EBC Site Remediation and Redevelopment Program:
Update from U.S. EPA and MassDEP
Brownfields Programs and Case Studies
Welcome

Jonathan Kitchen

EBC Site Remediation & Redevelopment Committee

Principal, Civil & Environmental Consultants, Inc.
Climate Change and Air Committee
Dam Management Committee
Energy Resources Committee
Infrastructure Committee
Ocean and Coastal Resources Committee
**Site Remediation and Redevelopment Committee**
Solid Waste Management Committee
Water Resources Committee
Ascending Professionals Committee

Connecticut Chapter
New Hampshire Chapter
Rhode Island Chapter
EBC Solid Waste Management Committee

Committee Chair
Jonathan D. Kitchen, Civil & Environmental Consultants, Inc.

Committee Vice Chairs
David Foss, Wilcox & Barton, Inc.
Edward Van Doren, CDM Smith

Leadership Team
David G. Austin, AECOM
John Haas, Cascade Thermal
Michelle O’Brien, Pierce Atwood LLP
David M. Peter, Site Redevelopment Technologies, LLC
Frank Ricciardi, Weston & Sampson
Matthew Robbins, TRC
EBC Membership Benefits

Programs

Access

Networking

Environmental Business Council of New England
Energy  Environment  Economy
Upcoming Programs

July 18 – Ascending Professionals “Year in Review” Night
July 22 – Site Remediation Program Planning Meeting
July 23 – Connecticut Chapter: PCBs in Building Materials
July 24 – PFAS Remediation and Disposal
July 31 – Treatment & Disposal: PCB Contaminated Material
Aug 1 – Connecticut Chapter Program: PFAS Overview
Aug 6 – Annual Rhode Island Summer Gathering
**Aug 8 – 25th Annual Summer Garden Party**
Sept 12 – Annual Portsmouth, NH Harbor Cruise
Sept 17 – Solid Waste: MassDEP Section Chiefs
Sept 27 – Ocean Resources: Coastal Contamination
Final Notes

1. Presentations will be posted to “ebcne.org”
   - Link to location of presentations in follow-up email

2. Get involved in EBC Chapters and Committees
   - Join Leadership Teams
   - Join Google Group for each committee / chapter
     • Email request to ebc@ebcne.org

3. Ask questions during presentations
   - Don’t hesitate to interrupt the speaker

4. Audience Introduction
Program Purpose – What You Will Learn

Edward Van Doren
Program Co-Chair
Principal Environmental Engineer
CDM Smith
MassDEP Brownfields Program

Joanne Fagan

Northeast Regional Brownfields Coordinator
Massachusetts Department of Environmental Protection
MassDEP Brownfields Program

Joanne Fagan
Brownfields Section Chief
MassDEP – Northeast Region
July 17, 2019
Brownfields Cleanup
The Brownfield Program helps with the reuse of abandoned or under-used land. These properties are often polluted. The cleanup and reuse of the properties improves public health, the environment, and the economy.

MassDEP Website
Brownfields
https://www.mass.gov/brownfields-cleanup

What would you like to do?
Top tasks
Find Brownfield Sites
Brownfield resources for site development

All other tasks
Visit MassDEP Brownfields Library
Request a “State Acknowledgement Letter”

What you need to know
Brownfields-related Laws and Rules

View transcript
Considerations Before Buying

Due Diligence Assessments

- MassDEP Sites Database, Brownfields List
- Prior Assessment or Remediation
- Determine data gaps & estimated costs for cleanup
- Building hazmat surveys
- Vapor Intrusion
- Liens, Past Response Costs, Back Taxes
Considerations Before Buying

- **Financial**
  - Grants or Loans
    - EPA
    - MassDevelopment
    - HUD
    - State – MassWorks, PARC grants
  - Brownfields Tax Credits - MassDOR

- **Understand your liability under c.21E**
  - Contamination impacts beyond property

- **Reach out to MassDEP Regional BF Contacts**
  - Do your homework & consult with LSP before a meeting with MassDEP
Brownfields & Liability

➢ The Brownfields Act & M.G.L. c.21E - 1998
  ▪ Established liability exemptions and limits on liability for certain parties

➢ Brownfields Covenants Not to Sue
Liability Exemptions

- Not deemed to be Owner/Operator if –
  ✓ Did not own/operate at time of release or cause or contribute to contamination
  ✓ Notify, provide access, prevent exposures, eliminate ongoing sources, respond to Imminent Hazards

- Eligible Tenants – tenancy after release reported
- Redevelopment Authorities & CDCs – act to sell or divest
- Municipalities – acquired via tax foreclosure, act to sell or divest
- Secured Lenders – act to sell or divest
- Downgradient Property Owners – contamination migrated onto property via groundwater or surface water
Brownfields & Liability
M.G.L. c.21E

➢ Eligible Persons
   ▪ Was not Owner/Operator at time of release
   ▪ Did not cause or contribute to contamination

➢ Limits liability when achieve Permanent Solution or Remedy Operation Status
   ✓ Protected from future claims from Commonwealth for additional response action costs
   ✓ Protected by third party claims for contribution, response action costs & property damage claims under c.21E & common law
Extent of Contamination
On-Property vs. Off-Property

➢ Eligible Persons – M.G.L. c.21E, Sec. 5C

▪ Contamination is limited to soil -
  • Must achieve PS or ROS for contamination within your property boundaries

▪ Release has impacted groundwater or surface water & source on your property –
  • Must achieve PS or ROS for entire site
Brownfields Covenant Not to Sue

➢ Agreement between Eligible Person & Attorney General’s Office

▪ Provides liability relief –
  • Must commit to achieve PS or ROS, or Temp Solution if PS or ROS is infeasible
  • Must commit to Eligible BF Project
    • Contributes to economic or physical revitalization, or
    • Provides public benefit
Relevant MCP Provisions
Re-establish Deadlines

- 310 CMR 40.0570
  - Eligible Person, Eligible Tenant, or Other Person
  - Re-establish deadlines for Phase work, & PS, TS, or ROS
  - May rely on prior Phase I Report
  - Must submit Eligible Person Cert. – BWSC107D
  - Must provide Tier Classification within 120 days of taking ownership
  - MassDEP may set Interim Deadlines
Relevant MCP Provisions
Special Project Designation Permits

- 310 CMR 40.0064
  - Public Entity OR Eligible Person/Tenant with Letter of Community Support
  - Extend deadlines for Tier Classification OR Phase work – 2-year extension
  - Projects may include redevelopment, infrastructure, coordinated response actions on multiple sites
  - Compliance with current MCP deadlines would impact cost-effectiveness or feasibility of project
Relevant MCP Provisions
Post-Permanent Solution

➢ Permanent Solution with Conditions, no AUL -310 CMR 40.1013
  • What are the specific conditions for your site?
➢ Existing AULs
  • Amending or Terminating – 310 CMR 40.1080 – 40.1083
  • If property sold - incorporate AUL in full or by reference in instrument of transfer - 310 CMR 40.1074(5)
➢ Additional Remediation – 310 CMR 40.1067
Common Technical Issues

Capping

Managing TCE migration pathways

Asbestos in Soil
Common Technical Issues
Capping

- MCP Soil Category S-1
  - Residential, Schools, Passive & Active Parks, Rail Trails
- Top 3 feet soil = accessible soil
- Capping – “3-2-1” approach
- Method 3 Risk Characterization & AUL
- Must complete Phase III
Common Technical Issues
Capping
“3-2-1” Approach

- Minimum Capping Design for S-1 Soils:
  - Geotextile at base of cap
  - Open Grass Areas – min. 3 ft. clean soil
  - Landscaped Areas – min. 2 ft. clean soil
    - Excluding single-family homes
  - Paved Areas – min. 1 ft. clean soil, sub-base & pavement
Common Technical Issues
Capping
Alternative Designs

▪ Alternative Designs to “3-2-1” Approach
  – Incorporate more robust, durable, dig-resistant components for < 3 ft. cap
    • Heftier geotextiles, geogrids
    • Synthetic Turfs
▪ To accommodate flood storage capacity
▪ Athletic Fields
▪ Multi-acre disposal sites
Capping - Alternative Designs
Synthetic Turf
UMass Lowell – Construction of Athletic Field

Former Warehouse

4.8-acre site

Lead, Asbestos
Capping - Alternative Designs
Synthetic Turf
UMass Lowell – Construction of Athletic Field
Capping - Alternative Designs
Synthetic Turf
UMass Lowell – Construction of Athletic Field

Campus Recreation
Sports Complex
Common Technical Issues
Managing TCE Contamination

- Vapor Intrusion
  - SSDS & open-air garages for new construction

- Excavation of contaminated soils
  - Ambient air monitoring
  - Vapor suppression
  - Indoor air impacts
Common Technical Issues
Asbestos in Soil

- Multi-Bureau Regulations
  - Bureau of Air & Waste – Asbestos, Air Quality, Solid Waste
  - Bureau of Waste Site Cleanup – Asbestos in Soil (AIS)
- Multiple cleanup plans – NT Plan, RAM Plan
- More flexibility when AIS kept on-site
  - Capping, AUL (see UMass Lowell Athletic Field)
- No Crushing or Screening during construction
- Activity-Based Monitoring?
Contact Information

- MassDEP Brownfields Coordinators:

<table>
<thead>
<tr>
<th>Region</th>
<th>Coordinator</th>
<th>Email</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>NERO</td>
<td>Joanne Fagan</td>
<td><a href="mailto:joanne.fagan@mass.gov">joanne.fagan@mass.gov</a></td>
<td>978-694-3390</td>
</tr>
<tr>
<td>SERO</td>
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<td><a href="mailto:john.handrahan@mass.gov">john.handrahan@mass.gov</a></td>
<td>508-946-2883</td>
</tr>
<tr>
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<td><a href="mailto:michael.leblanc@mass.gov">michael.leblanc@mass.gov</a></td>
<td>508-767-2830</td>
</tr>
<tr>
<td>WERO</td>
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<td><a href="mailto:caprice.shaw@mass.gov">caprice.shaw@mass.gov</a></td>
<td>413-755-2222</td>
</tr>
</tbody>
</table>
Case Study – PCB Remediation for Redevelopment Project in Cambridge, MA

Kathleen Murphy, P.E., LSP

Environmental Engineer

CDM Smith
Case Study – PCB Remediation for Redevelopment Project in Cambridge, MA

249 Third Street
Cambridge, Massachusetts

Kathleen Murphy, PE, LSP

July 17, 2019
Presentation Overview

- Property Background
- Site Use History
- Underground Storage Tank Removal (2009)
- Phase I Environmental Site Assessment (2014)
- Initial Site Characterization (2014)
- Immediate Response Action (2014 through 2016)
- Subsurface Soil Investigations (2016)
- Test Pit Excavations (2016)
- Additional PCB Soil Characterization (2016)
Property Background

- 249 Third Street, Cambridge, MA
- paved parking lot
- 0.618 acres
- commercial and residential area
- area has historically been industrial and commercial
Site Use History

- Industrial uses from late 1800s
- 1960s/early 1970s: Buildings on southern portion demolished in place
- 1980s-1990s: Buildings on northern portion were used as storage for research lab space for biotech companies
- 2009: Buildings on northern portion were demolished
- 2009 – 2017: Paved parking lot
Underground Storage Tank Removal – June 2009

- ENVIRON International Corporation investigated northern portion of site to determine if USTs present
  - Geophysical investigation – no indication of UST
- Excavation to 6-ft encountered 2-ft thick layer of black stained soil and two unidentifiable vessels
  - Petroleum odor and PID readings up to 30 ppm
- EPH concentrations in soil > MCP RCS-1
- July 2009 – excavation of 570 tons of fuel oil impacted soil
  - 16 post-excavation samples, 2 > S-1 standards
- August 2009 - No Significant Risk, Class A RAO submitted
Phase I Environmental Site Assessment - 2014

- Potential for impact due to:
  - Historical industrial use of property and area
  - Building demolition debris
  - Urban fill

- Sanborn® map review - the former building located within the southwestern portion of the property was located right up to the Foundry Works Building.
  - Following demolition of the building, the property was subdivided and private company acquired a portion (the Parking Lot) and City of Cambridge acquired a portion (the grass strip of land along the Foundry Works Building).
Initial Site Characterization - 2014

- Advancement of 6 soil borings for disposal characterization
  - EPH, PCB, metals, SVOCs > RCS-1 at three locations
  - PCB, SVOCs, and metals > S-3 at one location
- Installation of 2 monitoring wells
  - LNAPL detected at 0.72-in at CDM-MW-2
- Advancement of 5 additional soil borings/monitoring wells
  - No S-3 exceedances
  - LNAPL not observed
- Groundwater sampling
  - TCE > GW-2 at one location
Immediate Response Action – 2014 through 2016

- 2014: NAPL detected in well CDM-MW-2
  - 72-hour release notification for IRA condition
  - RTN 3-32341 issued (for IRA and RCS-1 exceedances)
    - Gauging of 7 groundwater monitoring wells
    - Manually remove LNAPL
    - Inspect nearby storm drain and sewer manhole

- Localized area of LNAPL at CDM-MW-2

- 36 gallons bailed - LNAPL reduced to less than 0.5-inches

- LNAPL sample non-detect for PCBs
Subsurface Soil Investigations – 2016

- Advancement of 41 soil borings for additional disposal characterization for planned construction

- PCB concentrations - 75.9 and 84.8 mg/kg from two locations

- PCBs >50 mg/kg → Site now regulated under TSCA
Test Pit Excavations – 2016

- Excavation of 20 test pits to determine:
  - depth of fill
  - quantity and quality of debris within fill
  - identify if ACM is present

- 30 samples of building material and manufacturing waste
  - Four types of debris – positive for ACM
  - Widespread ACM across the site
  - PCB analysis – three samples > 50 mg/kg

- Fill encountered 8-10 ft across site with waste, brick, building debris, rusted drums, pails, stained soil
Additional PCB Soil Characterization - 2016

- Based on TSCA regulations – site was divided into 10-ft by 10-ft grid
  - Soil samples collected from 229 of 273 grids
  - Sampling at 2-ft intervals from 0-12 ft
  - Sampling to 14-ft in southern portion of site
  - Approximately 1,500 samples collected

- Source of PCBs – buried building debris

- September 2016 - Self-implementing Work Plan submitted to EPA
  - Northern portion - not PCB remediation waste
  - Southern portion (0-8ft) - PCB remediation waste > 50 mg/kg
  - Southern portion (>8ft) - PCB remediation waste < 50 mg/kg
Additional PCB Soil Characterization - 2016

- PCBs > 1 mg/kg - widespread across site

- PCBs > 50 mg/kg – concentrated in southern portion of site
Construction/Soil Excavation – 2017 through 2018

- Soil excavation - September 2017 through February 2018
- PCB cleanup standard of 1 mg/kg
- Soil excavated to 12-ft across site. Isolated areas to 14-ft.
- Management of soil/asphalt conducted in accordance with:
  - Release Abatement Plan (MassDEP MCP)
  - Approved ACM Work Plan (MassDEP BAW)
  - Approved Self-Implementing Work Plan (EPA TSCA)
- Groundwater dewatering under Dewatering General Permit
- Site perimeter air monitoring
## Construction/Soil Excavation – 2017 through 2018

- Soil, asphalt, paving, and subgrade material disposal

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Portion of the Site</th>
<th>Receiving Facility</th>
<th>Number of Trucks</th>
<th>Total Soil Shipped (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-TSCA</td>
<td>Northern</td>
<td>Waste Management Facility - Crossroads Landfill - Norridgewock, ME</td>
<td>310</td>
<td>10,034</td>
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<tr>
<td>Non-TSCA</td>
<td>Northern</td>
<td>Waste Management Turnkey Facility (TREE) – Rochester, NH</td>
<td>96</td>
<td>3,083</td>
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<tr>
<td>TSCA</td>
<td>Southern Shallow (0-8 ft bgs)</td>
<td>Heritage - Roachdale, IN</td>
<td>302</td>
<td>6,631</td>
</tr>
<tr>
<td>PCB remediation waste less than 50 mg/kg</td>
<td>Southern Deep (below 8 ft bgs)</td>
<td>Waste Management Turnkey Facility (TREE) – Rochester, NH</td>
<td>97</td>
<td>3,510</td>
</tr>
</tbody>
</table>
Construction/Soil Excavation – 2017 through 2018

Cleanup verification per EPA – Confirmatory Sampling

- **Bottom sampling**
  - **Southern portion**
    - bottom sampling at 8-ft in 6 grids to determine acceptability at non-TSCA facility
    - bottom sampling at 12-ft in same 6 grids to verify achievement of cleanup levels
    - Grid D19 excavated to 14-ft. Bottom sampling to verify achievement of cleanup levels
  - **Sidewall sampling (at property boundary)**
    - Northern portion - 3 grids on western boundary
    - Southern portion – along entire boundary
Current Site Conditions

- All soil to 12-ft across the site has been removed
- Excavation to 14-ft in isolated area in southern portion of site
- Successful removal of soil with PCBs > 1 mg/kg
- July 2018 submittals:
  - SIP Completion Report to EPA
  - RAM Completion Report to MassDEP
  - Permanent Solution with No Conditions to MassDEP
Massachusetts Brownfields Tax Credit – What You Don’t Know Can Hurt You

James T. Curtis, P.E., LSP

President

Cooperstown Environmental LLC
Massachusetts Brownfields Tax Credits

What You Don’t Know Can Hurt You

James T. Curtis, P.E., LSP, President
Cooperstown Environmental LLC
Andover, MA
Presentation Overview

1. Introduction to Cooperstown Environmental LLC
2. Historical Perspective - Brownfields
3. Creation of the Tax Credits
4. Basics: How To Qualify & Details
5. What *Not* To Do
6. Timeframe – How Long Does It Take?
7. Contact Information
Cooperstown Environmental LLC

- Environmental Consulting Firm: Licensed Site Professional (LSP), Vapor Intrusion, & Brownfield Tax Credits
- Headquarters in Andover, Massachusetts
- Acknowledged Authority on MA Brownfields Tax Credits
- Have Filed More Successful Applications than Any Other Company – and All Other Companies Combined per DOR statistics
- Have Recovered *Tens of Millions of Dollars* for Our Clients
- Have Completed *Hundreds* of Purchase & Sales Transactions
Historical Perspective

Environmental Events

- Love Canal (‘76 – ’78)

- Woburn Wells G & H Leukemia cluster (late 70s to early 80s) (“A Civil Action”)

Legislative Response (not comprehensive)

- **1980** Superfund = Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- **1983** c.21E = Massachusetts Oil And Hazardous Material Release Prevention And Response Act

- **1998** MA Brownfields Act (Amendments to c. 21E)
Key Concepts

1. “Strict” Liability
2. “Joint & Several” Liability
3. “Chain of Title”

These concepts led to the creation of a new industry: “environmental due diligence”

Which eventually led to “Brownfields”. 
“Brownfield” Defined

1. What Is a “Brownfield”?
   ▪ property where future use is affected by real or perceived environmental contamination.
   ▪ In Massachusetts, this includes any site where a “release” has occurred

2. Recognition of Negative Effects of Brownfields
   ▪ Urban Decay, Sprawl, Economic Losses (Ex. Kendall Square MGP)
   ▪ Open-ended Potential Liability

   ▪ Liability Relief (Covenant Not to Sue, DPS, Eligible Person status)
   ▪ Monetary Grants & Loans for Investigation & Cleanups
   ▪ Other Financial Incentives (Brownfields Tax Credit)
What Exactly is a Brownfield Tax Credit?

“Financial reward/incentive to complete a societal goal”

- A “refund” of 25%/50% of eligible environmental costs
- Provided in the form of a credit against MA state income tax/“excise tax”
- No limit on maximum credit that can be granted
- Use to reduce your taxes (with limitations)
- Carry forward for as many as 5 additional years, or . . .
3 Major Changes

✓ Not-for-profit organizations now eligible
  ▪ Colleges & Universities, Hospitals, CDCs, etc.

✓ Credits may be transferred (sold)
  ▪ Sell at a discount to face value.

✓ Review & approval process - MassDOR
“How Do I Qualify?”

1. “Eligible Person” per 21E definition (innocent party)
2. Owner or “Operator” (Leasehold interest)
3. Located in Economically Distressed Area (EDA)
4. Used for “Business Purposes”
5. Reported to DEP – need MCP Release Tracking Number
6. Remediation Status is “Permanent Solution” or achieved “Remedy Operation Status” (ROS)
7. Spending Exceeds a Threshold (15% of Assessment)
Ask Mr. Brownfield

Regularly – published blog regarding items of interest to the Massachusetts Brownfields Tax Credit program
Five Ways To Screw Up Your Brownfield Application

1. File for Temporary Solution
2. Sell Property Before Permanent Solution
3. Spend Money Before Ownership
4. Paying Costs from a Different Entity
5. Failure to Document Spending
Five More Ways To Screw Up Your Brownfield Application

6. Including Ineligible Non-Remediation Costs
7. Including Construction Costs in Application
8. Not Exceeding the 15% Threshold
9. Accepting an Initial Denial w/o Appealing
10. Pretending You Know More Than You Really Do

----> You Really Want To Try This Yourself?
Generalized Timeline

- **Application Process**: 2 weeks – 2 months, depending primarily on availability of cost and payment documentation
- **MassDOR Review**: typically 6-9 months; sometimes >1 year. New requirements add significant time.
- **Selling Credits**: Direct purchase: 1-3 weeks; brokering, depends on legal/due diligence, typically 4-8 weeks.
James T. Curtis, PE, LSP
President

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Case Study – The Use of Limited Removal Actions in the Redevelopment of an Auto Service Center into an Education Facility

Olaf Westphalen, P.G., LSP

Project Manager
Watermark
Case Study – The Use of Limited Removal Actions in the Redevelopment of an Auto Service Center into an Educational Facility

Presented By:
Olaf Westphalen, PG, LSP
Watermark Environmental, Inc.
Agenda

• Phase I Environmental Site Assessment (ESA)
• Focused Phase II ESA
• Petroleum Limited Removal Action (LRA)
• Volatile Organic Compound (VOC) LRA
• MassDEP Involvement
• Summary and Conclusions
Phase I ESA – May

- 0.4 acre lot in commercial/residential area
- 1-story building/garage with partial basement
- 1951-1993 Auto service and gas station, 1994-present auto service, 3 bays
- Five Recognized Environmental Conditions (RECs) Identified:
  - 6 former UST systems (gasoline/kerosene) – no closure documentation
  - 1 former waste oil UST – no closure documentation
  - 1 Oil Water Separator (OWS) with oily water
  - 3 former underground lifts - no closure documentation
  - Former use of VOCs and other chemicals for auto repair
## Focused Phase II ESA – May

<table>
<thead>
<tr>
<th>Focus</th>
<th>VPH</th>
<th>EPH</th>
<th>Lead</th>
<th>Metals</th>
<th>VOCs</th>
<th>PCBs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline USTs/Dispensers</td>
<td>Soil/gw/soil gas</td>
<td>Soil/gw</td>
<td>Soil/gw</td>
<td>Soil/gw</td>
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<tr>
<td>Kerosene Dispenser</td>
<td>Soil</td>
<td>Soil</td>
<td>Soil/gw</td>
<td>Soil/gw</td>
<td>Soil/gw</td>
<td>Soil/gw</td>
</tr>
<tr>
<td>Waste Oil UST/OWS</td>
<td>Soil/gw/soil gas</td>
<td>Soil/gw</td>
<td>Soil/gw</td>
<td>Soil/gw/soil gas</td>
<td>Soil/gw</td>
<td>Soil/gw/soil gas</td>
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<tr>
<td>Hydraulic Lifts</td>
<td>Soil</td>
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</table>

**Key:**
- **VPH** = volatile petroleum hydrocarbons
- **EPH** = Extractable petroleum hydrocarbons
- **VOCs** = volatile organic compounds
- **PCBs** = polychlorinated biphenyls
- **gw** = groundwater
- **OWS** = oil/water separator
Focused Phase II ESA (Continued)

• Results

<table>
<thead>
<tr>
<th>Compound in Soil (units - mg/kg)</th>
<th>Reportable Concentration RCS-1</th>
<th>B-103 – 6-7 feet bgs (near OWS and former waste oil tank)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C9-C10 Aromatic Hydrocarbons</td>
<td>100</td>
<td>190</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compound in Soil Gas (units - ppbV)</th>
<th>MassDEP Sub-Slab Soil Gas Screening Value (commercial /industrial)</th>
<th>MassDEP Sub-Slab Soil Gas Screening Value (residential)</th>
<th>SG-106 (in basement)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCE (Tetrachloroethylene)</td>
<td>42</td>
<td>14</td>
<td>49</td>
</tr>
</tbody>
</table>

• No issues with other RECs
Additional Petroleum Assessment – Early July

• 7 more borings advanced behind building – volume est’d at 10 cubic yards

• Exempt from MassDEP Notification per 310 CMR 40.0317(15) if addressed as a Limited Removal Action (LRA) per 310 CMR 40.0318; with restrictions:
  • Must be <100 cubic yards of oil-impacted soil (<20 cy if hazardous material)
  • Must be completed within 120 days (by November)
  • No groundwater impacts
  • Benefit: no RTN
Petroleum LRA – Late July

- 6.4 cy soil and Oil/Water Separator (OWS) removed
- Groundwater not encountered
- All post-ex samples < RCS-1, except north wall where a < 12” seam of impacts were observed at 6-7 feet
- Additional excavation at property line not possible
- 310 CMR 40.0315(2) says MassDEP Notification required if:
  “oil in soil...greater than..[RCS-1 and] ...soil is...greater than two cubic yards”
- Suspected less than 2 cy remained on adjacent property
- Developer preferred leaving soil in place, if allowed
Last Steps of Petroleum LRA – August

- Advanced 14 borings on adjacent property – 1.47 cy calculated
- Confirmed with MassDEP that 2 cy threshold can apply after LRA
  
  "There is nothing in either the LRA provisions or 310 CMR 40.0315(2) that would prevent [someone] from applying the ‘total contiguous volume of oil or waste oil contaminated soil above Reportable Concentrations ≥ than two cubic yards’ notification criterion to soil left behind after an LRA has been conducted”

- Hold harmless agreement was drafted to document consent from adjacent property owner to allow <2 cy soil remain
Additional VOC Assessment – June

• Sample all wells and sub-slab soil gas probes for VOCs
• Groundwater flow north; depth 17 feet
• PCE in only one well at 1.3 ug/l (vs 50 ug/l RCGW-2)
• PCE up to 290 ppbV in garage (vs 42 / 14 sub-slab soil gas screening values)
Additional VOC Assessment – Early July

- Look for source – 16 soil borings up to 14 feet and 15 soil gas probes
- No MassDEP notification trigger found; < RCs in soil and groundwater
- No clear source or significant residual identified
- Plan to remove drain pipes (likely source) as VOC “LRA”; retest sub-slab soil gas
VOC LRA – Late July

- Removed floor drains/piping and 2.5 cy associated soil. Used Frog-4000 to guide excavation activities (PID petro vs. PCE discrimination poor)
- No PCE soil impacts >1 mg/kg (RCS-1); max in soil 0.011 mg/kg via 8260C
- Post VOC LRA soil gas above commercial/industrial screening values
- Recommended additional screening rounds and vapor barrier and passive SSDS to address residual VOCs
MassDEP Involvement

- BOH forwarded data to MassDEP the following year
- MassDEP issued Notice Of Responsibility due to RCS-1 exceedance; Release Tracking Number (RTN) created
- However, there was difference in opinion at MassDEP as to when the 2 cubic yard (cy) limit applies (before or after remediation)
- MassDEP ultimately decided <2cy after LRA is not reportable. RTN deleted. However, reserved right to collect indoor air sample in winter.
- MassDEP subsequently tested indoor air in Dec. – no PCE or TCE detected

"Vapor barrier and passive sub-slab venting system are working as intended"
Summary and Conclusions

• Used LRA to address a limited amount of petroleum-impacted soil, even left <2 cubic yards of impacted soil behind: ultimately no RTN

• Used “LRA” to address VOC source material. Vapor barrier and passive venting system addressed residual vapor

• MassDEP ultimately validated both LRAs, even though this was never the original intention

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Networking Break
Obtaining a Brownfields: Why You May Be Closer Than You Think

Melina Ambrosino

Executive Vice President
Cherrytree Group, LLC

Environmental Business Council of New England
Energy Environment Economy
Obtaining a Brownfields: Why You May Be Closer Than You Think

July 17, 2019
History and Overview of the MA Brownfields Tax Credit

1998: Massachusetts Brownfields Program first enacted. It was initially applicable to the tax years commencing on or after January 1, 1999.

2000: The Massachusetts legislature passed, "An Act Making Appropriations for the Fiscal Year 2001," extending the time for incurring eligible costs that qualify for the credit and changed the limitations rules where the taxpayer has received state financial assistance ("first amendment").

2006: The program was expanded in 2006 to allow transfer of the tax credit certificate, and to include nonprofit organizations.

2010: The Legislature extended the MA Brownfields tax credit program previously scheduled to expire on August 5, 2011, for two additional years to August 2013.
History and Overview of the MA Brownfields Tax Credit

2013: Governor Deval Patrick signed a $33.6 billion Fiscal Year 2014 (FY14) balanced budget for the Commonwealth of Massachusetts. Included in the approved budget was a provision extending the sunset date of the Massachusetts Brownfields Tax Credit (BTC) from its original expiration date of August 2013 until August 2018.

2015: Bill 2455, sponsored by House of Representative Antonio Cabral of New Bedford, was referred to the Joint Committee on Revenue on January 20, 2015. A hearing on the Bill was held on 9/22/2015. The Bill if passed will broaden eligibility of the BTC by replacing the “lease” requirement with an “operating” requirement. Specifically, the property operator, rather than only a landlord or a tenant, will now be eligible for the BTC. The Bill also proposes limiting AULs to a particular date.

2018: On May 31, Massachusetts Governor Charlie Baker signed the $1.8 billion Housing Bond Bill (H.4536) into law. Included in this bill is the 5 year extension of the Massachusetts Brownfields Tax Credit and Massachusetts State Historic Tax Credits.
What are tax credits?

• Tax credits allow a dollar-for-dollar offset against taxes due, thereby acting as a tax payment.

• This is a major distinction from a tax deduction, which only reduces adjusted gross income and can lessen the tax due.
What is an Eligible Property?

1. Commercial property owned or leased by the taxpayer for business purposes;

2. Release of contaminants reported to the Department of Environmental Protection (DEP) and DEP issues a Release Tracking Number (RTN);

3. Located in an economically distressed area (EDA); and

4. Expenses must be incurred by an entity, trust, or non-profit corporation. (*i.e. not municipality, city, etc.*)
Eligible Taxpayer

1. BTC claimant **cannot** have caused the contamination;

2. BTC claimant must be the *owner or lessee* of the contaminated site during the cleanup period.
   - Entity Structure
Examples of Eligible Costs

✓ LSP fees;
✓ Testing;
✓ Clean fill;
✓ Demolition (fact specific);
✓ 21E Legal fees;
✓ Soil Disposal;
✓ Slurry Wall
✓ Architect Cost
✓ Land Surveyors

*Eligible costs must be equal to or greater than 15% of the assessed value of the property prior to remediation, and must be directly related to the remediation.
Brownfields Tax Credit Award

The Certificate is issued by MA Department of Revenue.

- It may be used to offset up to 50% of taxes owed to the Commonwealth in current year with a 5 year carry forward (financial institutions or insurance companies can offset 100%);
- OR, may be transferred to another MA taxpayer;
- Certificate dated in year permanent solution was achieved;
- If filing of BTC is in later year, it can only transfer the follow-on years and apply for tax return amendment for “gap” period.
Recapture:

If a taxpayer ceases to maintain the remedy operation status or permanent solution prior to the sale of the property or the termination of the lease, the difference between the credit taken and the credit allowed for maintaining the remedy is added back as additional taxes due in the year in which the failure occurs. The sale of the property or the termination of the lease, in and of itself, will not result in recapture.

Recapture is a low risk event and past history has shown limited or even no history of recapture.
New Appeals Procedure:

In November 2013, the Department created an Appeal Process for Denial or Partial Denial of Applications for the BTC (i.e. AP 636). The AP covers procedures relating to representation, review, approval or proposed denial (or partial denial) of applications, the Department’s appeals conference process, and potential further remedies upon the Department’s final determination.
New BTC Procedure

The procedure requires additional documentation to be filed with the application which includes:

- Pre-Characterization Reports;
- Weekly Field Reports;
- Breakout of soil – DOR now requires a breakout of soil cost remediation. Please see Chart A for an example of the template necessary for soil tracking;
- Trucking and hauling fees per trip. Please see Chart B for an example of the template necessary for hauling/trucking tracking;
- Haul logs showing which soils were shipped to which facilities; and
- Any additional documentation you may have showing the cost of the various categories of earthwork

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<th>Tonnage</th>
<th>Disposal Expense</th>
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<tr>
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Case Study 1: Charlestown

• 100% Affordable Income Mix-Use Apartment complex

• Client came to us with an estimate of $900,000.00 in expenses ($450,000.00 BTC)

• Cherrytree Filed for $2,717,363.29 in expenses ($1,358,681.64 BTC)

• Cherrytree was successful in getting $1,157,450.00

• Cost Approved Included
  • Development Consulting
  • Land Surveyor
  • General Contractor
What Could Have Been Done Differently

- Include your consultant in the beginning
- Let your consultant work with your Architect / General Contractor / Landscape Architect
- Have your LSP work with more subcontractors
- Make sure your agreements with all vendors include all scope of work
- Make sure invoices do not have mistakes
How Your LSP Can Help Maximize

- Organize and maintain detail field reports
- Coordinate with other vendors
  - i.e. Architect, General Contractor, Land Surveyor, other Environmental Engineers
- Keep track of the Developer Timeline
  - Coordinate with the Developer and General Contractor
  - Coordinate with the BTC consultant to ensure all cost eligible cost are being applied for
- Tell you developer upfront about the Brownfields Tax Credit
What Should Your Consultants Do For You

▪ General development finance and transactional structuring;

▪ Analysis of a project’s tax credit eligibility;

▪ Preparation and filing of tax credit applications with the Massachusetts Department of Revenue;

▪ Work with engaged professionals, such as LSP’s to understand the scope of their work, review all environmental reports and filings, advise on structuring, and solving transactional issues;

▪ Accounting and Back-Office Services- including building tax credit eligible cost spreadsheets, accumulation and verification of documentation – such as invoices, cancelled checks, draw request haul logs, and field reports.

▪ Direct engagement with the tax credit regulators and responses to auditing questions and/or document requests; and

▪ Necessary legal services (staffed by our special counsel or outside counsel where applicable) associated with the application process and the buying process other than counsel hired by the Client;

▪ Securing a Tax Credit Purchaser (“TCP”) for state tax credits.
Summary of MA BTC Requirements:

- The taxpayer cannot have been the cause of the contamination.
- The taxpayer must be the owner or lessee of the contaminated site during the cleanup period.
- The site must be closed out with a permanent solution (RAO or ROS) with or without conditions.
- The money spent on the remediation must amount to at least 15% of the site's assessed value at the time the remediation began.
- The site must be in an *Economically Distressed Area*.
- The site must be used for business purposes.
- The remediation expenses must be incurred by an entity, trust, non-profit corp. (i.e. not a government, state, municipal entity)
Contact Our Team:

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Please Fill out the Program Survey

On a scale of 0-10, how likely are you to recommend this program to a colleague?

Will Not Recommend ----------------------------------------------- Will Definitely Recommend

0 1 2 3 4 5 6 7 8 9 10

General comments or suggestions on how program could be improved:

Suggestions for future EBC Program topics:

Name & Email (optional):
Moderated Discussion

Moderator: David Austin
   Program Co-Chair, AECOM

Panelists:
- Melina Ambrosino, Cherrytree Group
- James Curtis, Cooperstown Environmental
- Joanne Fagan, MassDEP
- Kathleen Murphy, CDM Smith
- Olaf Westphalen, Watermark

Environmental Business Council of New England
Energy Environment Economy
EBC Site Remediation and Redevelopment Program:
Update from U.S. EPA and MassDEP
Brownfields Programs and Case Studies