

BROWNFIELDS REDEVELOPMENT INITIATIVES:

**Environmental Site Assessment Process
EPA Region 7 & Kansas Brownfields Programs
2013 Brownfields Coalition Grant**

October 3, 2013



2013 Brownfields Coalition Grant
KDHE City of Chanute City of Ottawa
Fort Scott/Bourbon County Riverfront Authority

Presented by:

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GSI Engineering



A division of Alt & Witzig Engineering



Small Business Liability Relief and Brownfields Revitalization Act of 2002

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.



Brownfields Beyond Industrial Wastelands



Abandoned Service Station



Former Utility Sites / Water Towers



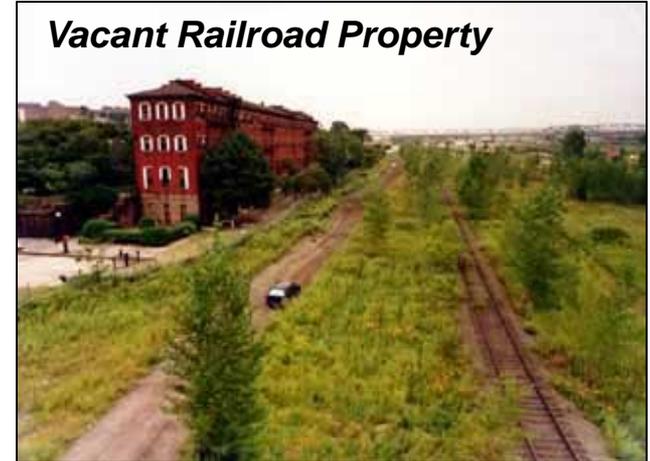
*Grain Elevators &
Vacant Agricultural
Facilities*

Brownfields in Small Town Kansas

Abandoned Tank Farm



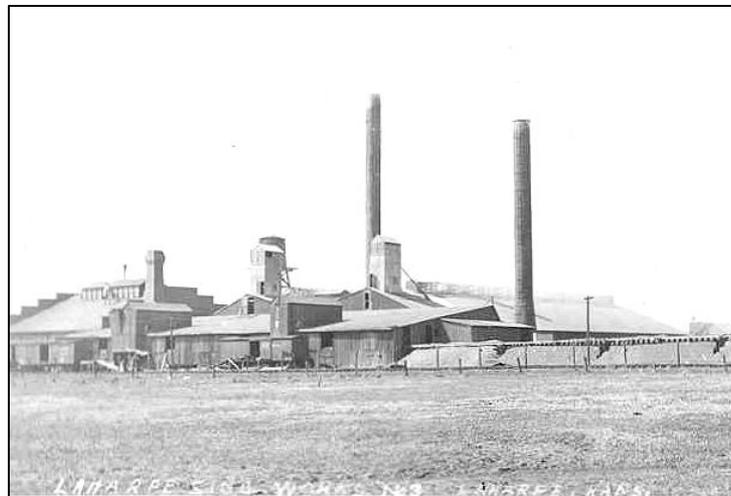
Vacant Railroad Property



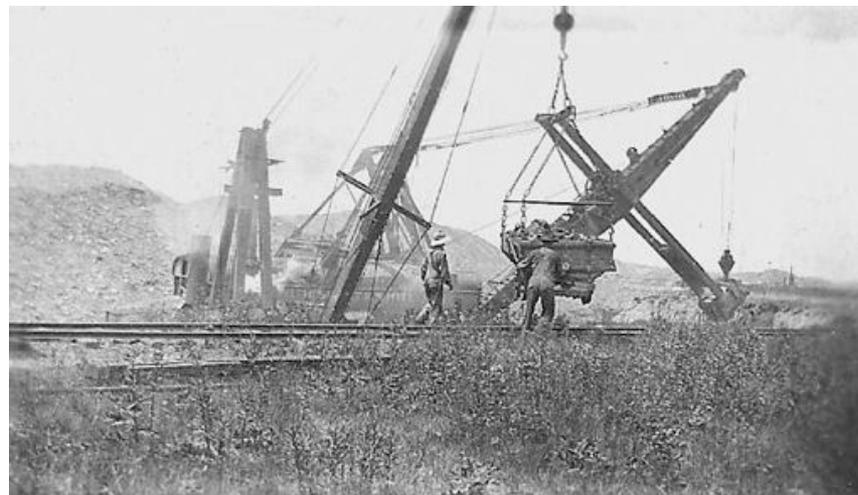
School Building Demolition



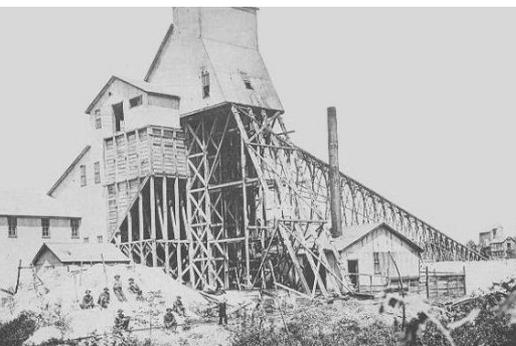
Brownfields in Southeast Kansas



LaHarpe Zinc Smelter



Pittsburg Coal Mining

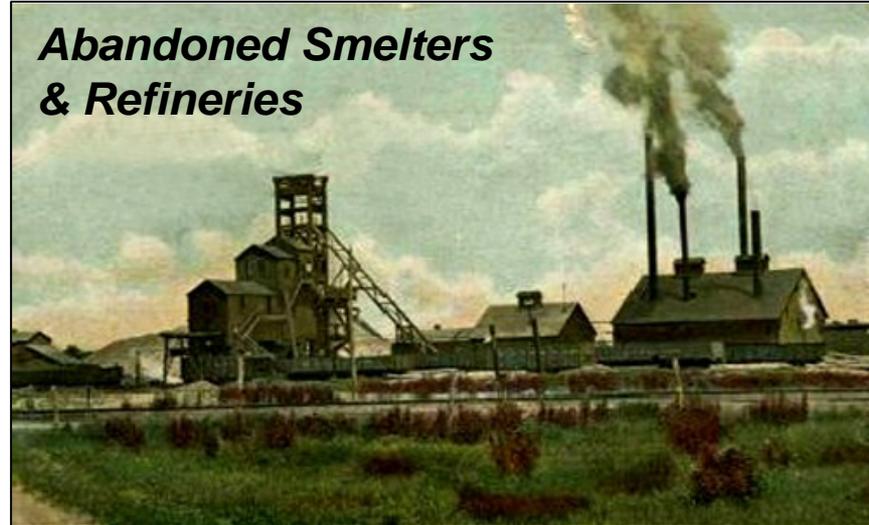


***Eureka Mining
Galena, KS***

Brownfields in Southeast Kansas



Contaminated Runoff



***Abandoned Smelters
& Refineries***



Tri-State Tailings Site

Brownfields & Building Materials



Brownfields Due Diligence – “Why” Environmental Site Assessment (ESA) Process

➤ Legal & Regulatory Considerations:

EPA All Appropriate Inquiry Rule (“AAI”)

- All Appropriate Inquiry (“AAI”) – 40 CFR Part 312
Federal standard for environmental due diligence
- “All Appropriate Inquiry” – required to establish federal liability protections under CERCLA (“joint & several” liability)
- Specific provisions for “Innocent Landowner”, “Contiguous Property Owner” and “Bona Fide Prospective Purchaser”
- ASTM E 1527-00 provides industry standard as a “Phase I” Environmental Site Assessment

Recognized by AAI [EPA final rule on 1527-13 pending]

Required for Brownfields Grant Eligibility!



Brownfields Due Diligence ESA Process (cont.)

➤ Financial & Site Development Considerations Phase I Due Diligence:

- The ASTM/AAI Phase I process is the due diligence standard for most commercial lenders
- Worker safety and civil liability
- Protect against unforeseen conditions during excavation, renovation & other construction work
- Integral to site selection; Identify options & risk early in process



Brownfields Due Diligence – “Where” Identify High Risk Properties

➤ Statutory “Brownfields” Definition:

- Generally includes any site where utilization is limited by actual or perceived environmental contamination
- Exceptions Apply: High risk, responsible party, RCRA Corrective Action, CERCLA National Priority List, etc.

➤ Assessment of most (or all) commercial / industrial sites is appropriate. Suspect conditions not always apparent. **Unknown land use is often a concern.**

➤ Typical Conditions / Contaminants of Concern:

- CERCLA-defined “hazardous substances”, “pollutants” or other “contaminants” – e.g. solvents, pesticides, heavy metals
- Petroleum Products
- Asbestos & lead-based paint, mold, HHW

Brownfields Due Diligence – “What” Phase I Environmental Site Assessment

- **Brownfields Inventories, Site Screening & Prioritization**
- **Phase I Assessment**
 - **All Appropriate Inquiry / ASTM 1527-05**
 - **Historical records reviews**
 - **State and federal environmental databases**
 - **Field Inspection**
 - **Often concurrently with building surveys – e.g. asbestos**

Identify recognized environmental conditions (RECs)

“Material threat” of a contaminant release or
historical release



Environmental Site Assessment Phase II / Phase III Process

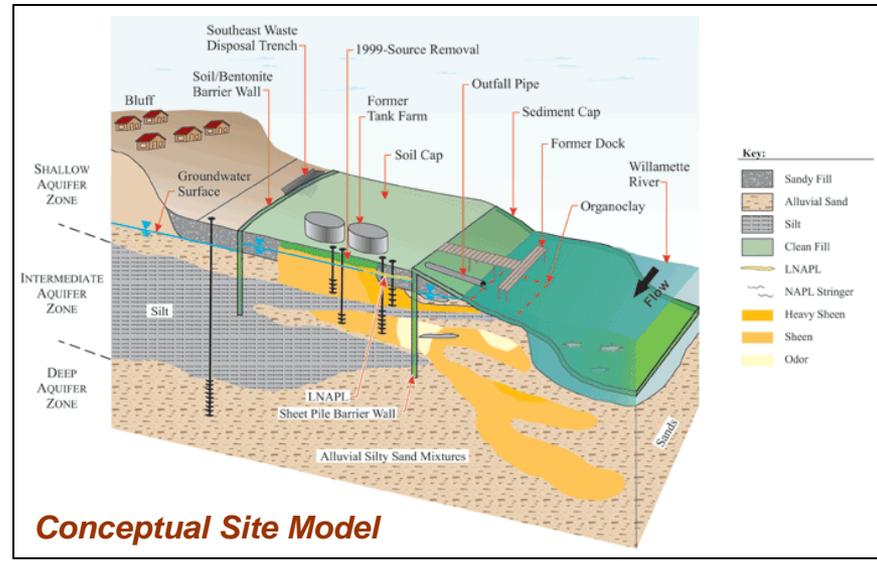
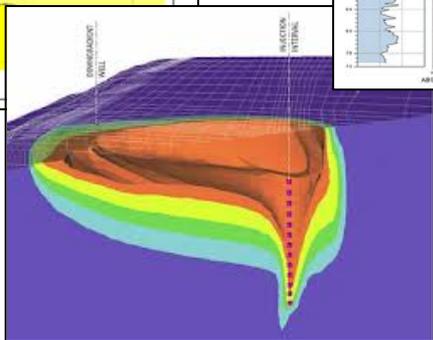
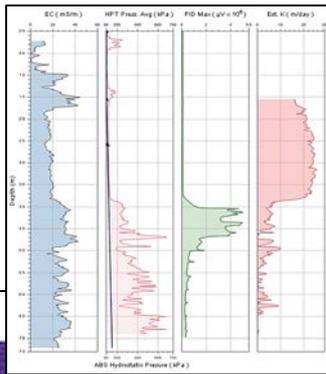
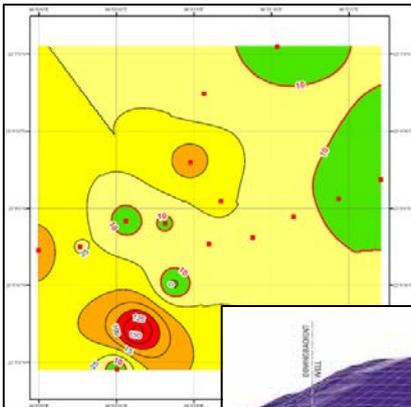
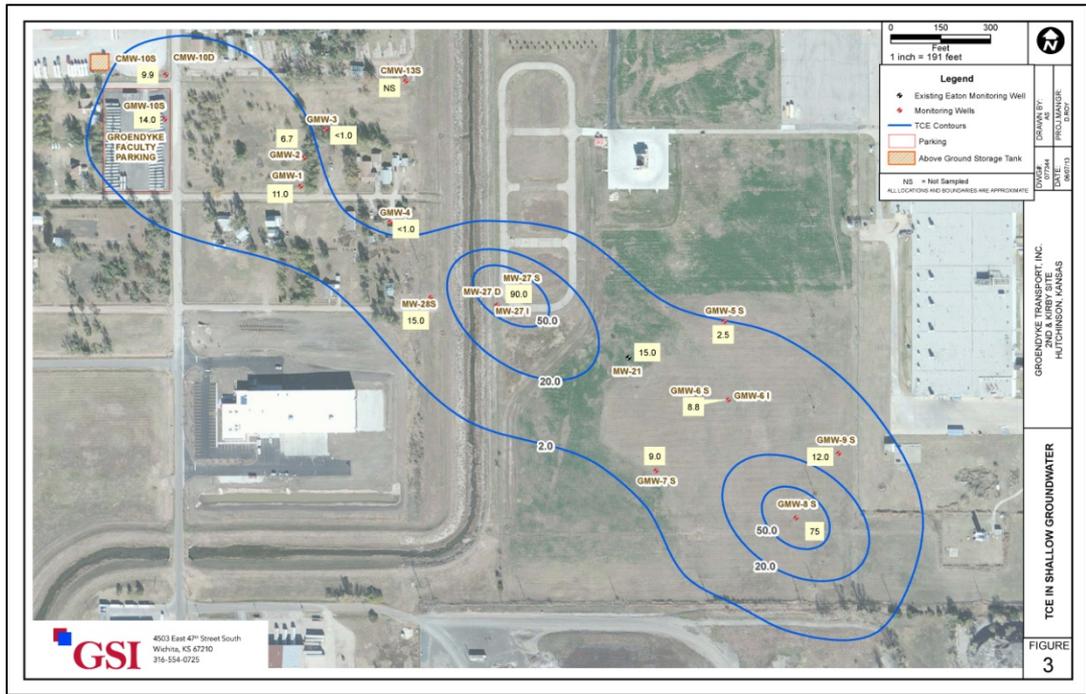
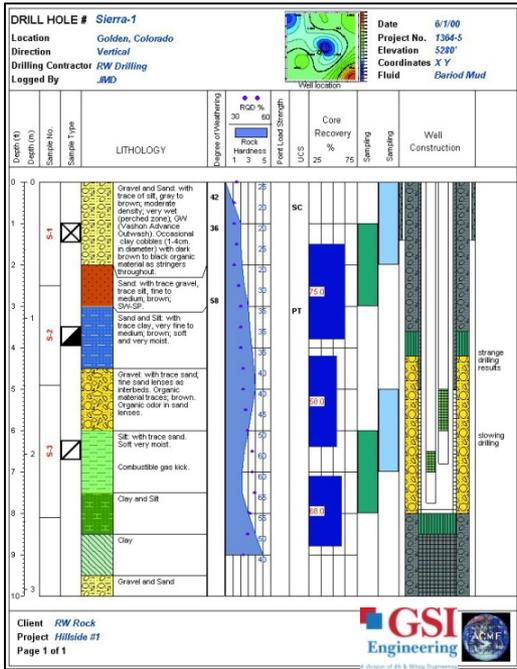
- **Phase II = Additional work in response to Phase I / RECs**

- **Phase II Assessment**
 - **Quality Assurance & Field Sampling Plans**
 - **Drilling / Geoprobe / Test Pit Investigation**
 - **Monitoring Well Installations**
 - **Soil and water testing**

- **Phase III Assessment**
 - **Address data gaps specific to Phase II findings**
 - **Risk Assessments**
 - **Site Characterization**
 - **Innovative Technologies – geophysical, in-situ profiling**



Monitoring VOC and Vinyl Chloride in the Air using PID and Dräger Tubes



Environmental Assessment Process

Supplemental Considerations – “Now What?”

➤ Cleanup Planning

Analysis of Brownfields Cleanup Alternatives (ABCA)

- Brownfields version of Corrective Action Study
- Evaluate cleanup alternatives – e.g. technical feasibility, cost, current/future land use, etc.
- Select Preferred Alternative

➤ Other Considerations:

- Conceptual Site Model (fully defined)
- Address ALL data requirements
e.g. waste profile, volume, system requirements
- Interim Measures & Remedial Design
- Basically thru implementation of the remedial design



Abatement



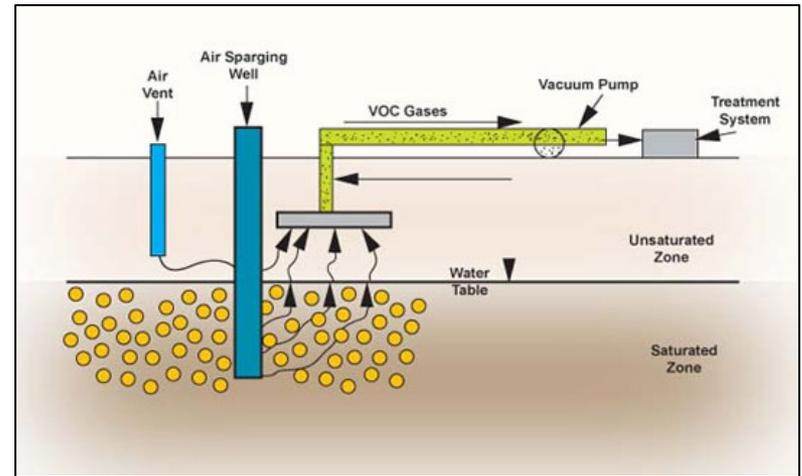
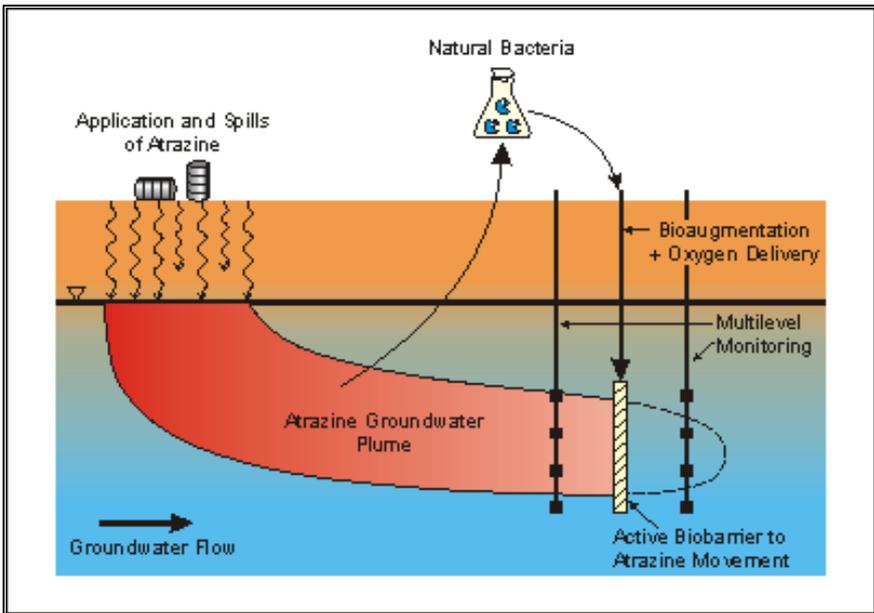
**Land Application
"Land Farm"**



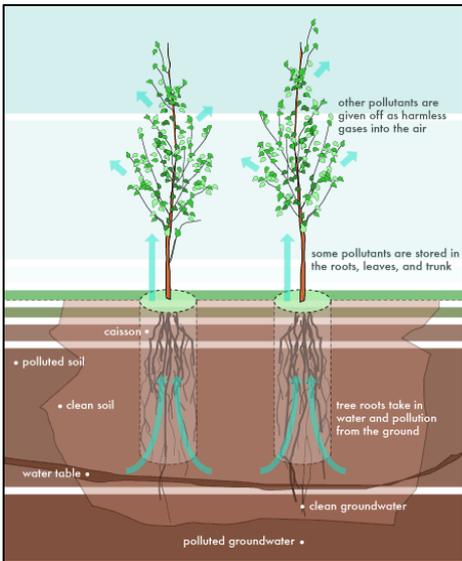
Encapsulation



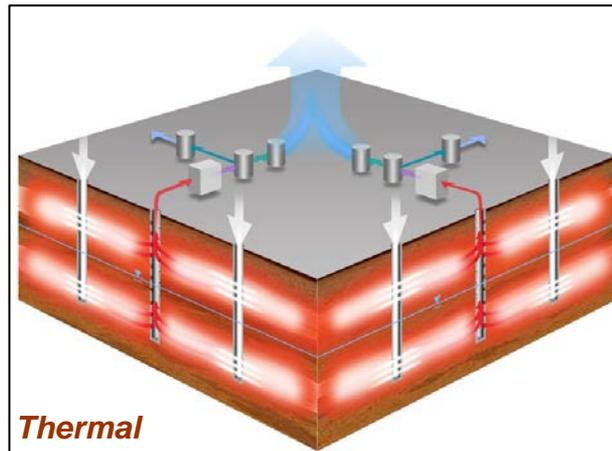
**Stabilize or
Encapsulate**



Air Sparge / SVE

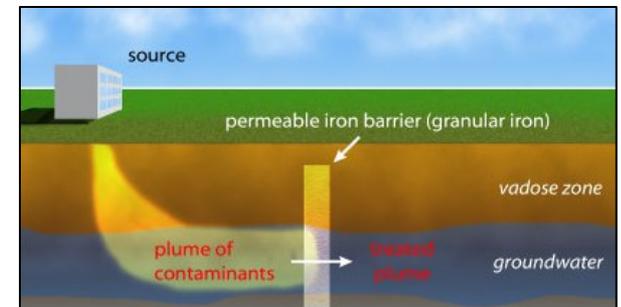


Bioremediation



Thermal

Reactive Barriers



Brownfields Assessment & Cleanup Case Study Examples – WaterOne

✓ Project Summary:

- Former tower site supporting local utility
- Decades of sandblasting lead-based paint
- Proposed redevelopment as a park facilitated Phase I / Phase II ESA (KDHE BTA Program)
- Phase II identified lead in surface soil – *good example of “unusual suspects”*
- Soil removal following application to VCP
- KDHE Subgrant used to facilitate cleanup in partnership with WaterOne (in coordination with scheduled demo)
- ~\$80,000 in KDHE Brownfields funding; No Further Action determinations issued for two properties following cleanup; initial assessment to NFA in less than eight months



Brownfields Assessment & Cleanup

Case Study Examples – Linneus Historical Museum

✓ Project Summary:

- Former jail listed on the Historical Registry
- Renovations ongoing as museum
- Assessment & cleanup under the Missouri B/VCP
- RLF Subgrant for Cleanup thru the MDNR
Environmental Improvement & Energy Resources Authority
- ABCA Evaluations recommended removal of significantly damaged/loose LBP with encapsulation of other areas
- **Solicitation for Bid** prepared using Brownfields funding
- Less extensive asbestos and pigeon wastes also addressed
- ~\$60,000 in Brownfields funding acquired by Linneus Historical Museum from multiple sources



Brownfields Assessment & Cleanup – LOCAL SUCCESS

Proactive Measures to Facilitate Redevelopment

✓ **Horace Mann School, Kansas City**

- Interim Measures to support building stability & safety
e.g. roof, windows, structural engineering
- Historical Preservation Coupled with Cleanup Plan (Tax Credits)
- Renovation Feasibility Assessment, ABCA, Bid Specifications, etc.



✓ **Western Building, Ft. Scott**

- Phase I, Asbestos, Mold Surveys
- Structural Feasibility Assessment / PCA
- Preliminary Abatement / Cost Analysis



Riverfront Revitalization

City of Atchison, Kansas

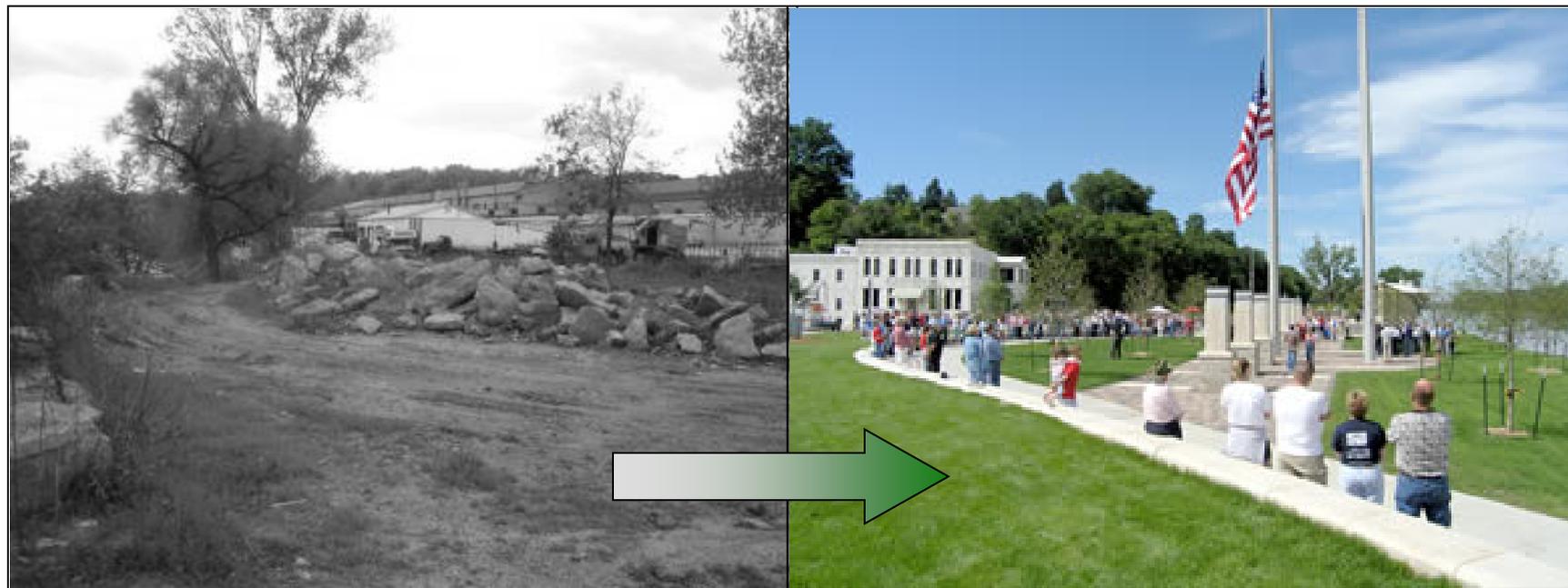
KDHE Brownfields Targeted Assessments: >\$50K

BTA funding used to initiate Environmental Site Assessment

EPA Brownfields Assessment Grant: \$200K

Total Funds Leveraged: >\$4.1 Million

2008 Region 7 Brownfields Achievement Award

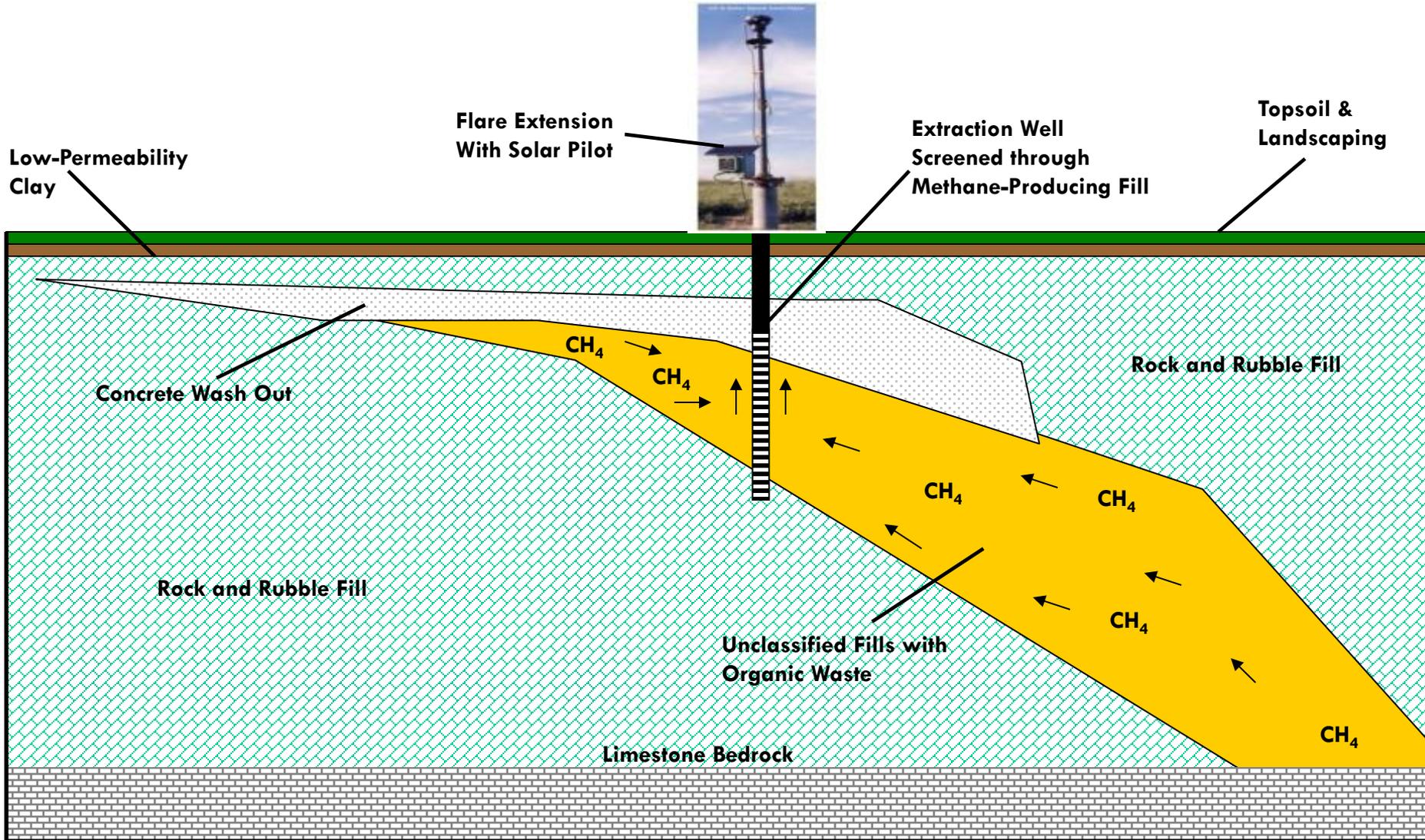


Brownfields Assessment & Urban Restoration Former Quarry Site – Springfield, MO



Ash Grove Quarry Methane Study

Brownfields Analysis of Brownfields Cleanup Alternatives – Scenario A



Brownfields Development & Risk Management

Final Considerations for Successful Projects

- ✓ **Real Property extends beyond the land; building conditions are often critical to the redevelopment plan**
- ✓ **Evaluate all funding resources and tax credits that may apply – Brownfields (both EPA and HUD Programs), Historical Preservation Tax Credits, etc.**
- ✓ **Use partnerships to expand technical resources and funding**
- ✓ **Initiate the environmental assessment early in the due diligence process**
- ✓ **Assess cost over time in addition to capital costs – cheap solutions today may cost tomorrow...**
- ✓ **Most environmental conditions are manageable. Incorporate cleanup alternatives and risk-based design with redevelopment plan.**





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THANK YOU!!!

