

Brownfields: A Rural Community Problem

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Overview of the Problem

Farmers, commercial agricultural outlets, homeowners, turf growers, landscapers, local governments, and others have stored, mixed, and used pesticides over the last 70 years in an effort to control various pests (Figure 1). Many pesticides were used in limited circumstances,



Figure 1. Examples of manual and mechanical methods of pesticide application.

while others became widely used. A few became the “pesticide of choice” for specific crops or entire industries. Some of these pesticides are persistent in the environment and may be present in the soil long after their application. As a result of slow degradation, the residue of a number of pesticides (including arsenical pesticides, DDT, and dieldrin) may be found in soils long after they are banned for use, or at levels that pose a risk to human health.

Before purchasing a property, a buyer must become knowledgeable about the past use of the site. Agriculture lands and some abandoned properties may have several potential hazards that could affect their value and future use. For example, the most frequently encountered problem is the past storage or use of pesticides,

which could impact the site’s future development potential. You can get an idea of the level of pesticides on a site by sampling the soils. This will help you determine the type of development that is appropriate for the site, such as residential, agricultural field, orchard, or a golf course. A full environmental assessment of the land may also be useful and may be required as part of a municipality’s site approval process. Banking institutions may consider environmental risk factors before making lending decisions.

What Is a Brownfield?

Few terms evoke the perception of urban decay and land abuse as effectively as “brownfield.” The U.S. Environmental Protection Agency (EPA) defines a brownfield as “*abandoned, idle, or underused industrial and commercial facilities where expansion or redevelopment is confounded by real or perceived environmental contamination.*” Rural areas are not exempt from the brownfield classification, but the underlying causes are generally different than from industrial or commercial situations.

Pesticide storage areas that were not maintained (Figure 2), spills that were not cleaned up,



Figure 2. A pesticide tank balanced precariously on a sandy slope.

or the past use of persistent pesticides can result in a brownfield classification for an agricultural property. Other examples of rural

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brownfields include abandoned gas stations, pesticide formulation plants, manufacturing sites, and other abandoned buildings.

Why Is Agricultural Contamination an Issue?

Agricultural brownfields seem to be the last frontier in the cleanup and redevelopment of contaminated sites. Farming may seem like the least likely place to find contaminated properties; however, lending institutions and governmental organizations are documenting the improper use of chemicals more and more.



Figure 3. A farmer shows students how to measure crop residues.

Pesticides can limit the normal use of farm property and can lead to a brownfield condition in a number of ways. For example, the lack of pesticide containment, the inability to clean up a spill, the contamination of a well, or the loss of pesticides to a waterway due to runoff can lead to a brownfield designation. All of the above may result in the property being viewed as a liability, with limited use.

Why Is This an Issue Now ?

Due to land use changes, the public is becoming more aware of rural brownfields in much the same way they became aware of urban brownfields. Banks and insurance companies have become the unofficial enforcer of environmental regulations during land transactions.

If contamination issues on the property are present, an environmental assessment of the property is required. A site assessment seeks to answer questions regarding the contamination potential, the source and type of contamination, potential cleanup costs, and environmental liability.

Who Are the Stakeholders in Agricultural Contamination?

Involvement from a variety of stakeholders enhances the outcome in any brownfield remediation (Figure 4). There are a number of stakeholders that should be included in discussions about agricultural land reuse. One is the landowner or renter, who should have past and current knowledge of the property.



Figure 4. Meeting of stakeholders.

Another is the prospective buyer who has goals and interests regarding the use of the property. Communities also need to be included in the redevelopment discussion.

Additionally, local government and regional authorities are important stakeholders to include, since they are responsible for authorizing infrastructure repairs or additions and zoning changes. Banks also play an important role as they are often the source of funds allowing the buyer to purchase the land.

State and federal agencies should be contacted if remediation is required because many governmental agencies have technical assistance and resources available (Figure 5). Finally, nongovernmental organizations and local universities have technical expertise on many related issues, and can recommend Best Management Practices (BMPs), and provide information about pesticide research and risk management. They can be an important resource for all stakeholders.

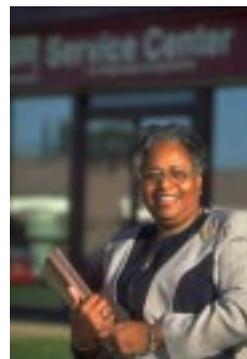


Figure 5. USDA Service Center Employee at a Service Center.

What Is Being Done to Address Agricultural Brownfields?

Agricultural brownfields have not, until recently, received the same attention as urban brownfields; however, as more land is converted from agricultural to rural development, questions are being raised concerning potential contamination. Also, an agricultural brownfield does not have the same visual presence as an industrial brownfields found in an urban setting.

There are several programs and/or technical assistance resources available for those interested in remediating agricultural brownfields. Stakeholders looking for information about remediating their property usually start locally (Figure 6). Every county in the United

States has access to an agricultural Extension educator who works for a land grant college or university. These



Figure 6. NRCS civil engineer interacting with landowner.

professionals have current information about available resources and technical assistance. They also have access to expertise from specialists (e.g. agricultural and engineering staff) located on their campuses. Most state departments of agriculture work with state departments of environmental protection to develop new practices and offer technical assistance to agricultural practitioners who are addressing environmental contamination issues. Land grant colleges and universities are also active in conducting research on new environmental practices.

How Many Brownfields?

Indiana does not have a comprehensive list (inventory) of brownfield sites. The two main reasons for the lack of information: 1) there are too many brownfield sites across the state to accurately list every one; and 2) the best source for a list or inventory is at the local level. By applying the state's definition of a brownfield, a local unit of government, task force, citizen

group, or neighborhood association can develop a thorough list of potential sites in their respective areas. These inventories are a useful community planning and development tool, especially when creating a redevelopment strategy.

The Steps Involved in Brownfield Redevelopment

The Indiana Interagency Brownfields Task Force (IBAT), an affiliation of state and federal agencies has updated the Indiana Brownfields Redevelopment Resource Guide. Technical information, remediation strategies, and financial resources are highlighted in the latest publication, which can be seen at www.in.gov/idem/land/brownfields/pdffiles/guidance/resourceguide.pdf.

Starting the redevelopment process usually occurs in three stages: planning, remediation, and redevelopment. The following is a basic approach to brownfield redevelopment in Indiana.

In the **Planning Stage** of this process, a community should do the following:

- Develop a potential brownfield properties inventory.
- Identify the pros and cons for each possible property for redevelopment.
- Identify the appropriate stakeholders based on past use and intended use.
- Develop partnerships.
- Identify possible barriers to the redevelopment process, (e.g., costs, access, technical difficulties, etc.).
- Conduct environmental site assessments (either done by the state environmental agency or by a hired consultant).
 - *Phase I Environmental Site Assessment*
Before purchasing and/or remediating a site, it is important to have a good understanding of the types of activities that occurred on the property. Any past environmental concerns and regulatory issues that have surfaced need to be addressed. This will guarantee that site assessment activities are focused. The

Phase 1 Environmental Site Assessment should include a site visit to determine the status of the property, such as structures, potential and apparent contamination sources and location of environmentally sensitive areas. It may also include a review of the regulatory records and aerial photographs, interviews with neighbors and past employees.

If the evidence from the initial information gathering process indicates that the property may have been contaminated, then sampling for contamination is the next step.

- *A Phase II Environmental Site Assessment*

A Phase II Environmental Site Assessment will identify the contaminant(s) present, how deep the contaminants have migrated in the soil, and how much of the land needs to be remediated. If such contamination is detected, then further assessments will be required to determine the extent of the contamination, address health concerns, and develop a remediation plan. This can include on-site or off-site cleanup processes.

When the tasks have been completed, and remediation is determined to be necessary, the property proceeds to the **Remediation Stage**. If remediation is not necessary, then the property will proceed to the **Redevelopment Stage**.

During the Remediation Stage, several questions and issues need to be addressed, such as the following:

- √ Review any technical information available for the property.
- √ Select consultants.
- √ Develop a corrective action plan/ remediation work plan.
- √ Determine who will be responsible for cleanup oversight.
- √ Do a cost/benefit analysis.
- √ Identify cleanup criteria.
- √ Do the cleanup that meets pre-approved government standards.

In Indiana, the property may be entered into the Indiana Department of Environmental Management's (IDEM) Voluntary Remediation Program (VRP). Details of the program can be viewed at

<http://www.in.gov/idem/guides/publicparticipation/print/citizenparticipation_short.pdf> Once remediation is addressed or completed, the State of Indiana will issue a Covenant Not to Sue, a Comfort Letter, or a Site Status Letter. The Redevelopment Stage occurs once the property has been assessed and adequately cleaned up.

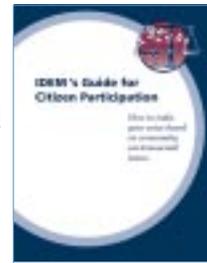


Figure 7. Picture of cover from IDEM's Voluntary Remediation Program.

This brief introduction to brownfields highlights some issues that stakeholders need to consider when selecting properties for brownfield redevelopment. There are many other issues that may arise at any particular site. Understanding the basic considerations, however, will help you begin to navigate the redevelopment process. For more information about brownfield redevelopment, contact your state environmental agency.

Benefits of Brownfield Redevelopment

- Eliminates underused, abandoned, or idle properties;
- Eliminates contaminants;
- Returns properties to the local and state tax base;
- Makes use of existing structures, when appropriate;
- Creates jobs;
- Enables farmland preservation;
- Protects community health; and
- Protects surface water, groundwater, and drinking supplies.

Conclusion

Brownfield redevelopment is important for rural communities. In areas where job availability and stability are marginal, remediation, clean up, and redevelopment may bring immediate revenue, as well as employment opportunities,

through new businesses and support industries. In addition, brownfield cleanup and reuse preserves regional open spaces and often utilizes lands closer to populated areas (reduced urban sprawl). Examples of open space are farmland, meadows, and forested areas.

There are a number of important ingredients for a successful rural brownfield redevelopment. The first is to coordinate the involvement of all stakeholders, who must consider the closely linked social, economic, and environmental status often found in rural communities. Second, participation by all stakeholders is a must. Successful redevelopment depends on the insights and resources from a wide range of stakeholder groups. Finally, technical and financial resources to pay for these activities are imperative and should be investigated.

Brownfield Resources

Rural community issues are often most effectively addressed at the local and state levels, but the federal government can provide an important coordinating role. The following list for brownfield information provides the primary sources of information from public and non-profit sources, as well as selected private sources. Additionally, many of the web sites provide links to other resources.

Organizations

Federal

- U.S. Environmental Protection Agency, Region 5: (800) 621-8431 – Empowers the states, communities and other stakeholders in economic development to work together in a timely manner to prevent, assess, safely cleanup and sustainably reuse brownfields. <www.epa.gov/brownfields/>

Successful Renovation Story in Indiana

Farmersburg, Sullivan County, IN has successfully remediated an inactive gas station property. The property is now the location of the new Town Hall.

How the Town Accomplished the Brownfield Remediation Process

A gas station was built on the property in the 1940s. The property was donated to the town of Farmersburg in the 1980's. The town was unable to sell the property due to the presence of three underground storage tanks and the presence of possible petroleum contaminants in the surrounding soil.

The assessment report indicated that the site had been impacted by petroleum contaminants near the former pump island. Contaminants were in excess of the Indiana Department of Environmental Management's (IDEM) Leaking Underground Storage Tank action level of 100 ppm.

In 1998, the town was awarded an Indiana Brownfield Site Assessment Grant Phase I. The assessment was used to investigate the environmental conditions of the property as well as assess the costs for remediation. IDEM reviewed the assessment report generated from Phase II investigation activities to ensure environmental activities were met. A Comment Letter regarding the report's findings and recommendations was issued in November 1999.

The town applied for and received assistance with the removal of the on-site underground storage tanks through IDEM's Abandoned Tank Community Assistance Program (ATCAP) in 2000.

Regional

- The Great Lakes Regional Online Brownfields Information Network: An innovative Internet consortium for sharing information and enhancing communication about brownfields cleanup and redevelopment in the bi-national Great Lakes region. <www.glc.org/bridges/brownfields.html>

Indiana

- Indiana Development Finance Authority (IDFA): (317) 233-4332 – Provides grants and loans to communities for brownfields redevelopment. <www.idfabrownfields.com/intro.aspx>
- Indiana Department of Environmental Management (IDEM): (317) 308-1313 – Provides environmental assessments, comfort letters and grant and loan oversight and conducts workshops. <www.in.gov/idem/land/brownfields/index.html>
- Indiana State Department of Health (ISDH): (317) 233-7808 – Focuses on the potential effect of brownfield contamination on human health. <www.state.in.us/isdh/programs/environmental/factsheets/bfhc.htm>

Other

- U.S. Conference of Mayors: (202) 293-7330 – Promotes comprehensive brownfields legislation, including liability relief, federal funding resources and empowerment of state and local governments. <www.usmayors.org/USCM/brownfields/>
- The Center for Land Renewal: (717) 541-1980 – Addresses policy issues and provides guidance to action affiliates. <www.landrenewalnetwork.com/>

- The Technical Assistance for Brownfields: (765) 496-2449 – TAB helps communities to clean and redevelop properties that have been damaged or undervalued by environmental contamination. The purpose of these efforts is to create better jobs, increase the local tax base, improve neighborhood environments, and enhance the overall quality of life. <www.toscprogram.org/tab-overview.html>
- National Brownfield Association (773) 714-0407 - Find a wide variety of news and information to keep you up to date on market developments and brownfield events and abreast of news from state chapters. <www.brownfieldassociation.org/>
- The Center for Brownfield Initiatives (504) 280-7089 – To facilitate: brownfield redevelopment, education, research, training and technology transfer through the use of transparent policies and balanced solution. <www.brownfields.com/>

Publications

- Brownfields Bulletin – IDEM bulletin published quarterly. Call (317) 233-1044 to get on the mailing list. <www.in.gov/idem/land/brownfields/services/edoreach.html>
- Brownfields Redevelopment Resource Guide(317) 233-1044 – A report updated in May 2003 providing guidance from IDEM on the redevelopment of brownfields in Indiana. The report provides information on getting started in the process of redevelopment to local and state contacts. <www.in.gov/idem/land/brownfields/pdf/files/guidance/resourceguide.pdf>

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