

## Information on Brownfields

### Definitions

The US Environmental Protection Agency (EPA) defines a brownfield site as “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.”<sup>1</sup> According to the US General Accounting Office (GAO), approximately, 130,000-450,000 brownfield sites exist in the US (the reason for the large range is that many are thought to exist but have not been reported.)<sup>2</sup> Of those sites that remain the decontamination process may take years to complete due to a variety of reasons explored in the following paragraphs.

The state of Massachusetts does not have an official definition for brownfields, instead it applies several characteristics to brownfield sites. The characteristics are as follows: land that a.) is abandoned or for sale or lease; b.) was once used for industrial or commercial purposes; c.) was reported to Massachusetts Department of Environmental Protection (MADEP) to contain contaminants; and/or d.) was assessed due to unknown contaminants located on the land.<sup>3</sup>

Massachusetts began its remediation of brownfields by having the MADEP use its money to cleanup-contaminated sites. These properties were only cleaned in emergency situations where human health was placed at risk. Other brownfields sites, not labeled as emergency sites, but thought to contain some level of contamination, were left to linger. In reality many of the sites that were thought to be only partially contaminated were in fact those that contained some of the highest levels of contamination, posing the greatest

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<sup>1</sup> See this site for additional information <http://www.epa.gov/brownfields/glossary.htm>

<sup>2</sup> Vitulli, Angela. “Brownfields Development: State Policies to Promote Commercial Viability” 1999, p 10.

threat. This is due to the fact that a majority of contamination cannot be discovered until the soil and groundwater is tested. Site assessments completed prior to the purchase and sale or redevelopment of a site has to be completed according to Massachusetts' statute.

The legislation that is the umbrella for all other regulations is Massachusetts General Law Chapter 21E (M.G.L. c 21E), created in 1983, which regulates hazardous waste, chemical spills, cleanup of contaminated sites, environmental fines, and disposal requirements. All other regulations fall under this statute.

The Massachusetts Contingency Plan (MCP) falls under M.G.L. c. 21E and aims to protect the health, safety, welfare and the environment of the commonwealth by regulating the reporting, response, assessment, and cleanup of hazardous waste and oil spills (310 CMR 40.0000). It was rewritten in 1993 to become the nation's first "privatized" cleanup program. The new program required that a Licensed Site Professional (LSP), inspect and approve a site once the contamination was removed. This process is known as site assessments, which are divided into Phases 1, 2 and 3. Phase 1 being an initial site assessment that strictly includes research and visual inspections of the site. Contamination is usually discovered during Phase 1 and then reported to DEP, as is discussed below. Phase 2 is made up of more in-depth research including water and/or soil sampling. Phase 3 entails the actual remediation of the site.

The MADEP manages a database of the assessments pertaining to the site/reportable releases that occurred throughout the state. A listing of sites that were reported to DEP because contamination was found is posted by the Bureau of Waste Site Management at the following web address:

<http://www.mass.gov/dep/cleanup/sites/report.htm>.

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<sup>3</sup> See this site for additional information <http://www.mass.gov/dep/bwsc/brownfld.htm>

A ranking system called a Tier system is assigned to each site to identify the level of contamination of each site. Sites that have a status of Tier 1A, Tier 1B, Tier 1C, Tier 1D or Tier 2 are considered to be a site that contains some level of contamination. The condition of these sites was reported to DEP and then each site was assigned a NRS score, based on the Numerical Ranking System (NRS). The score is determined based on the complexity of the site, type of contamination, and potential for human and environmental exposure to the contamination (<http://www.mass.gov/dep/cleanup/sites/statdef.htm>). This process of reporting and then classifying each site containing contamination is required under Chapter 21E of the MCP. They are known as “DEP Tier Classified oil and hazardous material disposal sites.”<sup>4</sup> A description of each of the Tiers is as follows:

- Tier 1A sites - Sites that are the most hazardous, require Immediate Response Actions (IRAs) and DEP oversight.<sup>5</sup> Receives a total National Ranking System (NRS) score equal to or greater than 550. A high score can be because of the close proximity of a site/release to drinking wells and the potential for human health to be affected by the contaminant(s). These sites require supervision by DEP until a permit is obtained.
- Tier 1B sites- Received a total NRS score of less than 550 and equal to or greater than 450. A permit is required but supervision by DEP is not.
- Tier 1C sites - Received a NRS score of less than 450 and equal to or greater than 350. A permit is also required but DEP approval is not required.
- Tier 1D sites are sites where the responsible party fails to provide a required submittal to DEP by a specific deadline.<sup>6</sup>
- Tier 2 sites - Received a total NRS score of less than 350. Permits are not required and response action may be performed under the supervision of a Licensed Professional, without prior Departmental approval.

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<sup>4</sup> DEP Tier Classified Oil or Hazardous Material Sites (MGL c. 21E) <http://www.massgis.gov/mgis/c21e/htm> accessed March 28, 2005.

<sup>5</sup> MassGIS DEP Tier Classified Oil or Hazardous Material Sites (MGL c. 21E) Datalayer March 2005.

<sup>6</sup> Definitions obtained from MassGIS DEP Tier Classified Oil or Hazardous Material Sites (MGL c. 21E) Datalayer March 2005.

Massachusetts Geographic Information Systems (MassGIS) provides a free electronic map of all of the sites located within Massachusetts that contain contamination and have been labeled as 21E sites, because they fall under MGL 21E statute requiring all contaminated sites to be reported and ranked. Please note that the 21E site map<sup>7</sup> contains only sites that have been classified and does not contain those sites/releases that have been reported to DEP but have not yet been classified, this number is unknown as accidental spills occur at an unknown rate. The most recent list of 21E sites was last updated in March 2005.

It is important to note that sites/reportable releases can also have a compliance status of Response Action Outcome (RAO). This identifies locations where an RAO Statement was submitted. “An RAO Statement asserts that response actions were sufficient to achieve a level of no significant risk or at least ensure that all substantial hazards were eliminated.”<sup>8</sup> These sites are no longer contaminated but did experience a spill at one point. The submittal of an RAO report indicates that LSP has reviewed the site and the activities occurring on site and that the release/spill is being addressed or has been cleaned up. A copy of this report is sent to DEP officials who oversee the process undertaken by the LSP and review the report but cannot be held liable for any errors.

## Funding

In order to assist with associated costs the EPA established a Brownfields program in 1990 providing training, assessment, and clean-up funding to a variety of

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<sup>7</sup> See Appendix B I and III

<sup>8</sup> <http://www.mass.gov/dep/bwsc/sites/statdef.html> accessed February 24, 2005.

entities including local governments, non-profit organizations, states, redevelopment agencies, etc. based on budget of applicant, community need, et al.<sup>9</sup>

In an attempt to spur economic redevelopment of contaminated properties throughout the commonwealth, in 1995 the MADEP created the Massachusetts Clean Sites Initiative. This provided liability to owners and lessees of contaminated property (Jacobs et al. 1998, 189). The Commonwealth offered to enter into a covenant not to sue agreement with the owners and lessees so long as the land they occupied was cleaned up according to Massachusetts environmental regulations.

In 1998 the State of Massachusetts passed the Massachusetts Brownfields Act providing incentives for the redevelopment of brownfield sites. The Act reduces the liability of landowners, provides financial incentives for the remediation of sites, while complying with state environmental regulations.

#### “Brownfield Paralysis”

Despite these incentives provided by federal and state entities “brownfield paralysis” still exists.<sup>10</sup> This condition occurs when the extent of contamination and cost of cleanup at urban and suburban sites is unknown, resulting in no action. Brownfield redevelopment is most often completed by the owner of the property (who may or may not be responsible for contaminating the land) or government agencies.

A second reason development is stalled is because brownfield redevelopment is often seen as too complex, preventing revitalization from taking place. The task can seem daunting because multiple parties are involved and the coordination required with

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<sup>9</sup> [http://www.epa.gov/swerosps/bf/pg/guidelines\\_2005.htm#process](http://www.epa.gov/swerosps/bf/pg/guidelines_2005.htm#process) Last visited November 9, 2004.

state and federal agencies, and potentially the previous owner (to understand the history of the land). Procedural hold-ups such as “red tape” can prevent progress from being made. The EPA, through the creation of a Brownfields Action Team (BAT), is helping to make redevelopment more appealing to businesses by streamlining the process. A dedicated group of professionals are assigned to work directly with the DEP, developers, and EPA to expedite the process.<sup>11</sup>

Developers also fear the possibility of being held liable because contaminants were not completely removed from the site. Based on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) established in 1980 government, current land owners, and operators have the right to go against predecessors, transporters and generators who placed hazardous substances on the property.<sup>12</sup> CERCLA held all potentially responsible parties (PRPs) liable for contamination of property. Fear of liability is often supported by the fact that some sites lack security, allowing polluting and contamination to continue beyond the control of the owner.

This concern is being lessened due to changes in primary federal brownfield law which will likely reduce liability for voluntary clean up projects, so long as liable parties have completed a cleanup plan that meets state requirements.<sup>13</sup> That being said, a site that has been cleared of liability charges by the state is not necessarily cleared by the Federal Government. Therefore land owners need to take additional precaution by confirming clearance with the State and Federal Government.

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<sup>10</sup> Geltman, Elizabeth Glass Recycling Land: Understanding the Legal Landscape of Brownfield Development. 2000, p 3.

<sup>11</sup> “Encouraging Redevelopment” <http://enviro2.blr.com/display.cfm/id/51790> October 22, 2004.

<sup>12</sup> Geltman, Elizabeth Glass. Recycling Land: Understanding the Legal Landscape of Brownfield Development 2000 p 1.

<sup>13</sup> Johnson, Mark. “Brownfields Are Looking Greener” *Planning* June 2002.

Finally, one of the most common reasons for not redeveloping brownfield sites is because it is too expensive. The basic costs of cleaning up a brownfield site can exceed several million dollars. If states and federal institutions provided more developers might be willing to participate in the revitalization of brownfields. The State of Massachusetts provides the following types of funding for remediation of brownfield sites:

- Brownfields Redevelopment Fund (BRF)
- Massachusetts Department of Housing and Community Development
- Underground Storage Tank (UST) Program
- Clean Water State Revolving Loan Fund

### Success Stories

Despite some concerns regarding brownfield development, there are many success stories proving the benefit of revitalizing sites once deemed unusable. Some critics claim the success of a project is determined by the economic profit generated. One example of this success occurred in Atlanta, Georgia's downtown. A 138-acre contaminated steel mill site was cleaned up and rebuilt to provide mixed-use amenities.<sup>14</sup> The article "Sprawl Atlanta: Social Equity Dimensions of Uneven Growth and Development," explained how people fled the downtown and went the suburbs for work and housing. Atlanta's living conditions rapidly decreased over the years and development within city lines would help remedy the problem. One of the policy recommendations listed in the article included land use reform and brownfield redevelopment. In 1999 the development, named "Atlantic Station", was designated by the EPA as a national "smart growth" model.<sup>15</sup>

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<sup>14</sup> Wright, Gordon. "New Community Rises on Old Brownfield Site" October 2004. p 6.

<sup>15</sup> Wright, Gordon. "New Community Rises on Old Brownfield Site" October 2004. p 6.

Another successful case study involves Ford Motor Plant in Dearborn, Michigan. The industry was first established at the site between 1917 and 1925. Over the years the plant has expanded and older buildings have become eyesores as well as potential brownfields, if they were abandoned. Instead of moving to a new location (a “greenfield, to build a new modern plant) Ford presented a plan in 1999 to revitalize the old buildings by making them more environmentally friendly. By working with the land they had, Ford maintained the economic viability of the area and prevented sprawl.<sup>16</sup>

The future of brownfield redevelopment looks strong. With thousands of sites remaining throughout the US there is plenty of developable space within urban and rural locations. The EPA currently has brownfield grant opportunities including assessment, cleanup, job training, and tribal response opportunities. On June 15, 2004 the EPA announced that 42 states, Puerto Rico, and five Tribes share \$75.4 million worth of Brownfield Grants. This is the largest amount of brownfield grants in history. In January 2002 President Bush signed the Small Business Liability Relief and Brownfields Revitalization Act which provides up to \$250 million worth of brownfield grants. Under this Act the definition of a brownfield has been expanded to include sites that are mined-scarred, affected by petroleum leaks, or the manufacture or distribution of illegal drugs to provide communities with the opportunity to cleanup additional sites.<sup>17</sup>

As the world’s population increases, in turn increasing demand for development, Brownfield redevelopment is the secret to success. Using this method the environment

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<sup>16</sup> <http://www.ford.com/en/goodWorks/environment/cleanerManufacturing/rougeRenovation.htm>

<sup>17</sup> “42 states, Puerto Rico, and five Tribes share \$75.4 million in Brownfield Grants”  
<http://yosemite.epa.gov/opa/admpress.nsf/b1ab9f485b098972852562e7004dc686/09da59161288b3dd85256eb4004894d6?OpenDocument> June 15, 2004.

will be cleaned-up, “greenspace” will be preserved, and dense, walkable, communities will emerge.