Control and Remediation of a Diving and Rapidly Moving MTBE/Benzene Plume to Prevent Impacts to Down-gradient Public Water Supply Wells in the Town of Palmer, Massachusetts

- 12,000 gallons of gasoline released from a storage tank due to tank failure.
- Ground water treated and contaminated plume eliminated. This was determined by long-term monitoring.

Questions related to the presentation were as follows:

- What is the relationship between this presentation and institutional controls?
 - o This has been a site for a long time. DEP had to implement its own institutional controls.
- Has anyone gone beyond the public water supply to limit private wells from manipulating the direction of the plume?
 - o No new wells were to be put in the area. DEP had control over which wells could be pumped when.

Wendy March Presentation

Challenges of Using GMZs as an Effective Long-Term Stewardship Tool

- GMZ is “ground water management zone”. It is a land area surrounding a contaminated site where water well construction is restricted.
- Ninety sites within Delaware are GMZs.
- Established because cleanup is technically impracticable and ground water is unsafe.

Questions and comments related to the presentation were as follows:

- GMZs are issued without any indication of how long they will be in effect—why isn’t a harder line taken on this? For example, in New Jersey, GMZ time constraints are put in place.
 - o With a GMZ, remediation of some sort is taking place, but it is not sufficient enough to reduce the contamination to acceptable levels.

- Has there been any attempt to use the data generated in this program for vapor intrusion work?
 - o This could be done.
- The GMZs do not run with the land—could you explain this a little more in depth? How do future owners know about GMZs?
 - o Delaware has total control over whether or not it will issue well permits. Right now it is considering allowing these restrictions to be included in restrictive covenants.
- What responsibility does the PRP have to notify the people who are going to be using their ground water in a GMZ?
 - o You would be notified if your well was going to be in a GMZ zone.
- What if there is an existing well?
 - o The state has to inform the well owners. Unfortunately the well owners often fight it. Every year the state will monitor to see if the water is still contaminated.
- Who puts the restrictions on the property?
 - o GMZs do not run with the land, but this could be changed in the future. There is no requirement that PRPs get covenants.
- The Delaware program is very similar to programs in some areas of Michigan.

John Gillespie Presentation

Post-Construction Management and Optimization of a Large Federal Remediation Program

- RPO is an Air Force requirement.
- Three-phased approach to RPO: inventory and review; evaluations; implementation of recommendations.

Questions related to the presentations were as follows:

- Will you need performance standards (e.g., MCLs) for each situation that is different?
 - o We negotiate performance standards every day.
- What about deed restrictions on your sites?
 - o The Air Force is not going to sell any of its active property.



MassDEP



Massachusetts Department of Environmental Protection

Michael Scherer, Western Regional Office, Springfield



MassDEP

Former Winton's Food & Fuel
Palmer, Massachusetts
Overview

**Optimal Closure, Control and Remediation
of a diving and rapidly moving
MTBE/Benzene plume to prevent impacts
to down-gradient public water supply wells
in the Town of Palmer, Massachusetts.**

Michael Scherer, Site Manager, Compliance & Enforcement
Coordinator, Bureau of Waste Site Cleanup, Springfield

Massachusetts Department of Environmental Protection

Special Thanks to: Jim Sweitzer, William J. Guazzo, Tom Sylvia, Howie
Allen, Pat Hurley & Rick Green to name a few



Massachusetts
Department
of
ENVIRONMENTAL
PROTECTION

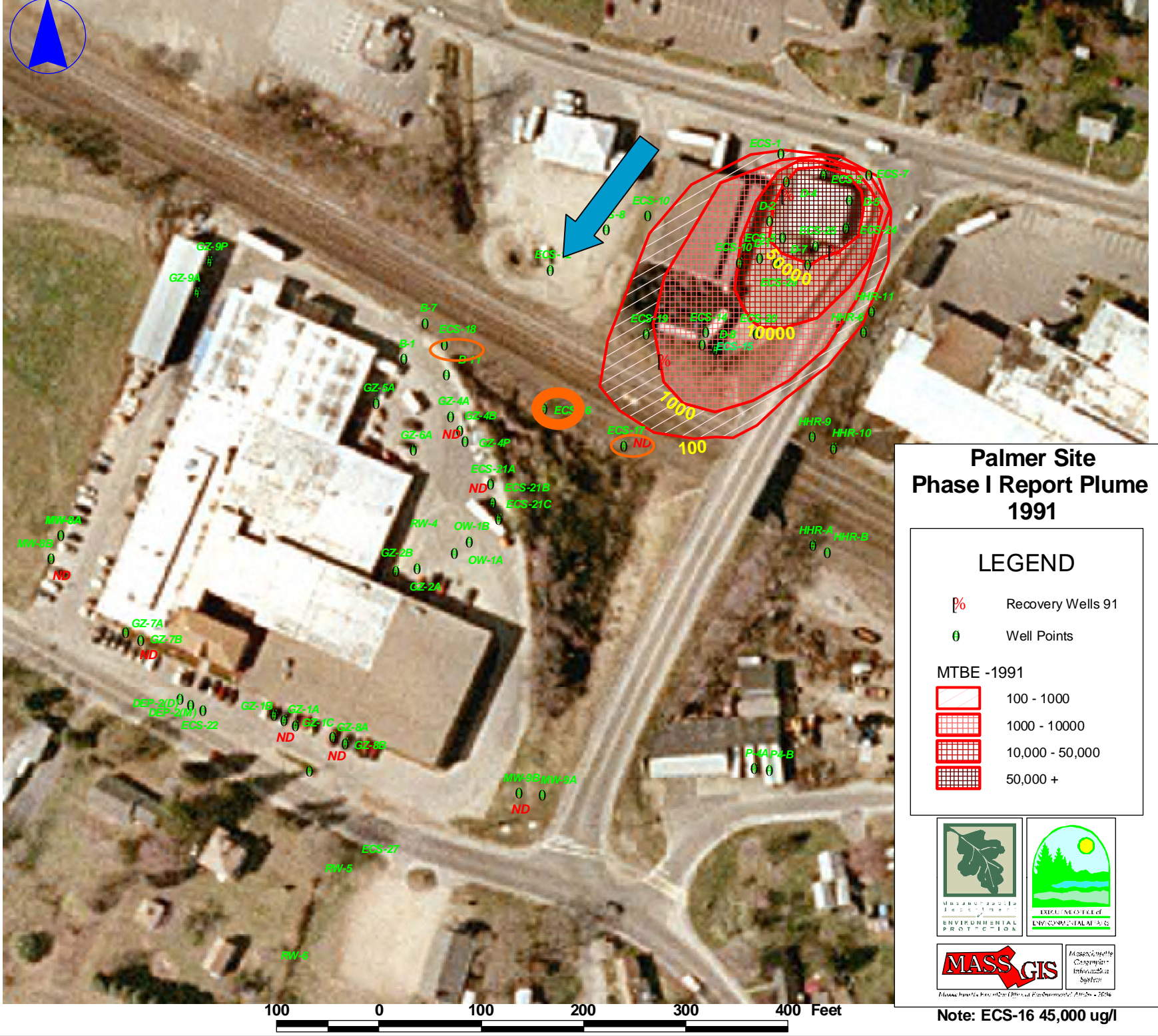
MassDEP

Former Winton's Food & Fuel

Palmer, Massachusetts

1989 Gasoline Release

- **Catastrophic failure of gasoline UST**
or How to release 12,000 gallons from an 8,000 gallon tank.
- **Immediate response actions not taken**
or Take legal action first. question
- **Initial assessment indicates that LNAP**
& plume stable within release area *or*
How to miss the MTBE plume.



Palmer Site Phase I Report Plume 1991

LEGEND

- Recovery Wells 91
- Well Points

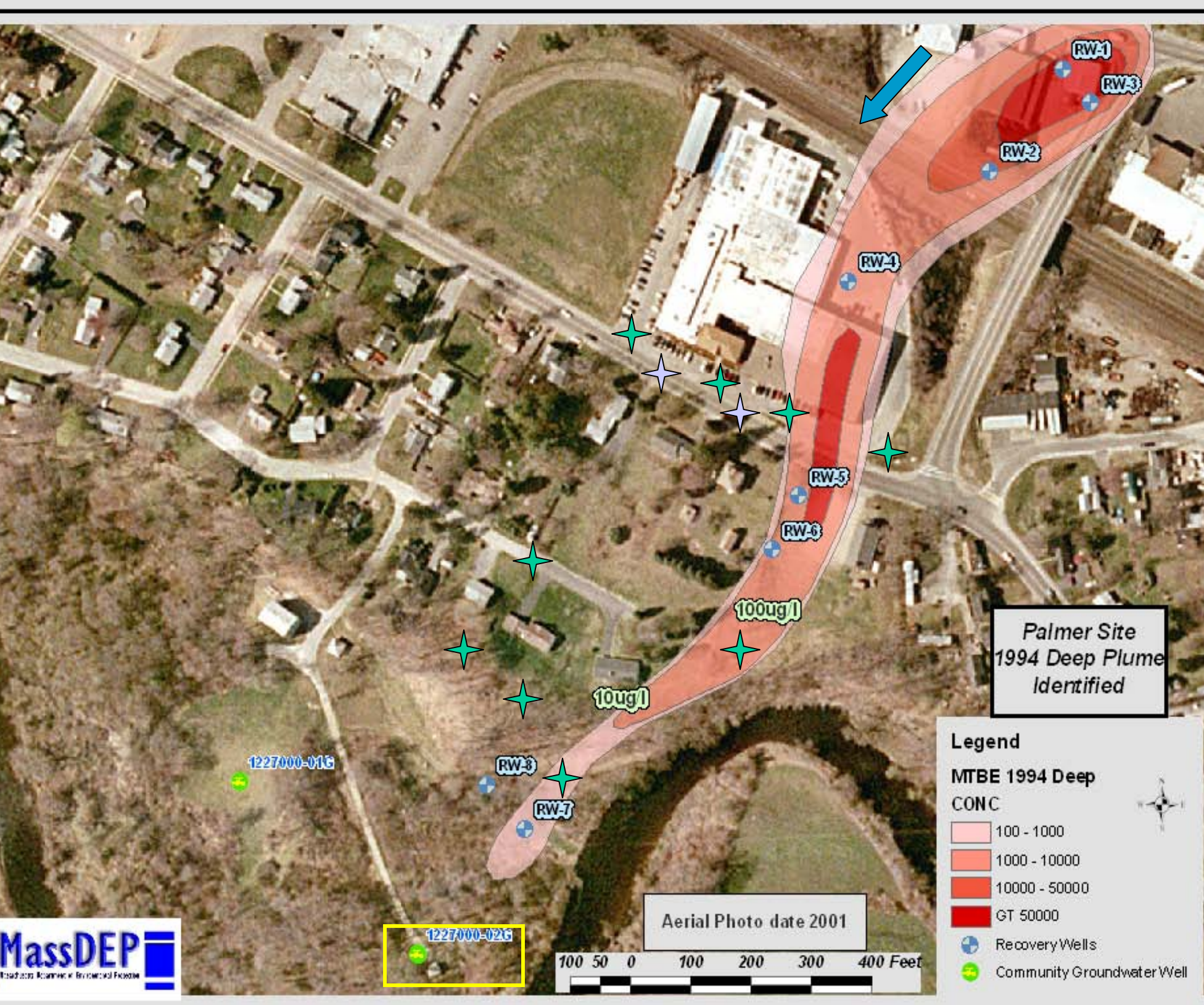
MTBE -1991

- 100 - 1000
- 1000 - 10000
- 10,000 - 50,000
- 50,000 +



Massachusetts
Department of
Environmental
Protection

Note: ECS-16 45,000 ug/l



Palmer Site
1994 Deep Plume
Identified

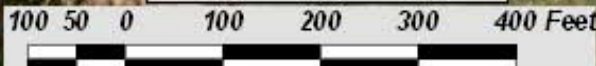
Legend

MTBE 1994 Deep
CONC

- 100 - 1000
- 1000 - 10000
- 10000 - 50000
- GT 50000

- Recovery Wells
- Community Groundwater Well

Aerial Photo date 2001

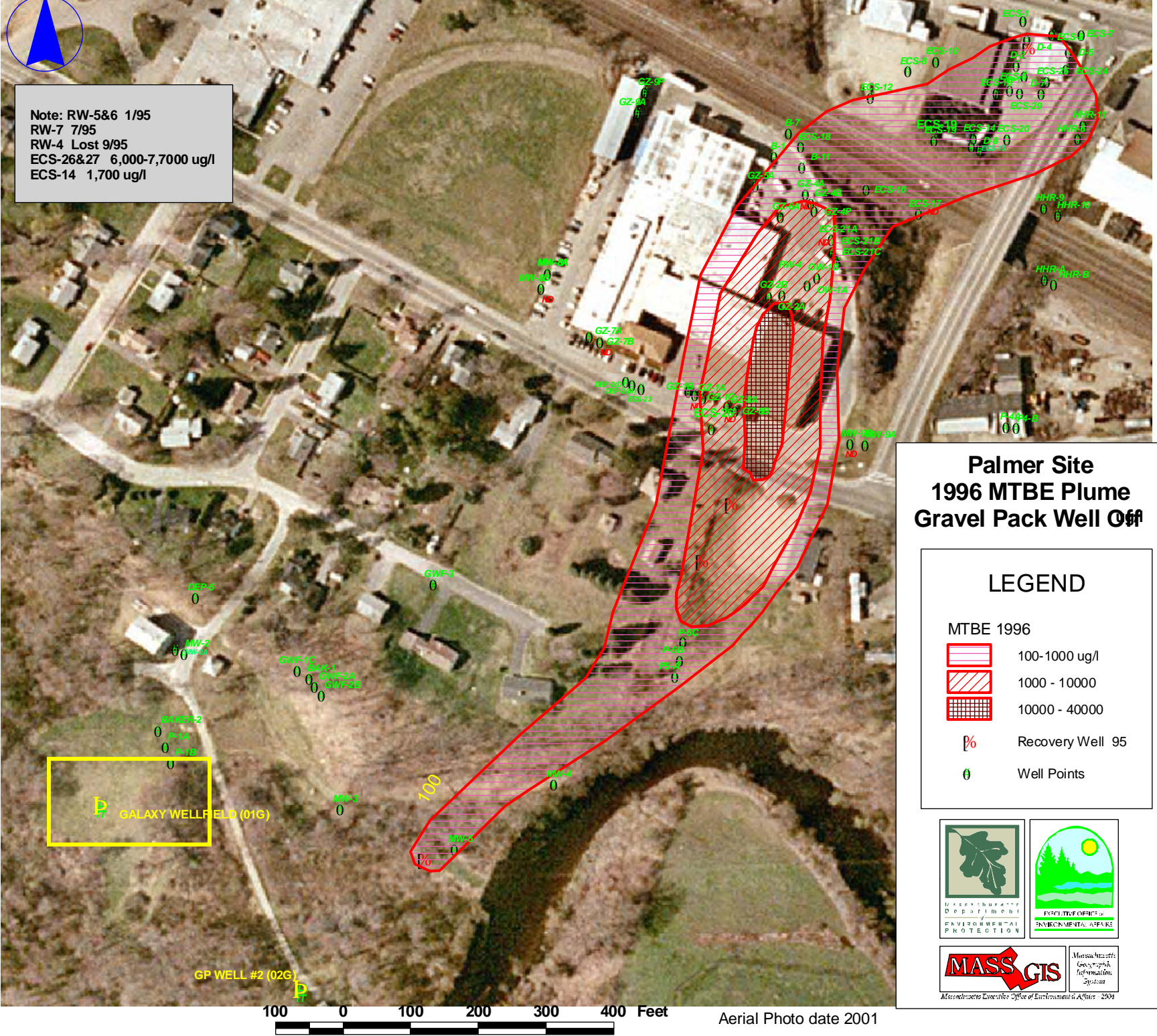


1227000-02G

1227000-01G



Note: RW-5&6 1/95
 RW-7 7/95
 RW-4 Lost 9/95
 ECS-26&27 6,000-7,7000 ug/l
 ECS-14 1,700 ug/l



Palmer Site 1996 MTBE Plume Gravel Pack Well Off

LEGEND

MTBE 1996

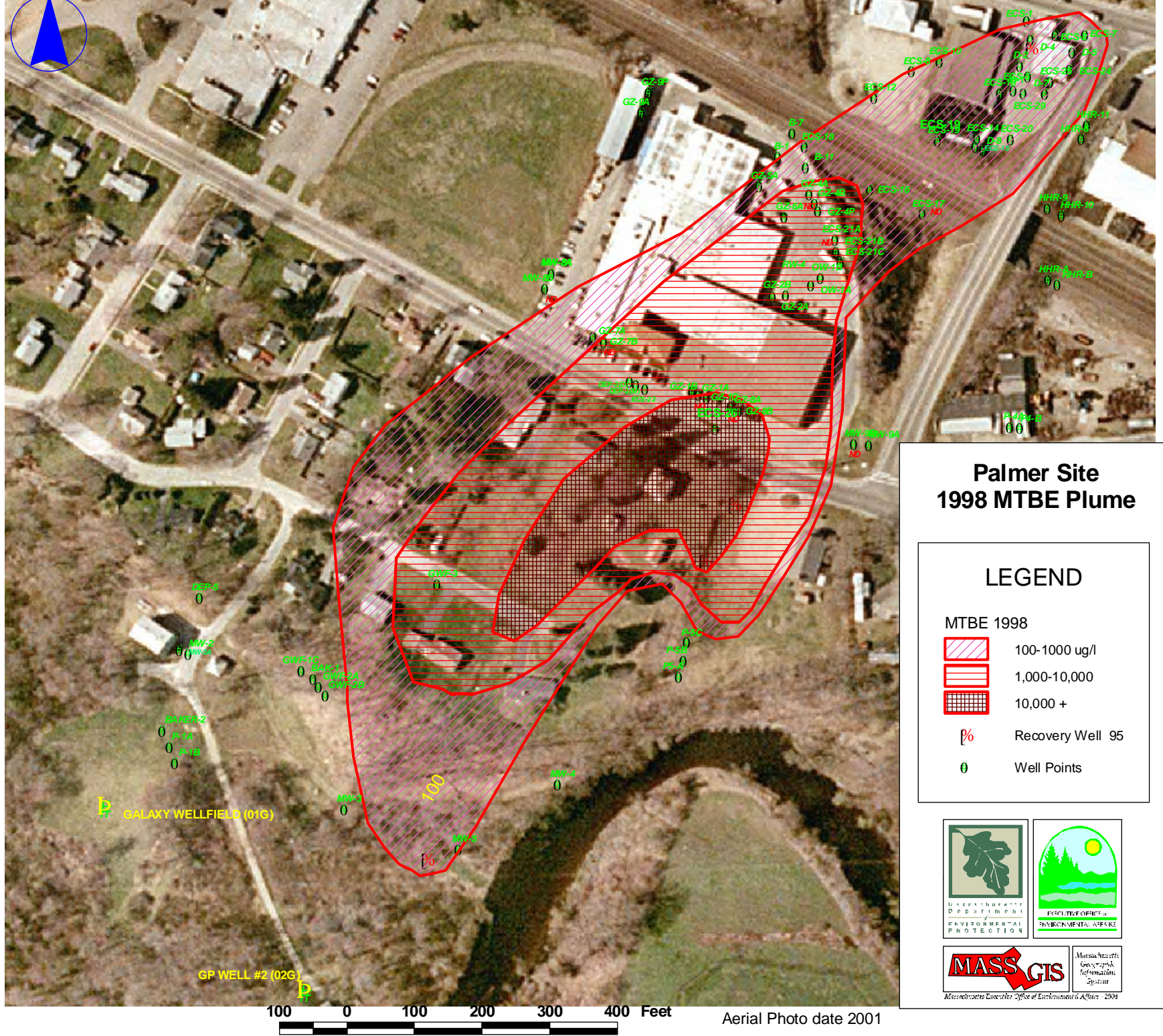
- 100-1000 ug/l
- 1000 - 10000
- 10000 - 40000
- Recovery Well 95
- Well Points



Massachusetts
 Geographic
 Information
 System






Massachusetts Executive Office of Environmental Affairs 2001

Shut down main well-Pump Galaxy backup supply-less influence under control



Palmer Site 1998 MTBE Plume

LEGEND

- MTBE 1998
-  100-1000 ug/l
 -  1,000-10,000
 -  10,000 +
 -  Recovery Well 95
 -  Well Points



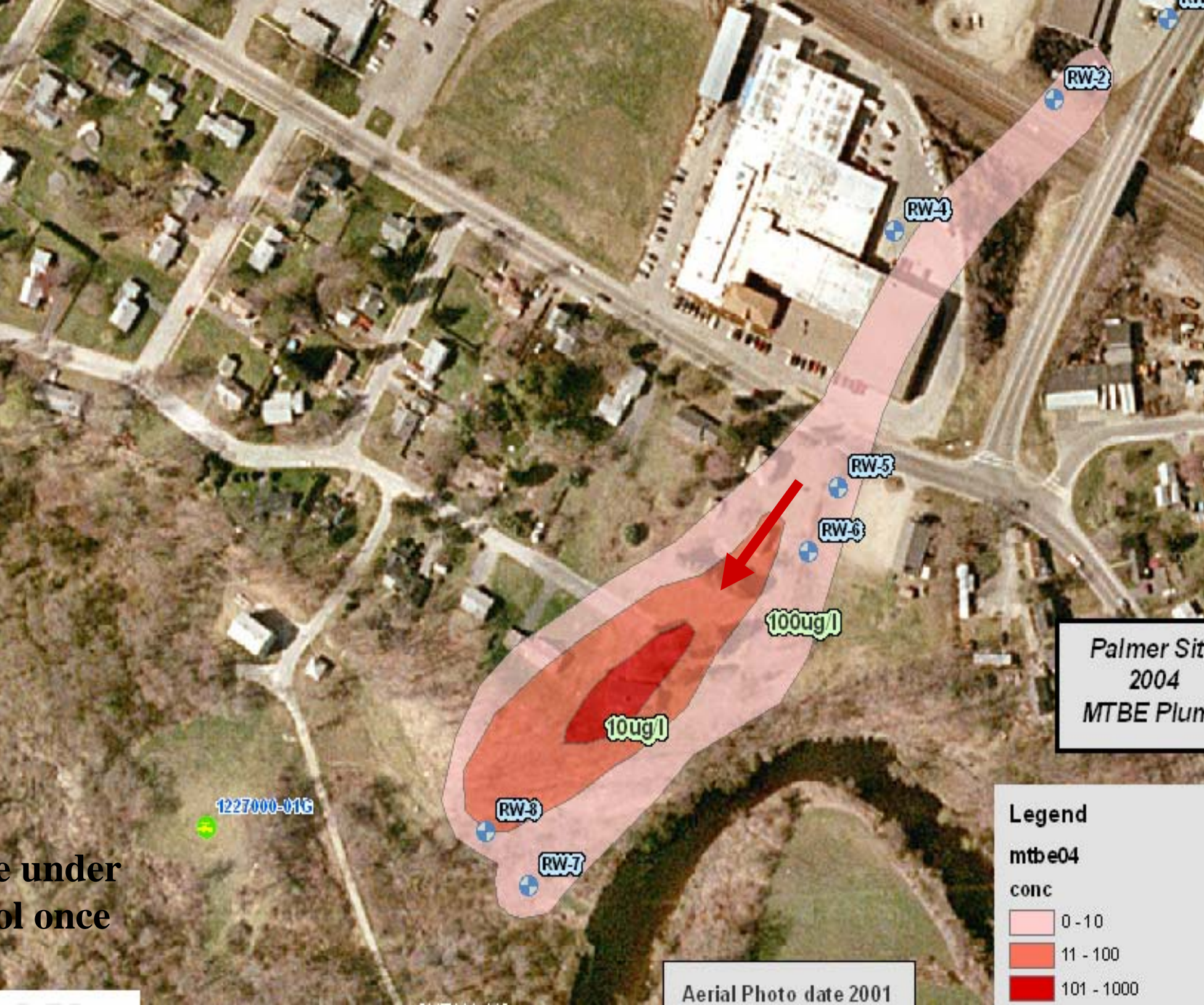
Massachusetts
Geographic Information
System

Massachusetts Executive Office of Environmental Affairs 2008



Aerial Photo date 2001

Back to primary well !!



Palmer Site
2004
MTBE Plume



Aerial Photo date 2001

e under
ol once

1227000-01G

RW-3

RW-7

100ug/l

10ug/l

RW-6

RW-5

RW-4

RW-2



Palmer Site
2006
MTBE Plume

Legend

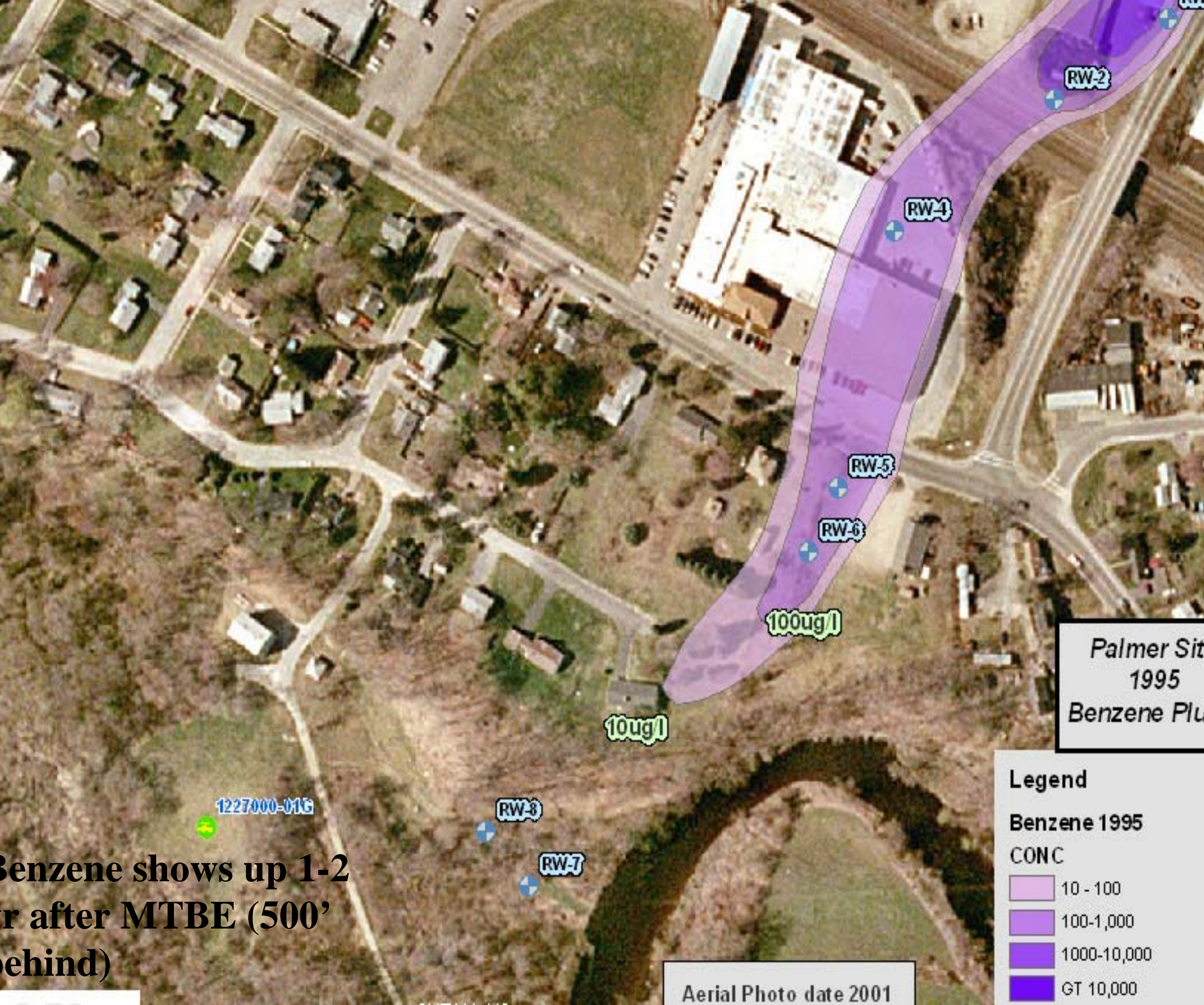
MTBE 2006
conc

-  70 - 100
-  100 - 1000

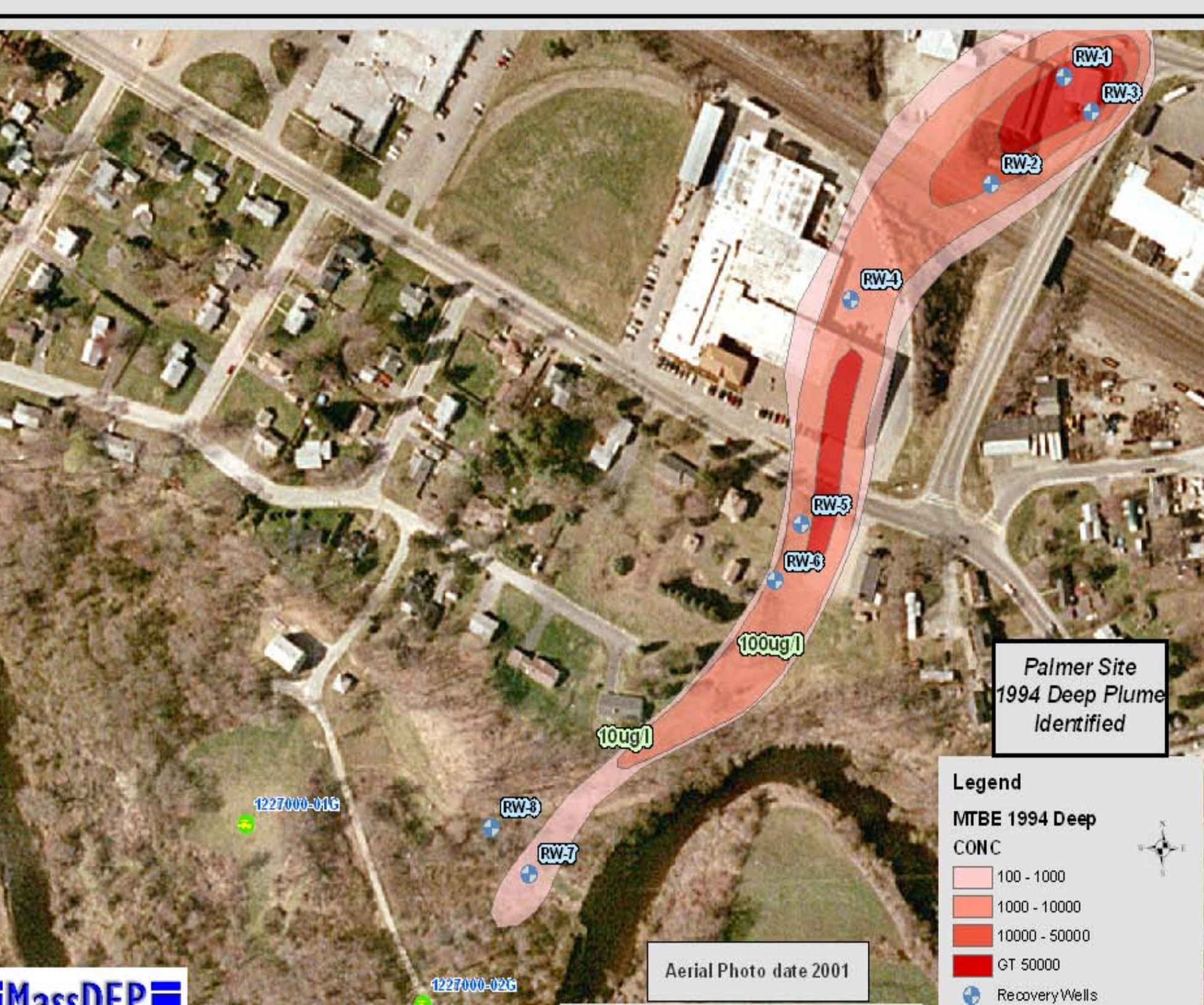
Aerial Photo date 2001

100ug/l

10ug/l



Benzene shows up 1-2
r after MTBE (500'
behind)



Palmer Site
1994 Deep Plume
Identified

Legend

**MTBE 1994 Deep
CONC**

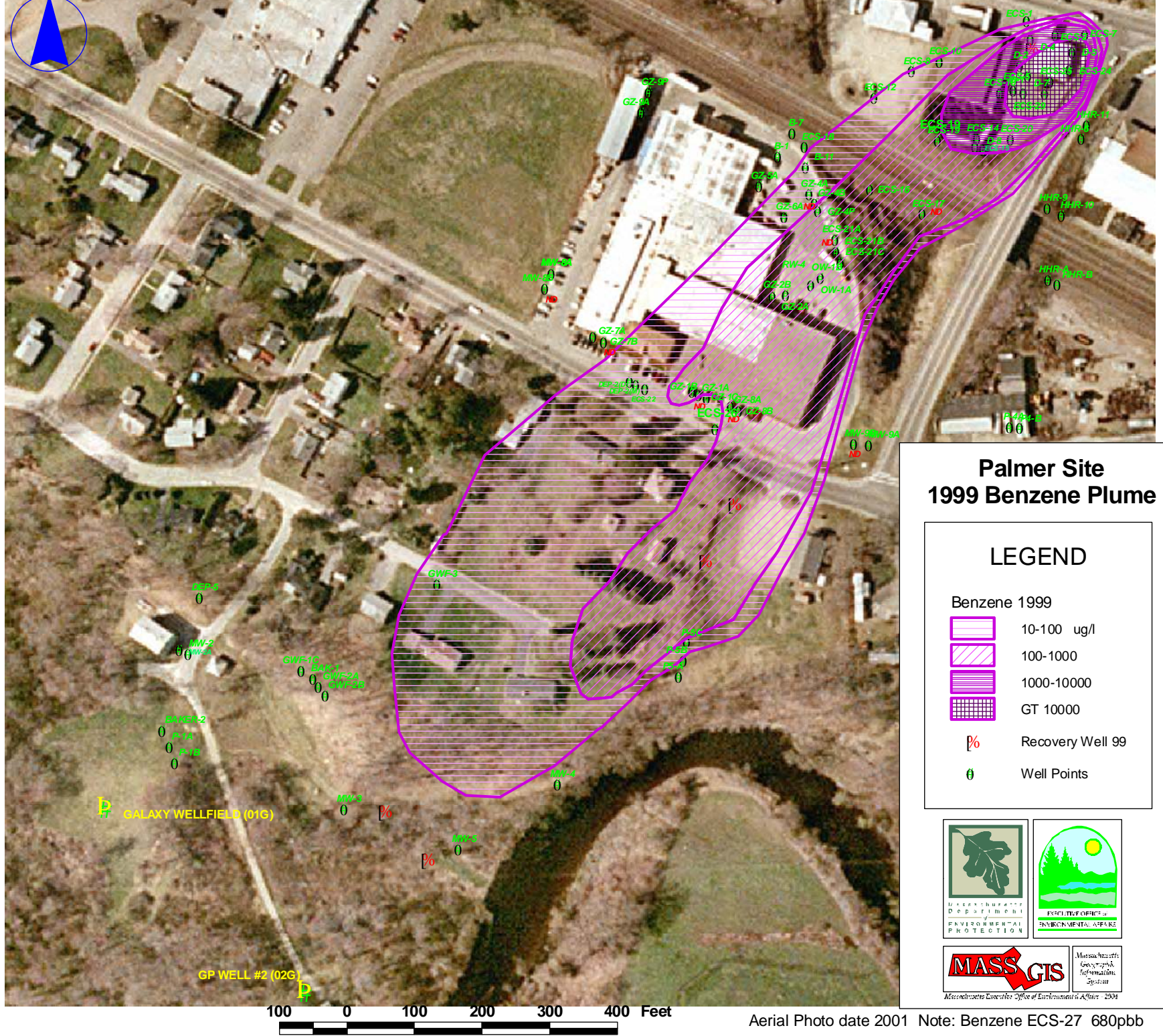
- 100 - 1000
- 1000 - 10000
- 10000 - 50000
- GT 50000
- + Recovery Wells



Aerial Photo date 2001

1227000-01G

1227000-02G



Palmer Site 1999 Benzene Plume

LEGEND

Benzene 1999

- 10-100 ug/l
- 100-1000
- 1000-10000
- GT 10000
- Recovery Well 99
- Well Points

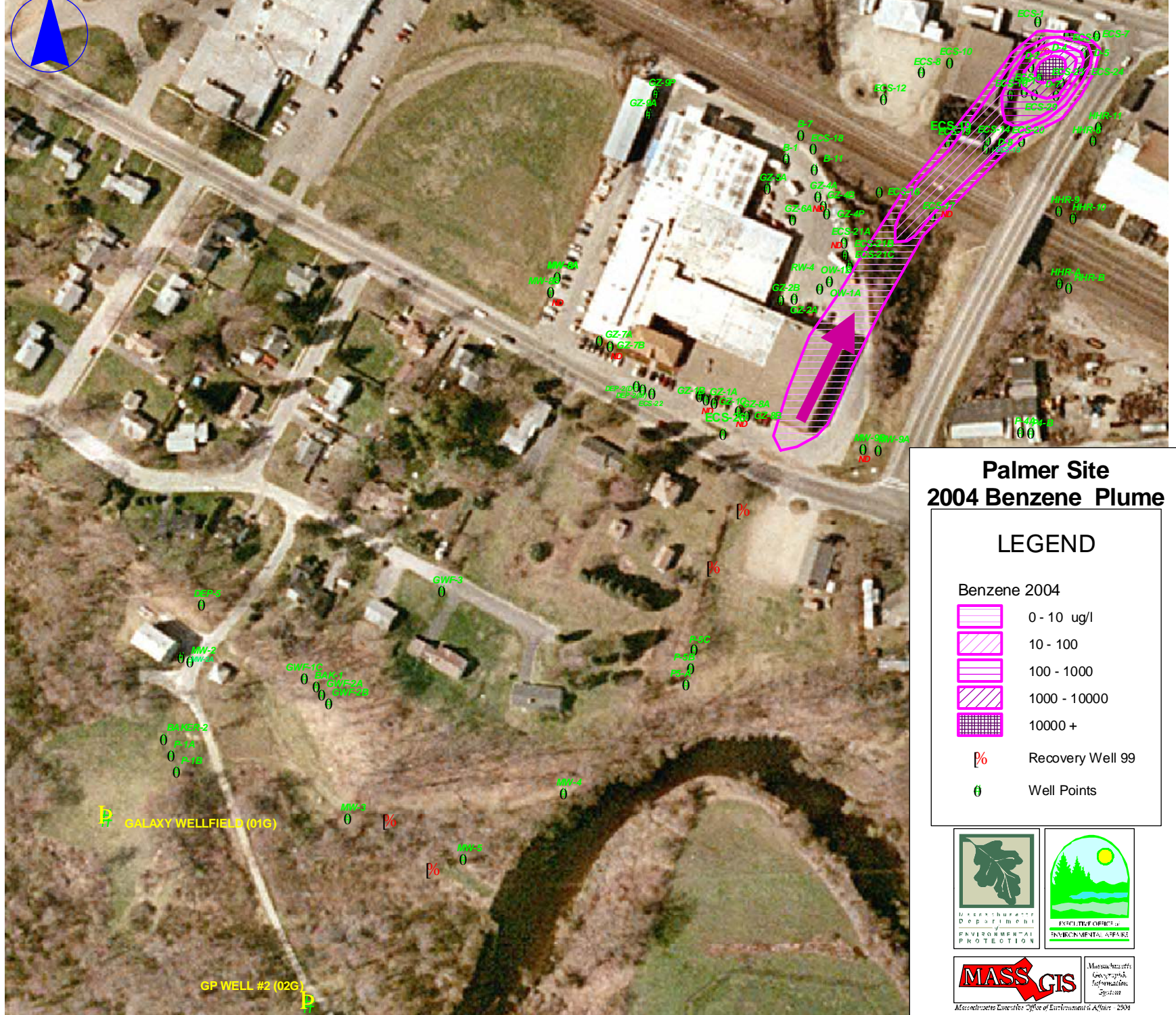


Massachusetts Executive Office of Environmental Affairs 2008

100 0 100 200 300 400 Feet








Aerial Photo date 2001 Note: Benzene ECS-27 680ppb

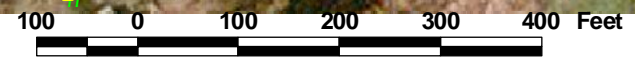
No TEX off property Benzene followed MTBE 1,200' downgradient



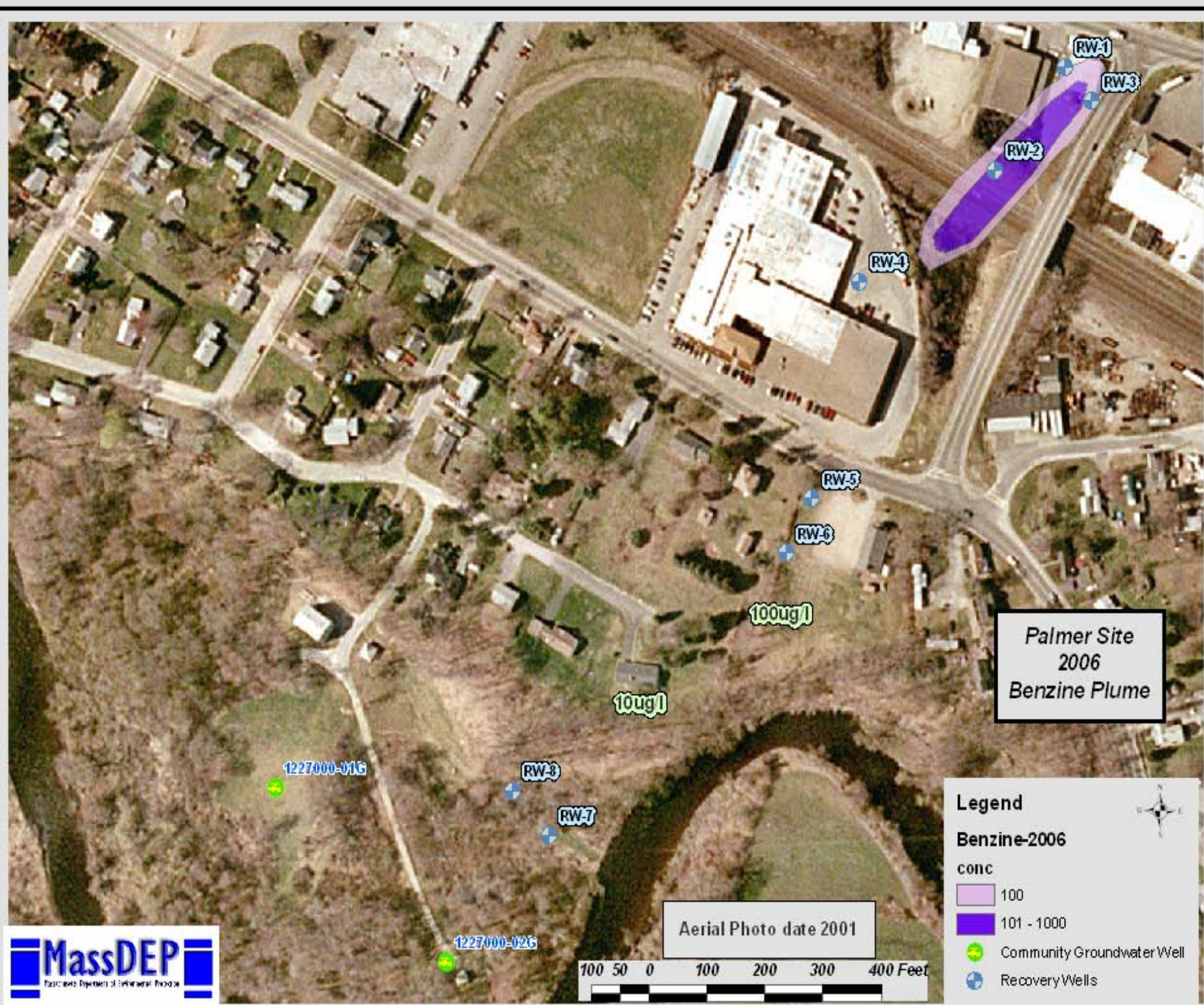
Palmer Site 2004 Benzene Plume

LEGEND

- Benzene 2004
-  0 - 10 ug/l
 -  10 - 100
 -  100 - 1000
 -  1000 - 10000
 -  10000 +
 -  Recovery Well 99
 -  Well Points



Aerial Photo date 2001



Palmer Site
2006
Benzene Plume

Legend

Benzene-2006
conc

- 100
- 101 - 1000

Community Groundwater Well

Recovery Wells

Aerial Photo date 2001







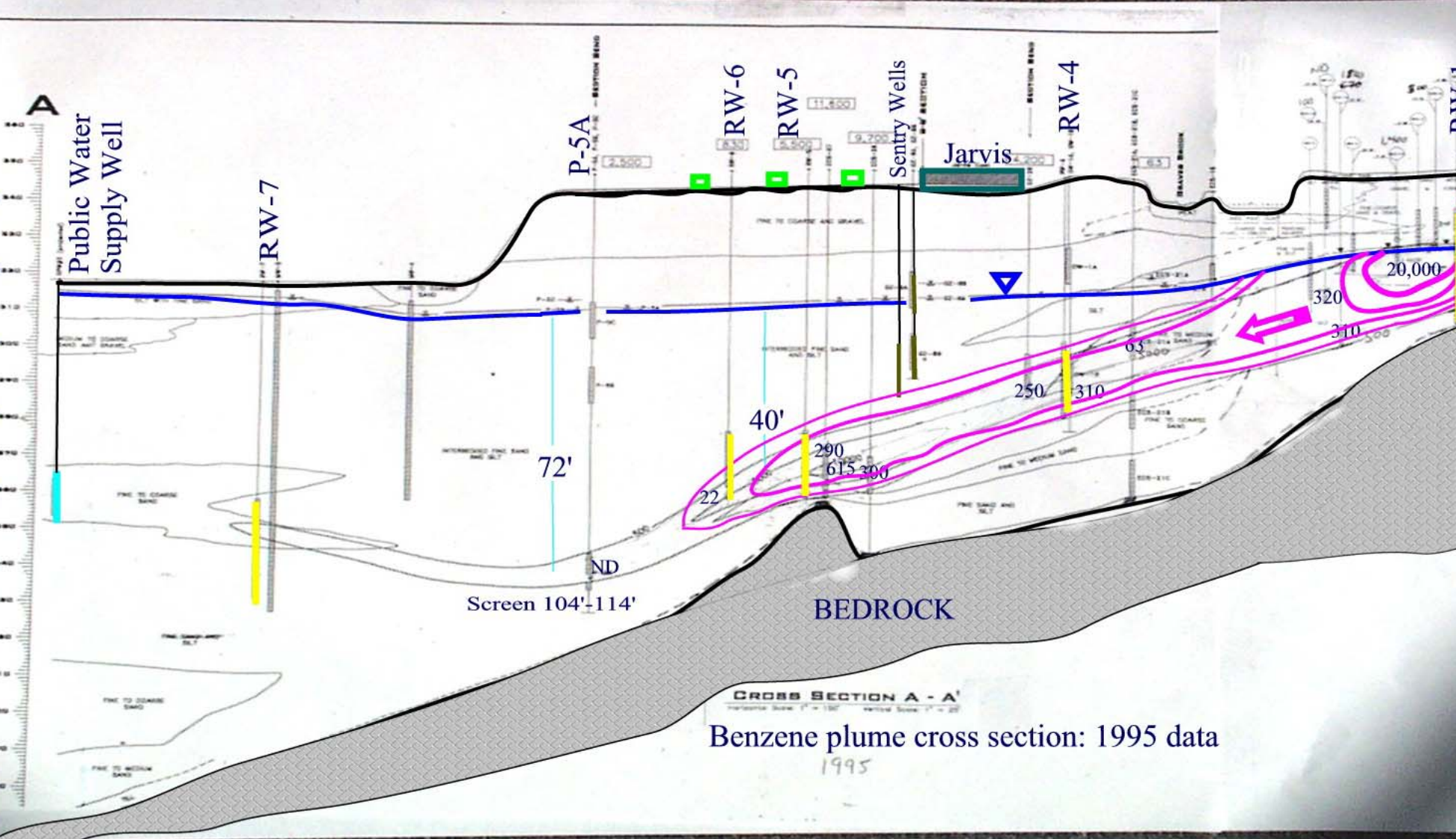
Palmer Site
2006
MTBE Plume

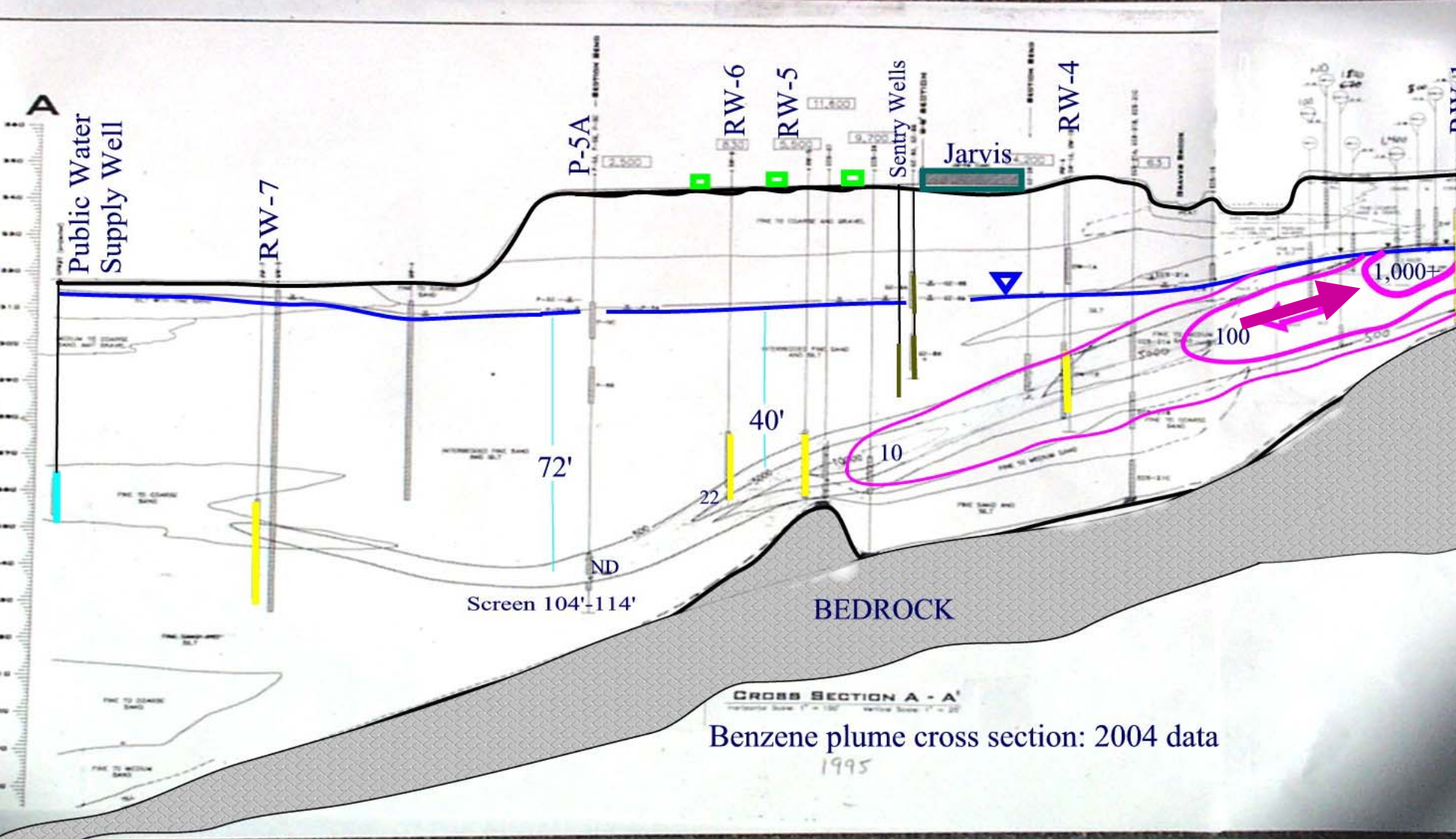
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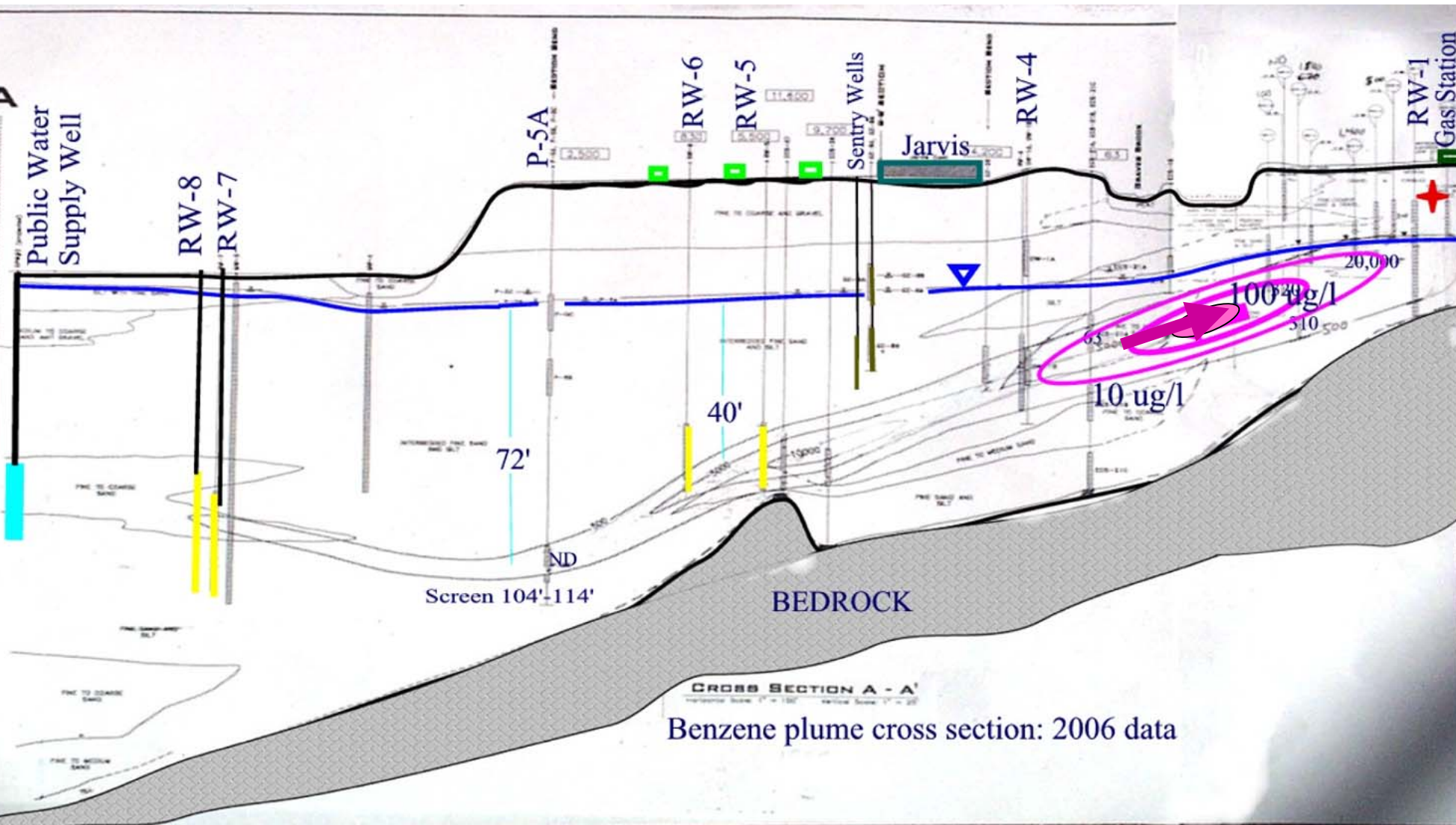
MTBE 2006
conc

	70 - 100
	100 - 1000

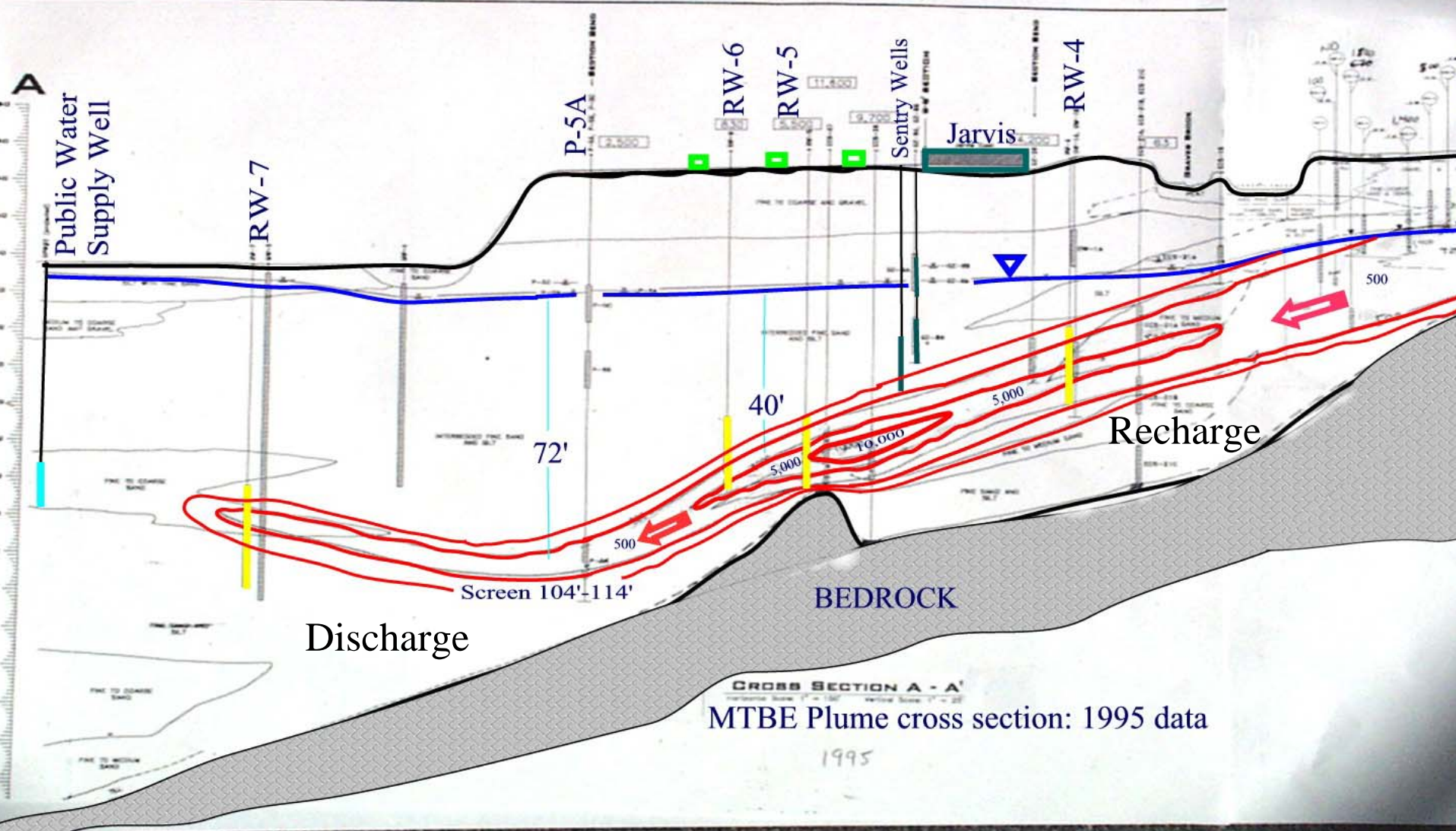
Aerial Photo date 2001

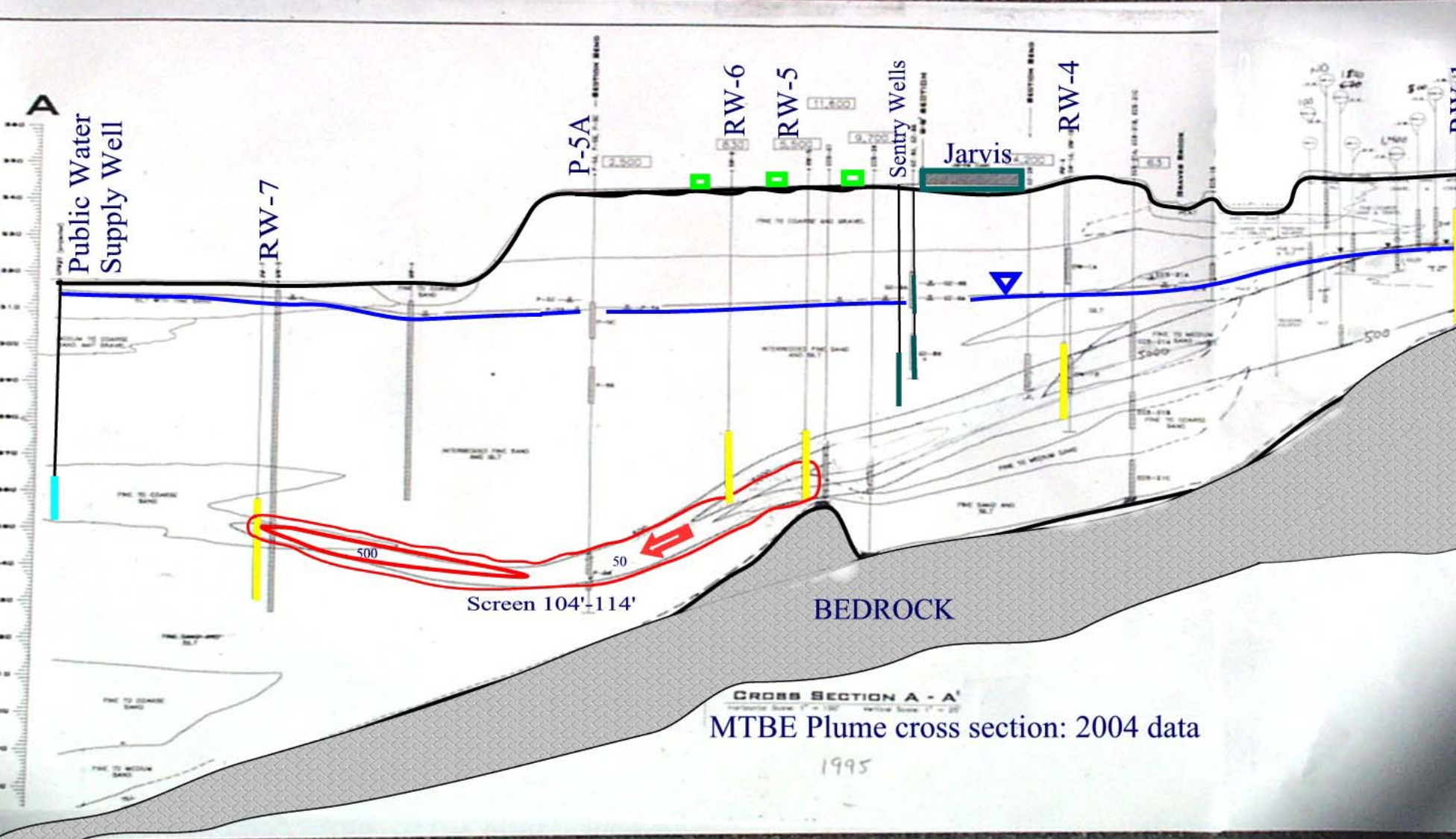


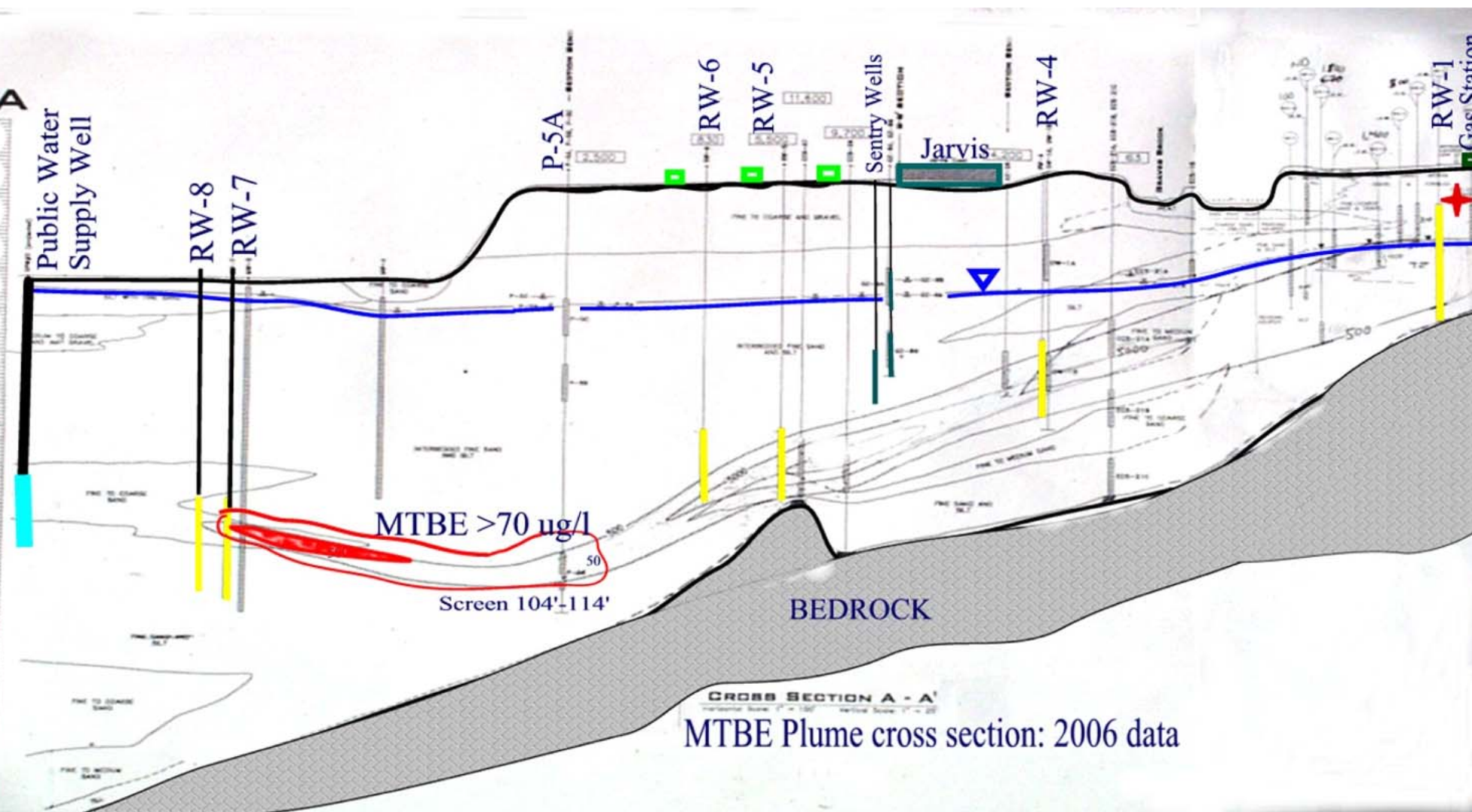


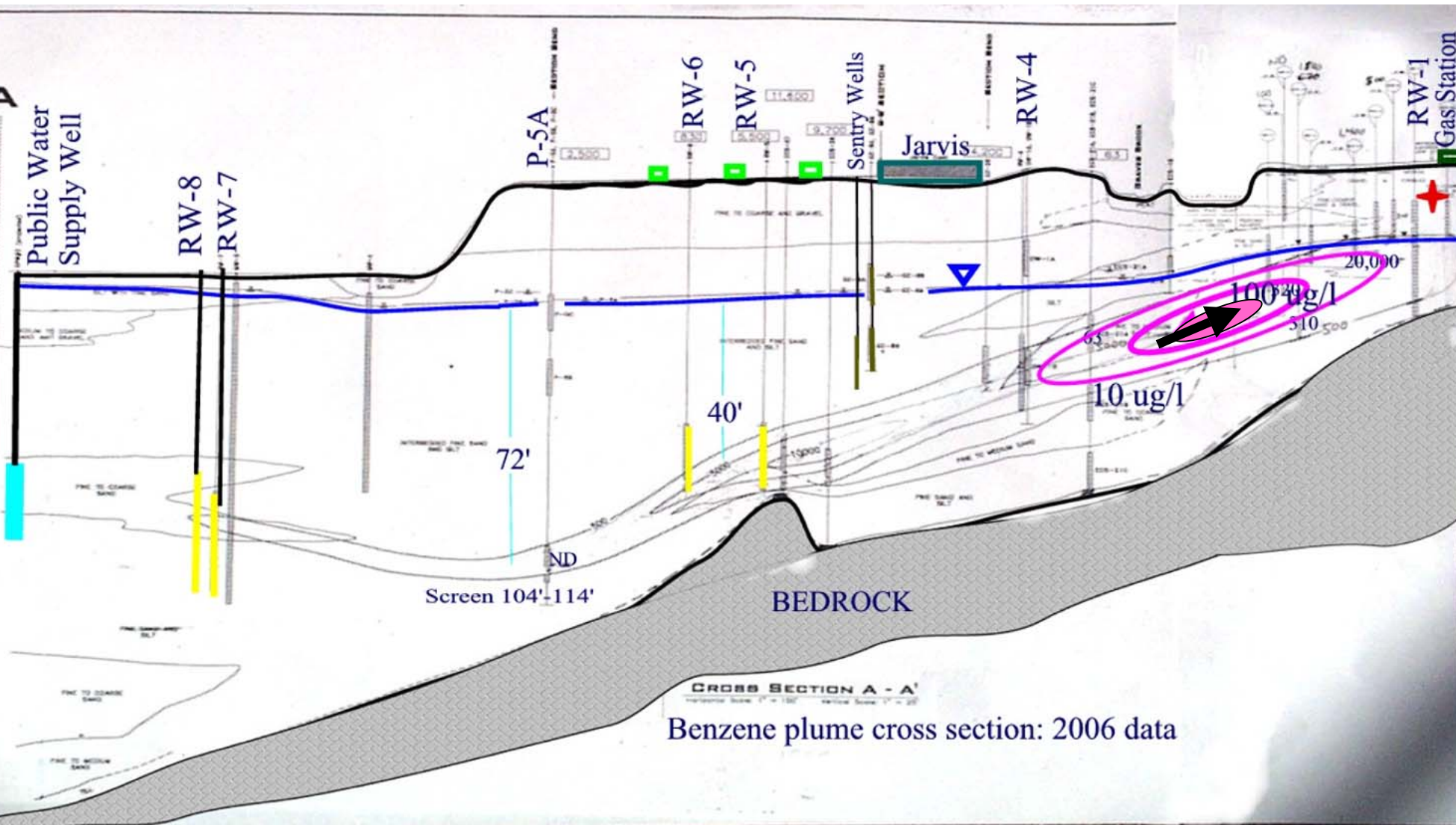


Benzene plume cross section: 2006 data











MassDEP

Former Winton's Food & Fuel Palmer Massachusetts Source Area Remedial Attack KMnO₄ Injection 2003-2006

- 16 well couplets (18-28 feet & 28-36 feet)
- Fourteen injection events to date (3-4% solution)
- Sept 2003 – May 2006 (projected –2 years)
- Projected KMnO₄ amount: 20,000 lbs
- Total KMnO₄ injected: 22,900 lbs
- Total Cost: \$299,000 (Pay for Performance)



easy to see also
non- toxic. Col
has advantages
but may cause
public percepti
issues.



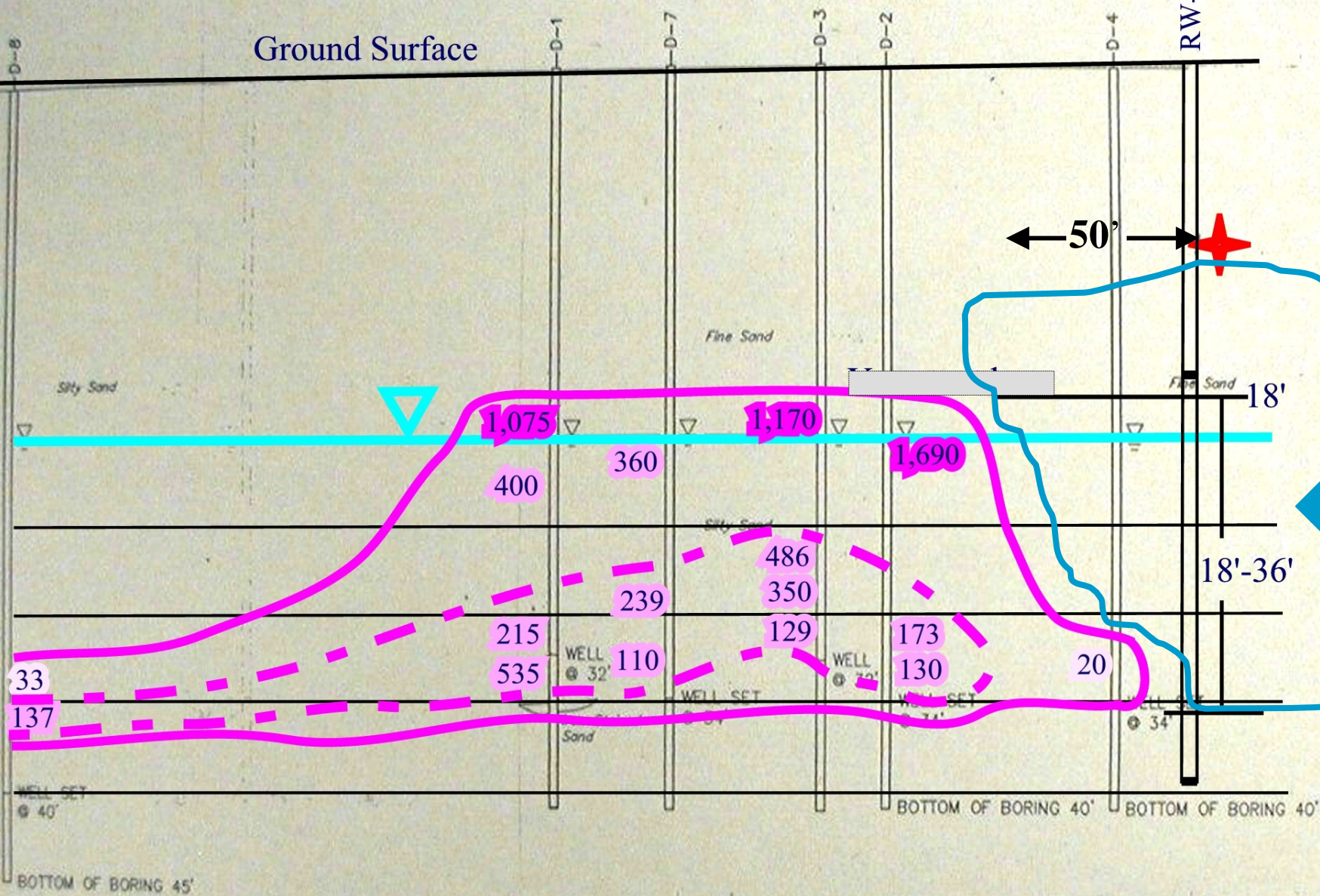
Based on Average Starting Concentrations after 16 months- 5 applications

**Winston's Food and Fuel
Palmer, MA**

Results in ug/L)	VPH minus Analytes			TotalAnalytes		
Well ID	Average	6/24/04	Reduction	Average	6/24/04	Reduction
D-01	17,810	1,760	90.1%	28,692	2,352	91.8%
D-02	38,840	30,300	22.0%	71,540	72,770	increase
D-03	5,602	0	100%	10,665	0	100%
D-04	565	0	100%	40	0	100%
D-05	4,774	0	100%	635	0	100%
D-06	2,277	0	100%	67	0	100%
D-07	7,374	5,100	30.8%	10,775	9,229	14.3%
D-08	1,335	0	100%	1,424	0	100%
D-10	9,037	39	99.6%	7,932	0	100%
D-11	8,907	121	98.6%	10,604	31	99.7%
D-13	8,087	1,402	82.7%	7,864	1299	83.5%
D-14	20,190	162	99.2%	25,790	179	99.3%
D-15	278	0	100%	368	0	100%
ECS-7	0	0	NA	1	0	100%
ECS-10	36	0	100%	15	0	100%
ECS-20	31	0	100%	7	0	100%
ECS-24	33	0	100%	4	0	100%
ECS-25	3,860	0	100%	3,713	0	100%

380'

Ground Surface







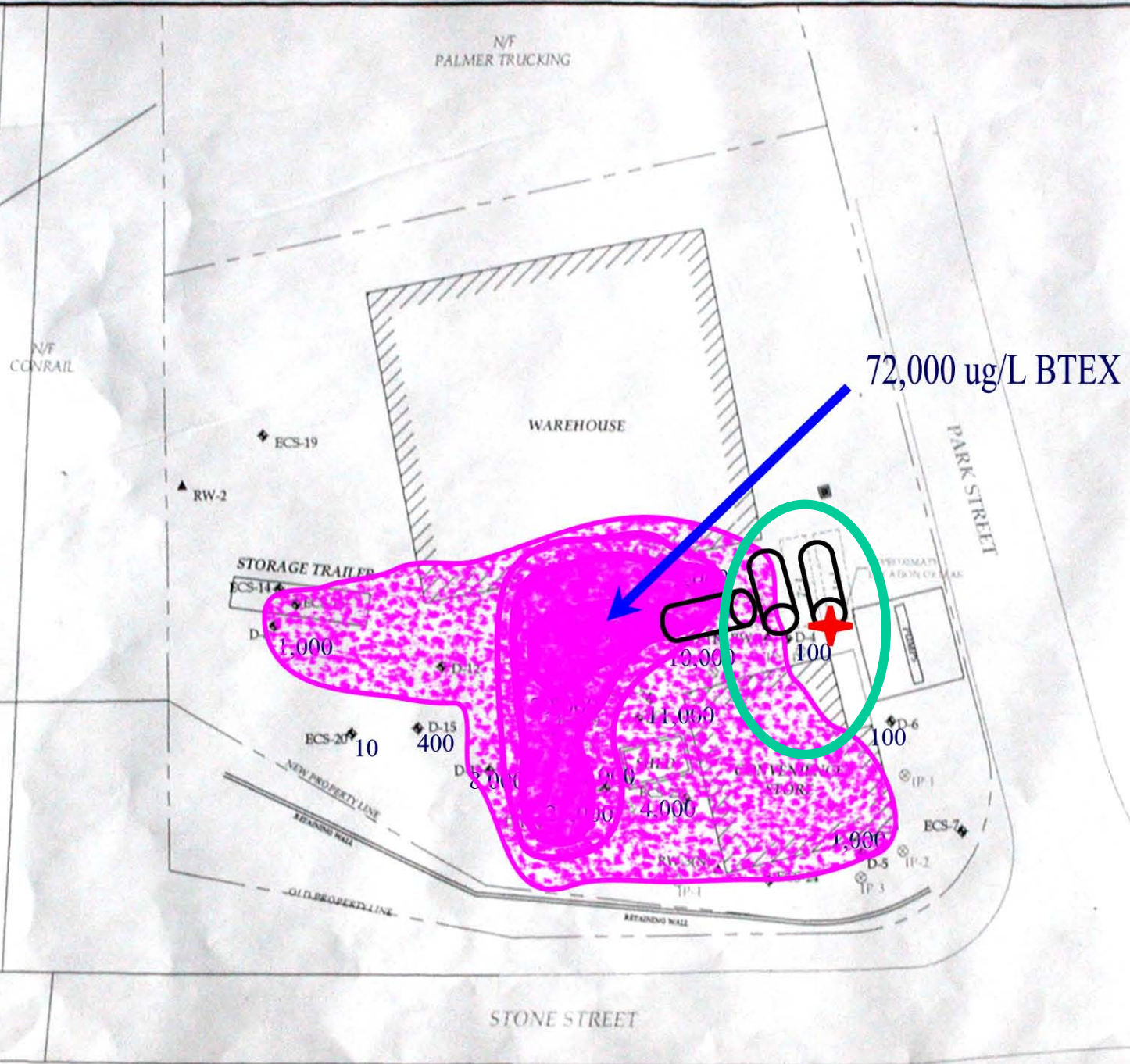
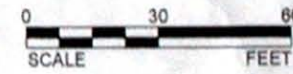
Palmer, MA Former Food & Fuel

Massachusetts
Department of
Environmental Protection
BWSC-WERO

 Leak Location

BTEX contours from
2000-2003 data

-  1,000
-  10,000
-  20,000
-  30,000+



72,000 ug/L BTEX

SITE MAP

CLIENT:	MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION	
LOCATION:	WINTONS FOOD & FUEL PALMER, MASSACHUSETTS	
DESIGNED:	DWG:	PROJECT NO.:
		2003

Palmer, MA Former Food & Fuel

Massachusetts
Department of
Environmental Protection
BWSC-WERO

 Leak Location

BTEX contours
2006 data

 1,000
 10,000
 20,000



0 30 60
SCALE FEET

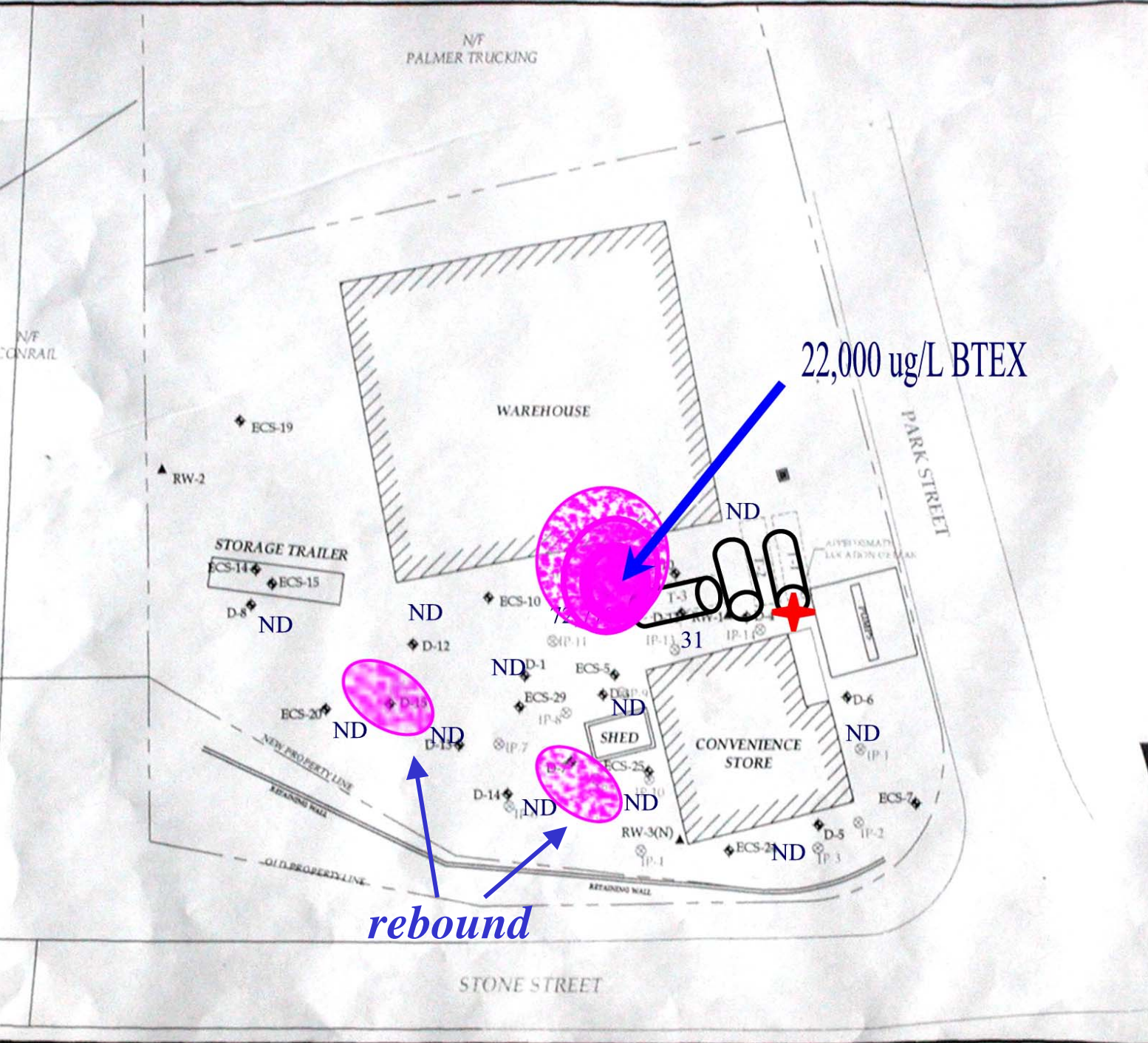
KMnO4 Application

SITE MAP

CLIENT:
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

LOCATION:
WINTONS FOOD & FUEL
PALMER, MASSACHUSETTS

DESIGNED: DWG: PROJECT NO.:
2003



Mass Transfer Estimates (guesstimates)

Groundwater treated & discharged	6,400 gallons
Soil treated with KMnO4	2,875 gallons
Groundwater treated with KMno4	<u>639 gallons</u>
Sub-total	9,914 gallons
Soil & GW treated by Natural Attenuation	?????? Gallons
guess 10% = 1,200 gallons	<u>1,200 gallons</u>
17% = 2,086 gallons	Total 11,114 gallons
Total gasoline released	12,000 gallons_
Cubic Meters x % soil or % GW x % VOCs	
Total GW gallons pumped x % VOCs	

\$\$ Cost Discussions \$\$

- Total cost to date: 1.9 million
- Legal fees: **\$440,000**
- O&M Initial \$25,000-\$30,000
- O&M Current \$8,000 - \$10,000
- Anticipated total cost: 2.1 (1.7) million
- 2000-2006 Cost: \$450,000

Pay for Performance (2003 Proposals)

- Biodegradation enhancement \$199,000
- **Potassium permanganate \$299,000**
- Hydrogen peroxide \$389,000
- Recirculation/recovery wells \$450,000
- Thermal heating/recovery \$1,100,000

• **Micro-well installation & analysis \$25,000**

Tank manufacturer went bankrupt



Optimal Closure Considerations

- Find the vertical extent of MTBE plume
- Co-Solvency effects (Benzene)
- Potassium permanganate not just for solvents anymore (effective at <20,000 ug/l BTEX)
- Micro-wells can be fun & cost effective and used at depths > 140'
- MTBE –Health effects important but odor will drive the cleanup
- Preferential pathways in aquifer exist even if we can't see them-especially DWSW areas
- Dissolved gasoline will persist in anaerobic conditions
- Natural attenuation - BTEX

MassDEP



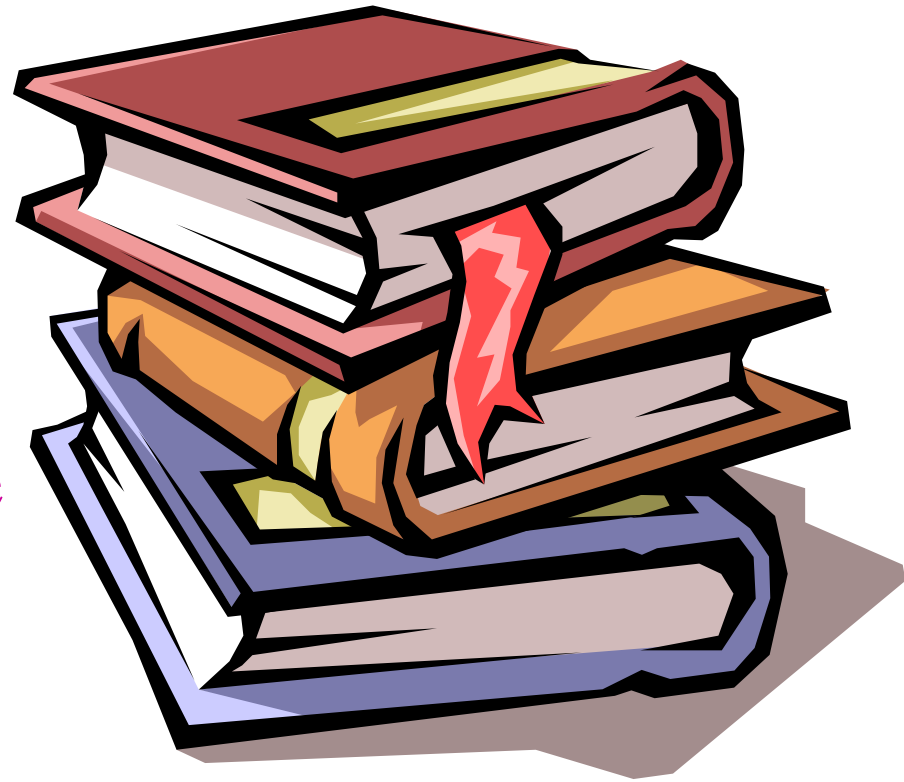
Old School Thoughts

- **Recovery Wells/Pump & Treat**
 - Dissolved – not effective
 - Plume control/SP – Effective
- **SVE/AS – inexpensive but ineffective in marginal soils**
- **MTBE is hard to remediate, most cost effective is NPDES permits and existing sewer**
- **WWTP-capacity, not contaminants is usually the limiting factor**
- **Treatment Train Effects**

MassDEP

BIG PICTURE

- **Prevented impacts to Public Water Supply Well (Pump & Treat effective in controlling MTBE)**
- **Potassium Permanganate works on BTEX**





Massachusetts
Department
of
ENVIRONMENTAL
PROTECTION

MassDEP

Thank you for
Attending

Challenges of Using GMZs as an Effective Long-Term Stewardship Tool

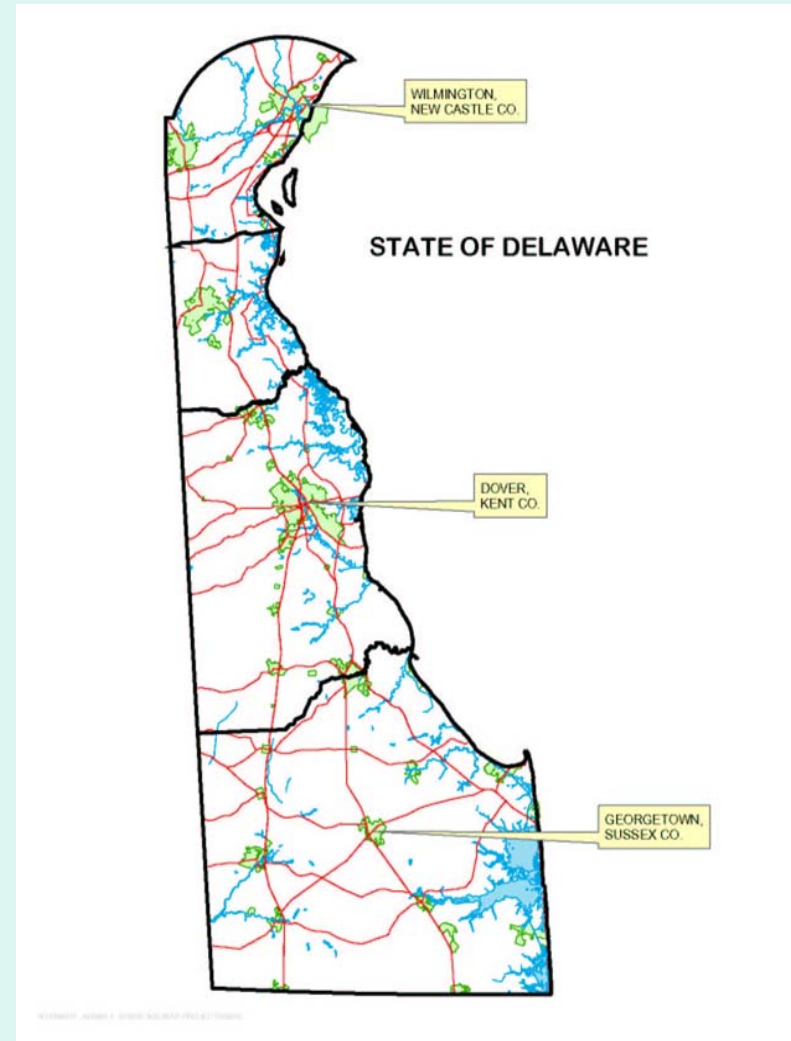


LTS Roundtable & Training San Diego, CA April 2007

**Wendy March, Environmental Scientist
State of Delaware Department of Natural Resources and
Environmental Control
Site Investigation and Restoration Branch**

Delaware Ground-Water Conditions

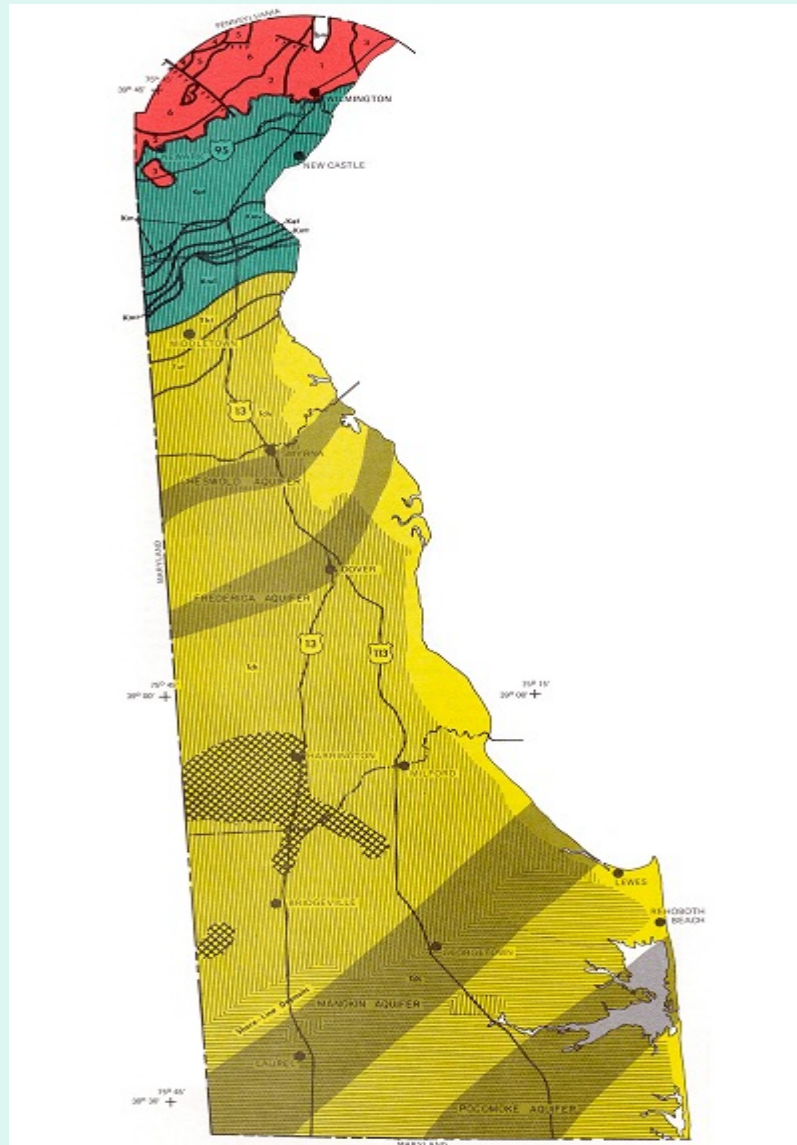
1. The primary source of public, rural, and industrial water supply in 94 percent of the State of Delaware is ground-water.
2. Northern 6 percent of the State is supplied by surface water.
3. Since Delaware's population is heavily concentrated in the northern part of the State, about 50% of the state's population is served by ground-water and 50% is served by surface water.



Delaware Ground-Water Conditions

1. Geologically, Delaware located in two physiographic provinces that are separated by the Fall Line.
2. To the north is the Piedmont province which comprises 6% of the State
3. To the south is Coastal Plain province which includes the remaining 94% of the State.

Generalized Geologic Map of Delaware



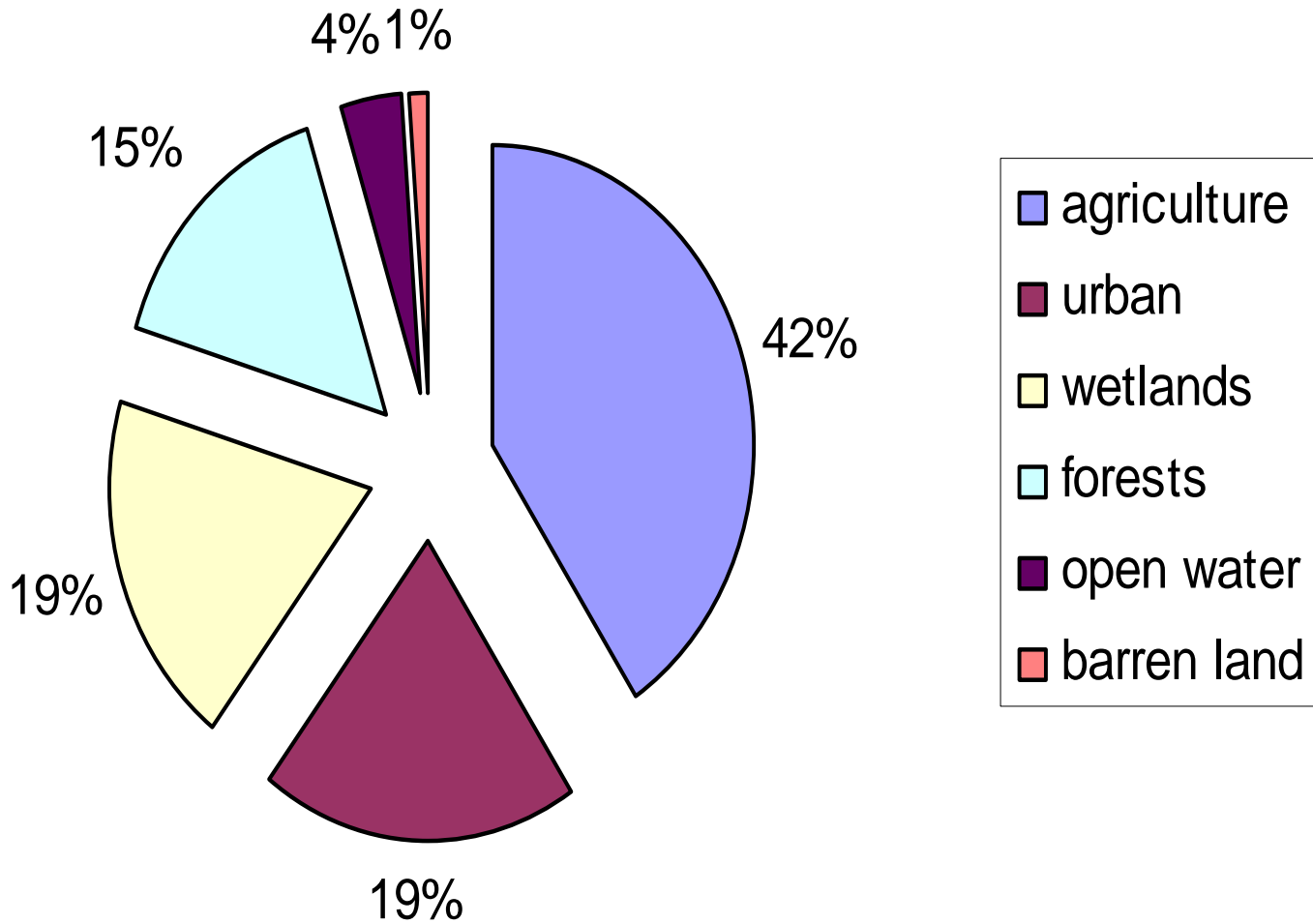
Delaware Geological Survey 1976

Delaware Ground-Water Conditions

1. Two types of aquifers found in Delaware:
 - a. Crystalline bedrock of the Piedmont
 - b. Unconsolidated sedimentary deposits of the Coastal Plain

2. The unconfined surficial aquifers are the most sensitive to human activities.

Delaware Land Use



Source Delaware Water Resources Center Annual Technical Report FY 2005

Major Ground-Water Quality Problems in Delaware

Delaware's ground-water is susceptible to pollution due to the shallow water table and high permeability soils

Major ground-water quality problems include:

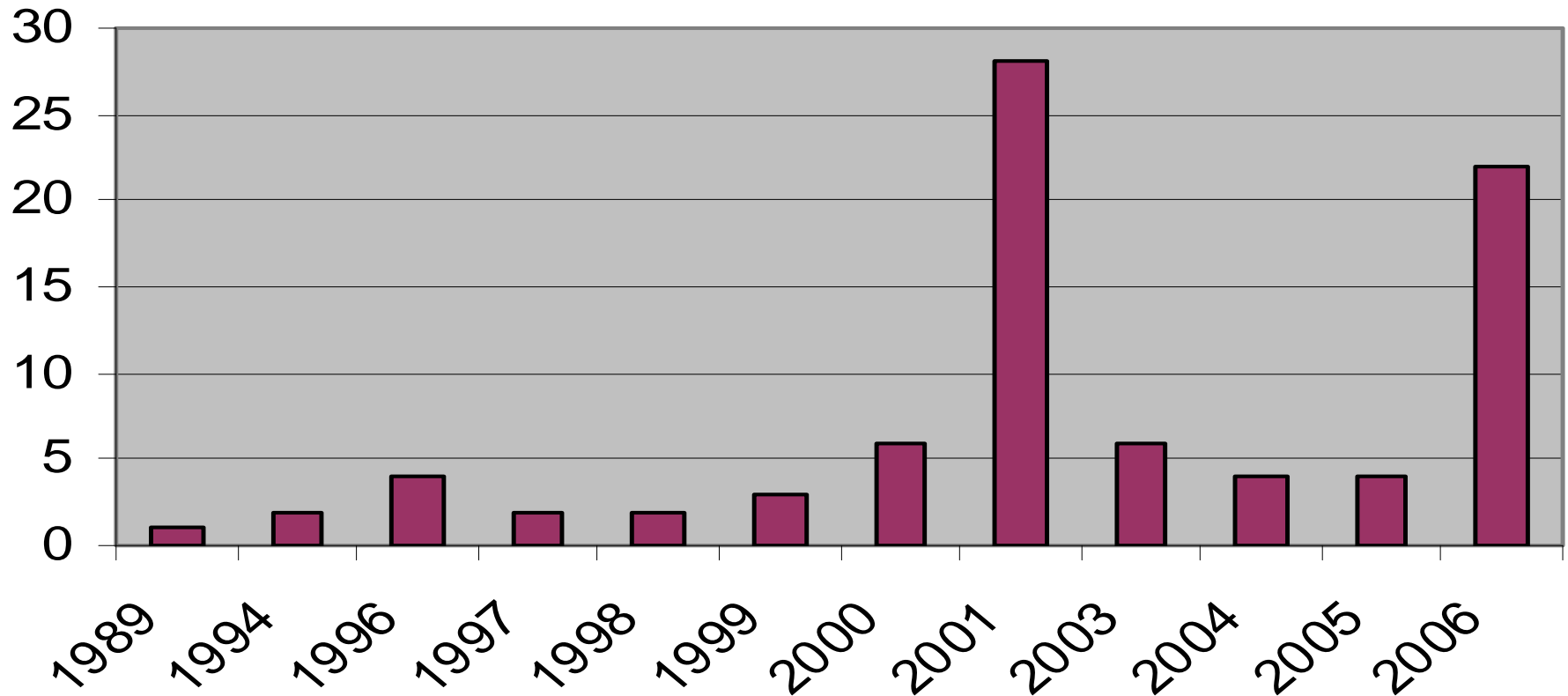
1. Historical and contemporary contaminants – man-made contaminants/hazardous materials/fill materials
2. Nutrients – nitrates from agriculture
3. Organics – major source is leaking underground storage tanks
4. Salt water intrusion – along Delaware river and bays

Definition of GMZ

1. A ground-water management zone is a delineated land area adjacent to and including a contaminated site where DNREC has determined that water well construction must be restricted in order to protect public health and safety.
2. The GMZ map and associated restrictive language define the area where DNREC will restrict public and private water well construction as detailed in an agreement between the DNREC Division of Water Resources and Division of Air and Waste Management

Evolution of HSCA, VCP, and NPL sites with GMZs

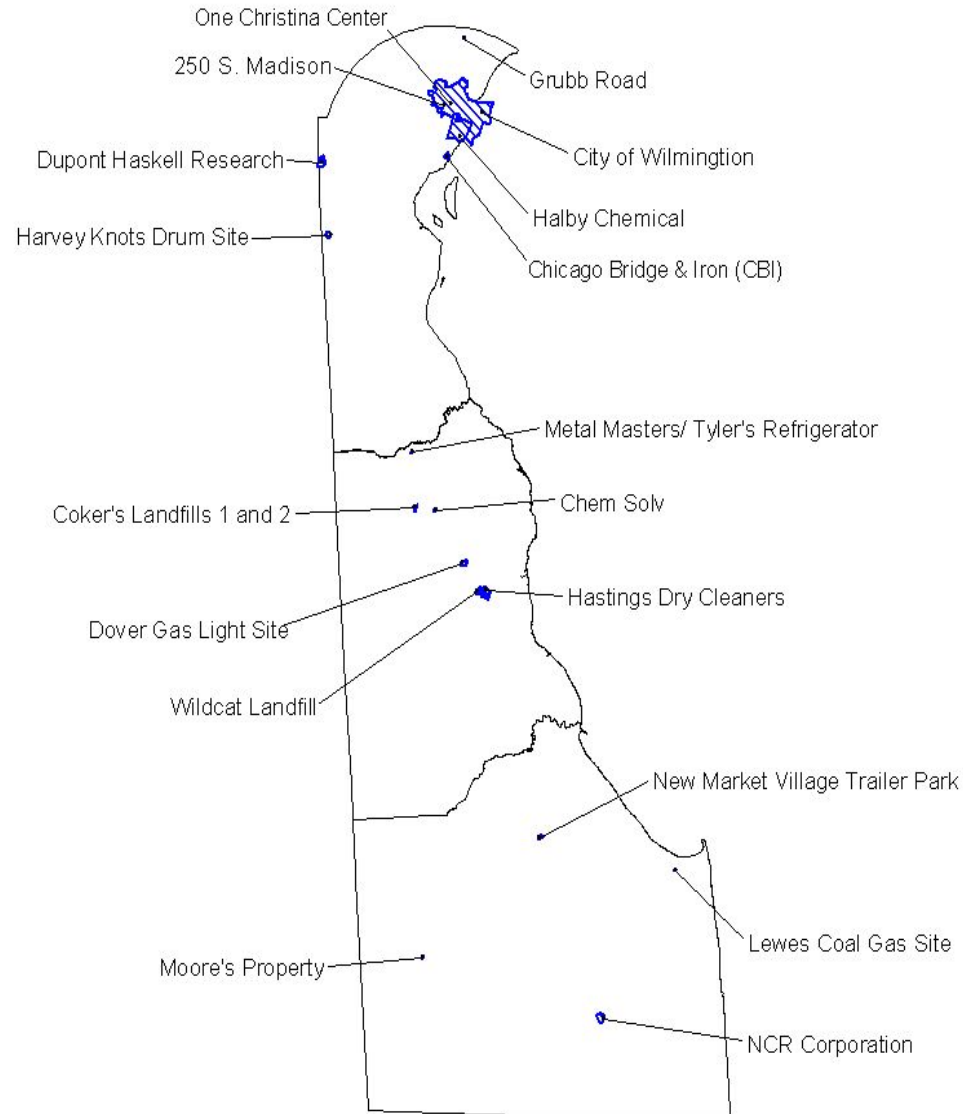
GMZs by year (HSCA, VCP, and NPL sites)



Ground-Water Management Zones

1. GMZs have been established at more than 90 locations in Delaware to help prevent future ground-water withdrawals on the property without approval by the state environmental agency (DNREC).
2. Generally, GMZs reflect the fact that the ground-water is currently too contaminated to be used safely, and cleaning would be “technically impracticable”.

Locations of Sites with GMZ's



Types of GMZs

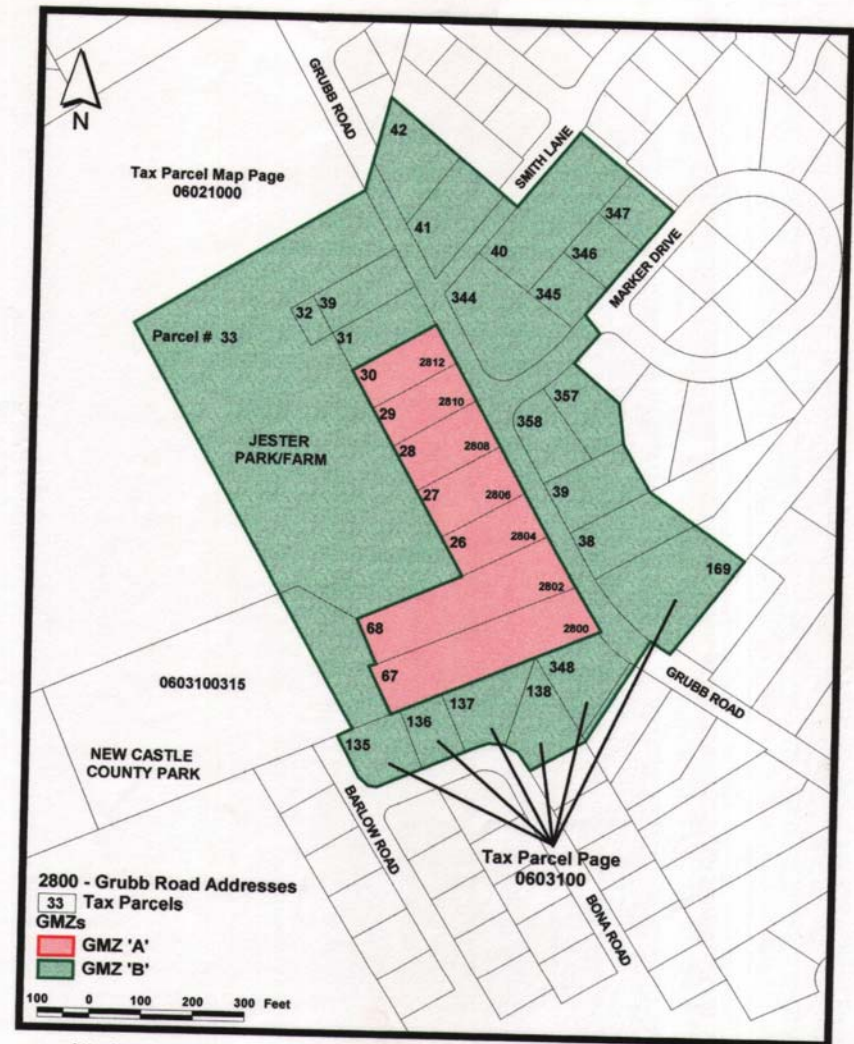
1. Site specific – Utilized as needed on a site by site basis (note that separate distinct areas may exist within one GMZ)
2. Regional
 - a. GMZ approach changes when many sites are located in close proximity or when dealing with very large sites
 - b. Currently, 5 regional GMZs have been established

NAME	LOCATION
GMZ 'A':	2800 to 2812 block of Grubb Road approximately 2000 feet southeast of the intersection of Naamans and Grubb Roads
GMZ 'B':	Site properties exclusive of GMZ 'A'

WHEREAS, Attachment 3 defines the areal extent of the GMZs; and

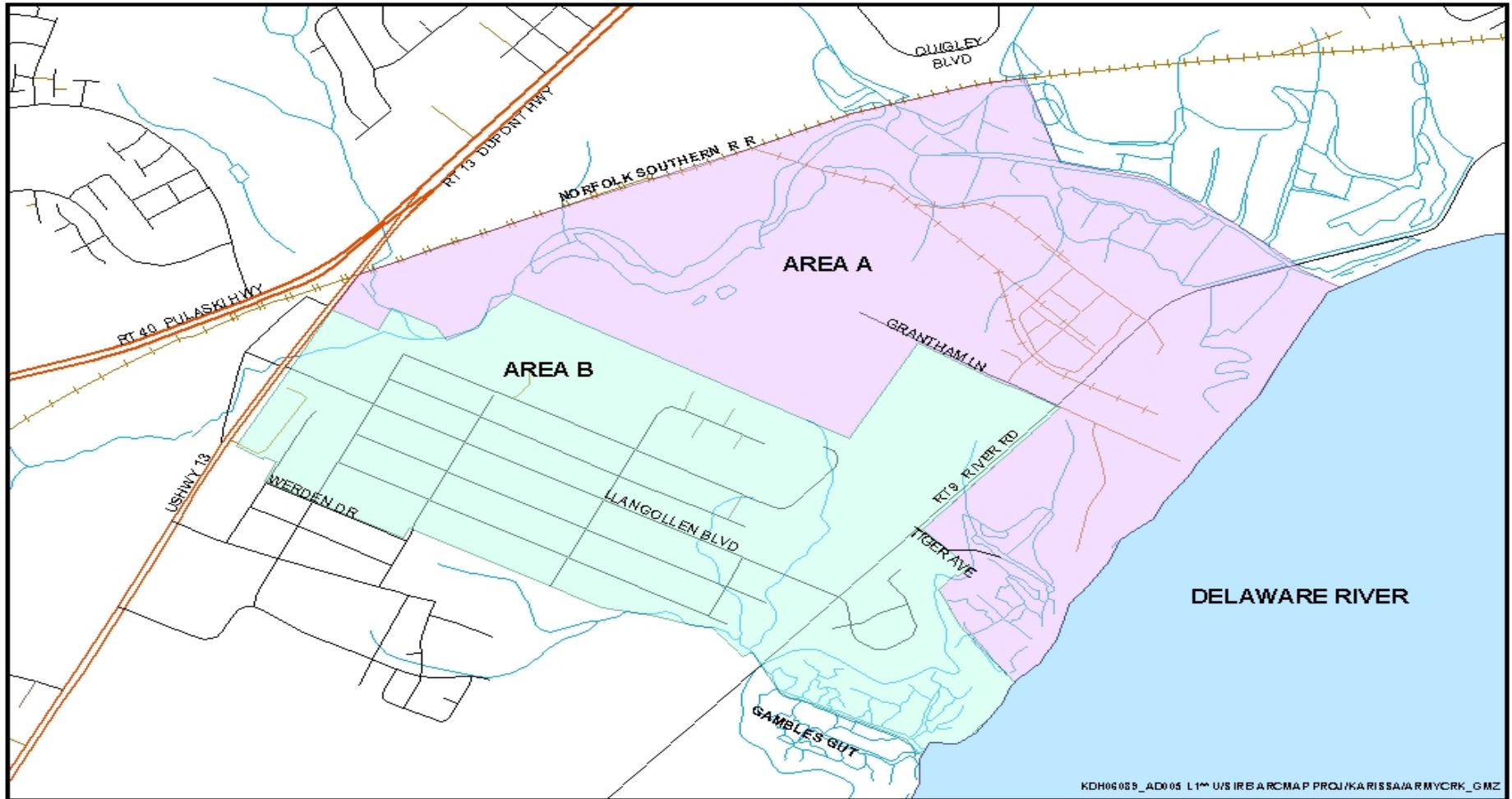
NOW, THEREFORE, IT IS AGREED BY DAWM AND DWR AS FOLLOWS:

1. A GMZ shall be established to include the Grubb Road Site and its environs as defined both in the text and on the attached maps, Attachment 2 and Attachment 3. The GMZs will consist of two distinct areas with differing restrictions on wells. The GMZ 'A' consists of the environs impacted by the Grubb Road Site (in the regolith), regardless of ownership, and is physically bounded to the northeast by Grubb Road, to the south by the southern property boundary of 2800 Grubb Road, and to the west and north by the Jester Park Farm. The GMZ 'B' consists of environs adjacent to but exclusive of GMZ 'A'.
2. No public or domestic water supply wells will be allowed or permitted in GMZ 'A'. Monitoring wells may be approved following joint review and approval by both DWR and DAWM.
3. No public or domestic water supply wells will be allowed or permitted in GMZ 'B' in the unconfined regolith aquifer. Monitoring wells may be approved following joint review and approval by both DWR and DAWM in the unconfined regolith aquifer. Other water supply wells may be allowed and permitted in GMZ 'B' in the Wilmington Complex Aquifer provided that the construction of the wells would



Attachment 3: Grubb Road Site-Areal Extent of Groundwater Management Zones

Type of GMZ – Regional



KDH06025_AD005 L1** U/S IRB A RC/MAP PROJ/KARISSA/ARMYCRK_GMZ

ARMY CREEK GMZ

ARE A

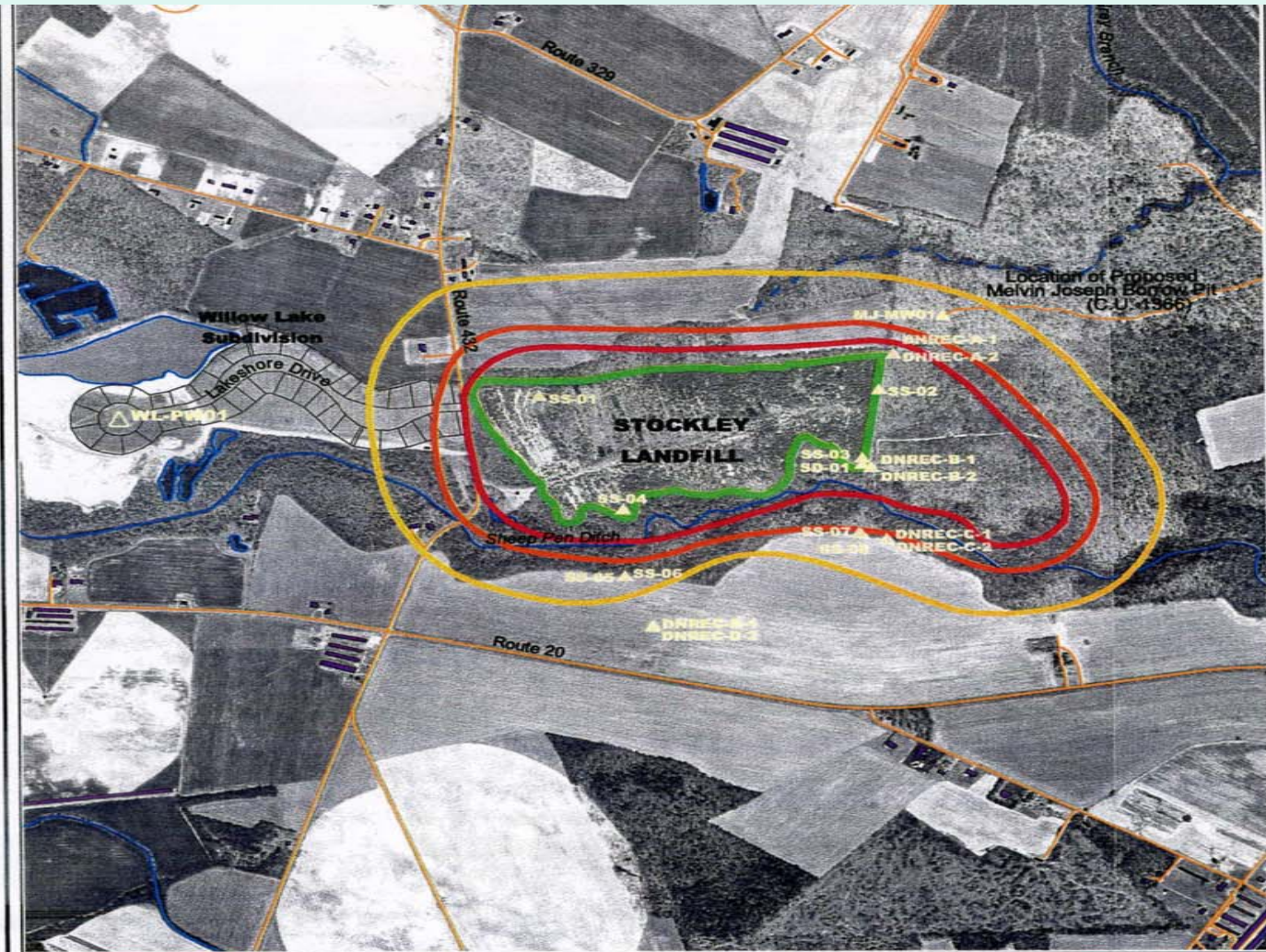
- GMZA
- GMZ B

0 0.25 0.5 Miles



This map is provided by the DNREC-SIRB solely for display and reference purposes and is subject to change without notice. DNREC-SIRB will not be held responsible for the assumed accuracy contained in the map or for use other than its intended purposes.

ATTACHMENT 2
GMZ AREA A & B FOR
ARMY CREEK & VICINITY
NEW CASTLE, DELAWARE



LEGEND:

- Monitor Well Location
- Public Water Supply Well Location

Groundwater Management Zones (GMZs)

- No Well Zone
- GMZ A
- GMZ B

NOTE: Aerial photography dated 1996.

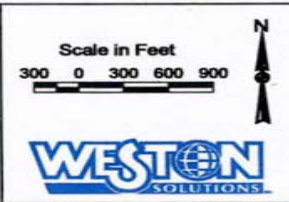


FIGURE 2-23
GROUNDWATER MANAGEMENT ZONES
STOCKLEY LANDFILL
SUSSEX COUNTY, DELAWARE

How GMZs are Established

1. Ground-water Management Zones (GMZs) are established by an agreement between DNREC's Divisions of Water Resources and Air and Waste Management at the request of SIRB or outside consultant due to "impracticability".
2. By preventing issuance of a well permit if a request is received on a property or area that has a GMZ, the goal is to prevent wells from being installed in contaminated areas.

GMZ Management Process

1. All Well Permit Applications received by DNREC Well Permitting Branch for review and issuance;
2. Review includes the Well Permitting GIS Project;
3. Well locations flagged if within 1000 ft of problem site polygon, including sites with GMZ's;
4. Flagged Permits reviewed by Ground-water Protection Branch hydrologists with DAWM program review;
5. Permits denied or special conditions applied to permit per the requirements of the GMZ agreement.

GMZ Long Term Stewardship

1. Law-abiding citizens may unwittingly use a well illegally installed in a GMZ later, long after the illegal installer has moved on.
2. There are both benefits and limitations to the use of GMZs as an effective tool for LTS.

GMZ Benefits:

1. Public-health and environmental protection
Easy preventive measure for exposure to contaminated GW utilizing required well permit process and licensed driller requirement, using readily available institutional mechanisms
1. Allow to include these restrictions in the restrictive covenants.
2. Internal mechanism, not necessarily part of the deed. GMZ does not run with the land. It is a dynamic document (can be removed once remediated)

GMZ Limitations:

1. Has potential to become “national sacrifice zone” without any effort (or very minimal effort) at active remediation.
2. Perception from Responsible Parties that GMZ is a “national sacrifice zone”.
3. Timeframes not defined (no specification of timeframe request)
4. No uniform criteria for establishing monitoring in the GMZs (DNREC O&M guidance suggests 8 quarters of monitoring after detections are below standards)

GMZ Limitations (cont.):

1. Internal mechanism, not necessarily part of the deed. GMZ does not run with the land. It is a dynamic document. (both benefit and limitation)
2. Certificate of Completion of Remedy (COCR) has already been issued.
3. No funding, procedures or staff for follow up ensure the GMZs are being honored or implemented.

GMZ Point of Compliance

1. The goal is remediation with any GMZ
2. Ground-water is to be remediated to the acceptable Uniform Risk-based Remediation Standards.
3. Sometimes both active and inactive (natural attenuation) remediation are used.

GMZ Useage – Where we want to go...

1. Important to note that GMZ's are to be used as “safety cones” in areas where ground-water remediation is required
2. DNREC intends to revisit these areas in the future – it is just not possible to resolve in the present state.

What to do??

1. Require GW monitoring for each GMZ
2. Require funding for trust fund for perpetual care of sites, including GMZ
3. Create institutional mechanisms immune from dependence on state funding
4. Reassessment through the Operations and Maintenance (O&M) Process
5. Need to clarify owners
6. Recommend ground-water remediation
7. Establish monitoring network within regional GMZs
8. Implement natural resource damage program (Buy a GMZ)

Keep in mind...

O&M activities are required for all sites until such time that contaminants of concern at a site are at levels that ensure restrictions on the land use of the facility are not needed.

Acknowledgements

1. Todd Keyser, Hydrologist, Delaware Department of Natural Resources and Environmental Control Site Investigation and Restoration Branch
2. Wilmer Reyes, Environmental Engineer, Delaware Department of Natural Resources and Environmental Control Site Investigation and Restoration Branch
3. James D. Werner, Director, Delaware Department of Natural Resources and Environmental Control
4. John T. Barndt, P.G., Delaware Department of Natural Resources and Environmental Control Division of Water Resources
5. Josh Kasper, Delaware Department of Natural Resources and Environmental Control Division of Water Resources

Headquarters U.S. Air Force

Integrity - Service - Excellence

Post-Construction Management and Optimization of a Large Federal Remediation Program

**Mr. John Gillespie
HQ AFCEE/TDE**





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States with Highest Total RA-O System and LTM Program Cost

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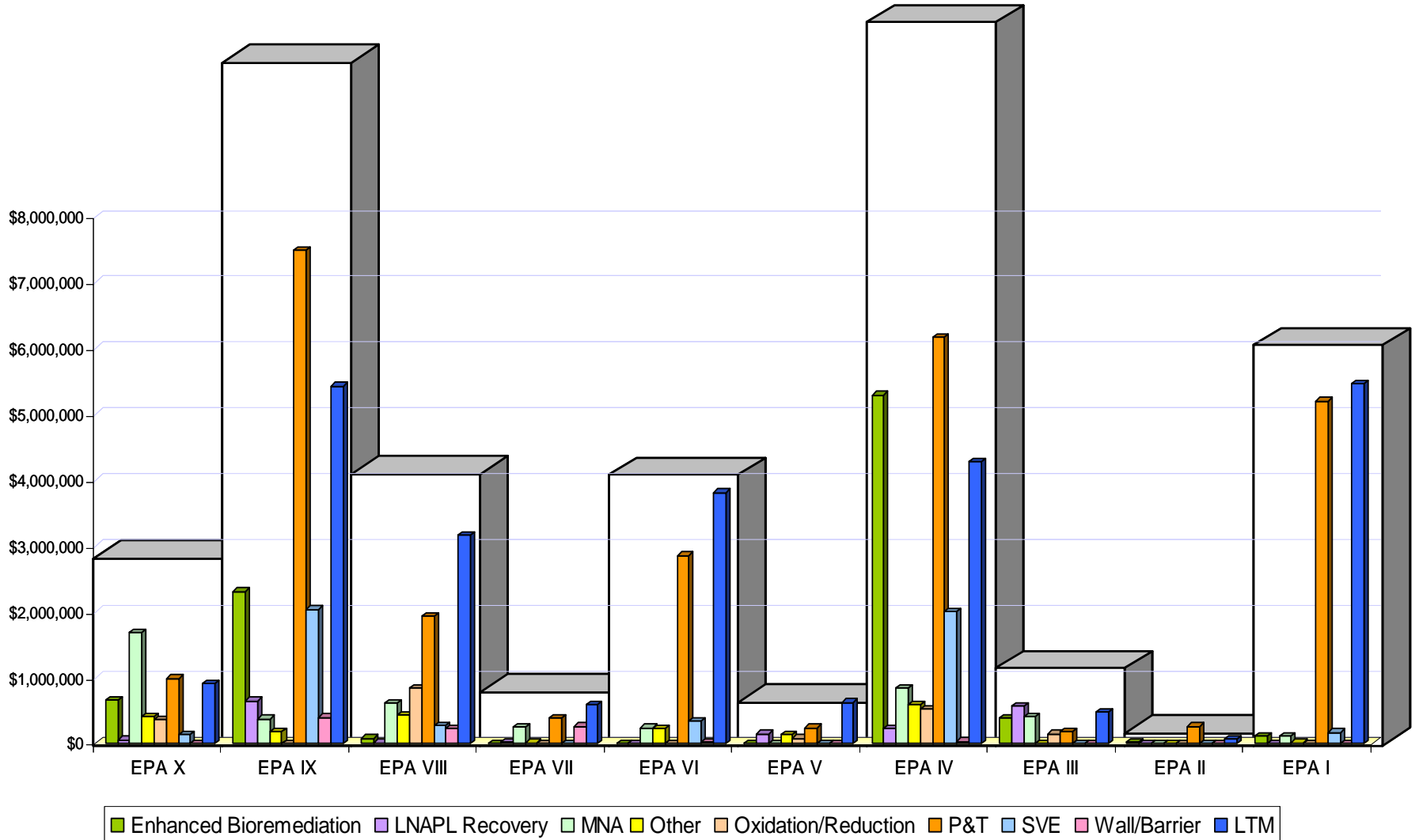
STATE	Grand Total
CA	\$12,484,185
MA	\$10,933,055
FL	\$7,817,804
GA	\$7,534,000
UT	\$3,886,165
OK	\$3,714,520
AK	\$3,123,270
AZ	\$3,094,000
NV	\$2,012,378
TX	\$1,757,993
WA	\$1,652,000
SC	\$1,615,463

	-Top 12 States = 80% of AF RAO/LTM Budget
	-States with no active AF Installation



FY2005 RAO/LTM Data by EPA Region and System Type

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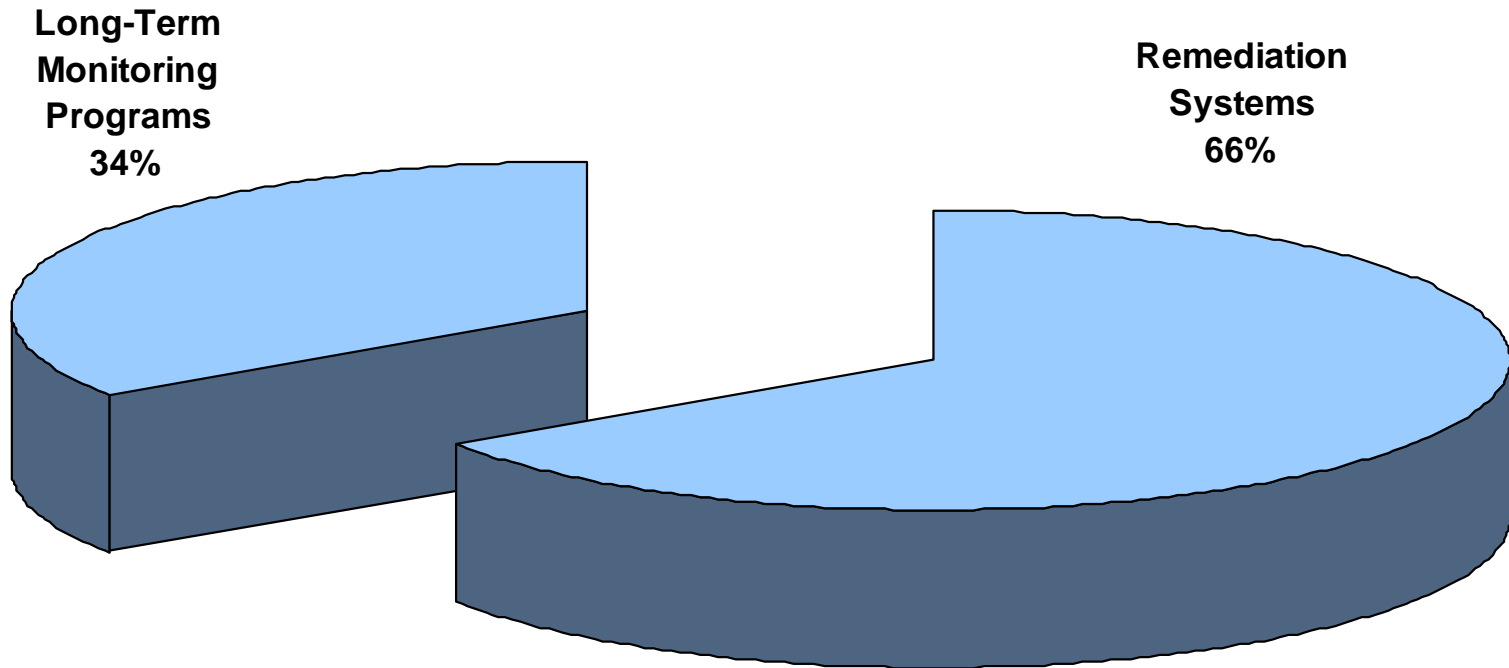




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FY06 Air Force Overview: Total FY06 Remedial System and LTM Cost

All Installations





RPO Overview: RPO Basis

- **President's Management Agenda (Section 5, 2002) directed all Federal Agencies to focus on performance, ensuring programs are evaluated to determine if their funding is actually accomplishing the intended goals**
- **Management Guidance for Defense Environmental Restoration Program (DERP), Sep 2001, mandates continuous reviews of response actions, ensuring protectiveness and optimization of remedial actions**
- **Management Guidance for the Air Force Environmental Restoration Program, Feb 2003, requires annual optimization reviews for sites with an installed remedy**
- **Optimization directed by SAF/IEE memo, Air Force Cleanup Program Performance-Based Management Policy, 27 Oct 04**
- **AFI 32-7020 will require RPO**

Bottom line, RPO is an AF requirement.



RPO Overview: Program Goals

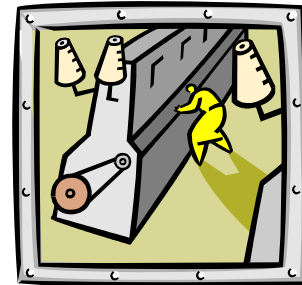
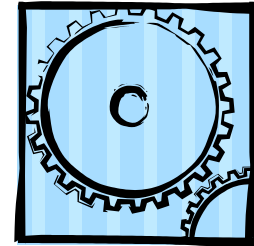
- **Ensure cleanup actions achieve protection of human health and the environment and are working towards accomplishing the cleanup objectives, goals, and levels as outlined in a decision document**
- **Continually re-evaluate site cleanup strategies and processes considering recent changes in legal requirements, site environmental factors, and technological options**
- **Track and report cleanup progress**
- **Optimize in-place cleanup systems and LTM to minimize operation and maintenance (O&M) cost**
- **Accelerate site transfer or closure, achieving site cleanup levels more rapidly and efficiently**



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RPO Overview: Effectiveness and Efficiency

- **First, verify effectiveness**
 - Is the system protective?
 - Will the system achieve site closure?
- **Then, analyze efficiency**
 - Is performance in-line with cleanup objectives, goals, and levels defined within the performance-based decision document?
 - Is system optimization necessary?
 - Accelerate cleanup
 - Reduce cost

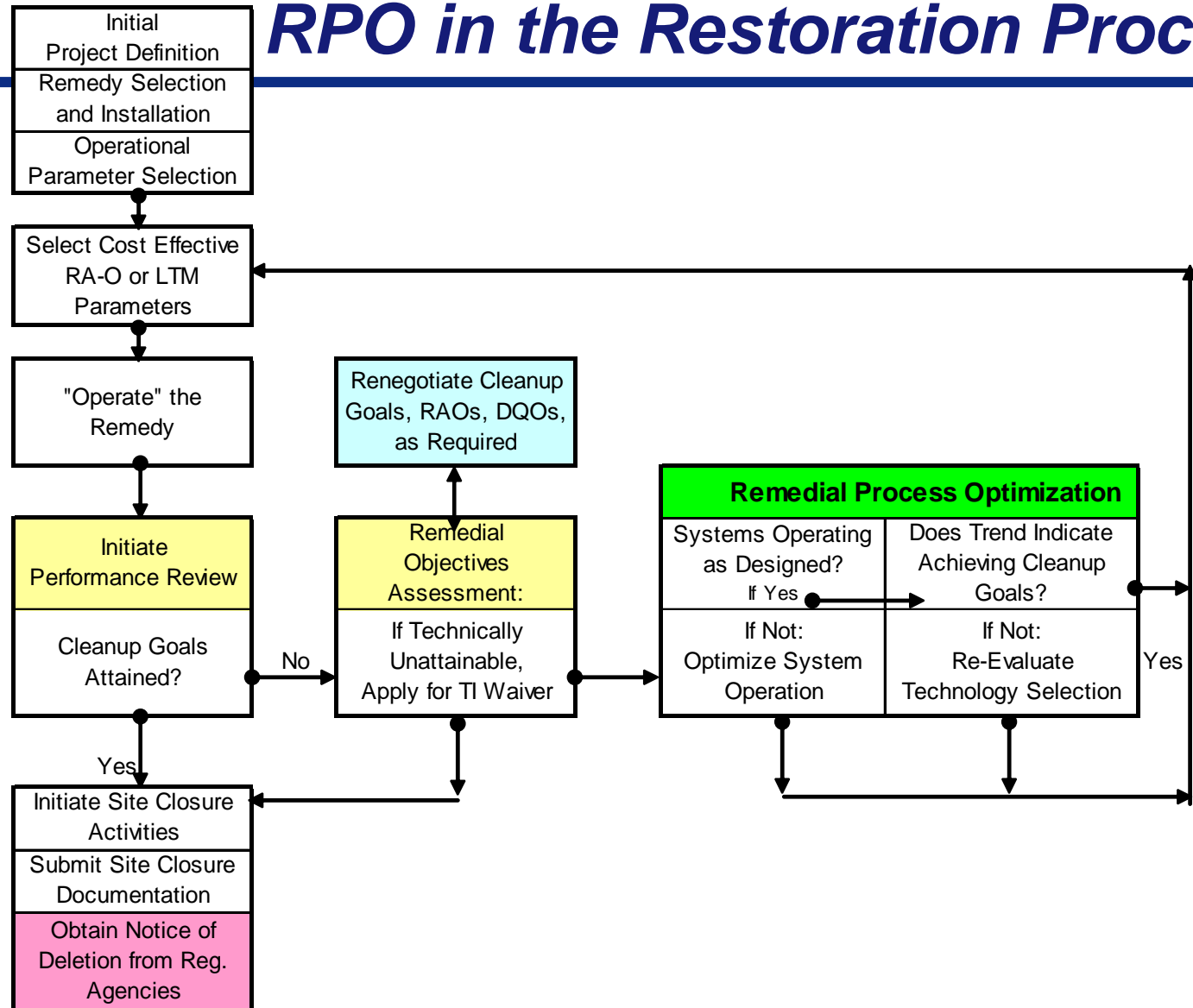


Confirm effectiveness before evaluating efficiency...



RPO Overview:

RPO in the Restoration Process





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RPO System: Three-Phased Approach

- **Phase I – Inventory and Review**
- **Phase II – Evaluations**
- **Phase III – Implementation of Recommendations**



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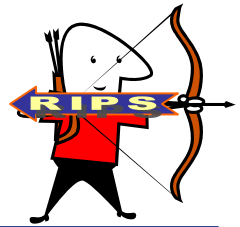
RPO Phase I: Inventory and Review

- **Inventory and review of system performance shall be accomplished annually for each system and site under active remediation or LTM**
- **Ideally, data collection for Phase I inventory and review will be accomplished throughout the year**
- **Cost accounting of the O&M of systems/monitoring and details of system performance shall be tracked and recorded**
- **The minimum requirement for an annual Phase I inventory and review is the completion of an RPO Inventory & Performance Software (RIPS) inventory and assessment**



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RPO Phase I: RIPS - Tool of the Trade




- **RPO Inventory & Performance Software (RIPS) is the cornerstone of RPO**
- **Web-based database**
 - RIPS provides an AF-wide, comprehensive inventory of remediation systems and LTM programs
- **Knowledge management tool**
 - Assists in prioritization of systems in terms of optimization potential
- **Performance tracking capability in FY06**
 - Allow for benchmarking technologies
- **RIPS is updated annually**
 - Data cut-off is end of FY, complete entry by end of CY



RPO Phase I: RIPS Screenshot

AFCEE RPO Outreach Office Sign Off Main Menu Support

 **Remedial Process Optimization Inventory and Performance Software**
The Air Force Center for Environmental Excellence - Brooks City Base, San Antonio, Texas

Major Command: Any Major Command
Installation: Any Installation
Site: Any Site
AFRIMS ID:
Remediation System: Any Pump And Treat
Remediation System Type: Pump & Treat
Fiscal Year: 2005

[Back to Selection Page](#)
[View Quick Report](#)

**** Internet connectivity cannot be guaranteed. This page is set to log-off idle sessions after 15 minutes. As you enter data, you may submit partial data and then continue to work.

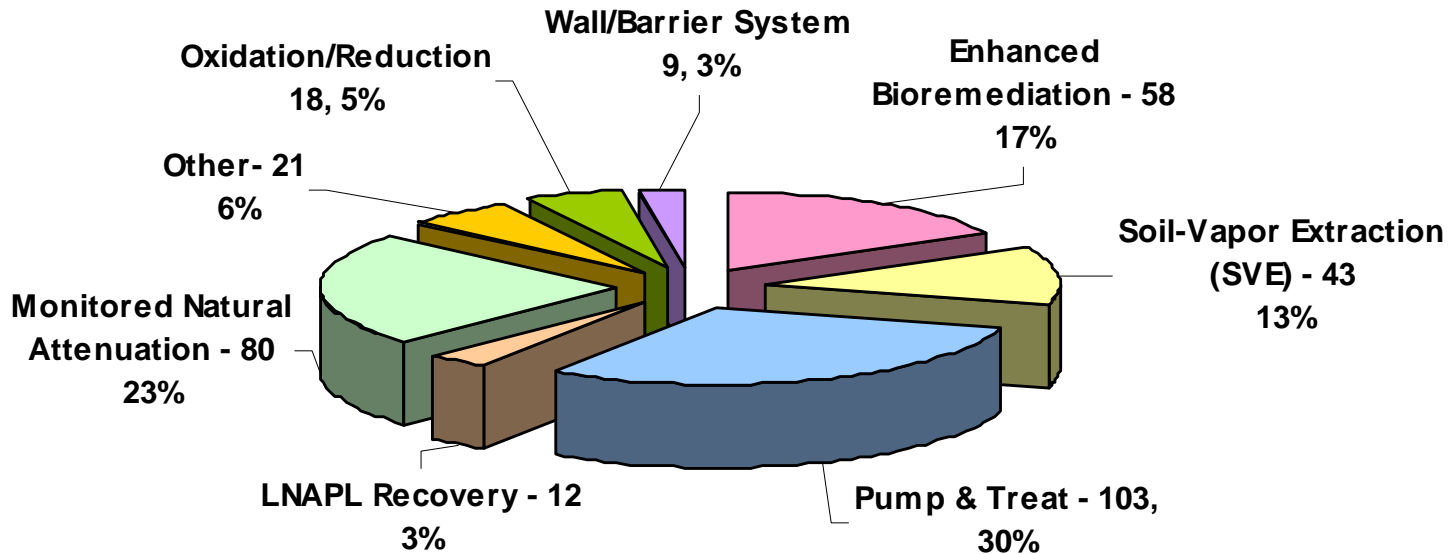
1. Date the questionnaire was completed (mm/yyyy)?	<input type="text"/>
2. Legal Statute for Remediation System?	<input type="text"/>
3. Legal Driver for Remediation System?	<input type="text"/>
4. Legal Status of Remedy?	<input type="text"/>
5. Date of Next 5-Year Review (mm/yyyy)?	<input type="text"/>
6. Basis for the 5-Year Review Date?	<input type="text"/>
7. Approximate (+/-10%) Operation and Maintenance Costs (\$) for Previous Fiscal Year?	<input type="text"/>
8. Portion of Previous Fiscal Year Operation and Maintenance Costs (\$) Used Only for Groundwater/Soil-Vapor Performance Monitoring?	<input type="text"/>

- Questionnaire



FY06 Air Force Remedial Systems Types

System Number by Technology – All MAJCOMs

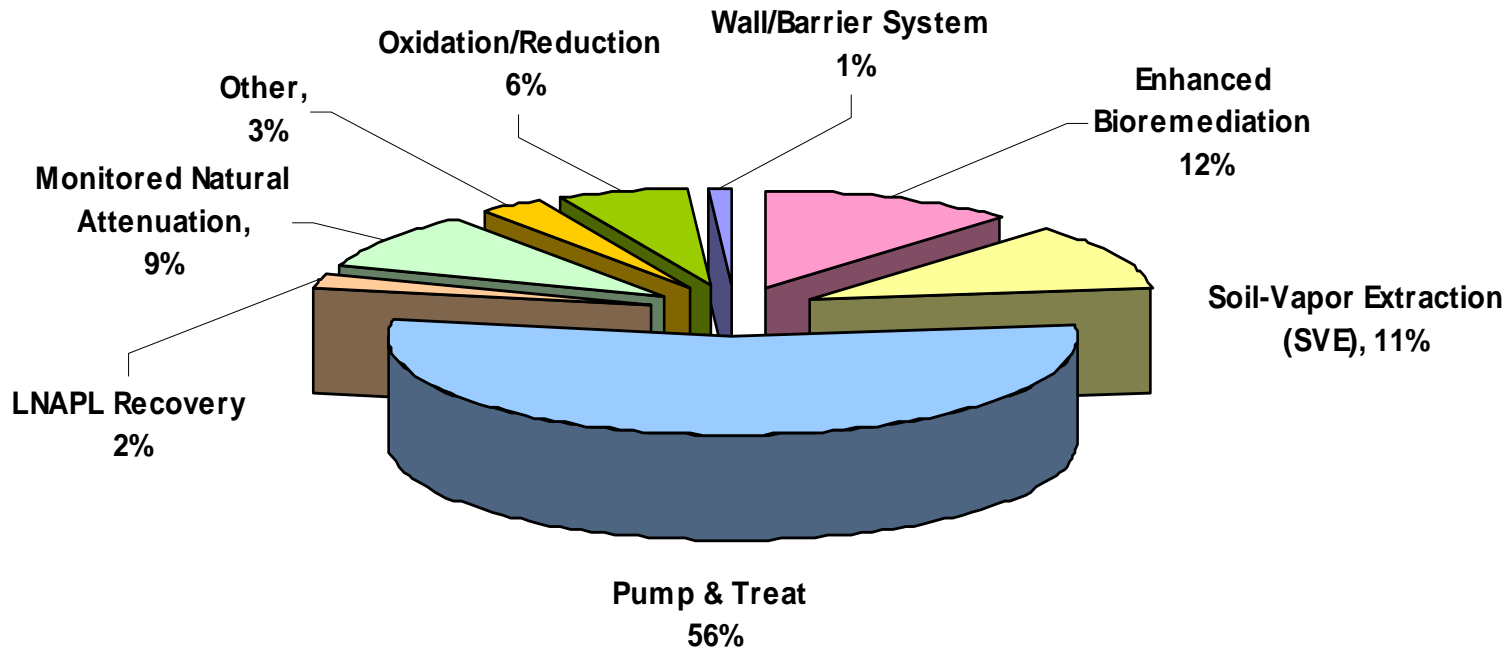


*As of 9 Mar 07



FY06 Air Force Remedial System Cost

Percent of Cost by Technology – All MAJCOMs



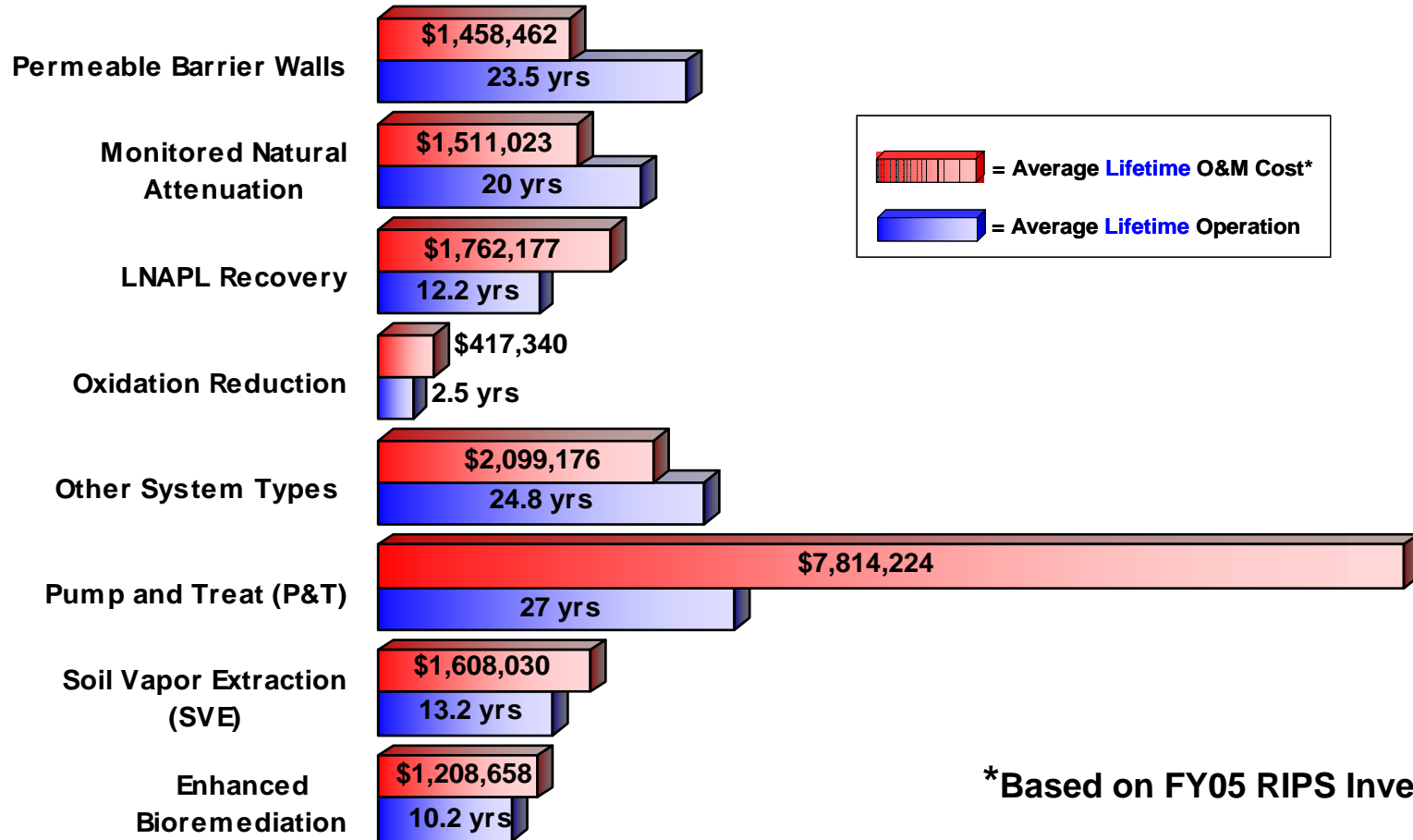
*As of 9 Mar 07



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Average Lifetime System Operation and O&M Cost by Technology

All MAJCOMs

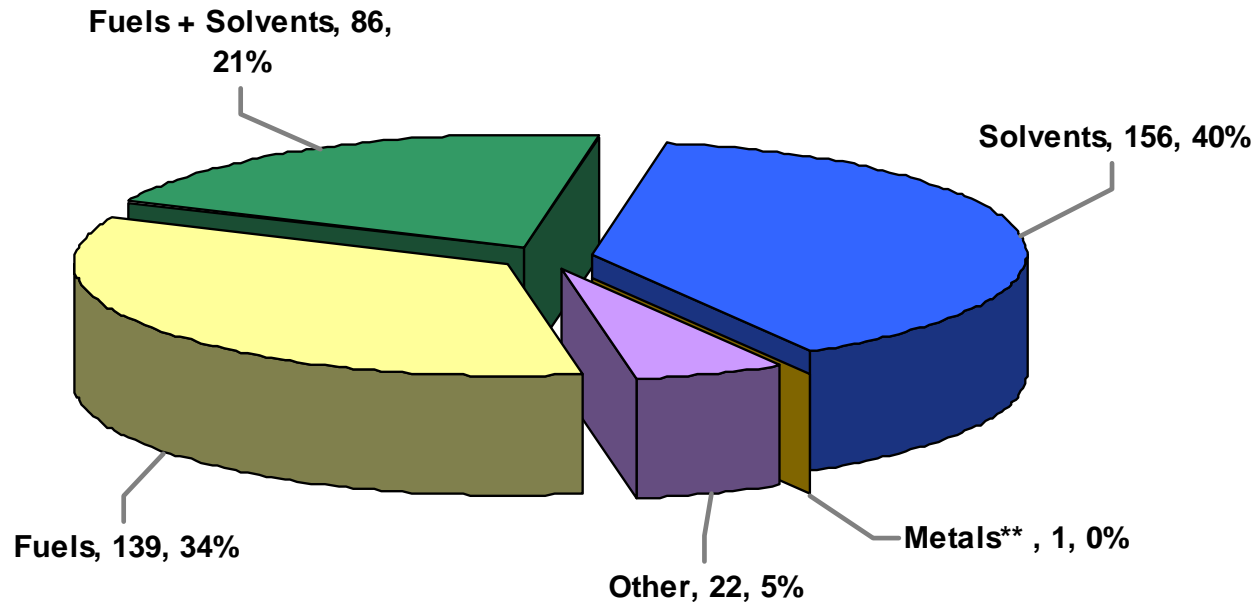


*Based on FY05 RIPS Inventory



AF Remedial Systems by COC

Number of Systems by Contaminant of Concern (COC)*



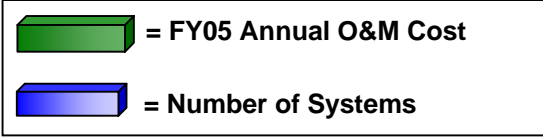
* The sites for the COC identified may include other contaminants not listed.

** One system addresses metals only; however, metals are collateral at 30 other remedial systems.



Remedial Systems by COC and Technology

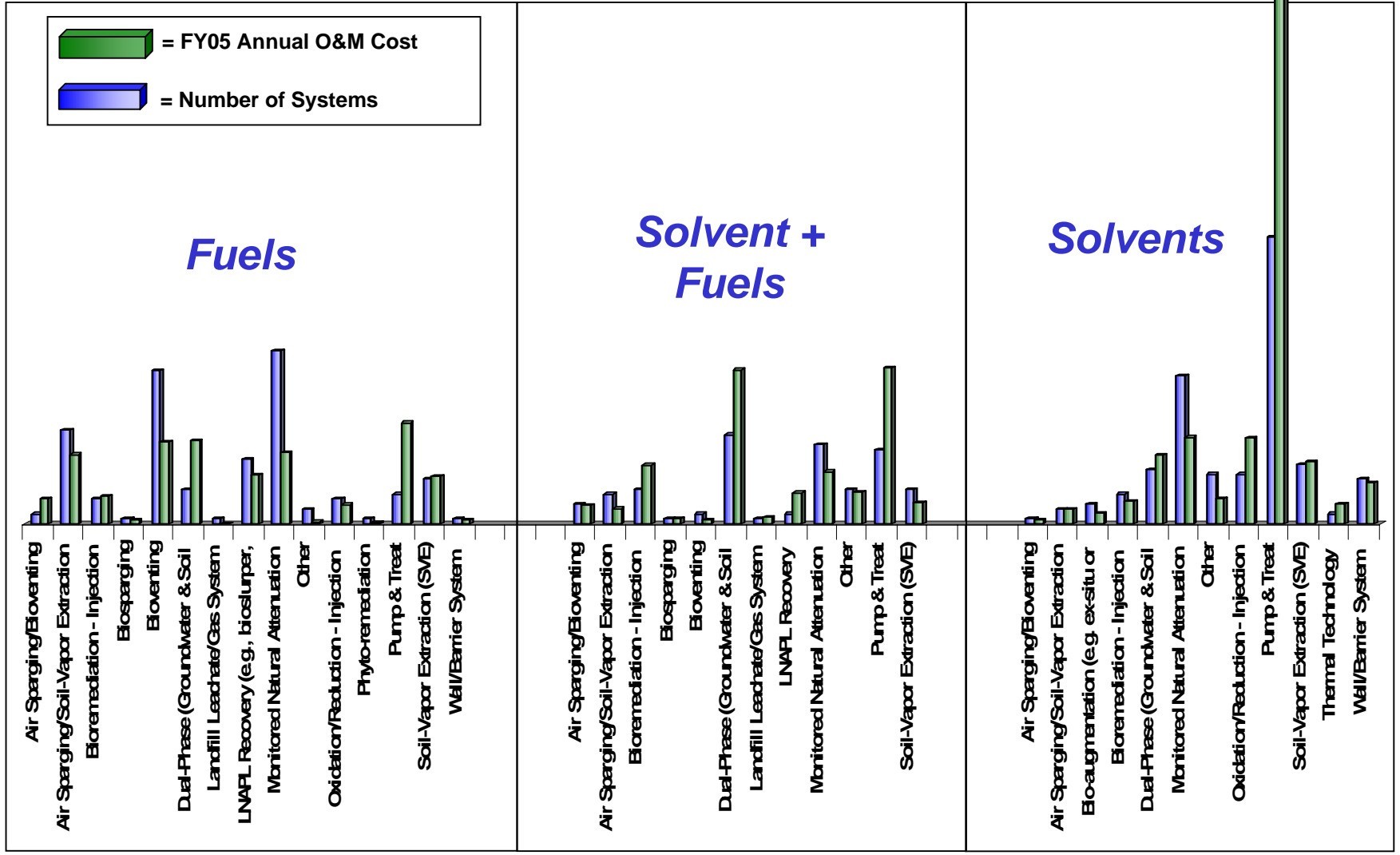
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Fuels

Solvent + Fuels

Solvents





RPO Phase II: Evaluations

- **Prioritize systems for Phase II evaluations and determine the level of effort**
- **Balance consideration of protectiveness, cost-to-complete, and schedule**
- **Systems not protective of human health and the environment as outlined in the decision document should receive the highest priority**
- **Sites with upcoming five-year reviews receive priority**
 - **RPO evaluations shall be conducted such that, necessary data and analysis will be available to support meaningful discussions and negotiations during a five-year review**

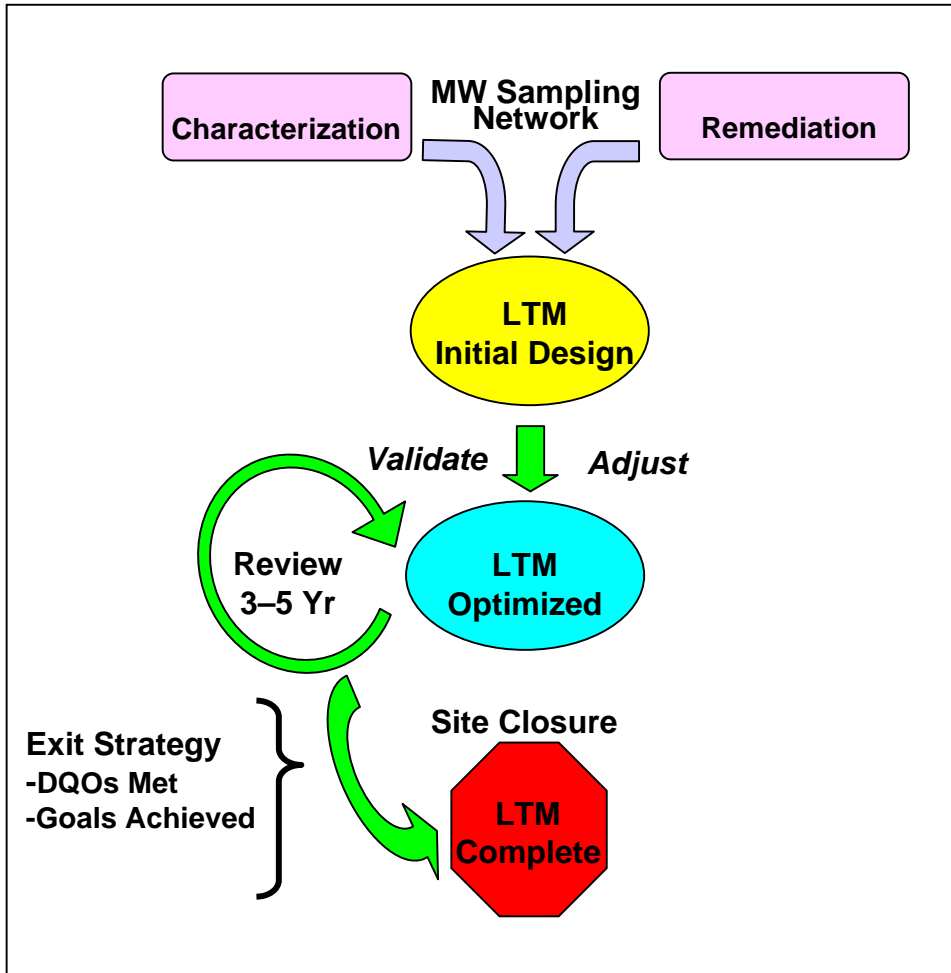


RPO Phase II: Evaluations

- **Recommended a team consisting of a combination of contractor support, MAJCOM representative(s), and RPMs from other installations be utilized**
- **Without incentives, contractors currently operation systems may not aggressively pursue optimization, especially if it leads to system shutdown**
- **It's often difficult for Installation RPMs, with time and effort invested in a remedy, to evaluate it impartially**
- **Coordination with Staff Judge Advocate and AFCEE Regional Environmental Office is vital**
- **Incorporating regulators from the Interstate Technology & Regulatory Council (ITRC) is encouraged and may be helpful in gaining cooperation from the regulatory community**



RPO Phase II: LTM System Evaluations



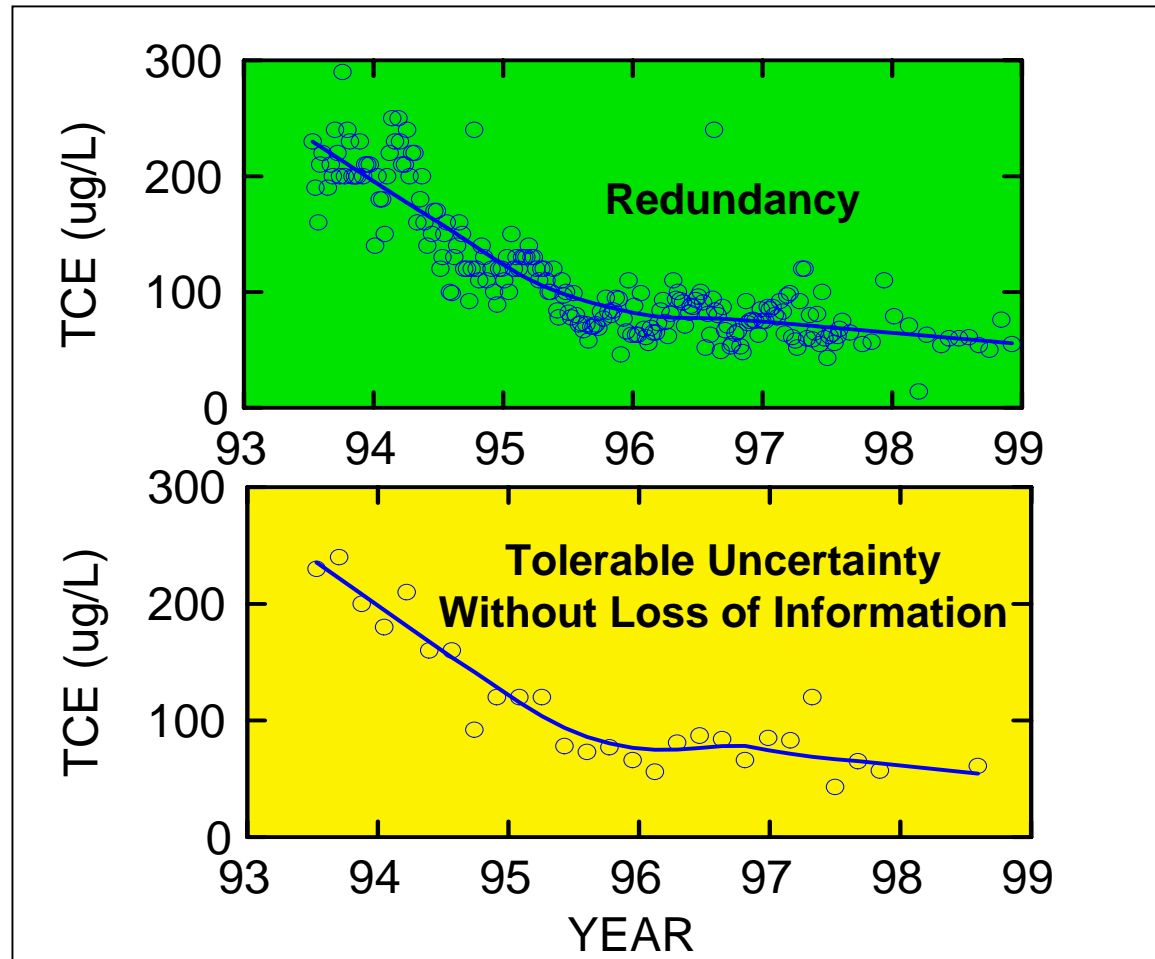
- Generally, offers the highest payback and least regulatory resistance – particularly on “un-optimized” systems
- Tools:
 - Monitoring and Remediation Optimization Software (MAROS)
 - Geostatistical Temporal and Spatial (GTS) optimization software
 - Professional Judgment of Environmental Scientists and Engineers



RPO Phase II LTM – Optimization Identifies Sampling Redundancy & Essential Data

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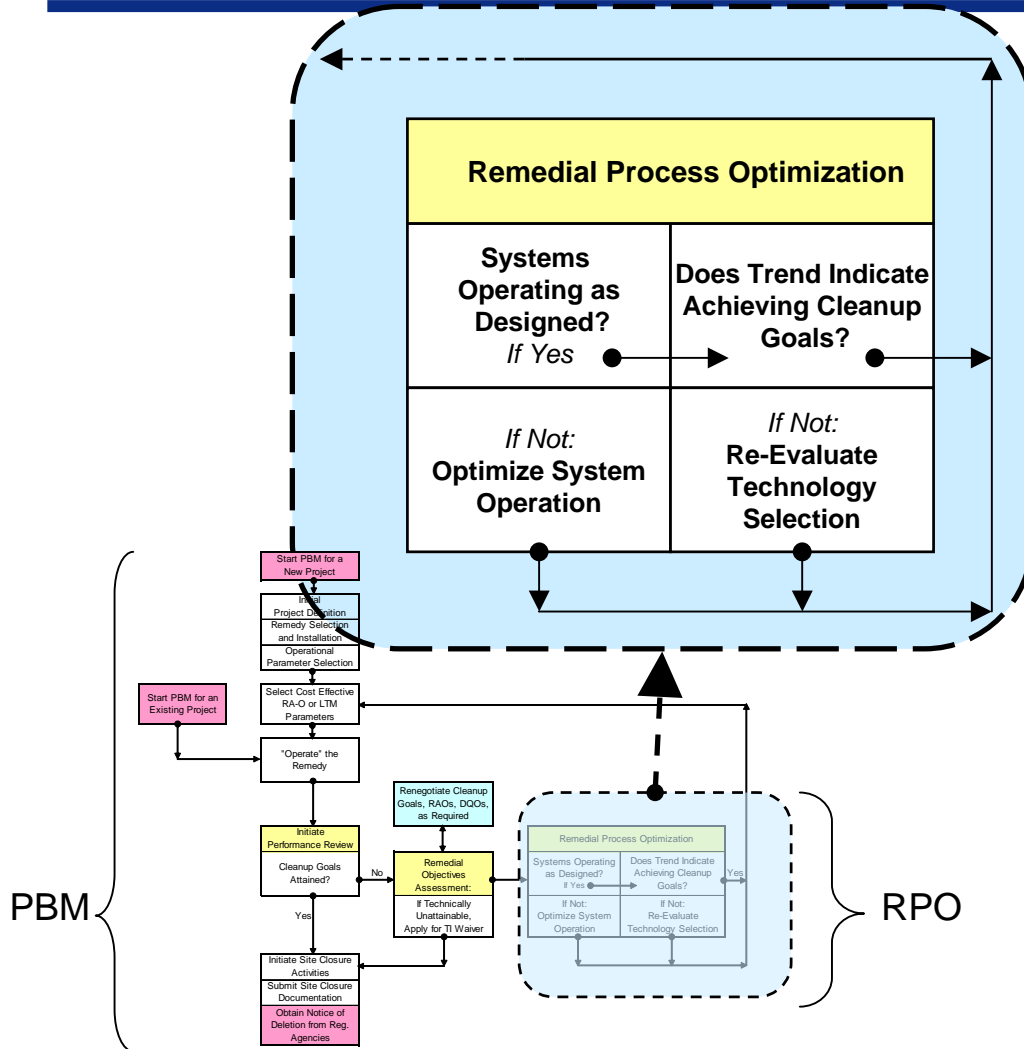
“Nice to have”
All Data
Samples = 240



“Essential”
90% Reduction
Samples = 27



RPO Phase II: Cleanup System Evaluations



- Evaluation can recommend minor changes or system shutdown and replacement with alternative treatment
- Optimization must be implemented within the confines of existing decision document
- Engage and include regulatory and public stakeholders early and often



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RPO Phase II: PTT Screen Shot – Mass Data Entry

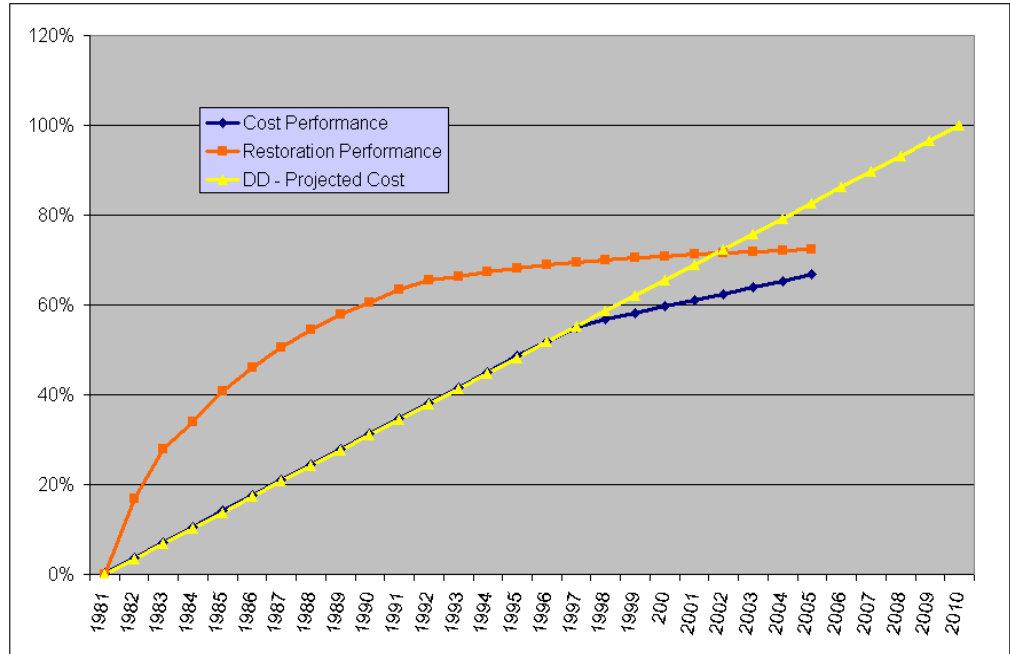
Fiscal Year	Total Mass Removed by Year (lbs.)	Operation & Maintenance Cost by Fiscal Year	Projected Costs/Mass Removed (from DD)	Operation & Maintenance as Percent of CTC	Total Percent Mass Removed
1981	0	\$ 16,917	0%	0%	0%
1982	1681	\$ 203,000	3%	4%	17%
1983	1121	\$ 203,000	7%	7%	28%
1984	599	\$ 203,000	10%	11%	34%
1985	676	\$ 203,000	14%	14%	41%
1986	518	\$ 203,000	17%	18%	46%
1987	458	\$ 203,000	21%	21%	51%
1988	397	\$ 203,000	24%	24%	54%
1989	337	\$ 203,000	28%	28%	58%
1990	276	\$ 203,000	31%	31%	61%
1991	269	\$ 203,000	34%	35%	63%
1992	211	\$ 203,000	38%	38%	65%
1993	91	\$ 203,000	41%	42%	66%
1994	97	\$ 203,000	45%	45%	67%
1995	86	\$ 203,000	48%	49%	68%
1996	79	\$ 190,000	52%	52%	69%
1997	63	\$ 190,000	55%	55%	70%
1998	53	\$ 104,000	59%	57%	70%
1999	36	\$ 84,000	62%	58%	70%
200	36	\$ 84,000	66%	60%	71%
2001	37	\$ 84,000	69%	61%	71%
2002	31	\$ 84,000	72%	62%	72%
2003	27	\$ 84,000	76%	64%	72%
2004	29	\$ 84,000	79%	65%	72%
2005	25	\$ 84,000	83%	67%	72%
2006			86%		
2007			90%		
2008			93%		
2009			97%		
2010			100%		

Mass Data Entry Directions: Enter mass data in Mass Calculations worksheet

Total Mass at RA-O Start-Up (lbs.)	10,000
Cost-To-Complete (CTC) (\$)	\$ 5,887,000
Impacted Acres	200
Acre-ft of groundwater impacted	1,200
RA-O Start Year (from DD)	1981
RA-O Completion Year	2010

1981 Eng Est
DD = 1998
Based on DD

Directions: Enter data in the cells highlighted in yellow (for the appropriate years). Data must be entered for all years between RA-O start up and RA-O completion. Do not enter data in the cells shaded in gray - they will be automatically populated.



	To Date	Projected Total Cost	Original Est. Total Cost
Cost/Acre	\$ 19,570	\$ 27,059	\$ 29,435
Cost/Acre feet	\$ 3,262	\$ 4,510	\$ 4,906
Cost/lb removed	\$ 541		\$ 589



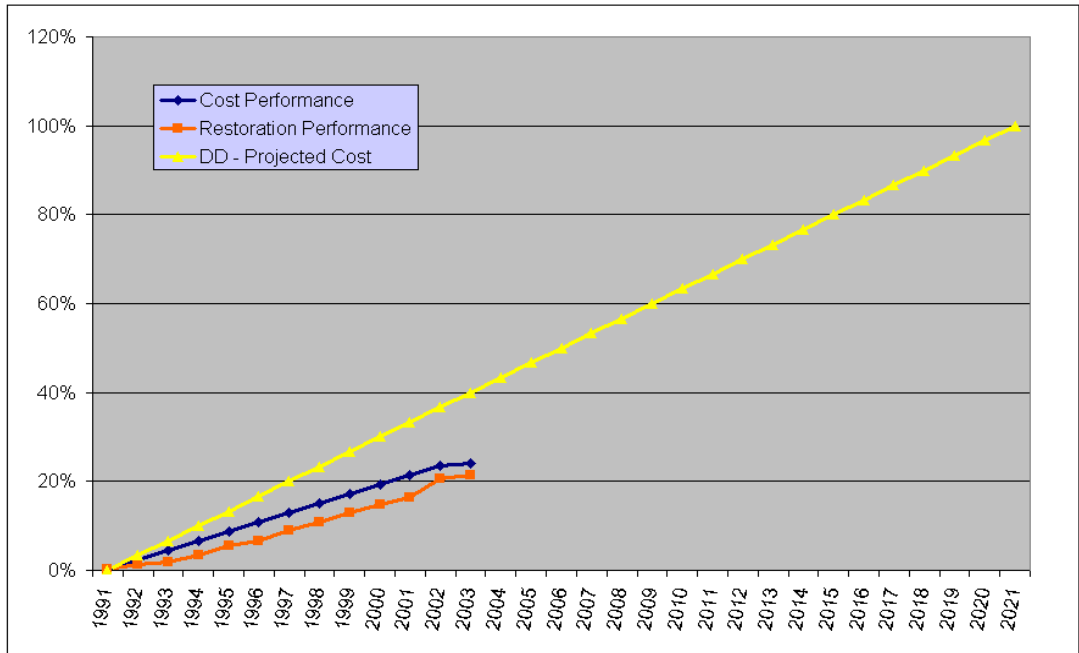
RPO Phase II: PTT Screen Shot – Mass Data Entry

Fiscal Year	Total Mass Removed by Year (lbs.)	Operation & Maintenance Cost by Fiscal Year	Projected Costs/Mass Removed (from DD)	Operation & Maintenance as Percent of	Total Percent Mass Removed
1991	2	\$ 25,000	0%	0%	0%
1992	11	\$ 250,000	3%	2%	1%
1993	7	\$ 250,000	7%	4%	2%
1994	16	\$ 250,000	10%	7%	3%
1995	21	\$ 250,000	13%	9%	6%
1996	12	\$ 250,000	17%	11%	7%
1997	23	\$ 250,000	20%	13%	9%
1998	21	\$ 250,000	23%	15%	11%
1999	21	\$ 250,000	27%	17%	13%
2000	20	\$ 250,000	30%	19%	15%
2001	17	\$ 250,000	33%	21%	16%
2002	44	\$ 250,000	37%	23%	21%
2003	6	\$ 62,500	40%	24%	21%
2004			43%		
2005			47%		
2006			50%		
2007			53%		
2008			57%		
2009			60%		
2010			63%		
2011			67%		
2012			70%		
2013			73%		
2014			77%		
2015			80%		
2016			83%		
2017			87%		
2018			90%		
2019			93%		
2020			97%		
2021			100%		

Mass Data Entry Directions: Enter mass data in Mass Calculations worksheet

Total Mass at RA-O Start-Up (lbs.)	1029
Cost-To-Complete (CTC) (\$)	\$ 11,829,000
Impacted Acres	70
Acre-ft of groundwater impacted	5,620
RA-O Start Year (from DD)	1991
RA-O Completion Year	2021

Directions: Enter data in the cells highlighted in yellow (for the appropriate years). Data must be entered for all years between RA-O start up and RA-O completion. Do not enter data in the cells shaded in gray - they will be automatically populated.



	To Date	Projected Total Cost	Original Est. Total Cost
Cost/Acre	\$ 40,536	\$ 190,407	\$ 168,986
Cost/Acre feet	\$ 505	\$ 2,372	\$ 2,105
Cost/lb removed	\$ 12,953		\$ 11,496



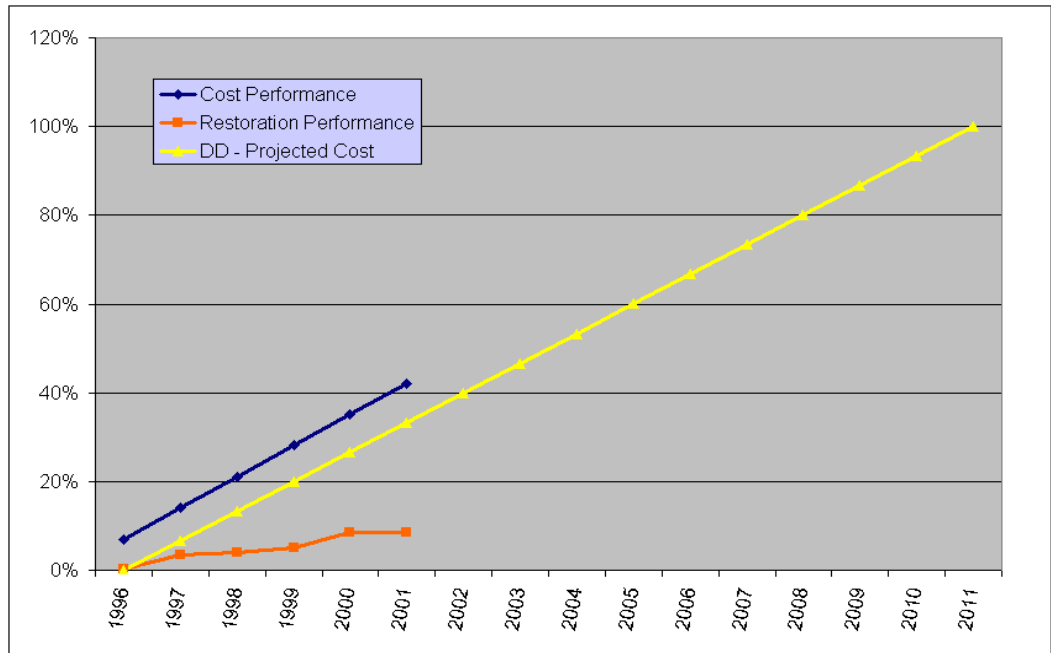
RPO Phase II: PTT Screen Shot – Mass Data Entry

Fiscal Year	Total Mass Removed by Year (lbs.)	Operation & Maintenance Cost by Fiscal Year	Projected Costs/Mass Removed (from DD)	Operation & Maintenance as Percent of	Total Percent Mass Removed
1996	4	\$ 114,000	0%	7%	0%
1997	83	\$ 114,000	7%	14%	4%
1998	9	\$ 114,000	13%	21%	4%
1999	26	\$ 114,000	20%	28%	5%
2000	86	\$ 114,000	27%	35%	9%
2001	2	\$ 114,000	33%	42%	9%
2002			40%		
2003			47%		
2004			53%		
2005			60%		
2006			67%		
2007			73%		
2008			80%		
2009			87%		
2010			93%		
2011			100%		

Mass Data Entry Directions: Enter mass data in Mass Calculations worksheet

Total Mass at RA-O Start-Up (lbs.)	2436
Cost-To-Complete (CTC) (\$)	\$ 1,623,000
Impacted Acres	19
Acre-ft of groundwater impacted	57
RA-O Start Year (from DD)	1996
RA-O Completion Year	2011

Directions: Enter data in the cells highlighted in yellow (for the appropriate years). Data must be entered for all years between RA-O start up and RA-O completion. Do not enter data in the cells shaded in gray - they will be automatically populated.



	To Date	Projected Total Cost	Original Est. Total Cost
Cost/Acre	\$ 30,000	\$ 355,620	\$ 85,421
Cost/Acre feet	\$ 10,000	\$ 118,540	\$ 28,474
Cost/lb removed	\$ 2,774		\$ 666



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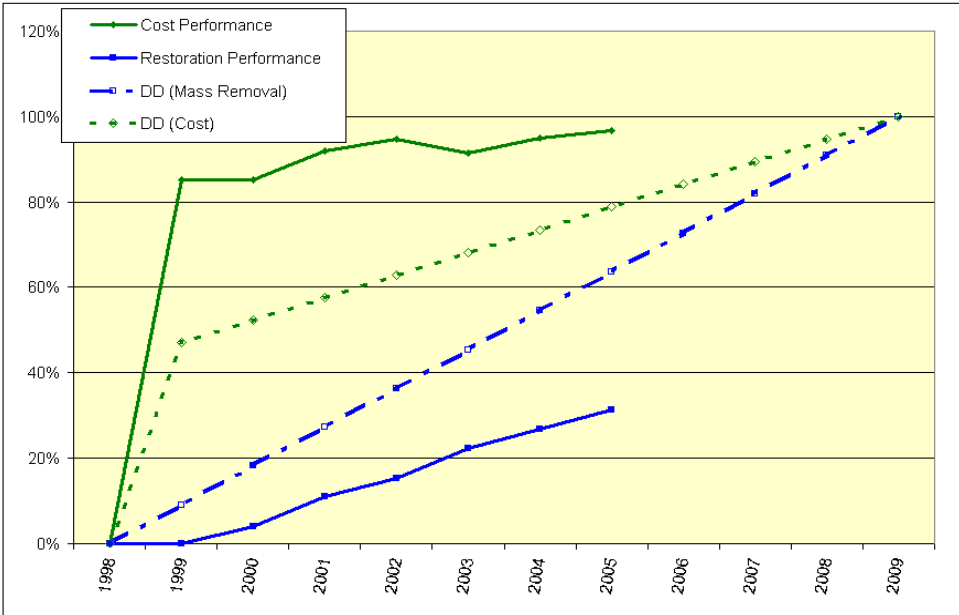
RPO Phase II: PTT Screen Shot – Mass Data Entry

Fiscal Year	Total Mass Removed by Year (lbs.)	Operation & Maintenance Cost by Fiscal Year	Projected Mass Removed (from DD)	Projected Cost (from DD)	Capital & O&M as Percent of CTC	Total Percent Mass Removed
1998	0	\$ -	0%	0%	0%	0%
1999	0	\$ 273,200	9%	47%	85%	0%
2000	281	\$ 273,200	18%	52%	85%	4%
2001	485	\$ 689,307	27%	58%	92%	11%
2002	306	\$ 855,382	36%	63%	95%	15%
2003	481	\$ 654,934	45%	68%	91%	22%
2004	325	\$ 873,000	55%	73%	95%	27%
2005	322	\$ 968,000	64%	79%	97%	31%
2006			73%	84%		
2007			82%	89%		
2008			91%	95%		
2009			100%	100%		

Directions: Enter data in the cells highlighted in yellow (for the appropriate years). Data must be entered for all years between RA-O start-up and RA-O completion. Do not enter data in the cells shaded in gray - they will be automatically populated.

Mass Data Entry Directions: Enter mass data in Mass Calculations worksheet

Total Mass at RA-O Start-Up (lbs.)	7,000	% of Programmed
Cost-To-Complete (CTC) (\$)	\$ 6,097,807	
Interim Action Costs	\$ -	172%
Programmed Capital Costs	\$ 2,865,647	
Actual Capital Costs	\$ 4,922,932	
O&M Costs	\$ 3,232,160	
Impacted Acres	165	
Acre-ft of groundwater impacted	346	
Interim Action Start Year	1998	
RA-O Start Year (from DD)	1998	
RA-O Completion Year	2009	



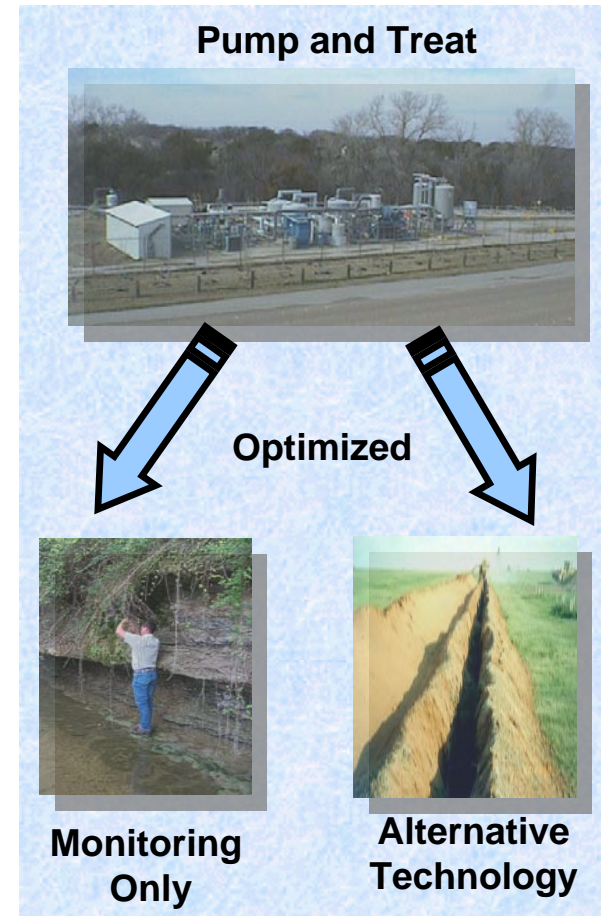
	To Date	Projected Total Cost	Original Estimated Total Cost
Cost/Acre	\$ 27,800	\$ 88,456	\$ 36,956
Cost/Acre feet	\$ 13,257	\$ 42,183	\$ 17,624
Cost/lb removed	\$ 2,085		\$ 871



U.S. AIR FORCE

RPO System: Phase III: Implementation

- **King Salmon AS – cost/benefit evaluations using the performance tracking module of RIPS:**
 - Replaced P&T system with bioventing and free product recovery
 - Approximately \$300K/yr in O&M savings
- **Air Force Plant 4 – updated Conceptual Site Model and evaluated system performance. System found to be ineffective:**
 - Regulatory approval to shut down 48 well dual phase pump and treat system
 - \$270-300K/yr in O&M savings
- **Tinker AFB – Geostatistical Temporal/Spatial (GTS) Optimization Algorithm and Professional Judgment :**
 - Sampling discontinued at 475 monitoring wells; a sampling reduction of 40% from 2004-peak
 - Sampling frequency moved from 12 to 15 months; a reduction of 20%
 - Sampling parameters decreased from 170 to 5

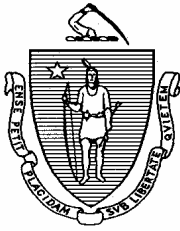


Changes to systems must be accomplished within the regulatory framework and the signed decision document for the site



U.S. AIR FORCE

Questions?



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WESTERN REGIONAL OFFICE
436 Dwight Street • Springfield, Massachusetts 01103

Attempts At Optimal Closure and Control Of A Rapidly Moving And Diving MTBE/Benzene Plume (gasoline) In A Public Water Supply Area.

Michael L. Scherer, Massachusetts Department of Environmental Protection, Bureau of Waste Site Cleanup, 436 Dwight Street, Springfield, MA 01103 Tel. 413-755-2278, FAX 413-784-1149, E-mail: michael.scherer@state.ma.us

Executive Summary

Three USTs were installed as part of the opening of a new convenience store in Palmer, Massachusetts in 1989. Shortly after the tanks were filled with gasoline, one of the tanks indicated low product volume. The storeowner ordered a second delivery of fuel to refill the tank. Again the tank indicated low product volume. The storeowner did not initially notify MADEP of the release, stating later that he thought someone was stealing his gasoline, but later came to the conclusion that the tank may be leaking. Upon its removal, it was determined that the tank had failed and premium gasoline containing a large percentage of MTBE had been injected into the subsurface, impacting soil and ground water.

Initial data from the treatment system installed at the convenience store and analytical evaluations indicated that the LNAPL area was decreasing and that the gasoline plume had been contained on the gasoline station property. However, MassDEP required that additional monitoring wells be installed downgradient. Samples from these downgradient monitoring wells installed as part of the VOC investigation revealed that an MTBE plume and benzene plume had migrated at depth beyond the original release site. Monitoring at depth downgradient within the aquifer indicated that MTBE and benzene were migrating at a rapid rate deep within the aquifer. Further, the plume was migrating toward the active drinking water supply wells for the Municipal Water District, located approximately 500 meters (1,640 feet) immediately downgradient of the gasoline release.

Given the concern for the municipal supply wells, two additional recovery wells (RW-5, RW-6) were installed between the release point and the municipal wells to capture the plume and prevent it from impacting the wellfield. With MassDEP and municipal approval these mid-plume recovery wells RW-5 & 6 were allowed to discharge to the municipal WWTP.

Despite success with the mid-plume recovery wells, MassDEP required installation of an additional recovery well as monitoring data indicated that the leading edge of the plume had passed beyond the effective recovery zone of RW-5 & 6. Recovery well RW-7 was therefore installed just upgradient of the main water supply well and with MassDEP and USEPA approval was allowed to discharge to the Quaboag River.

An additional recovery well (RW-8) was later installed as a backup to RW-7 and connected to a header for river discharge. Recovery wells continue to operate, and monitoring data collected by

both the state and the Water District indicate that the plume has been effectively captured and the primary municipal well has not been impacted by MTBE or Benzene compounds. The recovery well system initially installed as an Immediate Response Action will continue to operate as part of the long-term remedial plan at the site.

Site Description

The release site is a 1.1-acre parcel of land located at the intersection of two major roads in western Massachusetts. The site includes a convenience store/gas station, a warehouse, and one 10,000-gallon and two 8,000-gallon gasoline USTs associated with one fuel dispensing pump island. The surrounding area consists primarily of industrial, commercial and transportation uses. A railroad abuts the site on the south and a warehouse is adjacent to the west. A large gasoline distribution pipeline also runs through this area. Industrial properties are located across the roadways to the north and east of the site and across the railroad to the south and west. Graves Brook and its associated wetland are located approximately 200 feet downgradient, and the Quaboag River is located approximately 1,800 feet downgradient. The municipal Water District's wellfield is located approximately 1,640 feet to the southwest (and downgradient) of the release site.

Release History

Approximately 12,000 gallons of gasoline were released into the ground in 1989 when a UST failed, was refilled and failed again. When the tank was removed, a weld failure was identified as the cause of the leak. The tank manufacturer was eventually identified as the responsible party for remediation of the release.

The owner of the property initially failed to notify the MassDEP of the release thereby delaying immediate response actions. Initial response actions included the installation of three recovery wells at the release site to capture the plume and to remove the floating product. Monitoring wells screened approximately five feet above and five feet below the groundwater surface were also installed to determine the extent of the plume. According to the consultant hired by the tank manufacturer, the information collected from these initial assessment and response actions indicated that the gasoline contamination was contained within approximately 200 feet downgradient of the release point.

Site Hydrogeology & Surficial Geology

Several borings and monitoring wells were installed to evaluate hydrogeologic conditions and determine the limits of the gasoline release. The data indicated that an LNAPL layer measuring 100 feet by 60 feet was present beneath the facility, that ground water was at a depth of 20 feet, and that ground water elevations fluctuated by as much as 6-10 feet due to seasonal variations. Due to the fluctuation in ground water levels and the discrete sudden nature of the release, an approximate vertical thickness as large as 14-16 feet of soils in the source area has been impacted by separate-phase gasoline plume at depths ranging from 18 to 32 feet below grade. Data from subsurface investigations indicated that soils in the release area are primarily fine sand and silt. Groundwater was estimated to be traveling at between 0.5 and 1 foot per day. It is thought however that groundwater movement is occurring at a more rapid rate along micro pore preferential pathways possibly developed over time by the downgradient supply wells. No preferential pathways or soil layering was ever identified in any of the soil core samples.

Bedrock Geology. According to the Bedrock Geologic Map of Massachusetts, bedrock beneath the site is identified as Monson Gneiss described as a massive biotite, plagioclase gneiss with amphibolite and microline augen gneiss. Seismic refraction data and borings were used to determine the elevation of the bedrock at the release site. Bedrock elevation was estimated at approximately 105-112 feet below grade.

Hydrogeological Parameters. Ground water flow is to the west/southwest from the release site, towards the Quaboag River and the District's wellfield. Initially, Graves Brook and its associated wetland located downgradient of the release site were considered to possibly act as a hydrogeological divide. It was later determined that the wetland system created a perched water table that may have influenced and encouraged a downward hydraulic gradient in the vicinity of the release site. The perched aquifer may act as a barrier to horizontal ground water flow in the shallow aquifer thereby increasing the downward hydraulic gradient. In addition, the pumping of the water supply wells draws water from the recharge area towards the wells. As such, the release constituents MTBE and benzene have migrated to the deeper portion of the aquifer and traveled with regional ground water flow toward the wellfield.

Nature and Extent of Contamination

Soil and ground water were impacted by the release. LNAPL was smeared over a 5-meter (16-foot) vertical area in the immediate release area due to the sudden subsurface discrete releases and large seasonal changes in ground water depths. As noted above, the contaminant plume moved in deeper areas of the ground water, up to 60 feet below the ground water table, approximately 90 feet below ground surface. The vertical thickness of the MTBE plume was approximated at 8-12 feet. The shallow and mid-level downgradient wells were not detecting contamination because the plume was located at a depth of 80-100 feet below grade or 50-60 feet below the groundwater surface. MassDEP required that additional investigations be conducted downgradient of the release site. Elevated levels of MTBE (11,200 ug/l) were detected in a deep monitoring well located approximately 1,000 feet downgradient of the site. Elevated benzene levels (460 ug/l) were detected at the same monitoring well location two years later. In total, four additional recovery wells were installed at downgradient properties at depths of 70 to 100 feet.

The contamination had migrated to a deeper portion of the aquifer, apparently influenced by a number of factors including a perched water table associated with the wetland system adjacent to the release site resulting in a slight downward gradient, large percentage of MTBE in the gasoline release and possible preferential pathways developed under years of constant supply well pumping conditions. By the time this was discovered, the contaminant plume had traveled approximately 1,000 feet downgradient. Micro wells were also installed deep in the aquifer to rapidly assess the extent of the MTBE plume. Based on these findings, MassDEP determined that a condition of significant release migration had occurred and that a hazard to public health existed.

Receptors

Potential receptors included the community serviced by the District's ground water supply wells, workers at the convenience store and affected site properties from possible exposure to vapors

entering basements of the buildings; flora and fauna related to the nearby Graves Brook, its associated wetland and the Quaboag River.

The Water District's wellfield is located approximately 1,640 feet downgradient of the release site. These wells provide up to 80% of the potable water supply for the District's customers. If the water supply were to be impacted, numerous customers would be affected. The wells draw from a large regional aquifer, which includes the release site. The aquifer supports approximately 800 gallons per minute of withdrawal from the District's wells, which consist of a 26-meter (85-foot) deep gravel pack well and a tubular wellfield consisting of thirty-five 11-meter (35-foot) deep wells.

With documentation provided by the MassDEP, USEPA issued a NPDES permit for discharging recovery well flows from RW-7 and RW-8 to the adjacent Quaboag River. The USEPA approval was predicated on the fact that the concentrations of total VOCs remain below surface water standards (100 ug/l) and that the benefits to the municipal wellfield outweighed any minor impacts to surface water. Further, the river, even under low flow conditions, easily dilutes the minor discharge volumes.

Remedial Actions

In the source area, the original recovery wells, installed in order to remove LNAPL and control dissolved petroleum hydrocarbons have after 7 years been replaced with an SVE/AS system at the release site. Liquid phase carbon (LPC) was used for the removal of VOCs before discharge to the municipal sewer system. Additional assessment actions including monitoring well installation and sampling to evaluate remedial measures to address the residual source area were completed.

Multiple Phase Extraction (MPE) wells for product and ground water recovery were installed on the release site to recover gasoline, prevent migration and protect workers at the release site. Three additional ground water recovery wells were installed on other affected properties to recover contaminated groundwater and prevent downgradient migration. The initial recovery wells (RW-1,2,3) were in use from 4-6 years and were permitted to discharge to the sanitary sewer system after pretreatment with LPC. An Air-Sparging system was later installed to augment this recovery system. Recovery wells RW-5 and RW-6 continue to operate and discharge to the sanitary sewer.

While separate phase has not been detected since 1994, recent sampling results indicate that high levels of dissolved gasoline (>200,000 ug/l VOCs) continue to exist in the soils and groundwater in the residual source area. After a Request For Proposals (RFT), five remedial alternatives were evaluated. The final selection was the application of potassium permanganate in the residual source area. This was handled as a Pay For Performance contract with the remedial contractor. Application of potassium permanganate was initiated in the fall of 2003.

The District had previously installed a LPC treatment facility at the wellhead to remediate VOC contamination already present in the ground water supply from an upgradient chlorinated solvent release. The use of LPC for treating minor concentrations of PCE, TCE & DCE (VOCs) was

effective and relatively inexpensive for the District to maintain. Treating the water supply using the existing LPC system for MTBE in addition to solvent VOCs would have been ineffective even if design changes and more frequent LPC recharge could be effected.

Downgradient from the release location off-site remedial actions include the installation of five ground water recovery wells. These wells were installed to hydraulically control the contaminant plume with the goal of recovering MTBE/Benzene to prevent impacts to the drinking water supply wells. Two of the five recovery wells (RW-7 and RW-8) are located immediately upgradient of the District's wellfield. RW-8 was installed in 1999 as a redundant backup well system to RW-7 and to provide a wider capture zone at the leading edge of the plume. Both of these wells are on automatic alarm and telephone dialers systems to notify the MassDEP and municipal officials in the event that either well stops pumping. In addition to the selected additional remedial measure(s), a natural attenuation monitoring program has been established to document the natural remediation in the affected areas, extending from the original release site to the wellfield.

The off-site recovery wells RW-5, RW-6, RW-7, and RW-8 remain in use to recover contaminants and maintain hydraulic control of the ground water contaminant plume. The hydraulic head is reduced at the recovery well, thereby inducing a hydraulic gradient towards the well. As part of continuing response actions, potassium permanganate will be amended to the soils and groundwater to oxidize and degrade dissolved gasoline as the SVE/AS system has been discontinued. Selected monitoring wells will be sampled two times a year for VOCs, with certain wells to be tested to monitor natural attenuation.

Cleanup Levels

Site remediation has been performed in accordance with the Massachusetts Contingency Plan (MCP). Under the MCP, the cleanup standards are determined at the site by the potential exposures to soil and ground water receptors and the exposure routes and exposure point concentrations for contaminants of concern. The soils at the site are classified under the MCP as S-3 (least restrictive soil category) due to the developed nature of the site; however, the soils in the immediate release area could be exposed should the property be developed for a new use. Therefore, the most restrictive soil category (S-1) is used for evaluation at this site. Ground water is included under the most restrictive MCP category (GW-1) due to the site's location within the recharge area (Zone II) of a drinking water supply. The applicable ground water cleanup levels (GW-1 – drinking water areas) are 70 ug/l MTBE; 5 ug/l benzene; 1,000 ug/l toluene; 700 ug/l ethylbenzene; and 10,000 ug/l xylenes, 400 ug/l C9-C10 aromatic hydrocarbons and 400 ug/l C5-C8 aliphatic hydrocarbons and 4,000 ug/l C9-C12 aliphatic hydrocarbons (MassDEP, 2002). Within the release area two wells still have concentrations in soils and ground water above cleanup levels. Floating product has been eliminated, and the recovery wells downgradient have successfully prevented impacted ground water from reaching the ground water supply and reduced contaminant levels to below drinking water standards.

Cost Highlights

To date, the costs of the site assessment and remediation work total about \$1.9 million. The tank manufacturer covered about 1.5 million of these costs from 1989 until it went bankrupt in 2000. Costs from 2000 – 2006 are estimated to be about \$450,000. The total cost of the remediation is anticipated to reach about \$2.1 million.

Operation and maintenance costs for the four recovery wells and the SVE system were approximately \$20,000 - \$25,000 per year.

Micro-well installation (5 days, on-site lab, numerous samples) \$25,000

Pay for Performance Costs-Residual source area remediation with KMnO₄ - \$299,500 estimates include 9,000 gallons at 4% solution, 15 multilevel injection points, 2 years.

Costs are now approximately \$5,000-\$10,000 per year.

Mass Balance

It was estimated that 12,000 gallons of super unleaded gasoline containing 15% MTBE was released on-site in 1989. It was estimated that the groundwater pump & treat systems from a total of 7 recovery wells and the SVE system operating for various periods from 1989 until present have recovered approximately 6,400 gallons of gasoline. Treatment of the residual source area from 2003 until 2006 using potassium permanganate oxidized approximately 3,514 additional gallons of gasoline from the source area soils & groundwater. A basic conservative estimate of 10% of the total release was used to guesstimate the amount of gasoline reduced due to natural attenuation for an additional 1,200 gallons naturally attenuated. Using these estimates a total of 11,114 gallons of gasoline has been removed from the aquifer out of the original 12,000 gallons released.

Timeline

The MassDEP took over site remediation and oversight in 2000 with assistance from a state contractor. Monitoring data collected by both the State and the District indicate that MTBE or BTEX compounds have not impacted the municipal wells. Achievement of the MassDEP drinking water standard of 70 ug/l for MTBE was achieved in November 2006. The system will continue to be run however until MTBE levels are below the odor and taste threshold of 20 ug/l. Levels of BTEX and carbon chain compounds associated with the residual release source area have been reduced by 90% due to repeat application of 3% potassium permanganate solution (KMnO₄) from 2004-2006.

Summary Thoughts

- Vertical profiling of a gasoline plume with high amounts of MTBE is essential to determine plume location, control and remediation. High levels of MTBE appear to have a co-solvency effect on benzene, increasing its mobility. This may also be true for other oxygenates such as ethanol.

- Although potassium permanganate is usually only recommended for solvents (PCE, TCE,...) it appears to be a safe and effective way to address gasoline releases in the groundwater at levels up to 20,000 ug/l total VOCs (BTEX), especially at active gasoline stations.

- ❑ Micro well installation with an on-site mobile lab is efficient and can be used effectively to delineate groundwater plumes at depths up to at least 140 feet if best management approaches are used (welded seams, vibratory hammer with twist). Results in fewer monitoring wells and better plume delineation.
- ❑ Recovery wells and pump & treat technology are not effective in reducing dissolved contaminant concentrations in the soil & groundwater in the source area.
- ❑ Recovery wells with pump & treat technology are cost effective and efficient in hydraulically controlling rapidly moving MTBE and Benzene plumes and to a lesser extent in removing separate phase gasoline in the source area.
- ❑ Soil Vapor Extraction and Air Sparging in marginal soils (fine sands and silts), while usually the most inexpensive option, is generally ineffective in substantially reducing contaminants in the source area.
- ❑ In discharging to the sewer system the Limiting Factor is usually the WWTP system capacity, not the contaminant concentration in the discharge. LF is the amount of the discharge or total gallons discharged to the system. i.e. 5,000 ug/L VOCs at 5 gpm-OK but 50 ug/L at 200 gpm – no way.
- ❑ While the MTBE health effects level is of concern, for the drinking water system the driving remedial effort was not the Mass MCL of 70 ug/l but rather the taste and odor threshold level, which can be as low as 10 ug/l.
- ❑ MTBE is hard to cost effectively remediate unless it can be treated through an existing system such as the WWTP or discharged by NPDES permit to a nearby river. The \$700,000 dollar LPC system already in place at the wellhead for solvent control would have been ineffective in dealing with the MTBE levels heading towards the PWSW.
- ❑ Preferential pathways, where groundwater flows more rapidly than the regional flow, occurs in water supply aquifers even if you can't find evidence of those pathways in any of the soil borings.
- ❑ In anaerobic environs dissolved gasoline (BTEX) will persist for very long periods of time in the groundwater.
- ❑ Pay For Performance contracts have advantages for the busy regulatory project manager.

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

Session Title: **Training: Real Property 101**
Date and Time: Wednesday, April 4, 2007, 2:00 p.m., Session E
Speakers: Gregory Sullivan, EPA OSRE
 Michael Sowinski, DPRA Inc.
 Steve Hess, EPA OGC
 David Hoefler, EPA Region 7
 Bruce Hawley, Stewart National Title Services

Part 1 of the training consisted of PowerPoint presentations from the speakers; discussion occurred during Part 2 of the training.

Part 1: Title Evidence from the Perspective of the Panel

Presentation (Gregory Sullivan)
Presentation (Michael Sowinski)
Real Estate Based Land Use Controls (Steve Hess)
Presentation (David Hoefler)
Title Insurance Overview (Bruce Hawley)

Part 2: General Discussion and Discussion of Hypothetical Property Situation

General Discussion

- **“First in Time, First in Right”**
 - It is very important to know what is ahead of you, in terms of title restrictions.

- **Performing Title Searches Early**
 - The earlier you can do your title work, the better.
 - If you use a title company, then they have the interest and local knowledge to address the issues and negotiate or remove easements, if necessary.
 - The significant issue is whether easements might threaten the implementation or effectiveness of the IC, and a great deal goes into this consideration.
 - Almost every site needs ICs, and there can be problems for the remedy if there are title complications or if it is impossible to restrict land use. People need to be aware of this and explore it early in the process.

- **Timing of Establishing Easements**
 - At Superfund sites, easements are typically implemented last, after the engineered components of the remedy are complete.
 - Ideally, they should be considered during the feasibility study.

- o A great deal of time is spent on the remedy, which may require ICs, but ICs are often not formalized and implemented immediately.
- o If ICs are required as part of a remedy to ensure protectiveness, then they must be implemented, but Five-Year Reviews often report that ICs have not been implemented.
- **Modifying Easements**
 - o Sometimes a utility company will limit the scope of the easement. It is not uncommon to have to modify an easement after the fact because the easement was not specific enough at the time it was developed.
 - o There are two main reasons that easement modifications may occur:
 - If there is no easement but the survey shows a physical offense, then the easement is only the size of the physical offense.
 - The easement is vague or too general.
- **Title Insurance**
 - o What is the benefit of title insurance? What are you insuring?
 - o With title insurance, you are insured in case a recorded easement is missed. If this happens, then you have a claim against the insurer. Depending on the situation, the insurer can either write a check in the amount of the insurance or clear the defect.
 - o How much title insurance you buy should be based on the value of the property. If the surveyor was incorrect or missed something, then the claim would still be valid and the insurer would seek compensation from the surveyor.
- **Miscellaneous Issues**
 - o In comparison to the cost of engineered components of the remedy, ICs are often considered to be “noise.”
 - o Should the level of due diligence described in this training be performed in all cases, or just for Superfund? At the state level, there are often not resources to do everything described here. Do the best you can with your resources.

Discussion of Hypothetical Property Situation

- **Hypothetical Property**
 - o Situation: You have a capped landfill and want to restrict access, but you find out during the title search that there is already an easement (e.g., utility easement) across part of the area that you want to restrict. This is a problem, because if the existing easement is exercised, Uniform Environmental Covenants Act (UECA) could be affected. You are trying to find a solution to a dangerous problem. What should you do?
 - o If information about the easement is obtained prior to construction of the cap, then the cap could potentially be designed to accommodate the easement. This option applies to “Performing Title Searches Early,” outlined above. If this is not possible, then how do you deal with it after the fact?

- o Region 7 had this occur and approached the utility company to request a subordination of the easement so that Region 7 could use UECA. This would effectively reverse the “first in time, first in right” and give Region 7 priority in land use restrictions. The subordination agreement would then be in the chain of title. The utility company would not agree to the subordination, but the parties were eventually able to reach an agreement.
- o What if you found that the physical utility line was already there, but there was no easement on the land records? There is then an incentive to memorialize the easement.



stewart[®]

Title Insurance Overview

***Long Term Stewardship Roundtable
& Training***

San Diego, CA

April 4, 2007

Bruce E. Hawley, Esq.

Senior Vice President

& Senior Underwriting Counsel

Stewart National Title Services

Stamford, CT

888-398-0555

Title Insurance Overview

NATURE OF TITLE INSURANCE

Definition: Title insurance is a contract to indemnify the insured against loss or damage caused by defects in the title to real property.

Title Insurance Overview

NATURE OF TITLE INSURANCE

- Title insurance does not insure the title to personal property
- Title insurance does not insure contract rights or performance under contracts

Title Insurance Overview

NATURE OF TITLE INSURANCE

Title Insurance policies provide both information and insurance whereas other forms of title evidence (abstracts, reports, and title opinions) only provide information.

Title Insurance Overview

NATURE OF TITLE INSURANCE

Unlike other forms of insurance, title insurance is risk elimination insurance.

Title Insurance Overview

NATURE OF TITLE INSURANCE

How is the risk eliminated?

Title Insurance Overview

NATURE OF TITLE INSURANCE

- Title search & examination
- Proofs of authority
- Properly drafted title instruments
- Careful closing practices

Title Insurance Overview

NATURE OF TITLE INSURANCE

- Since the title insurance underwriting process begins with a title search, the title insurer is a key player in the “due diligence” part of the transaction.

Title Insurance Overview

NATURE OF TITLE INSURANCE

- Title insurer works very closely with the attorneys and the surveyors during the “**due diligence**” phase.

Title Insurance Overview

NATURE OF TITLE INSURANCE

Title Insurance Forms

Title insurance forms consist of commitments, policies and endorsements. In most states, title insurance companies use forms that have been adopted by the American Land Title Association (ALTA). They were last revised in 2006.

Title Insurance Overview

NATURE OF TITLE INSURANCE

Title Insurance Regulation & Rates

- Title insurance companies are chartered by the states.
- Premium rates vary from state to state.

Title Insurance Overview

Types of Premium Rates

- “All-Inclusive Rate” Model
(Includes the title search, examination and sometimes the closing or settlement)
- “Risk Rate” Model
(title search cost, etc. not included)

Title Insurance Overview

Types of Premium Rates

- Promulgated Rates
- Filed Rates
- Bid Rates

Title Insurance Overview

Who pays for the title insurance?

- It is controlled by custom and contract
- In about 26 states, the Seller pays for Owner Policy or title search for the Buyer
- In almost all states, the Buyer/Borrower pays for the Loan Policy for the Lender

Title Insurance Overview

NATURE OF TITLE INSURANCE

Amounts of Insurance

Purchase price; fair market value of the interest; loan amount

Title Insurance Overview

PARTIES WHO MAY BE INSURED

- **Owners**
- **Lenders**
- **Lessees**
- **Other parties who have a title interest in real property (e.g., the owner of an easement; the “holder” of an environmental covenant under U.E.C.A., etc.)**

Title Insurance Overview

TITLE INSURANCE COMMITMENTS

Definition: A title insurance commitment is a contract to issue title insurance once the transaction is closed and its requirements have been met.

Title Insurance Overview

TITLE INSURANCE COMMITMENTS

A title insurance commitment is not the same thing as a title abstract; a title report; or an attorney opinion of title.

Title Insurance Overview

TITLE INSURANCE COMMITMENTS

A **title abstract** consists of summaries and/or copies of instruments in the chain of title. It is the “raw data” that is reviewed by a title examiner to generate a title commitment, a title report or an opinion of title.

Title Insurance Overview

TITLE INSURANCE COMMITMENTS

A title report is a summary of the results of an examination of the title abstract. It is usually limited by its terms as to scope and liability. It does not insure the title.

Title Insurance Overview

TITLE INSURANCE COMMITMENTS

An opinion of title is an attorney's statement of the condition of the title after his/her examination of the title abstract. It is usually limited as to scope and liability by both its terms and by the statutes of limitation for professional liability. It does not insure the title.

Title Insurance Overview

TITLE INSURANCE COMMITMENTS

A title insurance commitment usually expires 180 days after it's effective date unless a title insurance policy is issued.

Title Insurance Overview

TITLE INSURANCE COMMITMENTS

Also, title commitments, reports and opinions do not necessarily list all of the items that affect the title whereas an abstract usually does list everything. For example, certain items like expired liens are “edited out” of a title commitment, etc. during the examination process.

Title Insurance Overview

TITLE INSURANCE COMMITMENTS

Nevertheless, the preparation of a title commitment, abstract, report and opinion all begins with a title search . .

▪

Title Insurance Overview

TITLE INSURANCE COMMITMENTS

Title search methodology . . .

Chain of Title

Grantee-Grantor Index

Tract Index

Abstracting of Instruments

Examination of Title

Title Insurance Overview

TITLE INSURANCE COMMITMENTS

Search & Evaluation
Of
Title Related Public Records
(See separate handout)

Title Insurance Overview

ALTA Commitment

BLANK TITLE INSURANCE COMPANY a Texas Corporation, herein called the Company, for a valuable consideration, hereby **commits to issue its policy or policies of title insurance**, as identified in Schedule A, in favor of the proposed Insured named in Schedule A,

Title Insurance Overview

ALTA Commitment (continued)

as owner or mortgagee of the estate or interest covered hereby in the land described or referred to in Schedule A, upon payment of the premiums and charges therefore; all subject to the provisions of Schedules A and B and to the Conditions and Stipulations hereof.

Title Insurance Overview

ALTA Commitment (continued)

This Commitment shall be effective only when the identity of the proposed Insured and the amount of the policy or policies committed for have been inserted in Schedule A hereof by the Company, either at the time of the issuance of this Commitment or by subsequent endorsement.

Title Insurance Overview

ALTA Commitment (continued)

This Commitment is **preliminary to** the issuance of such policy or policies of title insurance and all liability and obligations hereunder shall cease and **terminate six months** after the effective date hereof or when the policy or policies committed for shall issue, whichever first occurs, provided that the failure to issue such policy or policies is not the fault of the Company.

Title Insurance Overview

ALTA Commitment (continued)

SCHEDULE A

1. Effective Date

2. Policy or Policies to be issued:

(a) A.L.T.A. Owner's Amount of Insurance \$

Proposed Insured:

(b) A.L.T.A. Mortgagee's Amount of Insurance \$

Proposed Insured:

(c) Leasehold Amount of Insurance \$

Proposed Insured

Title Insurance Overview

ALTA Commitment (continued)

3. The estate or interest in the land described or referred to in this Commitment and covered herein is:

4. Title to the _____ estate or interest in said land is at the effective date hereof vested in:

5. The land referred to in this Commitment is described as follows:

Title Insurance Overview

ALTA Commitment (continued)

SCHEDULE A (Legal Description)

All that certain piece or parcel of land, together with the improvements thereon standing, situated in the Town of Alpo, County of Dog Patch and State of Confusion bounded: Northerly: By Fido Road, 800 feet more or less; Easterly: By Lot 25 on Map Number 100 in the Dog Patch Land Records, etc. . .

. .

Title Insurance Overview

ALTA Commitment (continued)

SCHEDULE B - SECTION I REQUIREMENTS

1. Release of mortgage from Grainer Company to the Last National Bank in the amount of \$2,000,000 dated June 16, 2000 and recorded on June 17, 2000 in Dog Patch County Land Records.

Title Insurance Overview

ALTA Commitment (continued)

SCHEDULE B - SECTION II EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction.

1. Utility easement from T.J. Smith to Central Power Company dated September 12, 1942 and recorded on September 15, 1942 in Volume 200 at page 15 of the Dog Patch County Land Records.
2. Etc.

Title Insurance Overview

TITLE INSURANCE POLICIES

Types of Policies: There are two basic categories of title insurance policies: **Owners** and **Loan (or Mortgagee)** policies. There are several different kinds of Owner and Loan policies. The following is a list of the standard ALTA polices for each category:

Title Insurance Overview

TITLE INSURANCE POLICIES

Owner Policies

ALTA Owner's (10-17-92) and (06-17-06)

ALTA U.S. Policy (09-28-91)

Title Insurance Overview

TITLE INSURANCE POLICIES

Loan (Mortgagee) Policies

ALTA Loan (10-17-92) and (06-17-06)

Title Insurance Overview

TITLE INSURANCE POLICIES

- **ALTA Owners (10-17-92)**
- **ALTA U.S. Policy (09-28-91)**

Title Insurance Overview

TITLE INSURANCE POLICIES

Organization of Policies: There are seven basic parts of a title insurance policy:

- Insuring Provisions
- Exclusions From Coverage
- Schedule A – (Identification Schedule)
- Schedule A – (Legal Description)
- Schedule B - Exceptions From Coverage
- Conditions and Stipulations
- Endorsements

Title Insurance Overview

ALTA Owner's Policy (10-17-92)

SUBJECT TO THE EXCLUSIONS FROM COVERAGE, THE EXCEPTIONS FROM COVERAGE CONTAINED IN SCHEDULE B AND THE CONDITIONS AND STIPULATIONS, BLANK TITLE INSURANCE COMPANY, a _____ corporation, herein called the Company, insures, as of Date of Policy shown in Schedule A, against loss or damage, not exceeding the Amount of Insurance stated in Schedule A, sustained or incurred by the insured by reason of:

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

1. Title to the estate or interest described in Schedule A being vested other than as stated therein;
2. Any defect in or lien or encumbrance on the title;

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

3. Unmarketability of the title;

4. Lack of a right of access to and from the land.

Title Insurance Overview

ALTA U.S. Policy (09-28-91) Added Provision

5. In instances where the insured acquires title to the land by condemnation, failure of the commitment for title insurance, as updated to the date of the filing of the *lis pendens* notice or the Declaration of Taking, to disclose the parties having an interest in the land as described by the public records.

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

The Company will also pay the costs, attorneys' fees and expenses incurred in defense of the title, as insured, but only to the extent provided in the Conditions and Stipulations.

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to
 - (i) the occupancy, use, or enjoyment of the land;
 - (ii) the character, dimensions or location of any improvement now or hereafter erected on the land;

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

(iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

(b) Any governmental police power not excluded by (a) above, except to exercise thereof or a notice of a defect, lien or encumbrance the extent that a notice of the resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

3. Defects, liens, encumbrances, adverse claims or other matters:

(a) created, suffered, assumed or agreed to by the insured claimant;

(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

- (c) resulting in no loss or damage to the insured claimant;
- (d) attaching or created subsequent to Date of Policy; or
- (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

Note: Exclusion 3 (e) is not in ALTA U.S. Policy.

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

4. Any claim, which arises out of the transaction vesting in the Insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:

(a) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

(b) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:

- (i) to timely record the instrument of transfer; or
- (ii) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

Title Insurance Overview

ALTA U.S. Policy (09-28-91)

Different Exclusion 4

4. This policy does not insure against the invalidity or insufficiency of any condemnation proceeding instituted by the United States of America, except to the extent set forth in insuring provision 5.

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

SCHEDULE A

Date of Policy: _____ Amount of Insurance: \$_____

1. Name of Insured: _____

2. The estate or interest in the land which is covered by this policy is: _____

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

3. Title to the estate or interest in the land is vested in:
4. The land referred to in this policy is described as follows:

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

[POLICY MAY INCLUDE REGIONAL EXCEPTIONS AND GENERAL EXCEPTIONS, IF SO DESIRED BY ISSUING COMPANY. GENERAL EXCEPTIONS INCLUDE ITEMS LIKE OFF-RECORD RIGHTS OF PARTIES TO POSSESSION, EASEMENTS NOT SHOWN OF RECORD, MATTERS THAT WOULD BE SHOWN BY AN ACCURATE SURVEY, ETC.]

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

[VARIABLE EXCEPTIONS SUCH AS TAXES,
EASEMENTS, LIENS, COVENEANTS, CONDITIONS &
RESTRICTIONS, ETC.]

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

Conditions and Stipulations

In addition to the Insuring Provisions, Exclusions from Coverage and Schedules A and B, the policies also contain Conditions and Stipulations. The Conditions and Stipulations cover the following items:

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

- Definition of Terms
- Continuation of Insurance
- Notice of Claim
- Defense and Prosecution of Actions
- Proof of Loss or Damage
- Options to Pay or Settle Claims
- Determination and Extent of Liability
- Apportionment
- Limitation of Liability

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

- Reduction of Insurance
- Liability Non-cumulative
- Payment of Loss
- Subrogation upon Payment or Settlement
- Arbitration
- Liability Limited to Policy
- Severability
- Notices

Title Insurance Overview

ALTA Owner's Policy (10-17-92) (continued)

Endorsements

Title insurance policies are often endorsed to tailor coverage to particular transactions. In general, policies that insure the title to commercial properties usually have more endorsements than those that insure the title to residential properties. Some endorsements, like the ones for zoning coverage, require the payment of additional premium, while others are free.

Title Insurance Overview

The following is a list of the common ALTA endorsements:

ALTA Endorsement Form 1 - Street Assessment

ALTA Endorsement Form 2 - Truth in Lending

ALTA Endorsement Form 3 - Zoning

ALTA Endorsement Form 3.1 – Zoning – Completed Structures

Title Insurance Overview

ALTA Endorsement Form 4 - Condominium

ALTA Endorsement Form 4.1 - Condominium

ALTA Endorsement Form 5 - Planned Unit Development

ALTA Endorsement Form 5.1 - Planned Unit Development

ALTA Endorsement Form 6 - Variable Rate Mortgage

ALTA Endorsement Form 6.1 - Variable Rate Mortgage – Regulation

ALTA Endorsement Form 6.2 – Variable Rate Mortgage – Negative
Amortization

Title Insurance Overview

- ALTA Endorsement Form 7 - Manufactured Housing Unit
- ALTA Endorsement Form 8.1 - Environmental Protection Lien
- ALTA Endorsement Form 9 - Restrictions, Encroachments
- ALTA Endorsement Form 10 - Assignment
- ALTA Endorsement Form 10.1- Assignment and Date Down
- ALTA Endorsement Form 11- Mortgage Modification
- ALTA Endorsement Form 12 - Aggregation
- ALTA Endorsement Form 13 - Leasehold-Owners
- ALTA Endorsement Form 13.1 - Leasehold-Loan

Title Insurance Overview

- ALTA Endorsement Form 14 - Future Advance
- ALTA Endorsement Form 14.1 - Future Advance-Knowledge
- ALTA Endorsement Form 14.2 – Future Advance - LOC
- ALTA Endorsement Form 15 – Non imputation-Full Equity Transfer
- ALTA Endorsement Form 15 – Non imputation-Additional Insured
- ALTA Endorsement Form 15 – Non imputation-Partial Equity Transfer
- ALTA Endorsement Form 16 – Mezzanine Financing
- ALTA Endorsement Form 17 – Access and Entry
- ALTA Endorsement Form 17.1 - Indirect Access and Entry
- ALTA Endorsement Form 18 – Single Tax Parcel
- ALTA Endorsement Form 18.1 – Multiple tax Parcel

Title Insurance Overview

ALTA Endorsement Form 19 – Contiguity-Multiple Parcels

ALTA Endorsement Form 19.1 - Contiguity-Single Parcel

ALTA Endorsement Form 20 – First Loss (Multiple Parcels)

ALTA Endorsement Form 21 – Creditors' Rights

Title Insurance Overview

The full text for these all of these endorsements can be seen at [www.vuwriter .com](http://www.vuwriter.com) under the “Forms” button.

Title Insurance Overview

Questions?

Bruce Hawley

888-398-0555

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

Session Title: **Effectively Managing LTS Liabilities**
Date and Time: Wednesday, April 4, 2007, 3:30 p.m., Session A
Speakers: Bruce-Sean Reshen, the MGP Group
 Susan Neuman, Environmental Insurance Agency, Inc.

Bruce-Sean Reshen Presentation

The Guardian Trust, a Model for Post-Closure Long-Term Stewardship

Mr. Reshen outlined an approach to managing long-term stewardship liabilities through the use of a third party stewardship organization. The Guardian Trust (Trust) is a public-private model for managing long-term stewardship risks at sites where waste is left in place. The Trust incorporates expertise in land use planning and management, finance, insurance and site remediation, offering a market-based model for the management of ICs and other long-term O&M obligations at environmentally impaired properties.

- The Trust is a non-profit organization.
- The role of the trust is to develop and implement long-term operation and maintenance plans for Superfund sites and other environmentally impaired properties at a fixed price for clients, including federal agencies and industry.
- Tasks performed by the trust include: document review, site inspection, land use records inspection, monitoring and permitting review, and breach notification.
- The Guardian Trust establishes an up-front fixed-price for IC and O&M design and implementation services. This model is likely suitable for use at large sites where LTS issues may be complex, requiring coordination among multiple parties.
- More information on the Guardian Trust is available online at:
www.guradiantrust.org.

Susan Neuman Presentation

RemVer: Environmental Insurance Coverage for IC Failures

- The generic environmental insurance policy does not fit the needs of most LTS liability situations. Ms. Neuman authored an article titled “Will Your Environmental Insurance Policy Cover Known Pollution Claims?: A Short Guide to Deciphering Your Quote” that highlights an effective approach for environmental insurance settlements.
- Part of the approach relies on the use of RemVer, a service that bundles risk transfer legal services and access to environmental insurance brokers with the right environmental insurance product.
- RemVer recognizes that the implementation of ICs and long-term O&M obligations is a complex process that requires coordination between multiple parties.

- LTS liabilities in the implementation process arise when ICs fail due to negligence on the part of the party responsible for some aspect of implementation.
- RemVer provides a service to state governments, federal governments, and industry that leads to a certification that an environmental insurance product will cover costs incurred due to the failure of ICs.
- The RemVer model is likely applicable at most small sites where cleanup costs are generally small.
- More information on RemVer is available online at:
www.environmentalinsurance.com.

The Guardian Trust

A Model For Post-Closure Long-Term Stewardship

**Presented By
The MGP Group**

**Long-Term Stewardship Roundtable
April 4, 2007**

Concept Origin



- **MGP, EPA, PA DEP**
- **Integrate and augment long term stewardship concepts with state and federal programs**
 - Critical mass provides advantages of pooling
 - Advantages for private remediators to participate
- **Programmatic solution for looming environmental issues**
 - Superfund sites
 - RCRA Corrective Action sites
 - Brownfield sites
 - Other sites

The Pilot Study

A Public/Private Partnership

- **EPA**
- **Pennsylvania**
- **MGP Environmental Partners LLC**
- **Pilot Study Advisory Committee Representatives**
 - **EPA (Headquarters and Region 3)**
 - **PADEP**
 - **Department of Defense, Department of the Navy**
 - **California**
 - **Maryland**

The Guardian Trust

- **Offers comprehensive program of long-term post closure inspection, monitoring and reporting**
- **Relieves companies of day-to-day management of environmental issues and allow them to focus on their core competencies**
- **Use of trust mechanism to provide long-term financial assurance**
- **Facilitates transfer of properties for redevelopment**
- **Provides economies of scale in pricing of environmental & insurance services for its clients**

The Role of the Guardian Trust

- **Provide a Detailed Design for the Long-Term Controls**
- **Prepare Implementation Plan**
- **Prepare Operations & Maintenance Plan**
- **Perform Periodic Inspections**
- **Prepare Annual Report to All Stakeholders**
- **Provide Interface with Community Stakeholders**

The Guardian Trust Process

- **Define Long-Term Post Closure Goals**
- **Review of Key Documents**
- **Review of Regulatory Requirements**
- **Baseline Site Inspection**
- **Define & Negotiate Tasks**
- **Negotiate Guardian Trust Responsibilities**
- **Translate Responsibilities into Financial Terms**
- **Negotiate Additional Terms & Conditions**
- **Sign Site Acceptance Agreement**

Potential Guardian Trust Tasks

- **Land Use Records Inspection Services**
- **Site Inspection Services**
- **Self-Certification Review Services**
- **Annual LUC Notifications**
- **Monitoring of Permit Issuance**
- **Breach Notification Services**
- **Notification of Property Transfers**
- **Notification of Changes in Zoning**
- **Reporting Services**
- **Data Management**
- **Site Maintenance Services**
- **Protection Against Long-Term “Tail” Liabilities**

Staffing For Post Closure, Long-Term Stewardship

- **Use of Environmental Engineering Services**
- **Use of Title Insurance Services**
- **Use of Fixed Priced Contracts**
- **Importance of Environmental Insurance**
- **Design of Quality Assurance Plan**

Key Advantages of The Guardian Trust



- **Public/Private partnership allows for ongoing public oversight and private management expertise**
- **Guardian Trust focused solely on managing long term stewardship of land use controls and engineering controls**
- **Pooling enables most favorable pricing for services**
- **Disciplined stewardship and enhanced institutional memory**
 - **Physical inspections of property & land use records**
 - **Automatic notices to land-use decision makers**
 - **Can interface and support state registries with updates**

The Future of Post-Closure Long-Term Stewardship

Guardian Trust Region 1 Pilot Project

- **Assisting Government**
- **Assisting Private Sector Clients**
- **Providing Long Term Assurance**
- **Providing Liquidity to the Marketplace**

EPA Region 1 Pilot Project

- **Relieve resource burden from EPA & DOJ**
- **Provide more timely & cost effective implementation for private sector clients**
- **Apply specialized knowledge to title process**
- **Bring new approach to easement implementation process**
- **Provide incentives for private sector to participate in process**

How Will the Pilot Project Work?

- The Trust becomes the grantee of the easement**
- The EPA & the state become 3rd party beneficiaries with rights of enforcement**
- DOJ confirms Guardian Trust's expertise**
- Trust does all survey, subordination & title work**
- Trust negotiates easement with current owners (grantors)**
- Regulators provide oversight through potential audits of Guardian Trust work**

**To obtain more information on the
Guardian Trust Program and the EPA
Region 1 Pilot Project, please contact
The Guardian Trust:**

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Effectively Managing Long-Term Stewardship Liabilities

REMVER INCORPORATED

Remedial & Post-Remedial Verification/Certification

Presented by:

Susan Neuman, Esq., Ph.D.

Co-author:

Kurt A. Frantzen, Ph.D.

Kleinfelder, Inc.

INTRODUCTION

- **What is RemVer?**
 - Kurt Frantzen founder: remedial, post-remedial verification/certification
 - Sue Neuman: insurance and other risk transfer
- **Define LTS liabilities:**
 - Failure of IC/EC's due among other things to inadequate implementation, monitoring and enforcement; non-compliance with regulations imposing such duties
 - Long-term element: IC/EC's need to be monitored and enforced in perpetuity.
- **Outline of talk:**
 - **Background:**
 - 5 Step Risk Management Process cp Brownfields Risk Management Process
 - Barriers to Effective Management of Environmental Risk
 - **RemVer Process:**
 - Basics of risk transfer including application to LTS liabilities
 - How risk transfer can be integrated with IC/EC monitoring and enforcement (risk control); long-term financing/financial assurance

Risk Management Decision Making Process

Corporation

Brownfields

1. Identify and analyze Loss exposures

Liability, property, net income, personnel

Technical and legal: specific risks, quantification

2. Examine Alternative Risk Management Techniques

Risk control: exposure avoidance, loss Reduction, prevention

Remediation and IC/EC's

Risk finance: transfer (contractual and insurance) retention: (captives, borrowing)

Contractual indemnities; environmental insurance and ART products

3. Select RM Techniques

Forecast frequency and severity of losses, Effects and costs of techniques

Depends on specific risks in deal, risk control techniques may be imposed.

4. Implement Chosen Techniques

Technical and managerial decisions by risk managers.

Based on step 1, processes, by professionals.

5. Monitor Results

Ensure proper implementation, adjust and improve, standards.

Groundwater, IC/EC monitoring.

BARRIERS TO SUCCESSFUL ENVIRONMENTAL RISK TRANSFER

- **Lack of environmental expertise:**
 - Engineering companies
 - Lawyers
 - Insurance brokers and underwriters
 - Financiers
- **Lack of integration**
 - Risk control and risk transfer
 - Contractual and insurance risk transfer
 - Remediation and post-remediation
- **Lack of Control and overall planning**
 - Too many processes (remediation, transaction, insurance) lead to timing issues
 - Too many parties with different agendas and agents
- **LTS makes everything worse**

REMOVING PROCESS

RISK MANAGER PROVIDES:

- **Step I.**
 - Strategic Review and Risk Analysis; Quantification/Underwriting
- **Step II.**
 - Review and Selection of Risk Control and Transfer Techniques
- **Step III.**
 - Implementation (IC/EC's; execute contracts, bind insurance)
- **Step IV.**
 - Monitoring (IC/EC's; claims management; loss control)
- **Step V.**
 - Enforcement (Annual certification of protectiveness; policy renewal)
- **Step VI.**
 - Long-Term Remediation Financing/Financial Assurance

SITE ENVIRONMENTAL LIABILITY MATRIX

Liabilities

Pre-Closing Pollution Conditions

Unknown

Known

			<u>Soil</u>	<u>Groundwater</u>	<u>Air</u>
Bodily Injury					
Property Damage					
Cleanup costs:					
On site					
Off site					
NRD					
Failure of IC/EC's					

AVAILABLE RISK TRANSFER MECHANISMS

- **Contractual indemnifications and allocation of specific risks in:**
 - PSA's
 - Leases
 - Remediation Agreements including GFP'R's
 - Other Liability Assumption Agreements
 - Trust Agreements
- **Environmental Insurance Policies**
 - Site Pollution Liability (SPL)
 - Cleanup Cost Cap (CCC)
 - Zurich's PRC Policy
 - SPL Policy with PRC Coverage
- **Alternative Risk Transfer (ART) Products**
 - Blended Finite Risk
 - Pooling Arrangements
 - Liability Assumptions
 - Trusts (structured settlements, 501C3's)
 - Municipal Tax Districts/Bonding

SITE POLLUTION LIABILITY COVERAGE

- **SPL Policy Form and Standard Endorsements:**
Damages/liabilities (cleanup costs, third party bodily injury and property damage) arising out of:
 - **New pollution conditions**
 - **Unknown pollution conditions**
 - **Known pollution conditions**
 - Hard to discern (done through an exclusion)
 - Must be disclosed and endorsed onto policy with full or partial coverage – need for manuscripting/tailoring

PRC (LTS) COVERAGE UNDER SPL POLICY

- **PRC Coverage Endorsements to SPL Policy**
 - Damages (cleanup costs, bodily injury, property damages) arising out of failures of IC/EC's including those due to e&o in monitoring and enforcement (same as Zurich PRC policy coverage)
 - Underwriting criteria: proper establishment of IC/EC's, and a plan for appropriate monitoring and annual certification
 - Long term feature: renewal with each annual certification
 - Endorsement promising to provide coverage later on
 - Not generally available

IMPLEMENTATION

- **IC/EC's**
- **Contractual Risk Transfer**
 - Environmental lawyers allocate specific risks
 - Based on complete characterization, separation of known from unknown
 - Difficulties in implementing contractual allocation of IC/EC risk before IC/EC implementation
 - Environmental insurance supports or substitutes for indemnities
- **Environmental Insurance (SPL Policy)**
 - Risk insured affected by contractual indemnities
 - Environmental brokers and underwriters tailor policy to fit specific risks
 - Underwriting based on complete characterization, separation of known from unknown
 - Difficulties in covering IC/EC (PRC) risk – same timing issue, not widely available
- **Examples: sites with and without IC/EC's**

MONITORING

(Georgetown, CT Site)

- **IC/EC's**

- RAP includes EC's and ELUR's (IC's) as part of RCRA CAMU Closure
- RemVer Process licensed to Kleinfelder
- Kleinfelder under contract to develop ELUR/EC Control Management System (Monitoring Plan) to include:
 - **web-accessible tracking database**
 - **ELUR/EC Management and Response System including:**
 - *OM&M Protocol, QA and Reporting Protocol, Contact Protocol (One-Call System), and Response Action Protocol*

- **Risk Financing**

- Contract only for risk control part of RemVer Process
- Special municipal tax district funding long-term risk, overall infrastructure, and on-going environmental management
- Monitoring plan could serve as insurance loss control and claims management system

ENFORCEMENT/ANNUAL CERTIFICATION

- RemVer's ultimate product: *Annual Certificate of Verification of Human Health and Environmental Protection.*
- Re-certification: response, remedy, re-verification of operational effectiveness and protectiveness, subsequent re-certification and notices
- Annual certification and insurance renewability

LONG-TERM FINANCING/FINANCIAL ASSURANCE

- **ART Products can Fund Long-Term Period:**
 - Finite Risk
 - Liability Assumptions
 - Pooling Arrangements
 - Trusts (structured settlements, 501C3's)
 - Municipal Tax Districts/bonding
 - PRC Insurance with renewability feature
- **Using Insurance to Achieve Assurance:**
 - Model on UST FA provisions
 - Tie product to plan for IC/CE monitoring and certification
 - Certification that insurance policy covers PRC and related risks

CONCLUSION

RemVer effectively manages LTS liabilities through:

- Outside risk manager provides services, control, planning
- Assumption of LTS liability through certification
- A private solution
- Integration of IC/EC monitoring/certification with risk transfer (contractual and insurance)
- Long-term financial management/financial assurance through ART products or renewable insurance.
- Scalability

The future

CONTACT INFORMATION

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WILL YOUR ENVIRONMENTAL INSURANCE POLICY COVER KNOWN POLLUTION CLAIMS? : A SHORT GUIDE TO DECIPHERING YOUR QUOTE

Presentation to the Environmental Insurance Committee of the New York Bar Association Environmental Law Section – Emerging Issues in Environmental Insurance November 2006

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Introduction

Brownfields are by definition lightly contaminated sites. Therefore, site pollution liability (SPL) policies obtained to facilitate Brownfields transactions usually need to include some coverage for known pollution conditions. At some point, usually before the purchase and sale agreement (PSA) is signed or before closing, a broker produces one or more premium quotations or indications (quotes) purportedly covering the main risks of concern. These quotes are often totally incomprehensible to clients and their lawyers. It is very difficult to answer the client's question – will this cover me, will claims be paid - without that basic understanding. It is the purpose of this article to shed some light on the typical insurance quote involving SPL coverage for known pollution conditions. To do so requires looking first at the matrix of site pollution liability risks from the point of view of an environmental lawyer attempting to allocate those risks in a transaction and the looking at the site pollution liability coverage matrix from the point of view of a broker attempting to tailor coverage to fit these specific risks.

The Site Pollution Liability Matrix

In a section of *Brownfields Law and Practice*, R. Timothy Weston and Craig P. Wilson, stress that, in negotiating a contaminated property transaction it is crucial to step back and focus on the specific liabilities and risks of concern.¹ They also state that it is most useful to view these specific environmental risks in terms of a matrix; the one below is perhaps what they have in mind: It places their list of the typical liabilities at a Brownfield site down the side of the graph and shows how they can intersect with the three types of pollution conditions at any site: pre-closing or known and unknown, and post-closing or new pollution conditions.

The matrix only shows the potential, however, for specific risks at any site to come to fruition. The authors stress that, to fill out such a matrix, one needs to consider the specific elements of risk involved with each type of liability, and then assess the real

¹ Chapter 7, Negotiating Transactional Documents, 7.02 Scope of Liabilities to Be Covered in the Negotiations and Transactional Documents (Benders, May 2005).

world potential for a given risk to be realized at the specific site. This can only be done, and the risks can only be allocated, after the engineering distinguishes known from unknown conditions by fully characterizing and delineating the contamination.

SITE ENVIRONMENTAL LIABILITY MATRIX

UNKNOWN KNOWN _____ NEW CONDITIONS

LIABILITIES *Soil Groundwater Air*

Cleanup Costs On- Site Off-Site					
Bodily Injury					
Property Damage Physical Diminution					
Natural Resource Damages					
Incidental Bus. Int. Soft Costs					
IC/EC Failure					

Examples

The matrix can be filled out in application to any number of specific transactions, for example an ISRA site in New Jersey owned by a chemical company where there were 20 AOC's. The seller in the PSA indemnified the buyer, a church, for the ISRA cleanup but required the buyer to be responsible for pre-existing unknown conditions. The main issues of concern to the buyer therefore were cleanup costs due to pre-existing unknown conditions (on-site and off-site) and bodily injury claims due to known conditions (one of the site buildings was going to be used as an elementary school). The seller was uninterested in insurance but the buyer was and requested a broker to obtain one in particular covering those risks.

Another example was an old smelting factory site in Pennsylvania, where the main problem was contaminated fill under a parking lot and building. No active remediation was needed; institutional and engineering controls (IC/EC's) were to be the primary technique. The main liabilities of concern were failures of IC/EC's and cleanup costs from pre-existing unknown conditions; although the buyer intended to use the site for light manufacturing purposes, it was never possible to be certain if some future buyer might not have other plans. The buyer in this case was indemnifying the seller for all preexisting conditions and had agreed to be responsible for monitoring and certifying the IC/EC's.

The SPL Coverage Matrix and the Typical SPL Quote

From the point of view of a broker who understands SPL coverage, the potential coverages under SPL policies also form a matrix similar to the one above. In negotiating the language of a quote, the broker attempts to tailor the language to cover the real world risks of concern. The quotes obtained for the two situations described above, from two different carriers, did in fact cover the risks of concern. However, that was far from evident to the clients or their lawyers.

Like most quotes, these consisted of 1) a letter with a proposal for basic coverages, premium options (limits, terms, deductibles), forms (a pre-printed policy form or "jacket" and endorsements), and conditions to binding coverage, and 2) the forms themselves. The basic "coverages" in the proposals referred to coverage parts or insuring agreements in the policy forms. However, looking at the policy form insuring agreements (and definitions) was not very enlightening in either case. This is because SPL policies provide basic coverages, not only through insuring agreements and their definitions, but also through endorsements and exclusions.

Endorsements are usually necessary because the insuring agreements/coverage parts of various policy forms do not necessarily recognize basic categories of coverage. Some forms, such as XL's and Zurich's, do not recognize the distinction between pre-existing and new pollution conditions; therefore, in situations where only pre-existing conditions will be covered (common with Brownfields policies), a "reverse retroactive date" must be added to the policy by endorsement or on the Declarations page. All of the policy forms recognize the basic damages of cleanup costs, and bodily injury, and property damage in their insuring agreements; some have coverage parts for other types of damages (e.g., business interruption). But those in the former category must use endorsements if the insured wishes to buy the particular coverage.

The policies also provide coverages through exclusions, with exceptions that may be endorsed onto the policy. For example, some policy forms exclude known underground storage tanks (UST's) unless specifically endorsed onto the policy. This is also true for coverage of known pollution conditions. In truth, coverage for damages arising out of known pollution conditions – along with pre-existing unknown conditions and new conditions --- is one of the three basic coverages of the policies. That is clear from looking at the matrix and has been recognized by experts in accounting for environmental

damages.² However, at the present time there is no major policy form that acknowledges known conditions as a separate coverage part. Instead, all policies have an exclusion for conditions that were known but not disclosed prior to the policy period. A typical exclusion eliminates coverage for claims and losses arising out of:

Any “pollution event” known to any “insured’s” principal, partner, director, officer or employee with responsibility for environmental affairs prior to the effective date of coverage unless, prior to the effective date of coverage, such “pollution event” was disclosed to the Company and endorsed onto the policy.

Known Conditions Endorsements

The key language here is “endorsed onto the policy.” Much of the litigation involving the SPL policies used since 1995 arose from the failure to define what is known and had been disclosed, e.g., *Goldenberg Development Corporation, et al. vs. Reliance Insurance Company of Illinois*, 2001 U.S. Dist. LEXIS 12870, May 14, 2001. The version of the exclusion, such as the one at issue in *Goldenberg*, simply excluded pollution events known to the insured and not disclosed in the application process. The dispute in *Goldenberg* was about whether there had been the proper level of disclosure. The above language was a response to such litigation; it required what was known and disclosed to be defined in an endorsement.

Underwriters are often willing to cover known conditions wholly, without any exclusion, in the following situations: there is no further action (NFA) letter; monitored natural attenuation; and firm indemnities for the known contamination by a responsible party. In such cases, the endorsements they usually use may include a Disclosed Document, Endorsement a Known Conditions Exclusion Endorsement, a Known Conditions Coverage Endorsement, and a Reopener Endorsement. The Disclosed Document endorsement typically refers to the known and disclosed conditions exclusion in the policy form and states that the conditions described in the documents scheduled below (e.g. Phase I’s, II’s, remedial investigation reports) will be deemed to constitute known and disclosed conditions. A problem with this approach, from the point of view of the insurer, is that every little constituent listed in the documents is deemed to be known and disclosed. The ambiguous term “known” is not defined in most policies.

If only the Disclosed Document endorsement with the deemer language is used, and nothing more is done, the known conditions will be covered. The conditions may, however, be excluded – wholly or partially. In most situations, there is some partial exclusion of the known conditions, but, whether the conditions are wholly or partially covered, underwriters normally will only provide such coverage when the known conditions have been fully defined and delineated. In the contexts cited above, where the sellers were willing to be responsible for cleanup of known conditions, it was sufficient

² C. Gregory Rogers, *Financial Reporting of Environmental Liabilities and Risks after Sarbanes-Oxley*, citing FASB EITF 03-8, “Accounting for Claims-Made Insurance and Retroactive Contracts by the Insured Entity.”

to exclude cleanup costs from known conditions by endorsement and leave everything else covered. To accomplish this task, underwriters most often use a Known Conditions Exclusion endorsement, but a Known Conditions endorsement which provides affirmative coverage is also possible. The trick for the insured is to be certain that the language of the endorsement defines the scope of what is excluded as narrowly as possible – or what is covered as broadly as it can.

The third main type of known conditions endorsement is the Reopener Endorsement. It typically states that once an NFA is produced, any Known Contamination Exclusion will be removed. This is also known as “reopener” coverage, because NFAs frequently came with “reopeners.” Upon removal of the exclusion, the carrier would be covering the risk that the agency will reopen the remediation and ask for more. These days, they usually state that the removal will take place at their sole discretion, rather than happening automatically, which is troublesome from the point of view of insureds who want certainty. A bigger problem with these reopener endorsements is that they are either silent on the issue of IC/EC’s or actually exclude liability arising from failures of IC/EC’s.

Examples

The Known Contamination Exclusion endorsement negotiated for the quote involving the ISRA site sold to the church made it clear that coverage would be provided, as needed, for: cleanup costs from unknown conditions and third party bodily injury from both known and unknown conditions. There was a section in the endorsement that specified what damages would be excluded: remediation expenses or “loss,” i.e., bodily injury and property damage. Here, only “remediation expense” was checked off. However, before the underwriter would agree to provide coverage of bodily injury arising from known conditions only after air monitoring tests in the building that was planned to be used as a school were done; he was concerned about the new vapor intrusion regulations in New Jersey despite the fact that the building was not over or near an AOC that could have caused vapor intrusion. The endorsement specifically excluded both groundwater and soil arising from the known conditions. However, instead of scheduling and therefore excluding all the constituents at the site, which would be troublesome for the insured, the 20 areas of concern (AOC’s) were scheduled, providing some circumscription by area to the exclusion.

The Connecticut smelting factory quote handled coverage of known conditions differently – not through an exclusion but through a grant of coverage, in a Known Pollution Conditions Schedule endorsement. The endorsement included a grant of coverage for specified known pollution conditions. It scheduled the only AOC at the site, the soil contaminated fill, and it made clear that bodily injury, property damage, and cleanup costs arising at that AOC were covered. This was possible since the LEP had already issued an NFA with respect to this AOC. The IC/EC’s could not be covered when the policy and endorsement were issued because they would not be established or implemented until the site had made its way through the Pennsylvania brownfields process. Nevertheless, the underwriting criteria for future coverage of IC’s, including

their proper establishment or implementation, were stipulated and specifically addressed in the endorsement.

Getting Claims Covered

The first step in getting claims covered is making sure that the language is correct up to and including the language in the issued policy form. The first quote is usually subject to some negotiation and alteration leading to a “bindable” quote that everyone is satisfied with. This is followed by a binder, which is followed by an issued policy. At each stage, it is critical that the document in question adhere to the previous document. The binder should mirror the last bindable quote, and the policy issued to the insured should mimic the binder exactly.

After the policy is issued, what often happens unfortunately is that it gets put away in a drawer. Circumstances change; perhaps the site is going to be or has been sold. Perhaps it is sold, and the new buyer has different plans for site use than those stated in the policy. Perhaps contamination is discovered. Nobody contacts the broker. That is the worst case scenario. If the broker is kept in the loop during the policy period about changes that could affect coverage, it is much more likely that claims will be paid. If, as should be the case, the broker has a very complete file on the negotiations for the endorsements concerning known conditions – and assuming that the language was properly negotiated as discussed above – there is no reason to think that a claim will not be covered.

When the claim comes in or contamination is discovered, the broker should be contacted and should forward the claim to the insurance company according to the directions in the claims notification clauses. Assuming that the claim involves known conditions, as is often the case, the broker should call attention in his or her cover letter to the relevant endorsement providing coverage for the known conditions.

Conclusion

Environmental insurers would make the policy buying process much easier if the policy forms were rewritten to recognize known pollution conditions as one of the three main coverage parts, rather than providing the coverage through exclusions. Alternatively, when brokers negotiate manuscript endorsements providing whole or partial coverage of known conditions, the endorsements should provide affirmative coverage for the known conditions rather than being exclusionary. Underwriters could also make things easier by explicitly referring to all risks that they purport to cover, including most notably failures of IC/EC's over known pollution conditions. In the policy or quote negotiation process, underwriters and brokers should fill in the matrix of coverages arising from known and unknown conditions through carefully worded and legally sufficient endorsements. Meaningful coverage will not be possible unless contamination has been fully characterized and defined on an engineering basis as well as within the words of the quote, binder, and policy.

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

Session Title: **Long-Term Stewardship and Abandoned Sites**
Date and Time: Wednesday, April 4, 2007, 3:45 p.m., Session B
Speakers: Sherry Estes, EPA Region 8
Ann Carroll, EPA OBCR
Mike Hendershot, EPA Region 3

Sherry Estes Presentation
Abandoned Sites

- EPA should do an extensive PRP search before determining if a site is truly abandoned.
- Dissolved corporations still may be able to renew leases and transfer property.
- Example of United Scrap Lead Site where last remaining PRP died just before UECA covenant was signed.

Sherry provided two handouts for this presentation, a declaration and a memorandum. Both provide details regarding the United Scrap Lead Site.

Mike Hendershot Presentation
Institutional Controls Through In Rem Actions

- It is possible to sue the land (In Rem) in addition to the people (In Personem) related to a contaminated site to gain access.
- Example of Sitkin Smelting and Refining, Inc.

Questions related to the presentation were as follows:

- If the property was acquired by someone else, would the court order include a requirement that the cap be maintained?
 - o No.
- What about a putting a daycare on the site?
 - o One would not be put on site because it would disturb the soil. We need to go beyond restricting access. We also need to include use restrictions.
- Did EPA agree to take care of this site in perpetuity?
 - o Our agents conducted the investigation through the PRPs. There is concern that we lose institutional knowledge of the site when people retire.
- Who will be enforcing the IC?

- o EPA would enforce it through the Five-Year Review. Region 3 might be the first Region to try this, but I do not recommend this approach.

Ann Carroll Presentation

Brownfields Redevelopment and Long Term Stewardship

- Long-term stewardship of brownfields sites needs to be considered.
- Brownfields law states that local governments receiving grant monies may not use more than 10 percent of them for monitoring the health of populations exposed to the hazardous substances at the sites and for monitoring and enforcement of institutional controls at the site.

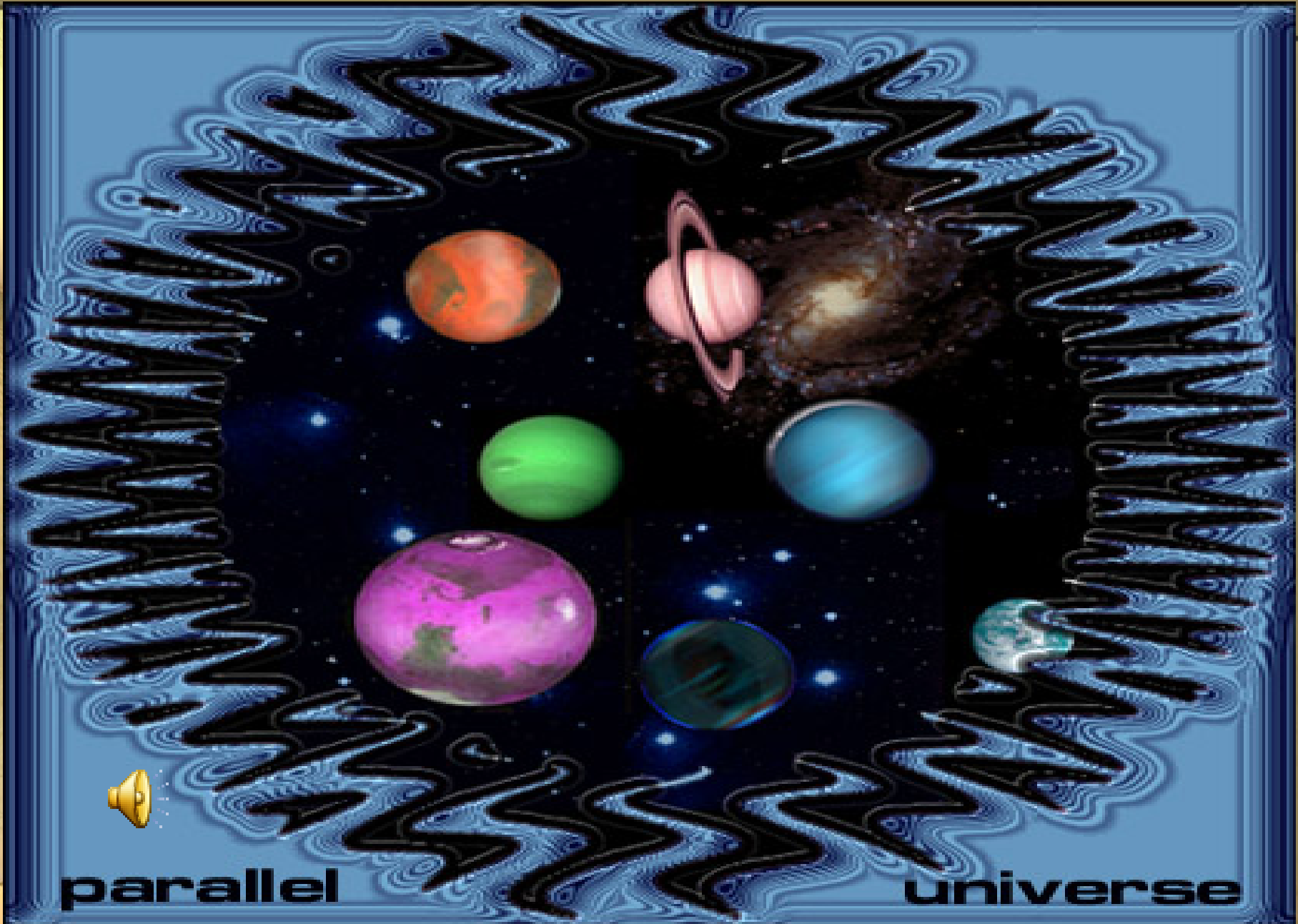
Questions related to the presentation were as follows:

- How do you interact with cities and counties? How do you get the message out physically?
 - o We are working with ATSDR. It has good relationships with health organizations. We are also working with a variety of local health agencies.

ABANDONED SITES

By Sherry Estes,
Associate Regional Counsel, Region 5

IC ENFORCEMENT IS IN A PARALLEL UNIVERSE



parallel

universe

MAKE SURE THAT SITE TRULY ABANDONED

- Use Enforcement Tools Such as PRP Searches for Site Principals
- Review existing files; know what is in them.
- Tax returns or title searches for info re: real property holdings.

PERFORM PRP SEARCHES EARLY AND OFTEN!!!



Richard J. Daley

PRP SEARCH TECHNIQUES (cont'd)

- Secretary of State Records—
 - Is Corporation Still Active?
 - Ascertain Current Officers and
 - Registered Agent
 - Any Recent UCC filings?—
“Follow the money”
- Principals Still Alive?
 - Social Security Death Index
 - Proprietary Data Base
 - Probate Records

PRP FIELD INVESTIGATIONS

- Civil Investigator Interviews
 - Local Officials
 - Adjacent Businesses
 - What Do These People Know About Your Business or the Principals?
- Document Retrieval
 - Tax Assessments
 - Clerk of Court—What Litigation was business or principals engaged in
 - Ex business partners, ex-wives and former employees

TRACING CASH TRANSFERS

- FinCen—Financial Crimes Enforcement Network; www.fincen.gov

Money Services Businesses (such as banks) required to report all transactions > \$10,000

Aggregate of \$10,000 in 24-hr. period

- Designed to catch money laundering
- States and locals can request reports on business and individuals
- Must be done through state contact
- Organize your info when requesting report

WHY BOTHER WITH DEFUNCT/DISSOLVED CORPORATIONS?

USE SIMILAR ENFORCEMENT TOOLS AS YOU
WOULD IN BUILDING A LIABILITY CASE;
HOWEVER, THE ENFORCEMENT ASSESSMENT
MAY BE DIFFERENT BECAUSE OF THE MORE
LIMITED NATURE OF THE RELIEF
THAT YOU NEED

DISSOLVED CORPORATIONS

- Many Sites Owned by Closely-Held Corps. Which Are Dissolved Once Facility Becomes Inactive
- Ability to Sue Dissolved Corporation In Most Cases Turns on State Corp. Dissolution Statute
- Time Period Short—Often 1-2 yrs. After Dissolution.

CERCLA PRE-EMPTION OF STATE DISSOLUTION STATUTE TIME LIMITS

- Some Courts Will Extend Limits Based on Purpose Behind CERCLA
- 3rd and 9th Circuits Reject and Apply State Dissolution Law Limits
- Several District Courts in the Sixth Circuit Have Allowed Suit After the Limit. Sixth Circuit Has Not Ruled.

CERCLA PRE-EMPTION OF STATE DISSOLUTION STATUTE TIME LIMITS (cont'd)

- 8th Circuit Has Not Ruled
- 3rd Div. in Minn. did not allow CERCLA Pre-emption, Onan Corp. v. Industrial Steel Corp., 770 F. Supp. 490 (1989)
- 4th Div. in Minn. did allow CERCLA Pre-emption, Soo L.R.R. Co. V. B.J. Carney & Carney & Co., 797 F. Supp. 1472 (1992).

CERCLA PRE-EMPTION OF STATE DISSOLUTION STATUTE TIME LIMITS (cont'd)

- Courts Which Allow CERCLA Pre-emption Distinguish Between “Dead” (Past Statutory Deadline) and “Dead and Buried” Corps. (Corps. Which Have Distributed All Assets).
- Question Whether CERCLA Pre-emption Theory Still Viable After Best Foods; Canadyne-Ga. Corp. v. Cleveland, 72 F. Supp. 2d 1373 (M. D. GA. 1999).

POWERS OF DISSOLVED CORPORATION

- Most State Dissolution Or “Winding Up” Statutes Allow A Corp. To Do Whatever It Could Do When Active Corporation
- Must Be Legal
- Must Be Within Corporate By-laws

EXAMPLES WHICH RELATE TO ICs

- Ohio—Dissolved Corporation Able To Enter Into 99-year Renewable Lease. Ohio Stat. Sec. 1701.88(D).
- Michigan—312 Mich. 290 at 293. Dissolved Corp. able to renew lease.
- Many Dissolution Statutes Speak to the Power of a Dissolved Corporation to Transfer Real Property

WHY IS THIS IMPORTANT?

Principal of Dissolved Corporation May Be Much More Willing to Enter Into IC as the Corporate Principal Than As an Individual

WHAT IF SITE TRULY ABANDONED?

- Judgment Should Not Be Made Until Extensive PRP Search Has Been Completed
- United Scrap Lead Site—Ohio
Where Last Remaining Principal Had Died, U.S. Asked Court To Appoint A Receiver With Power To Enter Into ICs and Also To Sell Site

FACTUAL SITUATION AT UNITED SCRAP LEAD

- Site Owner (United Scrap Lead Corp.) Was Obligated Under Consent Decree to Enter Into ICs.
- Delay In Finding Grantee Impeded Ability to Enter Into Proprietary Covenant.
- Corporate Principal Was About To Sign UECA Covenant When He Died

ELEMENTS OF BRIEF IN SUPPORT OF RECEIVER

- Atty. for Deceased Principal and Atty. for Parties Who Did Work At the Site Joined in the Brief
- Arguments Based Upon Federal Court Discretion In Appointing A Receiver Under FRCP 66
- Broad Equitable Powers of Fed. Cts. Generally, as well as the Broad Equitable Powers Afforded by Section 106 of CERCLA.

POTENTIAL SITE RE-DEVELOPMENT

- Historical Aviation Museum Next to Site
- Receiver Pleading Asked That Receiver Be Given Power to Sell Site
- Negotiations Underway To Match Needs of Museum With Environmental Protections

Brownfields Redevelopment and Long Term Stewardship

Ann Carroll, MPH

Office of Brownfields Cleanup and
Redevelopment

April 4-5, 2007

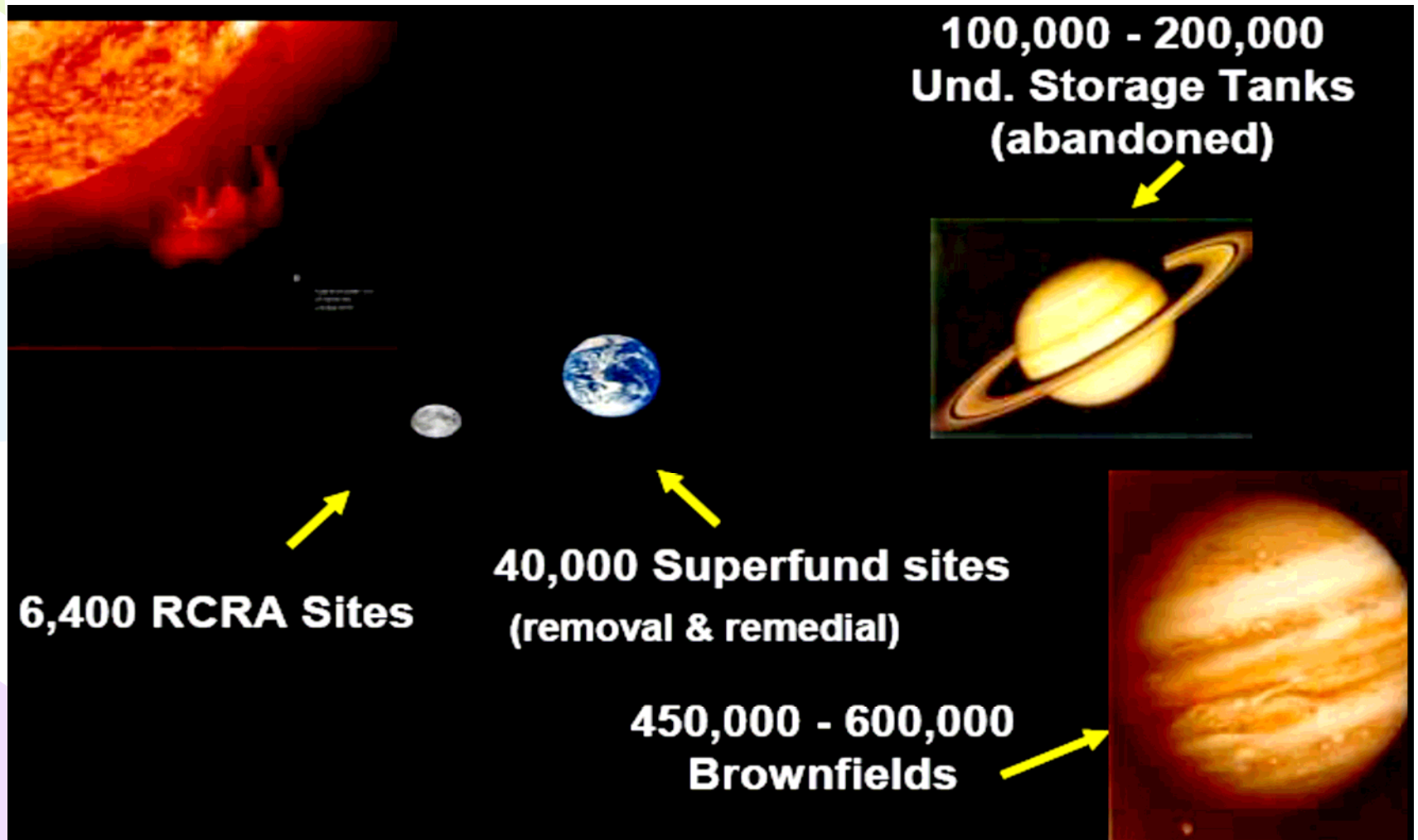


LTS Roundtable

- **BF EC/IC issues**
- **BF LTS Opportunities**
- **Redevelopment and Reuse**



Solar System of Contaminated Properties



Source: Region 4 NARPM
Presentations, 2006

What is a Brownfield Site ?

A Brownfield is “real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.”

The Small Business Liability Relief and Brownfields Revitalization Act signed January 11, 2002.



Firth Sterling, Allegheny County

Brownfields
Assessment
&
Cleanup

Brownfields
Redevelopment
&
Reuse

Brownfields
Long-Term
Management
& Stewardship

CREATING COMMUNITY WEALTH THROUGH COMMUNITY HEALTH

*Protecting Public
Health & Safety*



Brownfields Law

- **104(k)(4)(C) Assistance for Development of Local Government Site Remediation Programs –**
 - **“A local government that receives a grant under this subsection may use not to exceed 10% of the grant funds to develop and implement a brownfields program that may include-**
 - **(i) monitoring the health of populations exposed to one or more hazardous substances from a brownfield site; and**
 - **(ii) monitoring and enforcement of any institutional control used to prevent human exposure to any hazardous substance from a brownfield site.”**

Typical Brownfield Contaminants?

- Petroleum and other hydrocarbons
- Lead and other metals
- Polycyclic Aromatic Hydrocarbons (PAH) and Volatile Organic Compounds (VOC)
- Polychlorinated Biphenyls (PCB)
- Controlled substances (meth labs)



Brownfields
Assessment
&
Cleanup

Brownfields
Redevelopment
&
Reuse

Brownfields
Long-Term
Management
& Stewardship

CREATING COMMUNITY WEALTH THROUGH COMMUNITY HEALTH

*Protecting Public
Health & Safety*



Brownfield Health Examples

Somerville, Massachusetts

- \$100,000 EPA Assessment Grant, 1996
- Soil and groundwater assessment found lead, petroleum and barium contamination
- Cleanup costs of ~ \$250,000
- \$100,000 City cleanup cost coverage



Former Mattress factory to Visiting Nurses Association facility, Somerville, MA



- Opened June 2000
- 97 beds fully occupied by fall 2000
- \$14 million dollar redevelopment from other sources
- 45 community jobs



Brownfield Health Examples

Clearwater, Florida



- Abandoned gas station
- \$700,000 EPA Assessment Grants (1996, 2000, 2002, 2003)
- \$500,000 EPA RLF Grant (1999)
- Clearwater Brownfields Area 1,842 acres
- Petroleum, waste oil and kerosene tanks and 450 tons of petroleum contaminated soil removed

Willa Carson Community Health

Center opened March 2004

- Provides quality health care for medically underserved - free health care to 7,000 patients annually
- Improves individual and community health



Former Rheingold Brewery, New York City



- Brewery abandoned in 1976; demolished in the 1980s
- Assessment began in 2002
- Metal and SVOC 'hotspots' remediated.
- Over 97,000 tons of soil removed before replacement with clean fill

- Ridgewood Bushwick Senior Citizens Council worked with developer and City on this \$90 million dollar development
- 155 affordable rental units, 58 two family houses, 4 three family houses, 121 affordable condos, 20,000 sf retail, onsite parking and 50,000 sf office and training





Thank you

Ann Carroll, MPH

Public Health Lead,

**US EPA Office of Brownfields Cleanup and
Redevelopment**

(202) 566-2748 or

Carroll.ann@epa.gov

www.epa.gov/brownfields

INSTITUTIONAL CONTROLS THROUGH IN REM ACTIONS

Michael A. Hendershot

Senior Assistant Regional Counsel

U.S. Environmental Protection Agency

Region III

THE SITUATION

- Former operator and current owner of the Site, Sitkin Smelting and Refining, Inc.
- Operated between 1958-1977.
- Sitkin Smelting operations included the processing of ferrous and non-ferrous scrap metals, precious metals reclamation, and battery and transformer breaking operations.

THE SITUATION (CON'T)

- Smelting and battery breaking operations created extensive lead contamination.
- At conclusion of operations, Sitkin Smelting filed for and liquidated in bankruptcy.
- Company principle is dead.

THE SITUATION (CON'T)

- Company never formally wound up.
- EPA needed access—short term to demolish the precious metals building.
- Long term to conduct the remedy—cap the site.







11/28/2000

SHORT-TERM ACCESS

- EPA obtained a warrant to demolish the precious metals building.
- Very short term—just for exigent circumstances.

LONG-TERM ACCESS—ACTUALLY PERMANENT!

- Consolidate contaminated soil and cap it.
- Maintain the integrity of the cap.
- Prohibit certain uses of the cap.

WHAT TO DO—SUE THE DIRT!

- Typically, we sue persons (actual humans, corporations, partnerships)—In Personem.
- We can also sue property—In Rem.

THE LAWSUIT

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF PENNSYLVANIA

UNITED STATES OF AMERICA,)
)
)
Plaintiff,)
)
)
v.)
)
)
SITKIN SMELTING & REFINING,)
INC.;)
)
AND,)
)
)
TWO PARCELS OF LAND ON OR NEAR)
LEGISLATIVE ROUTE 44007,)
LOCATED IN DECATUR TOWNSHIP,)
MIFFLIN COUNTY, PENNSYLVANIA;)
)
)
Defendants.)

Civil Action No. _____

WHAT WE SOUGHT

- Unimpeded entry and access to the Defendant Properties in order to effectuate response actions at the Site including, *inter alia*, sampling, consolidation, treatment, removal and/or capping of contaminated soils on the Defendant Properties.

HOW WE SUED

- Filed under Section 104(e)(1) of CERCLA—authorizes us to enter a facility or other place or property "if there is a reasonable basis to believe there may be a release or threat of release of a hazardous substance or pollutant or contaminant."
- The U.S. filed a verified complaint.
- It contained the verification of EPA's RPM.

WHAT'S A VERIFIED COMPLAINT?

- It contains the sworn confirmation of correctness, truth or authenticity.
- The complaint was verified by EPA's Remedial Project Manager.

VERIFICATION OF COMPLAINT

I, Rashmi Mathur, am employed by the United States Environmental Protection Agency as a Remedial Project Manager. I have been responsible for overseeing EPA's remedial response action at the Jack's Creek/Sitkin Smelting Superfund Site, which is the subject of this Complaint, from March 1, 1998 to the present. I am familiar with EPA's Record of Decision and the approved remedial design plan for the remedial action at the Site. I also have personal knowledge pertaining to EPA's efforts to secure access to the property addressed in this Complaint and certain other of the facts addressed herein. **I swear under penalty of perjury that the allegations set forth above are true and accurate to the best of my knowledge.**

NOTICE—LOTS OF NOTICE

- Served complaint on PA Secretary of State.
- Newspaper notice announcing filing of complaint.
- Posted signs at site simultaneously with filing.
- Sent complaint to one remaining heir of principle of corp. Also notice of filing by phone. No thanks!

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF PENNSYLVANIA

UNITED STATES OF AMERICA,

Plaintiff,

v.

SITKIN SMELTING & REFINING,
INC.;

AND,

TWO PARCELS OF LAND ON OR NEAR
LEGISLATIVE ROUTE 44007,
LOCATED IN DECATUR TOWNSHIP,
MIFFLIN COUNTY, PENNSYLVANIA;

Defendants.

Civil Action No. 1:CV 02-0678

(Judge Rambo)

FILED
HARRISBURG, PA

AUG 16 2002

MARY S. DANIEL
Per *[Signature]*

ORDER

Having considered the United States' Motion for an Order in Aid of Access, and good cause appearing therefor,

IT IS HEREBY ORDERED THAT:

EPA, its officers, employees, agents, contractors and other representatives, shall be allowed immediately to enter upon and gain access to, through, over and under the Defendant Parcels (as described in Exhibits A and B to the Complaint filed by the United States), for the purposes of effectuating response actions, including but not limited to sampling, consolidation, treatment, removal and/or capping of contaminated soils, at the Jack's Creek/Sitkin Smelting Superfund Site.

THE FUTURE

- Maintain the integrity cap, including the right to prevent people from interfering with remedy.
- Court said it was implicit in her order.

RECORDATION

- EPA sought advice of county solicitor for recorders office.
- Was indexed in both grantor and grantee indices.

EFFECT OF RECORDATION

- The order runs with the land—literally!
- It actually binds the property.

IS THIS A TAKINGS?

- The operator created the nuisance.
- The claim was offset by the benefit of the cleanup.
- Also, practical reality that there would be no claim.

LESSONS LEARNED

- Be bold—It's worth trying.
- Consult with those who know.

4. In the case of Perrysburg v. Koenig, 1995 WL 803592 (Ohio App. 6th, Dec. 8, 1995) (unpublished), which is attached at Exhibit 1, the Ohio Appellate Court held that equitable servitudes could run with the land. Environmental practitioners in Ohio, and in, particular, attorneys with the Ohio Environmental Protection Agency, advised me to use these types of controls to restrict future use at the Site. An equitable servitude, however, also required a third-party grantee for restrictions to run with the land. As a result, I attempted to locate a third-party grantee for the easement, but was ultimately unsuccessful in this effort.

5. On December 22, 2004, the State of Ohio enacted the Uniform Environmental Covenants Act ("UECA"), Ohio Revised Code § 5301.80 - 5301.92, which established a process for creating, modifying and enforcing environmental covenants that will not be subject to common law rules that prevent land use restrictions from enduring over time. UECA, among other things, removes the need for a third-party grantee.

6. In accordance with UECA, I prepared the environmental covenant at Exhibit 2. Under the terms of the proposed covenant, United Scrap Lead, Inc. ("USL"), which holds title to the Site, will covenant that the Site shall be used for only Commercial / Industrial Activities, that no property groundwater shall be used for potable purposes, and that USL shall permit maintenance of the remedial measures implemented on the eight acres where battery breaking operations were conducted. Further, USL will grant EPA and the Settling Generator Defendants access to the Site for the purpose of conducting any activity related to the Consent Decree. Finally, the covenant specifies that the above requirements shall "run with the land" and, hence, be binding upon any future owner of the Site.

7. Prior to the death of Charles Bailen, who was the sole surviving officer and director of USL, I presented the proposed covenant to Jacob Myers, USL's outside counsel, who reviewed and approved the covenant. Unfortunately, Mr. Bailen passed away before he could sign the covenant. I have attempted to secure the agreement of Mr. Bailen's daughter to serve as the director of USL for the purpose of signing the covenant under Section 1701.88 of the Ohio Revised Code. Ms. Bailen, however, has communicated through USL's counsel that she is unwilling to serve in this capacity, and I am unaware of any other persons who could execute the covenant on behalf of USL.

8. To ensure the integrity and protectiveness of the remedial measures implemented at the Site, and to prevent exposure to residual Site contamination, EPA believes that a receiver should be appointed to sign the covenant before the property is acquired by a new owner. EPA is particularly concerned that a third party could acquire the Site by paying back taxes owed on the property. If this should happen before the environmental covenant is executed and recorded, the new owner would take the property free and clear of environmental restrictions, and EPA would have only limited rights under property law to prevent the new owner from using the Site in a

manner inconsistent with the Site cleanup. For instance, a new owner could use the Site to build residences or a day care center, or could potentially use the groundwater as a drinking water source.

9. EPA also believes that a receiver should be appointed to arrange for the sale of the Site to a new owner, who can assure that the trespassers do not enter the property and engage in activities that may threaten their health. In 2001, children from the neighborhood cut the fence surrounding the Site and drove dirt bikes onto the property. Given that the Site is now effectively abandoned, EPA is concerned that the Site remains an attractive nuisance.

10. The Waco Aviation Museum, which is located on property adjoining the Site, has expressed an interest in acquiring the Site for several potential purposes, such as building an aircraft hangar, extending its runways, or maintaining the site "as is" to protect the integrity of its airspace. EPA believes that any of these proposed uses would be consistent with maintenance of the remedial measures, and the Settling Generator Defendants (known now as the Respondent Group) have agreed to forgo their 50% share of the sale price to facilitate the sale. The sale, however, is not possible so long as there is no person authorized to sign the sale agreements on behalf of USL.

Pursuant to 28 U.S.C. § 1746, I hereby swear under penalty of perjury, that the foregoing is true and correct.

1/9/07
Date

Sherry L. Estes
Sherry L. Estes
Associate Regional Counsel
U.S. Environmental Protection Agency, Region V

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF OHIO
WESTERN DIVISION

UNITED STATES OF AMERICA,)
)
) Civil Action No. 3:91-CV-00309-WHR
)
 Plaintiff,)
)
) Judge Walter H. Rice
)
 v.)
)
)
)
 THE ATLAS LEDERER COMPANY,)
)
 et al.,)
)
)
)
 Defendants.)
)
 _____)

MEMORANDUM IN SUPPORT
OF JOINT MOTION
TO APPOINT RECEIVER TO CARRY OUT OBLIGATIONS
OF THE SETTLING OWNER / OPERATOR DEFENDANTS
UNDER THE CONSENT DECREE

Pursuant to Rule 66 of the Federal Rules of Civil Procedure (“FRCP”), plaintiff United States and counsel of record for the Settling Owner / Operator Defendants move for the appointment of a receiver to carry out the obligations of the Settling Owner / Operator Defendants under the Consent Decree entered by the Court on September 28, 1998. The Settling Owner / Operator Defendants are unable to complete their obligations under the Consent Decree due to the death of Charles Bailen, who was the last surviving individual who had authority to act on behalf of the Settling Owner / Operator Defendants. Accordingly, the United States and counsel of record for the Settling Owner / Operator Defendants move for the appointment of a receiver to assume the duties of the Settling Owner / Operator Defendants under the Consent Decree and to take other action to secure the long-term security of the United Scrap Lead Superfund Site (“Site”), including the sale of the Site to a new, appropriate owner. The United States has consulted with counsel for the Respondent Group regarding this motion, and counsel

has given his permission to represent to the Court that the Respondent Group supports the motion.^{1/}

STATEMENT OF FACTS

The Site occupies approximately 25 acres of land near Troy, Ohio. Over a 34-year period between 1946 and 1980, the Site became contaminated with lead as a result of the operations of a lead reclamation facility owned and operated by United Scrap Lead Company (“USL Company”), a sole proprietorship owned by two brothers – Edward and Charles Bailen. Edward Bailen was the president and treasurer of USL Company, and Charles Bailen was the company’s vice president and secretary.

USL Company ceased its lead reclamation operations in 1980 and was dissolved in March 1982. Edward and Charles Bailen formed two new corporations – United Scrap Lead, Inc. (“USL”) and Bailen Brothers, Inc. (“Bailen Brothers”) – to continue operations at the Site. USL held title to the Site and Bailen Brothers engaged in the business of leasing the Site to other parties for recycling and cleaning up waste material left on the property. Bailen Brothers ceased operations in 1983. Four years later, Edward Bailen died, leaving Charles Bailen as the sole owner and officer of USL and Bailen Brothers – neither one of which continues to operate.

In July of 1998, Charles Bailen, acting on behalf of himself and USL Company, USL, Bailen Brothers, and the Estate of Edward Bailen (collectively “Settling Owner / Operator Defendants”) entered into a Consent Decree with the United States. (Consent Decree, Doc. No. 138). Under the terms of that Decree, the Settling Owner / Operator Defendants were required, among other things, to refrain from using the Site in any manner that would interfere with or

^{1/} The Respondent Group is comprised of the Settling Generator Defendants that conducted the cleanup of the Site under the initial Consent Decree entered by the Court on September 28, 1998.

adversely affect the integrity or protectiveness of the remedial measures to be implemented under the Consent Decree. (Consent Decree at ¶ 29b). Further, they agreed to execute and record with the County Recorder for Miami County, an easement, running with the land, that granted EPA the right of access to the Site and the right to enforce land/water use restrictions set forth in Appendix G of the Consent Decree or other restrictions that EPA determines are necessary to ensure non-interference with the remedial measures implemented at the Site. (Consent Decree at ¶ 30.a.ii)

In 2005, Charles Bailen died without having executed the covenant required by the Decree. As a result of his death, there is now no surviving officer or director of the Settling Owner / Operator Defendants with authority to execute the covenant or make other decisions regarding the use and disposition of the Site.

ARGUMENT

The death of Charles Bailen casts a shadow over the long-term viability of the remedy implemented at the Site. The 25-acre Site has been effectively abandoned because the title holder of the site, USL, is defunct with no surviving officers or directors. While the Site is surrounded by a security fence, the fence is frequently vandalized, making it possible that trespassers could enter the Site and engage in activities that might put them at risk or damage the remedial measures implemented at the Site. Further, it is possible that a third party might acquire title to the Site by paying the back taxes owed on the property. In such an event, EPA might not be able to compel the new owner to comply with the land use restrictions memorialized in the Consent Decree, because Charles Bailen died before executing the easement giving such enforcement rights to EPA. Although the Consent Decree is enforceable against successors of the Settling Owner / Operator Defendants, the land use restrictions memorialized in the Consent Decree might not be enforceable against a tax purchaser. To remedy this

situation, the United States and counsel of record for the Settling Owner / Operator Defendants respectfully request that the Court appoint a receiver for the purpose of executing the court-ordered obligations of the Settling Owner /Operator Defendants and for taking other steps to ensure the long-term security of the Site.^{2/}

A. The Court has authority to appoint a receiver under FRCP 66 and the Court's inherent authority to fashion equitable relief

“Federal Rule 66 applies to receivers who are appointed under the general equitable powers of the Court.” 13 JAMES W. MOORE ET AL, Moore's Fed. Practice, § 66.02[1] (3d ed. 2006). Although the rule does not set forth any standard or procedures for the appointment of receivers, the Sixth Circuit has held that the appointment of a receiver is “a matter firmly within [the federal court's] discretion and will be reversed only if such discretion has been abused.” United States v. Prod. Plated Plastics, Inc., Nos. 93-2055, 93-2618, 1995 WL 428451 at *7 (6th Cir. July 19, 1995) (unpublished), cert. denied, 517 U.S. 1133 (1996).^{3/}

In Production Plated Plastics, the lower court issued an injunction enjoining defendants to comply with hazardous waste laws by closing their facility in accordance with a state-

^{2/} In the event that the Court grants the joint motion, the parties assume that the receiver will be paid for his services in accordance with the Court's standard procedures for compensating its officers. Should that not be the case, the parties recognize that the sale of the Site will generate a source of funds that could be used for such compensation. Under the terms of the Consent Decree, EPA and the Respondent Group are each entitled to receive half the proceeds generated from the sale. (Consent Decree at ¶ 45). The Respondent Group has agreed to forego its 50% share of the sale proceeds, if necessary, to facilitate the sale of the property to a viable entity at less than appraised value in order to terminate the Respondent Group's further obligations for the Site, if any, under the Consent Decree. The United States has not yet determined whether the Miscellaneous Receipts Act, 31 U.S.C. 3302, would allow it to waive its right to 50% of the sale proceeds, or to view the cost of a receiver as a transactional cost payable before the proceeds are divided between the United States and the Respondent Group, but will address these issues in good faith with the Respondent Group in the event that a source of funding for the receiver is necessary.

^{3/} In accordance with Rule 28 of the Rules of the United States Court of Appeals for the Sixth Circuit, a copy of this unpublished decision is provided at Exhibit A.

approved plan. When the defendants failed to liquidate sufficient assets to finance the compliance activities, the lower court relied upon FRCP 66 and its inherent equitable powers to appoint a receiver for the purpose of identifying and liquidating assets. Id. at *7. Upon appeal, the Sixth Circuit held that the lower court was “well within its discretionary powers to appoint a trustee/receiver to secure [the defendant’s] compliance with the court’s injunction.” Id. The Sixth Circuit explained that the appointment would advance the objectives of the Resource Conservation and Recover Act under which the Court issued its initial injunction. Id.

Other courts have reached the same result. In United States v. Vertac Chemical Corporation, 671 F. Supp. 595 (E.D. Ark. 1987), vacated on other grounds, 855 F.2d 856 (8th Cir. 1988), the court appointed a receiver to take management control of a corporate defendant for the purpose of cleaning up a contaminated site. The court found that the defendant had violated the terms of a Consent Decree and other orders relating to the clean up of the site, and that the “present management of [the defendant had] demonstrated its willingness . . . to facilitate nonperformance of [the defendant’s] environmental responsibilities” under those orders. Id. at 610-12, 623. Accordingly, the court determined that it had inherent authority, as well as authority under the broad equitable powers afforded by Section 106(a) of CERCLA, 42 U.S.C. § 9606(a), to appoint a receiver to “aid in enforcement of the Consent Decree and Stipulation previously approved by the Court.” Id. at 624.

Finally, in United States v. City of Detroit, 476 F. Supp. 512 (E.D. Mich. 1979), the court appointed a receiver to secure compliance with a consent decree and the Clean Water Act. There, the court found that the City of Detroit had failed to comply with effluent limits set forth in the Consent Decree, and that “potential areas of non-compliance in the future loom.” Id. at 519. Accordingly, relying upon “the broad range of equitable powers available to [the] court to enforce and effectuate its orders and judgments,” the court appointed a receiver. Id. at 520. The

court explained that “[w]here ‘the more usual remedies contempt proceedings and further injunctions are plainly not very promising as they invite further confrontation and delay; and when the usual remedies are inadequate, a court of equity is justified, particularly in aid of an outstanding injunction, in turning to less common ones, such as a receivership, to get the job done.’” Id. (quoting Morgan v. McDonough, 540 F.2d 527, 533 (1st Cir. 1976)).

Here, the demise of Charles Bailen leaves the United States with no adequate legal remedy against the Settling Owner / Operator Defendants to compel compliance with the Consent Decree. Typically, the United States addresses non-compliance with Consent Decrees by assessing stipulated penalties and, if necessary, petitioning the Court to enforce the Decree or hold the defendant in contempt. Those traditional remedies are not adequate here because the death of Charles Bailen has left the Settling Owner / Operator Defendants without any authorized person to carry out their obligations under the Consent Decree. As a result, the Settling Owner / Operator Defendants are unable to execute the easement required under the Consent Decree. Nor are they able to ensure that the abandoned Site will be used in a manner that will not adversely affect the integrity or protectiveness of the remedial measures implemented under the Consent Decree. Accordingly, this Court is well within its discretionary equitable powers to appoint a receiver for the purpose of implementing and enforcing the Consent Decree.

B. The appointment of a receiver is a necessary remedy in this case

The United States and counsel of record for the Settling Owner / Operator Defendants request the appointment of a receiver to carry out two discrete tasks. First, the receiver is needed to execute an environmental covenant on behalf of USL, which is the titleholder of the Site. Second, the receiver is needed to arrange for and execute the sale of the Site to a buyer who will

use the property in a manner consistent with maintaining the remedial measures implemented under the Consent Decree.

1. Environmental Covenant

As noted above, the Consent Decree required the Settling Owner / Operator Defendants to execute and record an easement, running with the land, that gave EPA not only the right of access to the Site, but also the right to enforce land/water use restrictions necessary to ensure the integrity and protectiveness of the remedial measures implemented at the Site. In accordance with this requirement, EPA has prepared an environmental covenant, which is attached at Exhibit B2. As explained in her Declaration at Exhibit B, Sherry Estes, who is associate regional counsel for EPA Region V, prepared the environmental covenant based upon Ohio's Uniform Environmental Covenants Act. Under the terms of the proposed agreement, USL will covenant that the Site shall be used for only Commercial / Industrial Activities, that no property groundwater shall be used for potable purposes, and that USL shall permit maintenance of the remedial measures implemented on the eight acres where battery breaking operations were conducted. Exhibit B.2 at ¶ 5. Further, USL will grant EPA and the Settling Generator Defendants access to the Site for the purpose of conducting any activity related to the Consent Decree. Id. at ¶ 8. Finally, the covenant specifies that the above requirements shall "run with the land" and, hence, be binding upon any future owner of the Site. Id. at ¶ 7.

Prior to the death of Charles Bailen, Ms. Estes presented the proposed covenant to USL's outside counsel, who reviewed and approved the covenant. Exhibit B (Declaration of Sherry Estes, hereinafter Estes) at ¶ 7. Unfortunately, Mr. Bailen passed away before he could sign the covenant. Id. EPA has attempted to secure the agreement of Mr. Bailen's daughter to serve as the director of USL for the purpose of signing the covenant under Section 1701.88 of the Ohio Revised Code. Mr. Bailen's daughter, however, has communicated through USL's counsel that

she is unwilling to serve in this capacity, and EPA is unaware of any other persons who could execute the covenant on behalf of USL. Id.

To ensure the integrity and protectiveness of the remedial measures implemented at the Site, and to prevent exposure to residual contamination, a receiver should be appointed to sign the covenant before the property is acquired by a new owner. EPA is particularly concerned that a third party could acquire the Site by paying back taxes owed on the property. Id. at ¶ 8. If this should happen before the environmental covenant is executed and recorded, the new owner would take the property free and clear of restrictions on the property's use, and EPA would have only limited rights under property law to prevent the new owner from using the Site in a manner inconsistent with maintaining the remedial measures implemented at the Site. Id.

2. Sale of the Property to a New Owner

As noted above, the Settling Owner / Operator Defendants are required, among other things, to refrain from using the Site in any manner that would interfere with or adversely affect the integrity or protectiveness of the remedial measures implemented under the Consent Decree. The Settling Owner / Operator Defendants, however, have effectively abandoned the Site, and as a result, vandals may continue to cut the fence and gain entry to the Site. This occurred in 2001, when children from the neighborhood cut the fence and drove dirt bikes on the property. Estes at ¶ 9. Given that the Site is now effectively abandoned, EPA is concerned that the Site continues to pose an attractive nuisance. Id. Thus, to maintain the integrity of the remedy and prevent any threat to public health and safety, EPA believes that the property should be sold to a new owner, who can maintain a daily presence at the Site. Such a sale will obviously not result in any harm to the present owner, USL, which has no present use for the property and agreed in the Consent Decree to pay all proceeds from the sale of the Site to EPA and the Settling Generator Defendants. (Consent Decree at ¶ 43).

The Waco Aviation Museum, which is located on property adjoining the Site, has expressed an interest in acquiring the Site for the purposes of building an aircraft hangar, extending its runways, or maintaining the Site “as is” to protect the integrity of its airspace. Estes at ¶ 10. EPA believes that such use would be consistent with maintenance of the remedial measures, and the Respondent Group have agreed to forgo their 50% share of the sale price to facilitate the sale. Id. The sale, however, is not possible so long as there is no person authorized to sign the sale agreements on behalf of USL. Accordingly, the Court should appoint a receiver for the purpose of carrying out the sale to Waco or, alternatively, selling the Site to another suitable buyer located by the receiver.

CONCLUSION

The United States and counsel of record for the Settling Owner / Operator Defendants respectfully request that the Court exercise its inherent equitable powers to appoint a receiver for the Settling Owner / Operator Defendants. The realization of CERCLA’s remedial goals depends upon the United States’ ability to identify responsible parties and, using its various enforcement tools, compel them to secure and cleanup contaminated sites. Here, those goals, originally achieved over a decade ago, are threatened due to the death of Charles Bailen. Accordingly, the Court should appoint a receiver for the purposes of (1) executing and recording

the environmental covenant attached to this memorandum and (2) conveying the Site to the Waco Aviation Museum or other suitable buyer located by the receiver.

Dated: January 10, 2007

Respectfully submitted,

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s/ Jacob Myers (w/ permission JWCW)

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CERTIFICATE OF SERVICE

I hereby certify that the foregoing *Joint Motion to Appoint a Receiver to Carry Out the Obligations of the Settling Owner / Operator Defendants Under the Consent Decree*, together with its supporting memorandum, was electronically filed on January 10, 2007. Notice of this filing will be sent to the parties by operation of the Court's electronic filing system, or by regular mail, in accordance with the attached Service List. Parties may access this filing through the Court's system.

In addition, the foregoing documents were served on the following potential future parties by U.S. Mail:

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s/ Joseph W.C. Warren
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SERVICE LIST

United States v. The Atlas Lederer Co., et al.
Case No. 3:91-CV-00309-WHR, S.D. Ohio

Service by Electronic Case Filing System

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

Session Title: **Optimization of Groundwater Pump and Treatment Systems to Enhance Efficiency and Cost-Effective Operation**
Date and Time: Wednesday, April 4, 2007, 3:45 p.m., Session C
Speakers: Mike Hurd, OSRTI
 Patrick Hurley, MA DEP
 Jay Naparstek, MA DEP

Mike Hurd Presentation

Ground Water Remedy Optimization in the Superfund Program

- Optimization is an independent review of an operating remedy intended to enhance overall remedy- and cost- effectiveness, without compromising protectiveness.
- Routine optimization efforts encourage systematic review and modification of existing remedies, while promoting a culture of continuous improvement.
- EPA's optimization tool is Remediation System Evaluation (RSE) developed by USACE.

Questions related to the presentation were as follows:

- What level do you think you would have to do an ESD or ROD amendment to optimize these pump and treat systems?
 - o Any fundamental change to the remedy would require a ROD amendment and would depend on the site and technology. There would need to be a discussion between EPA and the state.

Patrick Hurley & Jay Naparstek Presentation

Baird & McGuire Superfund Site Holbrook, MA Pre- and Post-Turnover Optimization Efforts

- RSE recommendations estimated a savings of \$1.3 million by automating plant operations, with a total of \$2 million in savings by performing all recommendations.
- O&M costs prior to optimization efforts was \$3 million; EPA modifications saved \$1.5 million; additional DEP optimization efforts saved \$500,000; and the current O&M cost is \$900,000.
- Optimization is an ongoing process not just a one-time event. Efficiencies must be searched for constantly.

Questions and comments related to the presentation were as follows:

- Is EPA looking at optimization earlier in the 10-year period?

- o Optimization should not be done too early. It should be done at some point later in the process, so you can make sure you are making the best change for the site. You can do more than one optimization if you have the funding.
- How long will you have to run the system? How close are you to reaching the objectives?
 - o There is a lack of clarity as to what the objectives are. We are close to the organics goals, but there are issues with metals (specifically arsenic), which may be a long-term issue.
- Getting recommendations and funding implemented is time consuming.
- Jobs were at stake and lost with optimization.
- There is no prohibition in combining optimization and Five-Year Reviews.
- There is no reason to do any ESD or ROD amendments.

Ground Water Remedy Optimization in the Superfund Program

Mike Hurd

Office of Superfund Remediation and
Technology Innovation

Objectives

- Provide an overview of remedy optimization and its benefits at both the site and program level
- Clarify roles and responsibilities for EPA and State staff in all phases of optimization, from site selection to implementation of system improvements
- Identify tools and resources currently available to assist project managers in effectively managing ground water remedies

What is Optimization?

- An *independent* review of an operating remedy intended to enhance overall remedy- and cost-effectiveness, without compromising protectiveness
- Routine optimization efforts encourage systematic review and modification of existing remedies, while promoting a culture of *continuous improvement*

Benefits of Optimization

- Encourage active site management during PCC
- Prepare both EPA and States for LTRA transfer
- Identify cost savings opportunities for EPA and States
- More efficient remedies allow us to reach goals faster
- Help a new RPM become familiar with a site
- Consider innovative processes or technologies developed since remedy selection
- Provide a roadmap for interim remedies
- Objectively resolve disagreements about cleanup levels or operations

A bit of history . . .

- EPA initiated a pilot effort in 2000 as part of the Superfund Reforms
 - Included a baseline data collection effort for all Fund-lead P&T systems
 - Selected 20 sites for pilot, based on cost and performance concerns
- EPA formalized the initiative in the 2004 “Action Plan for Ground Water Remedy Optimization” (OSWER 9283.1-25; August 25, 2004)

The Basic Approach

- Identify and prioritize candidate sites
- EPA funds reviews, conducted by team of independent technical experts
 - Private firm or USACE
- Document review, followed by a site visit
- Draft report and recommendations circulated for comment
- Implementation of final recommendations, monitored by EPA HQ

EPA's Optimization Tool: Remediation System Evaluation (RSE)

- RSE process was developed by USACE
- Independent team reviews site documents, conducts a site visit & interviews, then compiles report
 - Report includes site-specific recommendations on system effectiveness, cost savings, technical improvement and system closure
 - Effort costs approximately \$25K per site
- *Not an audit*, but an independent review of actual operating information not available during design
- Additional tools/processes developed by other Federal Agencies and several private firms

Common Recommendations

- Improve evaluation of capture zones & plume delineation
- Reduce unnecessary monitoring, labor and oversight as remedy reaches routine operation
- Simplify systems, or replace components with more efficient units/technologies
- Develop clear strategy for site closure

Site Selection

- Current focus is on operational Fund-lead P&T systems in the LTRA phase
- Selection is based on a review of several factors:
 - Annual operating costs,
 - Years remaining in LTRA phase,
 - Age of the system,
 - Known or suspected operating problems, and
 - Relevant Five-Year Review recommendations

How do RPMs prepare for an RSE?

- Assemble key site documents for the RSE team to review prior to the site visit
- Work with the RSE team to select a date for the site visit, to include other key stakeholders:
 - State project manager,
 - Facility operator,
 - Oversight contractor,
 - Other Regional staff (e.g., manager, hydrogeologist, Regional Optimization Liaison)
- Be prepared to discuss remedial activities and progress at the site visit

How do States get involved?

- EPA RPM will make contact once a site is selected
 - States can recommend a site to HQ or the Regional Optimization Liaison
- Assist in gathering key site documents for the RSE team to review prior to the site visit
- Participate in the RSE site visit
 - Be prepared to discuss State perspective on remedial activities, progress & expectations after transfer
- Participate in implementation phase and followup discussions

What happens during an RSE visit?

- Typically lasts one day; longer for very complex sites
- Part 1: General discussion
 - Site history, remedial objectives, site conceptual model, contractor's SOW, monitoring trends and progress toward cleanup goals
- Part 2: Site tour
 - Highlight operational status, performance and maintenance of individual remedy components

What happens during an RSE visit?

- Part 3: Discussion of site costs
 - Operator labor, project management & reporting, utilities, lab analytical work, and disposables
- Part 4: Debriefing
 - Preliminary discussion of possible recommendations
 - Request for additional information as a result of discussion

Streamlined Reviews

- An “RSE-Lite” may be appropriate for less complex sites
- Utilizes a conference call for interviews, instead of a site visit
 - Effort costs \$10-15K per site
- Allows us to conserve resources while increasing the number of sites to receive a review
- May be scaled up to a full RSE if further evaluation is needed

Analysis and Draft Report Preparation

- Following site visit, the RSE team performs various analyses to evaluate performance and alternatives:
 - Target vs. actual capture zone,
 - Design vs. actual influent concentrations,
 - Comparison of design treatment effectiveness/cost relative to actual, and to other potential technologies,
 - Evaluation of performance against objectives, and considerations for an exit strategy,
 - Options for revising current monitoring program
- Draft report with recommendations generally complete 45 days after the site visit

Reviewing the Draft RSE Report

- Review of draft report is generally coordinated through the EPA RPM
 - RPM shares the report with all who participated in the site visit/interviews
- In addition to factual accuracy, be sure to consider:
 - Are recommendations clear?
 - Does EPA and/or the State disagree with any recommendation? Why?
 - Are cost estimates realistic?
 - Have any important site details been overlooked?

Implementation Considerations

- RSE report includes advice on the suggested order to implement recommendations
- EPA HQ can provide priority funding for implementation
- An ESD or ROD Amendment may be necessary
- Contract revisions may be required (for remedy operations and SSC)
- Consider objectivity of on-site contractors/operators
 - Appropriate approval of Value Engineering proposals
- RSE team can provide technical assistance (HQ-funded)

Monitoring Progress & Results

- HQ oversight of implementation progress allows us to track site-specific results and overall trends
 - Highlights obstacles to successful, timely implementation that need to be addressed
 - Need to be able to quantify cost savings and expenditures that result from optimization
- March 2003 OIG report recommended a systematic approach to monitoring progress and outcomes
- Given limited program resources, site-specific progress may be considered when making future funding decisions

Process for Monitoring Progress

- 2004 *Action Plan* outlined a formal follow-up process
- Annual conference calls with the RSE team for at least 2 years after each RSE
 - Status and results of each recommended system change
 - Associated cost savings and/or expenditures
 - Obstacles to implementation
- Compile annual report of site-specific progress and overall trends
 - 2006 report currently under development

What if the RPM disagrees with a recommendation?

- HQ recognizes that Regions weigh many factors when determining whether to implement a change
 - It's best to discuss potentially inappropriate recommendations while the RSE report is still draft
 - Annual follow-up discussions present a subsequent opportunity to discuss disagreements or the need for clarification
- Significant disagreement between HQ and the Region over recommendations not implemented may be elevated to management
- HQ does not require all recommendations to be implemented; however, rationale should be provided for declining a recommendation.

Regional Reviews

- Regions are expected to pursue at least one review a year on their own
 - Contact HQ if funding is an issue
- Use of independent experts is key
 - RPM should not task operator or oversight contractor to do an optimization review
 - HQ can help Regions access USACE or our RSE team
- HQ intends to highlight Regional reviews in annual report
 - These sites are not typically subject to formal follow-up process, but HQ may inquire about progress to aid funding decisions

Key Project Documents

- “2005 Annual Progress Report for Ground Water Remedy Optimization”
 - OSWER 9283.1-28 (December 2006)
- “Action Plan for Ground Water Remedy Optimization”
 - OSWER 9283.1-25 (August 25, 2004)
- “Pilot Project to Optimize Superfund-financed Pump and Treat Systems: Summary Report and Lessons Learned”
 - OSWER 9283.1-18 / EPA 542-R-02-008a (November 2002)

Fact Sheets Based on Lessons Learned from Optimization

- “Elements for Effective Management of Operating Pump and Treat Systems” (EPA 542-R-02-009, December 2002)
- “Cost-Effective Design of Pump and Treat Systems” (EPA 542-05-008, April 2005)
- “Effective Contracting Approaches for Operating Pump and Treat Systems” (EPA 542-R-05-009, April 2005)
- “O&M Report Template for Ground Water Remedies” (EPA 542-R-05-010, April 2005)

Helpful Websites

<http://www.epa.gov/superfund/action/postconstruction/optimize.htm>

- Relevant guidance & project updates, with links to additional post construction topic areas (LTRA transfer, O&M, etc.)

<http://www.cluin.org/optimization/>

- Site-specific RSE reports & additional technical information

<http://www.environmental.usace.army.mil/library/guide/rsechk/rsechk.html>

- RSE checklists, scope of work & model contract clause

www.frtr.gov/optimization.htm

- Optimization tools from various Federal agencies

Contact Information

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Don't forget your *Regional Optimization Liaison!*

EPA Regional Optimization Liaisons

- **R1:** Darryl Luce
- **R2:** Rob Alvey & Diana Cutt
- **R3:** Kathy Davies
- **R4:** Kay Wischkaemper
- **R5:** Dion Novak
- **R6:** Vince Malott
- **R7:** *Vacant*
- **R8:** *Vacant*
- **R9:** Herb Levine
- **R10:** Bernie Zavala

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

Session Title: **ICs on Non-PRP Property: BFPPs, Contiguous Property Owners and Innocent Landowners**
Date and Time: Wednesday, April 4, 2007, 3:45 p.m., Session E
Speakers: Carlos Evans, EPA OSRE
Virginia Capon, EPA Region 2
Steve Hess, EPA OGC

Presentation by All Presenters

ICs on Non-PRP Property: BFPPs, Contiguous Property Owners and Innocent Landowners

General Discussion After the Presentation

- **Determining “Fair Market Value”**
 - o The PRP must make “best efforts” to establish the fair market value (i.e., reduction in value) of the use restrictions that will be placed on the affected non-PRP owned property. The PRP must then provide this amount to the non-PRP owner whose property will be restricted.
 - o How difficult is it to determine the associated reduction in property value?
 - o Beyond monetary value, how do you value the basic inconvenience suffered by non-PRP property owners who are limited from performing certain activities on their properties?
 - o What if a property will have no resale value because of the restrictions or the property is completely devalued due to stigma. Should the non-PRP owner receive the true market value for the property?
 - o Appraisers are very good at estimating and accounting for these values, including the value of stigma.

- **Third Party Tort Liability Issues**
 - o What if the PRP will have to put a treatment system on a non-PRP owned property but does not want to be liable if something goes wrong (e.g., third party tort liability)?
 - o If there is a risk associated with the remedy, then the PRP should bear it.
 - o Third party tort overlay issues can cause many delays.
 - o At what point can you say that an access agreement is not fair to the non-PRP property owner and he or she should be compensated? For example, what if the PRP wants language in the access agreement to protect him or herself from third party tort liability issues associated with EPA coming on the non-PRP property to conduct sampling? What right does EPA have to stop the PRP from making these additions to the access agreement?

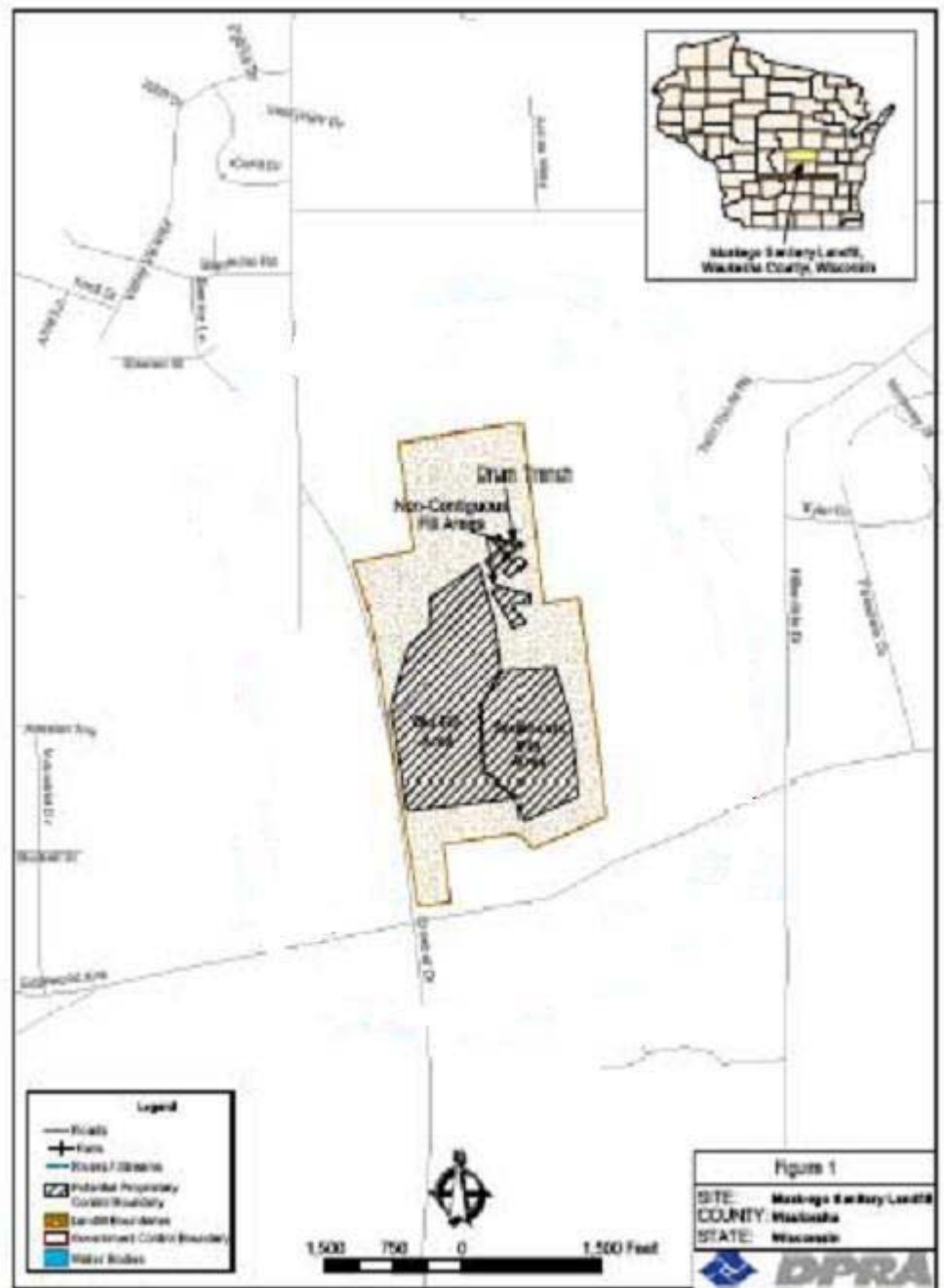
- o EPA has residual authority even if there is not a “best efforts” clause in the access agreement.
- **State Deferred Sites**
 - o What about a state deferred site, as opposed to a fund lead site?
 - o Specifically, what if the non-PRP owner will not allow the PRP to construct the remedy, but the non-PRP owner also will not agree to sell the property so that the remedy can be constructed.
 - o Would the state have to acquire the property, if this is possible, and then transfer it to the federal government?
 - o How rare is it to have a UAO issued against the state? Can EPA acquire a state-owned part of the site through a condemnation agreement?
 - o A UAO against the state is not rare. However, it is an interim access measure because if the property is sold, the restriction runs out. Long-term access is the goal. 104(j) cannot be used with a state property.

ICs on Non-PRP

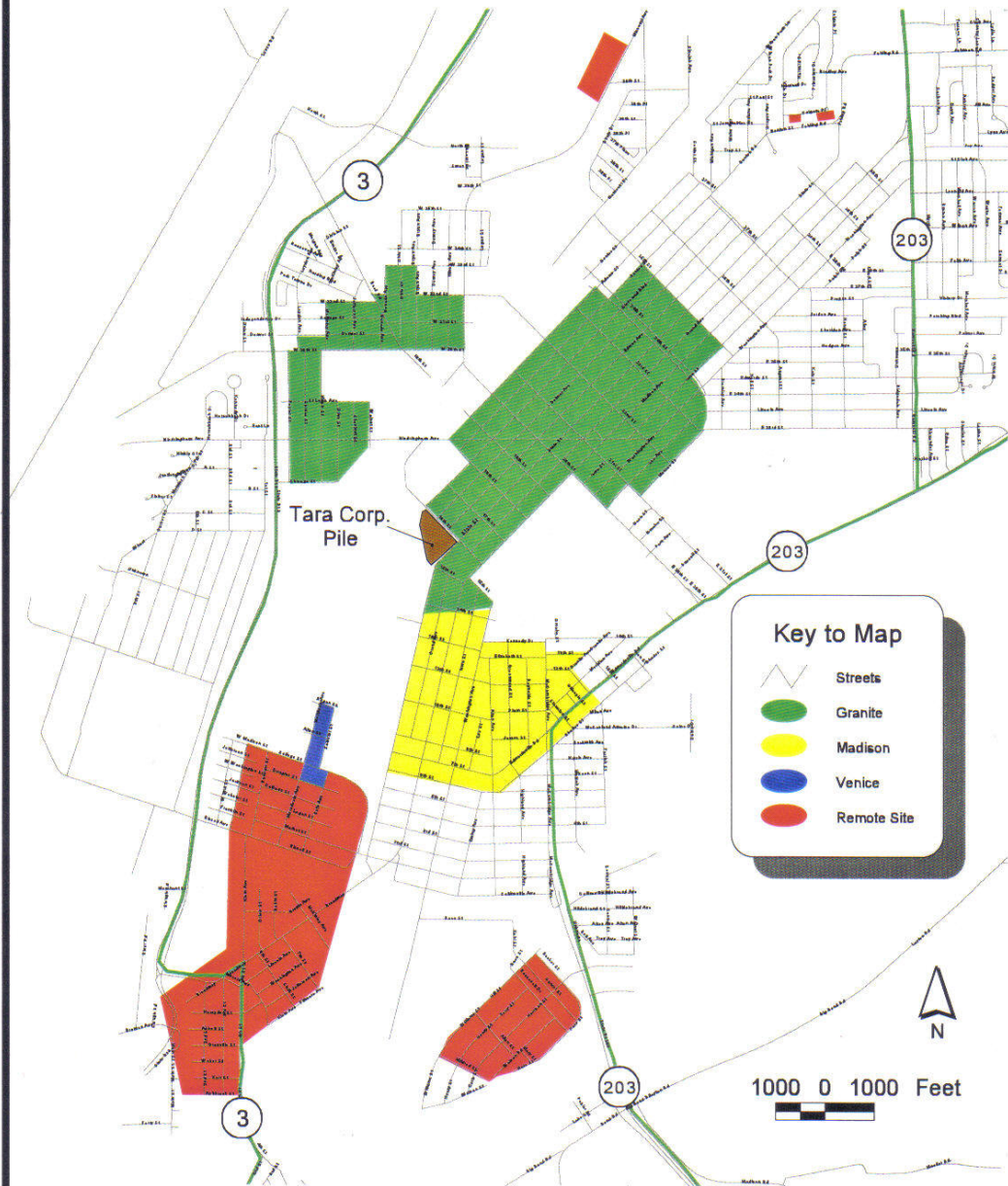
Property:



“BFPPs, Contiguous Property
Owners and Innocent
Landowners”



N.L. Tara Corp Super Fund Site Clean Up Zones





Liability

- Under CERCLA, current owners and operators are liable for hazardous substance contamination on property.
- Current property owners are liable even if they did not cause the contamination.
(42 USC s. 107(a)(1))



Exemptions and Defenses

- Non-PRP property owners may claim certain statutory defenses and exemptions:
 - Bona Fide Prospective Purchaser Exemption (42 USC s. 107(r) and 101 (40))
 - Contiguous Property Owner Exemption (42 USC s. 107(q))
 - Innocent Landowner Defense (42 USC s. 107(b)(3) and 101(35))



U.S. EPA Policy

- U.S. EPA excludes property owners in certain circumstances:
 - Residential Homeowners
 - Owners of Property above Contaminated Aquifers



Owner Responsibilities

- However, in order to successfully claim CERCLA liability protection, a property owner must do the following:
 - Perform “all appropriate inquiry”
 - AAI is a process of using an environmental professional to evaluate a property’s environmental conditions and assess potential liability for any contamination.
 - EPA promulgated new AAI standards on November 1, 2005, which took effect on November 1, 2006.
 - www.epa.gov/brownfields/regneg.htm



Owner Responsibilities (Cont'd)

- Meet “continuing obligations”
 - Comply with existing land use restrictions
 - Not impede the effectiveness or integrity of ICs
 - Provide cooperation, assistance and access
 - Comply with all information requests
 - Provide legally required notices
 - Take “reasonable steps”



Techniques for Restricting Land Use at PRP-Lead Sites

- Potentially Responsible Parties (PRPs) are required to use “best efforts” to restrict non-PRP property if necessary to complete or maintain a CERCLA remedy.



Best Efforts and CERCLA

- “Best efforts” include:
 - The payment of reasonable sums of money (fair market value) in consideration of the use restriction(s).
- PRPs must document “best efforts”



Refusal to Use “Best Efforts”

- If PRP does not use “best efforts”:
 - Reimburse U.S. EPA for response costs
 - Consent Decree
 - Liable for stipulated penalties
 - UAO
 - Liable for \$32,500 per day statutory penalty
- EPA can enforce against Non-PRP owner



Non-PRP Land Owners Responsibilities

- Some non-PRP property owners may:
 - Refuse to restrict their property regardless of the compensation, or
 - Refuse to permit use restrictions unless they are paid above fair market compensation.
- EPA or other regulators should monitor negotiations to ensure the parties are acting in good faith and to moderate disputes.
- PRPs are not required to acquire ICs from **unreasonable** property owners.



Restricting Property at Fund- Lead Site

- Remedy may require EPA to restrict non-PRP property – however, a grantee/enforcement party must be identified.
- If Non-PRP property owner is recalcitrant, EPA may:
 - Use CERCLA enforcement tools (PRP status);
 - Use CERCLA 104(j) to negotiate/condemn; or
 - Issue a UAO to require that property owner secure the appropriate use restriction(s).