

Regional Approaches to Brownfields

Introduction to Brownfields Identification and Assessment

Prepared for
ATC TAB Brownfields Workshop Series

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ALPHABET SOUP...

KSU: KANSAS STATE UNIVERSITY

TAB: Technical Assistance to
Brownfields Communities

ESA: Environmental Site
Assessment

AAI: All Appropriate Inquiry

CERCLA: Federal Superfund Law

RECS: Recognized Environmental
Conditions

RISC: Risk Integrated System
Closure

PRP: Potentially Responsible Party



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What is a Brownfield?

“.....*real property*, the expansion, redevelopment, or *reuse* of which may be *complicated* by the presence or *potential presence* of a *hazardous substance, pollutant or contamination.*” (EPA)

In laymen's terms:

- A brownfield is a property that is difficult to develop because it is contaminated or *believed* to be contaminated
- Not a superfund site
- Hazardous, petroleum, asbestos, lead paint, mold, meth-lab contaminants and mine-scarred lands



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BROWNFIELD PROGRAM DOES NOT...

BENEFIT POTENTIALLY RESPONSIBLE PARTIES

**BROWNFIELD RESOURCES CANNOT BE USED TO
BENEFIT THE POLLUTER!!**



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THE DOMINO EFFECT OF BROWNFIELDS

- Properties are abandoned or underutilized
- Local tax base is significantly eroded
- Vagrants, vandalism and crime
- Property values decline
- Environmental Justice issues
- Communities appear neglected
- Greenfield Development
- Tax drain of new infrastructure
- Continued disinvestment of inner core



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Why Inventory Brownfields?

- You can't manage what you can't measure—how big is the problem?
- Allows for prioritization of investment in infrastructure



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Why Inventory?

- Quality of life and/or Community appearances may be damaged by presence of Brownfields



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Inventory Team Members...

- **Stakeholders with vested interest in the success of the community:**
 - Corporate stakeholders
 - Neighborhood organizations, local churches
 - Development and Real Estate professionals
 - Chamber of Commerce
 - Electric, Gas companies
 - City/Town council
 - Local Greenway, Conservation Organizations

- **Local and state agency representatives:**
 - Local Planning, Public Works, Economic Development and Community Development Officials
 - Local Economic Development Organizations
 - Local and State Health Departments: Complaints, spills, violations
 - Local Fire and Police Departments: Emergency response information, fire runs, drug busts, nuisance, complaints
 - Indiana Brownfields Program



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Information Resources On-Line

- Where you live...Search your environment by zip code
 - <http://www.epa.gov/epahome/commsearch.htm>
- Other program information and support
 - <http://www.epa.gov/brownfields>
 - <http://www.epa.gov/compliance/environmentaljustice/index.html>
 - <http://www.epa.gov/smartgrowth>
 - <http://www.smarte.org>



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More On-Line Resources: State Websites

Virtual File Cabinet

<http://www.in.gov/idem/4101.htm>

- Select Virtual File Cabinet
- Search by County, City, Town, Zip Code

For Brownfield Program Resources and Support

<http://www.brownfields.in.gov>



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THE COMMUNITY DEFINES ITS BROWNFIELDS

EPA provides the guidance, but it is the community that identifies a property as a Brownfield



What Are You Looking For?

- **Abandoned property**
- ***Active* but Underutilized...Salvage yard next to the Greenway**
- **Real estate turnover complicated by real or perceived contamination**
- **Blighted property that significantly conflicts with a Master Plan or Revitalization Plan**
- **Property blighted and located at the gateways to your community**



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Make Your List....

- IDENTIFY SUSPECTED AREAS (FORMER INDUSTRIAL, FORMER DRY CLEANERS, OLD GAS STATIONS)
- CONSIDER PROPERTIES TIED TO OTHER PROJECTS (TRANSPORTATION, DISASTER RECOVERY, NEIGHBORHOOD STABILIZATION)
- CONSIDER TAX DELINQUENT PROPERTIES
- CONSIDER FORMER SCHOOL PROPERTIES, HOSPITALS, PROPERTIES THAT ARE GATEWAYS TO THE COMMUNITY



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The Inventory Can Be Detailed...

MAP ID #	Site Name	Site Address	Zip Code (first 5 digits)	Zip Code (last 4 digits)	Agency Database	Site Description				
38B	Frost, Larry	443 N 4th St	47901	1113	SPILL					
38C	Lafayette Fire Depart	443 N 4th St	47901	1113	LUST					
38D	Lafayette Fire Depart	443 N 4th St	47901	1113	LUST					
39	Reeds Honda Yamaha	736 N 9th St	47904	1927	UST					
40	Ed Grace Company IN	9th St Rd PO Box	47905		UST	fabrication				
41A	Van's Body Shop Inc	413 N 3rd St	47901	1106	CRTK					
41B	Van's Body Shop Inc	413 N 3rd St	47901	1106	RCRA SQ	land type				
42	Redinbo Transmissic	1500 Schuyler Ave	47904	1116	UST	Tansmission				
43	Carter Oil	Duncan Rd & Davis F	47905		UST					
44	Centeon Bio Service:	400 Brown St	47906	3214	RCRA SQ	private land				
45	Mugg Auto Sales anc	2119 N 15th St	47904	1101	RCRA SQ	land type				
46	Ades Service Station	1535 Schuyler Ave	47904	1115	UST	Auto Repair				
47A	Union St Auto Sales	332 Brown St	47906	3212	UST					
47B	Union St Auto Sales	332 Brown St	47906	3212	LUST					
48A	Lafayette Instrument	3700 Sagamore Pkw	47904	1066	RCRA SQ	electronics,				
48B	Lafayette Instrument	3700 Sagamore Pkw	47904	1066	CERCLA	electronics,				
49	Archie's Car Wash Ir	310 Brown St Levee			UST					
50	McCord Tire	304 Brown St	47906	3212	UST					
51A	Journal & Courier Pa	730 North St	47901	1158	UST					
51B	Lafayette Journal &	730 North St	47901	1158	LUST					
52A	Landis & Gyr	3601 Sagamore Pkw	47904	1070	CRTK					9212511 Priority-
52B	Landis & Gyr Meterin	3601 Sagamore Pkw	47904	1070	CERCLA					0505394,
52C	Landis & Gyr	3601 Sagamore Pkw	47904	1070	TRI					0505394, CERCLIS
52D	Siemens Power Tran	3601 Sagamore Pkw	47904	1070	RCRA SQ	Manufacturer	IND00510	copper,	In Operation	Status-
52E	Siemens Power Tran	3601 Sagamore Pkw	47904	1070	CORRAC	Manufacturer	TSD and	copper,	In Operation	complete
53A	Explosives Stored	312 N 5th St Rear	47901	1117	RCRA SQ	private land	0501785,			Status-
53B	Explosives Stored in	312 N 5th St Rear	47901	1117	CERCLA	garage	0501785,		CERCLIS	prelim
54	Hairman	142 N River Rd	47906	3259	UST					
55	Lafayette WWTP	2nd & Ferry St	47905		SPILL					
56	McDonald Underwoo	300 Ferry St. 1/4 of 3	47901		SPILL					
57	Berry's Camera	328 Ferry St	47901	1164	RCRA SQ	repair and	INR00001			status-
58A	Haywood Printing Co	300 N 5th St	47901	1117	CRTK	type	IND06280			status-
58B	Haywood Printing Co	300 N 5th St	47901	1117	RCRA SQG					
59A	Ivy Tech	9th and Brown	47903		ERNS		526579	oil, fuel		Reported
59B	Ivy Tech	9th and Brown	47903		SPILL					
59C	Ivy Tech State Collec	9th and Brown			ERNS		526581	oil: diesel		Reported
60	Purdue University W:	Brown St and to Leve	47906		CERCLA		0507258,		CERCLIS	prelim



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An Effective Inventory Can Also Be Simple

- **Abandoned Welding Repair on Maple Drive**
- **Old English Furniture on Main**
- **Old Dump on River**
- **Pete's Gas Station at SWC Green & Walnut**
- **Marcy's Dry Cleaners on Washington**
- **Old School in Mercy Neighborhood**



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Communities Select Their Criteria for Prioritization







CRITERIA EXAMPLES:

- Eligible for EPA or State funding
- Development potential for immediate job creation
- Located in the TIF district or Revitalization Zone
- Quality of Life Issues—community health impacts
- Quality of Life Issues—eliminate unsafe or blighted properties
- Control of Property: can you get access?
- Visibility of the site to the community
- Physical site characteristics: acreage, visibility, etc.



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Prioritization Is Dynamic... And May Change As The Public Becomes More Aware Of The Program

- Abandoned Welding Repair on Maple Drive (*no site access*)
- Old English Furniture on Main (*in TIF zone, on Main Street, have site access, eligible*)   
- Old Dump on River (*proximal to greenway, eligible, property boundaries unclear, environmental impacts to wildlife, river*) 
- Pete's Gas Station at SWC Green & Walnut (*not eligible*)
- Marcy's Dry Cleaners on Washington (*tax delinquent, no site access at this time, eligible*)
- Old School in Mercy Neighborhood (*tax delinquent, adjacent business complaints, eligible, have site access*)  



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Former Industrial Properties



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BROWNFIELD? GREENWAYS, TRAILS, RAILWAYS



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ON MAJOR GATEWAYS INTO COMMUNITIES



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ABANDONED BUILDING NEXT TO COMMUNITY HOUSING PROJECT



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OLD SCHOOLS, HOSPITALS



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SURPRISES IN ABANDONED BUILDINGS



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MAIN STREET



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ASBESTOS



UNDERGROUND STORAGE TANK



ASSOCIATES INC.

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UNSAFE BUILDINGS



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HAUNTED JAILS AND LEAD PAINT



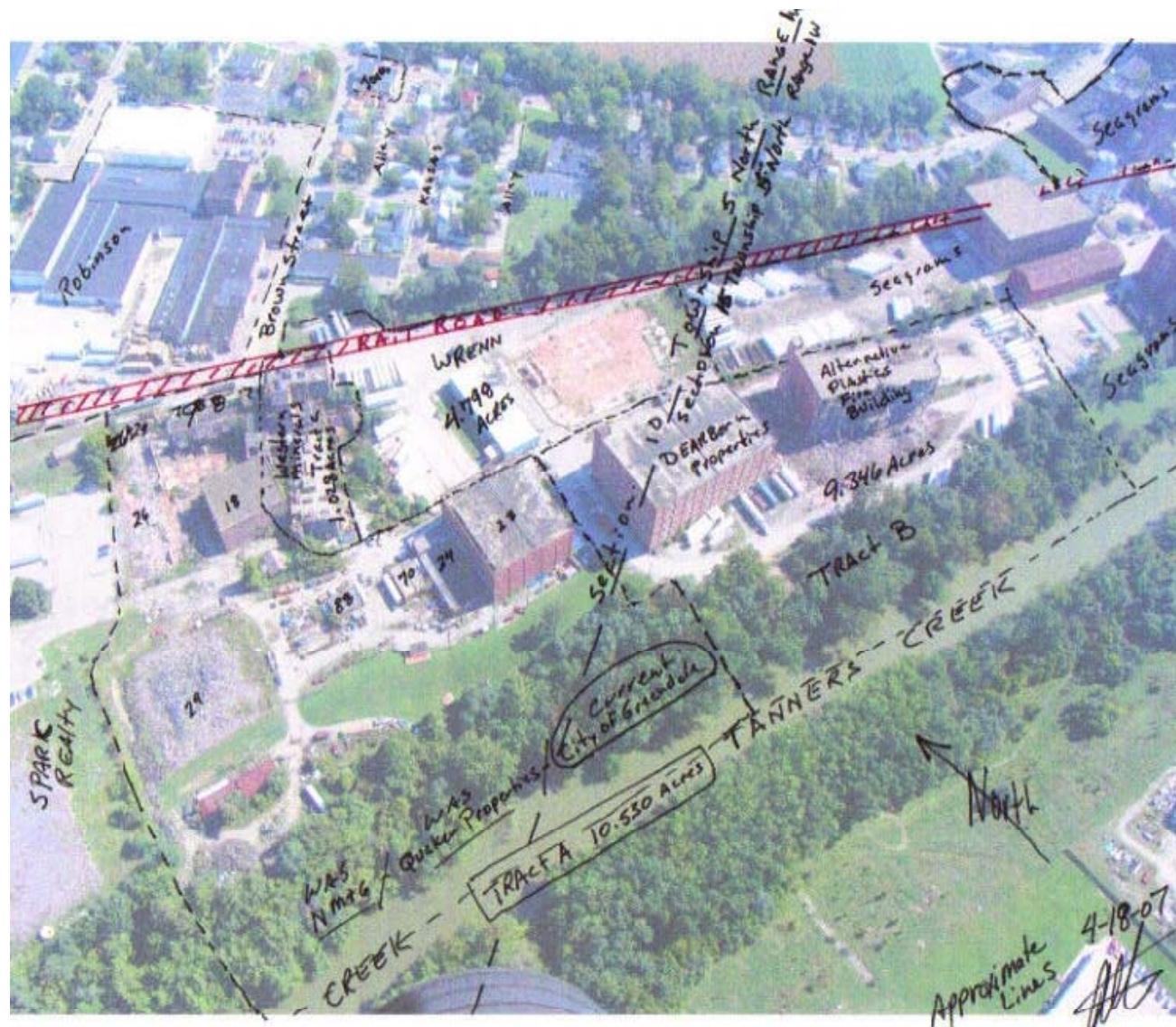
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INDUSTRIAL STORAGE



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Brownfields...Part of the Bigger Picture



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Generally, what are Environmental Site Assessments?

Systematic steps to identify/evaluate environmental concerns

- Purpose of Phase I ESA is to learn about a property's **past use**, environmental conditions at the property and adjacent sites and **possible presence of hazardous substances**
- Phase II ESAs can be composed of various steps to define magnitude and extent of contamination, and identify appropriate site specific remediation options



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All Appropriate Inquiry?

CONDUCT ALL APPROPRIATE INQUIRY (AAI) within one year prior to acquisition:

- Due Diligence process (more commonly known as Phase I ESA)
- Conducted by an “Environmental Professional” (outlined in the AAI rule)
- EPA recognizes 2 ASTM International Standards as compliant with AAI requirements:
 - ASTM E 1527-05 “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process
 - ASTM E 2247-08 “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process for Forestland or Rural Property

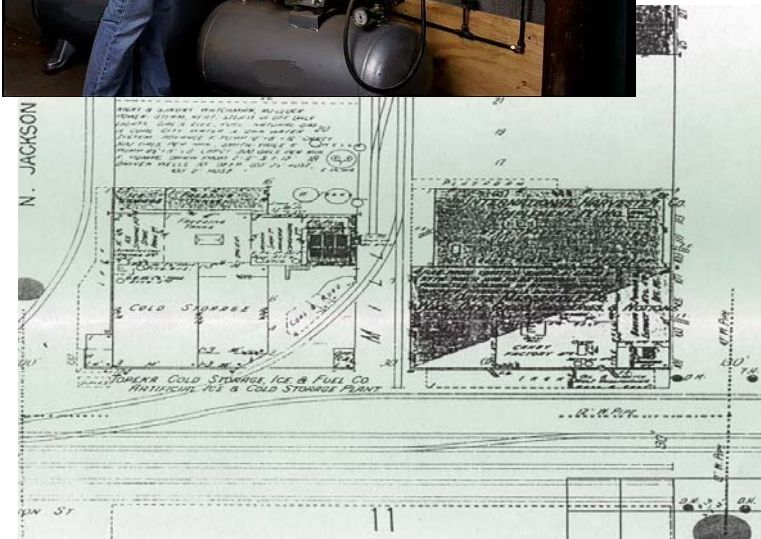
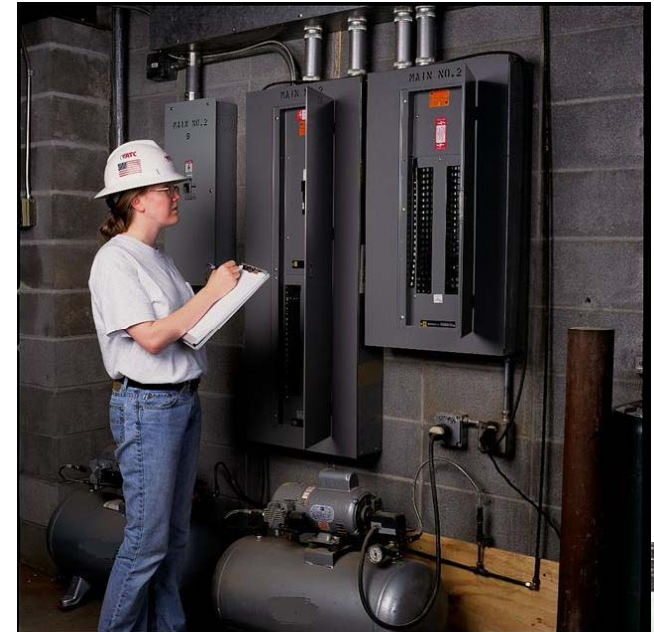


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Environmental Site Assessments:

Phase I ESA

- Review of federal, state, local records
- Visual Inspection of site
- Interviews with current/past owners
- Roadmap for Future Investigations:
- Identifies Recognized Environmental Conditions
- Non-Intrusive-no sampling or tests



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Recognized Environmental Conditions

- Conditions that indicate a release or threat of a release of any hazardous substances or petroleum
- The term includes hazardous substances or petroleum products even under conditions in compliance with laws



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Phase II Environmental Site Assessments:

Phase II ESA

- What Are Your RECs?
- Presence/Absence
- What Is There?
- If It's There—Where?



Phase II Characterization

- If It's There-How Much?
- Extent/Delineation/
Quantification
- Feasibility Studies
- Cleanup Plan



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RECS LEAD TO SAMPLING STRATEGY

- Staining associated with paint cans, and various other containers (labeled and unlabeled) in the former boiler house.
- Dark colored staining was observed on the floor in the basement; oil was noted in two containers located near the stained floor in front of the air handler.
- The cistern was lined with brick and was filled with sand and gravel.

Sampling strategy:

Soil and groundwater samples should be collected in the areas most likely impacted by historical releases or spills; including the former boiler house, former cistern and the oil-stained areas near the air handlers inside the school



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Sites May Contain These Types of Contaminants

- Volatile Organics

- BTEX
- gasoline-range TPH
- solvents

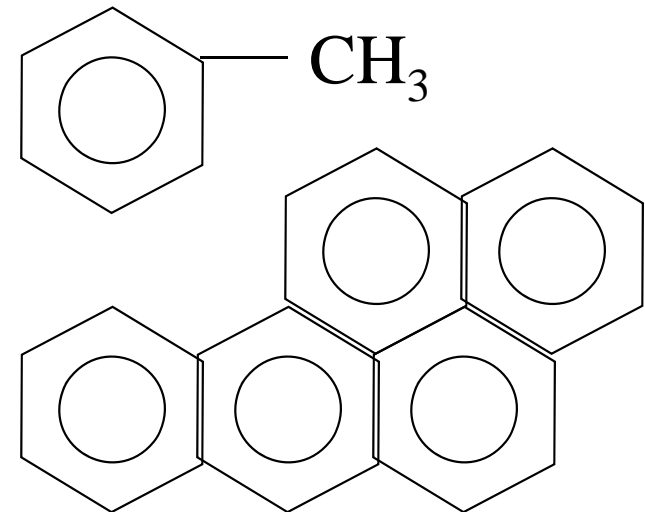
- Semi-volatile Organics

- diesel- and oil-range TPH
- PCBs
- pesticides/herbicides
- explosives
- dioxins/Furans

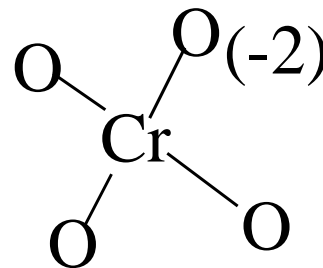
- Inorganics

- metals
- radionuclides
- nitrogen
- salts

Toluene



Benzo (a) pyrene



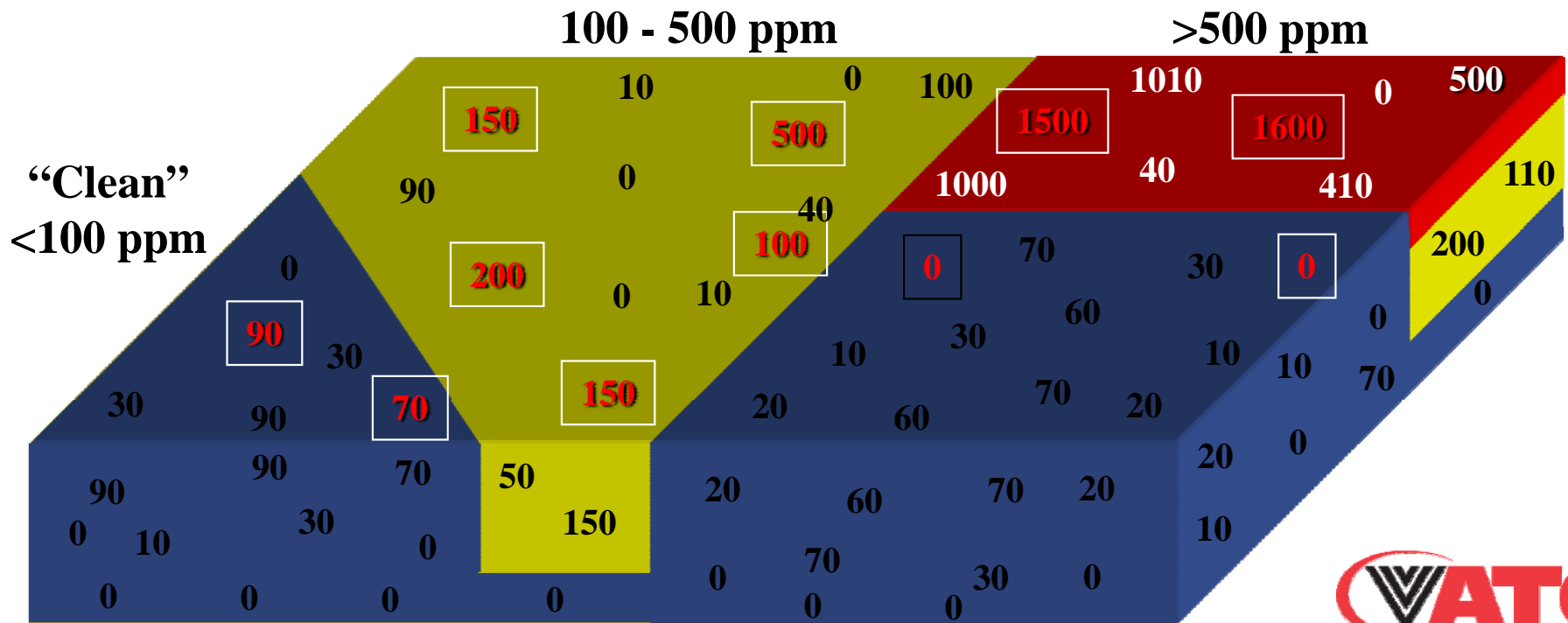
Chromate
Ion



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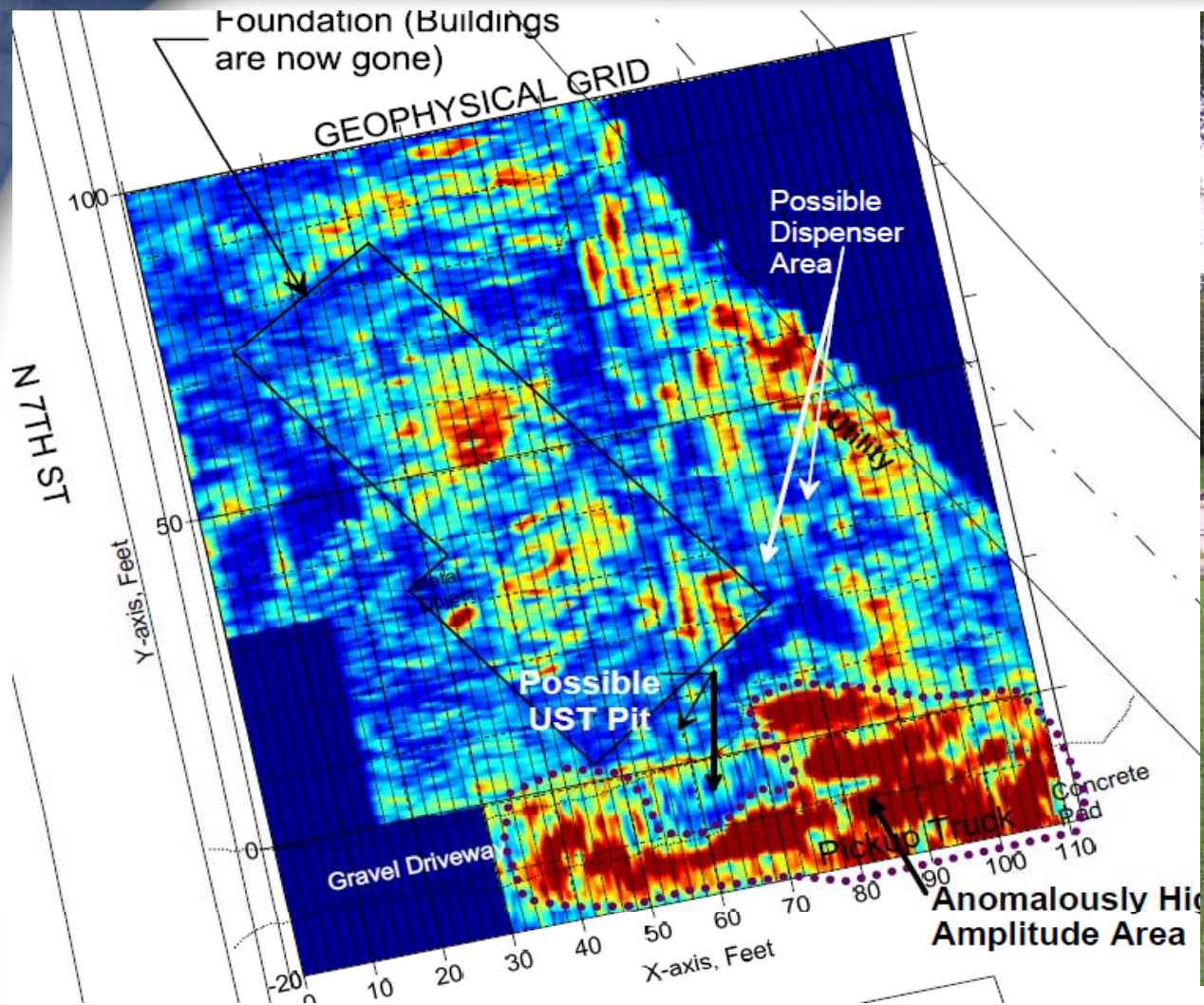
Contaminants Are Rarely Distributed Evenly

- Neither horizontally, nor vertically
- Assessment estimates between available sample points



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Location Of Sources Not Always Evident



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Risk Integrated System Closure (RISC)

- RISC was created to establish cost-effective closure standards and closure options that result in negligible risk to human health and the environment
- The RISC system is designed to provide IDEM staff, industry and consultants with a consistent, but flexible, framework for achieving closure of contaminated sites
- It has expanded the number of closure options by allowing methods that prevent people from coming in contact with contamination when cleanup is not technically feasible



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Sample Groundwater Data

Sample Identification	Date Sampled	Mercury	Arsenic	Lead
RISC Residential Default Closure Levels		2.0	10	15
RISC Industrial Default Closure Levels		31	10	42
B-4	01/28/10	<2.0	100 ²	122 ²
B-4	05/14/10	NA	<10.0	<10.0
B-6	01/28/10	2.1	42.3 ²	192 ²
B-6	05/14/10	<2.0	<10.0	<10.0
B-8	01/28/10	<2.0	13.8 ²	19.7
B-8	05/14/10	NA	<10.0	NA

Notes:

- Results reported in
- metals analyzed using US EPA SW-846 6010B and 7000 series

BOLD = Concentration reported above RISC Residential Default Closure Level.

BOLD² = Concentration reported above RISC Industrial Default Closure Level.

- NA = Not analyzed for that constituent.



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INSTITUTIONAL CONTROLS

WASTE MAY BE LEFT ON-SITE OR IN PROCESS OF BEING REMEDIATED AND THERE IS LIMIT TO SAFE ACTIVITIES THAT CAN TAKE PLACE ON-SITE

- CAN BE AS SIMPLE AS CONSTRUCTING A FENCE...
- OR AS COMPLEX AS DEVELOPMENT OF LOCAL LAWS, RE-ZONING, DEED RESTRICTIONS



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Next Steps

- Remedial Action Plan developed to quantify risks, costs, timeframe
- Identify partners in development
- Apply for cleanup funding
- Determine other sources of funding to leverage for development



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Questions?

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