FROM RAGS TO RICHES

Innovations in Petroleum Brownfields

Northeast-Midwest Institute
National Association of Local Government Environmetnal Professionasl

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Northeast-Midwest Institute

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I. FROM RAGS TO RICHES: THE "USTFIELD PILOTS" AND THE EVOLUTION OF PETROLEUM BROWNFIELD SITES

Almost every city and town contains a site with an underground storage tank (UST) that is affected by petroleum contamination or impacted by the perception that contamination exists. In addition to the almost uncountable number of abandoned gas stations, UST sites also include things like idle manufacturing facilities or moribund commercial areas that dealt with oil in some way. The list is as long as it is diverse. Thus, the challenge of petroleum contaminated brownfield sites is significant.

This report, the final in a series exploring the issues and opportunities of petroleum contaminated brownfield sites, describes the progress states and communities have made in addressing UST situations, lays out lessons learned from the pioneer "USTfield pilots," and re-examines the detailed findings and recommendations of the landmark report, ***Recycling America's Gas Stations*** (RAGS), published in 2002 as the original USTfield initiative was making the transition into a component of the EPA brownfields initiative. The second report in this series, ***A Primer for Petroleum*** Brownfields, was published in 2004. The goal of the primer is to help communities better understand the re-use of petroleum brownfields.

FROM "USTFIELDS" TO "PETROLEUM CONTAMINATED BROWNFIELDS" -- TAKING A NEW LOOK AT CLEANUP AND REUSE

In September, 2001, the U.S. Environmental Protection Agency (EPA) launched its USTfields pilot initiative, to address "abandoned or idle property where redevelopment is hindered by petroleum contamination from abandoned, federally regulated underground storage tanks." These sites, like brownfields, must overcome significant barriers to reuse: fear of liability, lengthy cost recovery procedures, and up-front cleanup expenses. In 2001, 10 pilot communities (see table below) were selected. Forty additional communities were added in 2002.

When the USTfield initiative was launched, tank programs had focused solely on the cleanup of environmental problems. After four years of effort, a growing number of states, localities, and private development interests are embracing a new approach that looks beyond cleanup to site reuse. The first 10 pilot communities played a significant role in facilitating this shift from solely focusing on cleanup of environmental problems to an approach that considers petroleum sites more from a more comprehensive vantage point which includes real estate and community benefit considerations.

The second wave of 40 USTfield pilots built on this foundation, contributing their own strategies and successes. The pioneering 50 designees set the stage for the integration of "petroleum contaminated brownfields" into the larger EPA brownfield effort, a role cemented with federal brownfield legislation, the Small Business Liability Relief and Brownfields Revitalization Act (Brownfields Law; P.L. 107-118). The law brought a new focus on tank sites and earmarked 25 percent of the federal brownfield appropriation for assessment, cleanup and revolving loan funds for petroleum-contaminated sites.

The overarching lesson learned from the initial USTfield pilot is that the challenge of petroleum contamination can be met. Communities that are succeeding have done so because they have defined cleanup and reuse in a new context for these properties. They are approaching reuse of petroleum contaminated brownfield sites as an economic development issue with an environmental twist, rather than as only a pollution problem. They are considering UST projects not as environmental threats, but as real estate situations that can further community development goals. In doing so , communities turn environmental issues into an projects that create value, attract investment, and gather support. And to support such strategies, they are using methods such as risk-based corrective action (RBCA) to guide their efforts and striving to make sure that regulatory processes dovetail with development time frames.

For more information on petroleum brownfields, download the "Recycling America's Gas Stations" report at www.nemw.org or www.nalgep.org.

THE 50 USTFIELDS PILOTS (BY EPA REGION)

EPA Region 1
- Maine -- Portland, Westbrook, Hiram and Lewiston
- New Hampshire -- Nashua*
- New Hampshire -- Northumberland, Berlin, and Carroll
- New Hampshire -- Bradford, Greenfield, and Pelham

EPA Region 2
- New Jersey -- Hudson County
- New Jersey -- Trenton*
- New York -- Yonkers

EPA Region 3
- Delaware --Wilmington*
- Pennsylvania -- Lancaster County and Philadelphia

EPA Region 4
- Alabama -- Selma
- Florida -- Clearwater, Escambia County, and St. Petersburg
- Mississippi -- Jackson
- North Carolina -- Concord
- South Carolina --Anderson*
- South Carolina -- Greenville
- Tennessee -- Kingsport and Sullivan Counties

EPA Region 5
- Illinois -- Chicago*
- Illinois -- Freeport and Waukegan
- Indiana --Indianapolis and South Bend
- Michigan -- Detroit and Kalamazoo
- Minnesota -- Minneapolis
- Ohio -- Youngstown and Boardman Township in Mahoning County

EPA Region 6
- Louisiana -- Baton Rouge and Westwego
- New Mexico -- Laguna Tribe*
- Texas -- Houston

EPA Region 7
- Iowa -- Clinton and Des Moines
- Missouri -- Kansas City*
- Missouri -- St. Louis

EPA Region 8
- Colorado -- City and County of Denver
- Montana --Billings and the Crow Tribe
- Utah -- Salt Lake City*

EPA Region 9
- California -- Los Angeles to investigate
- California -- Oakland*
- Nevada -- Mineral County
- Arizona -- Gila River Indian Community

EPA Region 10
- Alaska -- Metlakatla Indian Community
- Idaho – Smelterville
- Oregon -- Portland*
- Washington --Rosalia, Tacoma, and Seattle

*Original USTfield Pilot

Federal Petroleum Brownfield Resources

U.S. EPA Office of Underground Storage Tanks
Phone: 703.603.7164
Web: http://www.epa.gov/oust/

U.S. EPA Office of Brownfields Cleanup and Redevelopment
Phone: 202.566.2777
Web: http://www.epa.gov/brownfields/

Occupational Health and Safety Administration
Web: http://www.osha.gov/

For more information about the USTfield pilot initiative, please visit http://www.epa.gov/swerust1/rags/ustfield.htm.

II. WHAT INFLUENCES THE SUCCESS OF PETROLEUM BROWNFIELDS REVITALIZATION?

The initial USTfield pilots are completed and with petroleum contaminated sites are now included as a regular programmatic component in EPA's brownfields program. The 50 USTfield pioneers provided valuable lessons about what contributed to the successful revitalization of abandoned gas stations and other tank sites. Some of these lessons were first described in the *Recycling America's Gas Stations* report.

From petroleum brownfield to fire station in Trenton, NJ

Others have only come to light in recent years. These issues that influenced the success of petroleum brownfield cleanup and reuse efforts are listed below. These were determined by interviewing program managers engaged in the day-to-day task of petroleum brownfield cleanup and reuse and by analyzing case studies. The issues identified fell into three broad categories:

- The development and launch of an initiative
- Ongoing program implementation
- Policy issues that influence ongoing tank site revitalization efforts.

ISSUES INFLUENCING THE LAUNCH OF TANK SITE REVITALIZATION EFFORTS

Analysis of the pilot experiences shows that the way in which various state and local issues are addressed plays a critical role in launching a viable and ongoing community process that leads to revitalization of petroleum contaminated brownfields. An overarching theme was that effective partnerships focused on UST site reuse must be in place for these efforts to succeed. Successful partnerships were driven by the state, but structured in a way which allowed maximum local flexibility to deal with the multitude of tank issues The lessons from the 50 pilots, re-enforced by subsequent brownfield petroleum site projects, indicate that state programs and intergovernmental partnerships may involve a number of approaches and take various paths to reach success.

Process is key. Getting clear answers to basic process questions was key, no matter where a project was located or what its focus was. Process questions included how a suitable end use can be identified, how petroleum sites can best be handled, what constitutes enough legal comfort for the private sector to be interested, and when the cleanup is really completed Based on the experiences of the pilots, achieving success meant figuring out how to increase communication, coordination, and consistency among tank site reuse efforts across the state, and among stakeholder groups.

Existing state voluntary cleanup programs (VCPs) can play a vital role in encouraging tank site reuse. Most state VCPs allow sites with petroleum contamination to be addressed. However, current state use of them for this purpose varies significantly. Some state VCPss include petroleum sites and offer various forms of certainty, while others prohibit petroleum sites from using their VCPs. This complicates the process, and can deter local efforts to promote revitalization of petroleum contaminated sites.

Similarly, the use of risk-based corrective action (RBCA) or end-use based cleanup approaches and incorporation of institutional controls as part of the cleanup remedy are common state cleanup remedies. However, the connection may or may not be made in the case of a tank site, when future use is not identified as part of the revitalization process. Great potential exists if these two recognized and accepted brownfield tools are incorporated into a community based site strategy from the beginning. State partners should promote this linkage and validate such approaches.

Necessary capacity must be in place. As the pilot efforts have recognized, a minimum program capacity must be in place if petroleum focused efforts are to get off the ground and continue. A key aspect of capacity, of course, is funding. Some states tried to link the UST initiative and economic development. In some places this involves a host of staffing issues, as well as institutional and mind-set changes regarding tank sites and the barriers of reuse.

Public relations, risk communication, and community involvement activities needed for any type of brownfield revitalization effort, including tank sites, can be resource-intensive activities that strain the capacity of local governments, especially smaller ones. Another capacity situation that must be addressed as part of an effort to launch petroleum brownfield efforts, focuses on long term management of a site if institutional controls are used as part of the cleanup. This cleanup action involves leaving waste in place and can raise concerns among local residents.

In some areas, "capacity" has emerged as a two-prong issue; the lack of adequate technical expertise and lack of funding, which present a real barrier to ongoing program success. Site owners and prospective purchasers, as well as local officials, often lack the technical experience to proceed with petroleum brownfield projects. Concurrently, state and local officials face staffing constraints and can not devote the personnel to these activities which could advance UST site reuse on a broader scale. could not be carried out. Therefore, key activities such as gaining property access, negotiating with tank owners, and outreach to stakeholders can not be performed. In other cases, capacity concerns meant that balancing local community concerns and priorities with regulatory concerns was difficult to achieve.

Orphan sites must be addressed. States and communities must identify a way to address the problem of sites with no liable and viable owner. This is especially important if smaller towns, with even less capacity to address UST situations on their own, are to succeed in cleanup and reuse efforts. A clear process and strategy for covering cleanup costs and addressing liability concerns at orphan sites could remove the stigma and make the reuse more appealing to private developers and investors.

Legal and situational constraints must be acknowledged and addressed. Over the past four years, USTfield pilot states and localities identified several constraints that must be addressed if a successful program is to be sustained over time. The constraints originate from provisions in the law and the practical limitations of working with an old, abandoned tank site. For example, accumulated back taxes on UST sites make many of these properties an economic challenge for redevelopment financing and a forgiveness strategy could be a good incentive to encourage reuse.

Abandoned site in Kansas City

In addition, necessary site specific legal activity, such as title searches and the hunt for viable responsible parties for cost recovery, can inhibit broader programmatic efforts to promote UST site cleanup and reuse. As demonstrated by several of the pilot efforts, states and cities can work with various agencies to meet these needs, and adopt a more flexible interpretation of cost recovery requirements to enhance tank site reuse strategies.

Incentives play a critical role. The most successful state and local pilot efforts proved to be creative in identifying and applying economic development incentives, not just environmental agency incentives, for tank site projects. The success of local programs was enhanced when potential site reusers were shown how to make the connection between petroleum brownfield revitalization situations, and traditional state economic development tools and incentives that could support these projects. In some cases, identifying the future end use made a site eligible for economic development incentives.

A strategy for engaging private sector participation needs to be voiced. States and localities need to convey to the private sector their vision for tank site reuse, which includes acceptable and suitable new uses and best approaches to site marketing. Conversely, public entities need to learn from prospective private partners how they can better shape their technical assistance and incentive offerings. Some states have tried to generate

interest in UST sites by sending letters to county development offices, commercial real estate brokers, and other potential partners. While other cities and states have worked to make a special effort to reach out to the major oil companies as part of their activities, to encourage them to support redevelopment of station sites that they are no longer interested in operating.

Community and stakeholder involvement needs to be ensured. Identifying the appropriate stakeholders and including them early in the tank site reuse process is critical. EPA has learned through its brownfield pilot initiative that meaningful public participation is a critical factor in reuse success. In fact, community involvement helps move site cleanup and redevelopment plans forward. A comparable lesson can be drawn from the initial UST pilot experiences. A credible community information and outreach program, with meaningful community input into the reuse process was critical. This was especially true in cases where communities explored new cleanup technologies and institutional control approaches.

Overall, community involvement is often the pad from which solid reuse strategies can be launched. Substantive, meaningful, and early participation can drive initial efforts to promote tank site reuse, and serve as a key element that sustains projects over time.

Issues Influencing the Implementation and Sustainability of Tank Site Revitalization Efforts

Four years of activity at many of the USTfield pilot locations shows that UST-related partnerships come to fruition at the local level, and maintain themselves over time, in communities that take full advantage of opportunities provided by the state. Increasingly, local jurisdictions are exploring diverse ways to promote tank cleanup and site reuse.

Local officials are working with a variety of state-supported tools and strategies to make that happen. For example, Salt Lake City, Utah, and Chicago, Illinois, both operate "vacant and abandoned" gas station programs, which facilitate the cleanup, marketing, and new use of UST sites. Other communities are beginning similar efforts, sometimes working with federal block grant dollars and comparable state program resources to make this happen. Based on the experiences of several pilots, some cities are developing more informal approaches to accomplish the same objective, by working with private developers or community groups on targeted sites with important local impacts.

Addressing operational issues can enhance overall success. With much experience to consider, it is clear that communities that work to integrate tank site revitalization approaches into various parts of their local government development process are seeing greater benefits from their petroleum brownfield strategies. For example, linking tank sites to related community vision and economic development activities, like small-scale commercial development or infill housing, will help a project succeed. More communities are starting to treat tank site projects in the same way as traditional brownfields, which includes tapping into a variety of federal and state resources aimed at general site cleanup. In other cities, project coordination among state and local agencies and community groups is proving to be an important approach when it comes to attracting private participation at UST sites.

In addition, more communities are recognizing that various federal program resources, beyond those of EPA's brownfield grant program, can be applied to petroleum contaminated sites once their local initiatives are more fully developed. Programs offered by the Department of Housing and Urban Development, Small Business Administration, and Economic Development Agency target distressed areas or capital market imperfections and have the potential to play a key role in UST site reuse. At the same time, communities that have proven especially adept at linking federal resources together have found that making the timing of that leveraging work can be a real challenge. Many federal programs are well-suited to support complementary project needs, but often these programs have very different timetables and requirements, which complicates their tandem use.

Information is vital. Providing credible information on tank sites and tank issues can facilitate the decision-making process and lead to ongoing successes. Local officials and community organizations need

information on: cleanup costs and the impact of contamination on future site use; innovative cleanup technologies and institutional controls and how they can protect health and the environment. Private parties need information on: the proven ways to minimize liability; other barriers to successfully redevelop and market tank sites; the economic benefits of cleaning and reusing these sites; and the public incentives (such as VCPs and financing incentives) and private tools (such as environmental insurance) available that can help tie these projects together.

As the USTfield pilot experiences have indicated, this role can be filled by various government or by quasi-public organizations, depending on local need and tradition. However, gaps still exist. Therefore, a variety of educational and outreach approaches are still needed to advance UST reuse efforts.

In general, pilot successes have shown that a sound and flexible planning process equips cities with the informational tools and techniques they need to cope with the various situations and factors they are likely to face when structuring and sustaining a program that focuses on petroleum contaminated brownfields. A good, proactive planning process can also help link tank site issues to other local opportunities, building on their strengths.

Financial concerns must be confronted. Like traditional brownfields, financial concerns are the biggest barrier noted by USTfield pilots to the ongoing success of their efforts. Federal, state and local governments must be creative in the funding resources for petroleum brownfields.

More communities, for example, are working to connect activities that fit within the basic mission of Department of Housing and Urban Development (HUD) programs. This involves defining and publicizing ways in which HUD could encourage cities to use their block grant program and other HUD resources to finance tank site cleanup and redevelopment, or capitalize a local loan fund for gas station revitalization in a distressed area. This is similar to the approach taken by brownfield practitioners across the country.

At this stage, it is clear that UST site project financing, like brownfields before it, is playing out as a patchwork that takes considerable time and effort to put together. Initial projects in pilot cities like Chicago, Trenton, and Kansas City bear this out; where specific redevelopments involved half a dozen or more public and private funding sources.

Building partnerships contributes to easier program implementation. As the pilot experiences demonstrated, cities will clearly benefit in the long-term from encouraging a "visioning" process that links petroleum brownfield reuse to practical strategies for economic and community revitalization. One of the key challenges facing UST pilots at the beginning was building the right coalitions, from community groups to potential investors, to address specific needs and help to nurture meaningful relationships among stakeholders that can enhance reuse opportunities. This was accomplished through a variety of incentives and program approaches, which addressed the economic and process barriers both community and private sector players typically associated with these sites.

PROGRAM AND POLICY ISSUES ARE BARRIERS TO TANK SITE REVITALIZATION EFFORTS

The original pilot states and communities indicate that even after several years of program experience, several program and policy issues are still barriers to more widespread cleanup and reuse of petroleum contaminated brownfields.

Variations in cost recovery policies lead to inconsistencies which can deter reuse. One issue that continues to be emphasized is cost recovery. The approach to cost recovery varies across the states, and nationally, and this affects the ability for communities to deploy consistent approaches. In its cost recovery policies relating to UST sites and the Leaking Underground Storage Tank (LUST) trust fund, EPA has noted that "states will implement the cost recovery program, have considerable discretion in operating it, and benefit directly from their successful recoveries."

With this direction in mind, some state agencies continue to take a very strict view of cost recovery with regard to UST sites, which tends to hamper their flexibility when pursuing new site users and future uses for petroleum brownfields. There was a concern that their initial strategy of pursuing UST site cleanups and redevelopment that brought greater benefits to their communities bumped up against the realities of cost recovery. Several communities have emphasized that the need to cost recover, or establish an inability to pay, is creating a lengthy up-front process before work can begin and can deter new private users from taking on these sites.

Critical performance measurements are still lacking. Consistent, accepted criteria or indicators of program accomplishments will help measure how progress is being made and what approaches are working. However, very few states and communities have adopted this process so far. One potential application of such measures cited by a few of the original pilots is their ability to help local officials make the transition from individual tank site projects, perhaps based on an EPA brownfield awards , to a sustainable, ongoing local petroleum brownfields program.

Cities need to better prepare their petroleum brownfield programs for the future. Building local programs for the future may involve learning how to build on early site cleanup and reuse successes and move to more challenging projects. Focus is needed on maintaining program momentum, by keeping stakeholders satisfied and engaged. Efforts will also need to involve broadening the local knowledge base, so that communities can learn how to deal with negative value or "upside down" tank properties more effectively. Overall, a broader community revitalization strategy, deploying innovative technologies and RBCA-style cleanups is needed.

State/local reuse partnerships need further broadening and strengthening. State and local partnerships, crafted to work with various public and private stakeholders have been a critical component of the early programmatic success to drive reuse. However, these partnerships could do more if they expanded their scope and strengthened their presence in petroleum brownfield site reuse efforts. In fact, states are the critical core of partnerships, and may be in the best position to enhance petroleum brownfield program sustainability by establishing a reuse climate, along with programs (such as VCPs) and incentives that invites private investment at UST sites.

States can enhance partnerships by offering technical assistance about what solutions work, how cost savings can be realized, and the role of institutional controls. They can also fine-tune their economic and business development incentives to make them more responsive to UST-type real estate situations, and promote the use of tools, such as subsidized insurance and financing intermediaries. In doing so, these partnerships can expand the potential for site reuse by helping to meet more specialized local needs by plugging the holes that federal programs can not fill.

Cities need to devise proactive ways to enhance petroleum brownfield programs. Recent conversations with numerous USTfield pilot communities suggest that issues still remain that influence how and to what extent they can carry out these efforts. These include:

- local government concerns, in the context of orphan site acquisition and redevelopment, about potential liability;
- need to strengthen state and local relationships early in the petroleum brownfield redevelopment process;
- availability and reliability of funding for cleanup and reuse, including applicability of existing state and federal redevelopment resources and a continued focus on petroleum brownfields within EPA's programs;
- availability and constraints of LUST trust fund monies;

- need for a dedicated funding source to support title searches and potentially responsible party (PRP) searches, and a determination of how vigorously to hunt for viable owners, in the context of cost recovery;

- cost recovery, which can be a barrier to redevelopment of petroleum brownfield sites;

- need for proven marketing strategies suitable for petroleum brownfield sites, including simpler and clearer site prioritization criteria that drive development decisions;

- need for liability protection for municipalities and innocent owners, and in some states, clarification of the applicability of state VCP protections to UST sites;

- need to disseminate examples of proven brownfield approaches such as risk-based cleanup and cleanup pegged to future land use;

- need to set up long-term management programs, and the need to cover related costs of doing so, at sites where institutional controls are used; and

- need to readily apply various public participation tools, such as EPA's TOSC and TAB programs) to UST situations.

III. LESSONS FROM THE PIONEERS: WHAT ENHANCES STATE AND LOCAL EFFORTS TO REUSE PETROLEUM CONTAMINATED SITES?

Brownfield reuse, including sites contaminated with petroleum or featuring abandoned underground storage tanks, has captured public attention because it offers the unique opportunity to solve multiple problems concurrently, a prospect that is particularly attractive for government officials. For example, with minimal public investment, a brownfield project may provide environmental cleanup, reduce neighborhood blight, generate tax revenues, and create jobs, all of which helps to stabilize and enrich a community. Often these projects make use of existing infrastructure, such as highways and utilities, thus maximizing the benefit of previously spent public dollars. In addition, brownfield reuse offsets development that might have occurred on a greenfield, thus helping to limit urban sprawl — an increasingly high priority for many Americans.

Despite these opportunities, however, many challenges are associated with brownfield reuse, especially revitalization of sites contaminated with petroleum. In recent years, public officials have made it a priority to develop incentives and other measures that "level the playing field" between greenfield and brownfield sites. This process has involved identifying key barriers and determining which of them may be reduced or eliminated without compromising public health and the environment. The original USTfield pilot initiative is an example of such an effort and which was later folded into the larger EPA brownfield program.

The preceding chapter offers an overview of pioneering UST efforts. This chapter lays out the lessons learned from those 50 USTfield pilots more succinctly. Where appropriate, these lessons corroborate or build on the earlier, in-depth analysis done in *Recycling America's Gas Stations*. The findings are based on analyzing case studies, follow-up interviews with pilot partners, and various other sources which have described the evolution of those efforts in the four years since 2001. The purpose is to understand how these projects overcame the barriers typically associated with petroleum brownfield reuse and to then derive a series of "lessons learned from the field" that could be shared with other localities facing similar challenges.

FACTORS INFLUENCING THE VIABILITY OF REUSE

Encouraging the cleanup and redevelopment of brownfields requires a comprehensive package of solutions to overcome an array of barriers. What is clear is that certain factors and "solutions" are important at different times in the redevelopment process. Most factors come into play at the beginning when stakeholders such as developers, businesses, or local officials, are trying to determine whether to move forward with a given project. Other factors come in to play later on and help expedite time frames or reduce costs associated with a given project. Still other aspects are important at a broader policy level. The factors that frame the lessons learned from the USTfield pilots, include:

- State cleanup priorities are often inconsistent with economic and redevelopment priorities. The state determines cleanup priorities based on risks to health and the environment but the project might not make economic sense.
- Ownership status of property and its influence on reuse -- if the site is privately held and not under state enforcement order, does the owner have an incentive to investigate environmental contamination and proceed with a project — or would the owner prefer to just sit on a site, perhaps "mothballing" it?
- Extent of known or perceived environmental contamination, and estimated cost of cleanup.
- Existence of generic cleanup standards or ones that are tailored to meet end use.
- Location of property and conditions in surrounding area (i.e., is the property's location desirable enough that, in spite of potential environmental contamination, redevelopment could make strong financial sense? Or is the property in an economically depressed area?).

- Availability of public-sector financing -- i.e., is a city or state funding assessment and cleanup? If not, are financing incentives available through the city, state, or federal government, such as tax breaks, tax credits, grants, or loans? Is there the option of piggy-backing onto any existing development, such as road construction, in the area?

- Availability of private-sector financing (i.e., is a private-sector entity backing the project? Are commercial banks willing to get involved? Are foundations or companies willing to donate funds or in-kind work?).

- Presence of a strong local government entity to act as a "brownfields broker" that will match interested buyers with brownfield properties. Local officials also can help parties navigate through myriad technical, legal, financial, and community-involvement challenges.

- Availability of insurance to protect brownfield purchasers from potentially high costs associated with the discovery of environmental contamination.

Lessons Linked to Program Capacity

Project examples continue to show that the potential for successful petroleum brownfield reuse is achieved or thwarted at the local level. Clearly, one of the most significant -- and expected -- findings is that local governments and their community partners need to have the capacity, ability, and wherewithal to carry out an effective petroleum brownfields initiative. Specifically, if they are to ensure success over the long haul, local governments must:

- carry out an inventory of sites and perform reuse feasibility studies that focus on petroleum brownfield sites and situations to promote eventual reuse;

- assemble sufficient resources to build program capacity and to leverage site-specific initiatives to connect UST and brownfield efforts;

- target priority sites for local attention and focus resources on them, working with state enforcement agencies as appropriate;

- recognize that the large number and small size of petroleum brownfield properties create unique challenges and as such may not fit within traditional land use approaches;

- revamp community planning approaches to recognize that tank sites may have to be considered lot by lot, within the context of a broader community development plan, that allows for acceptable future uses of specific lots within a larger revitalization vision;

- develop strategies to deal with "mom and pop" sites and orphan sites, that include both financial resources for "upside down" properties and links to state VCPs to gain regulatory clarification/relief for prospective new site owners and operators;

- explore creative new uses of traditional redevelopment tools, like tax forgiveness and community development financing, for petroleum brownfield sites with potential economic development impacts;

- integrate petroleum brownfield efforts into broader community development goals, relating future site use to economic development goals like small-scale commercial development or infill housing;

- structure new partnerships and interdisciplinary approaches to address the specific barriers associated with petroleum site barriers. These partnerships and cross-cutting approaches will be especially critical in small towns and rural communities and should involve state agencies, regional planning and economic development organizations and technical service providers; and

- establish a foundation for the future by keeping stakeholders satisfied and engaged.

LESSONS LINKED TO RESOURCES AND INCENTIVES

State and local governments participating in the original USTfield pilots emphasized over and over again the need to draw upon a variety of resources and incentives in any effort to clean and redevelop a petroleum contaminated property. For most projects, the costs of site testing, remediation planning, and actual cleanup (not to mention increased project transaction costs related to contamination) can tip development choices towards properties that do not include such costs.

Most of the USTfield pilots, or their community partners, deployed various incentives, such as grants, loans or loan guarantees, or technical assistance services, to offset expenses linked to petroleum contaminated sites. They found it necessary to offer and package multiple types of resources from various sources, to meet the specific financing needs of individual projects.

The over-riding lesson is that tank sites, like all brownfields, are essentially prospective real estate deals which must be able to "pencil out," regardless of site condition, including contamination. Therefore, every potential purchaser or developer that approaches a site contaminated with petroleum, must perform an analysis of both risks and strategies, and the role that incentives might play in making the project more feasible. Remediation and related preparation costs put substantial pressure on the bottom line. Developers often have trouble putting a complete financing package together for a tank site project, including the capital needed to pay for the early stage site assessment; developing a cleanup plan; and carrying out the actual cleanup. As we have learned from four years of USTfield pilot experience, the successful revitalization of petroleum brownfield sites requires the leveraging of critical resources for assessment, cleanup and redevelopment, from various federal, state, local and/or private sector sources. Specifically, localities need to:

- increase project access to incentives -- both direct and indirect funding instruments (such as grants, loans, and private insurance) -- for a broader range of potential site reusers, since incentives are often the catalyst for petroleum brownfield site interest and private investment;

- facilitate the targeted use of existing economic and community development tax credits, abatements, and other tax incentives (federal, state, and local) to petroleum contaminated sites;

- promote the use of environmental insurance, to cope with unexpected cleanup costs as well as bring lenders more comfort that contamination will not undermine the bankability of sites and the fiduciary stability of petroleum brownfield site users to pay their notes;

- promote creative use of various federal tools, since programs offered by HUD, SBA, EDA, and other agencies, which target distressed areas or capital market imperfections, have the potential to play a key role in reuse of petroleum brownfield sites;

- encourage states to target their own economic and community development programs and broaden their eligibility criteria to support tank site projects; and

- press for new state and federal administrative and procedural strategies, such as convening a "resource roundtable" or similar forum, to help with project packaging, gathering stakeholders, and program leveraging.

LESSONS LINKED TO INTERGOVERNMENTAL PARTNERSHIPS AND COOPERATION

The USTfield pilot experience also made it clear that various incentives and policies are best leveraged if states and localities build on each others resources and efforts in a true spirit of intergovernmental cooperation. States will be in a position to link more of their own resources to petroleum brownfield reuse efforts by

working with localities to measure and track results, and use them to establish a solid case for why reuse matters, and what benefits it can bring to the state's communities. Specifically, these public partnerships:

- require involvement of multiple stakeholders in a collaborative process which starts early in the revitalization process, particularly for local government partners;
- are enhanced by collaborative efforts (such as joint meetings) between state VCPs, economic development agencies, and UST offices, to work together towards what should be the common goals of cleanup and reuse;
- are better received across sector and agency lines if they include efforts to measure and track results, as well as promote them; and
- should consider specific strategies, such as site bundling, which can take advantage of various cooperative funding sources.

Lessons Linked To Private Sector and Community Involvement

Through their experiences, USTfield pilots demonstrated that public-private partnerships are based on solid outreach efforts, which are vital to a successful revitalization effort. They foster communication, cooperation and trust between relevant stakeholders, both private sector and community-based.

Desired partners may include bankers, elected officials, investors, developers, business owners, lawyers, environmental professionals, local agency staff and private practitioners in several areas (such as economic development, engineering, or technology services), insurance providers, community representatives, even the major oil companies – basically, anyone with an interest in reviving a distressed area. In addition, groups of these stakeholders, such as community development organizations, chambers of commerce, or business councils, can contribute to the process. Partnership efforts need to feature:

- marketing strategies that persuasively sell the benefits of petroleum site reuse to both local officials, affected community residents, and interested private parties;
- formation of good working partnerships with potential redevelopers and reusers of petroleum contaminated sites, as well as prospective site financiers and tenants;
- information and examples to inform private parties on (a) how to overcome liability and other barriers that inhibit the successful redevelopment and marketing of tank sites, (b) the economic benefits of cleaning and reusing former gas stations and other UST sites, (c) various public incentives, both procedural (i.e., linked to VCPs) as well as financial, and (d) the availability of private tools (such as environmental insurance) that can help tie these projects together;
- community involvement, based on a vision for what can and should be done at a site;
- understandable, credible community information and outreach strategies; and
- working relationships with major oil companies, to the extent feasible.

Lessons Linked To Regulatory and Legal Concerns

As the experiences of the USTfield pilots has reiterated, successful revitalization of petroleum brownfield sites demands linking an economic development approach to an environmental challenge, where reuse is explored concurrently with a cleanup strategy. As state and local UST pilots have emphasized, this cannot be dominated by a regulatory perspective. Therefore, EPA and the states need to explore how

regulatory tools and incentives can be tailored to meet site revitalization and reuse goals while maintaining their mission to safeguard human health and the environment.

Several UST reuse advocates from pilot states and communities noted that this may require revised regulatory policies that build on EPA's current land revitalization focus and adopt approaches to liability that are similar to the liability clarifications contained in the 2002 Brownfields Law. Both may provide an excellent opportunity to promote a more creative petroleum brownfield revitalization approach and regulatory innovation linked to UST sites. As several pilot communities have stated, such change means:

- allowing local flexibility to determine cleanup levels in ways that coordinate local vision, community concerns, and state requirements;
- working at the state level for greater clarity in regards to UST contamination, integrating, where possible, tank site liability clarification tools with VCPs;
- expanding the eligibility of petroleum site for brownfields grants;
- identifying strategies to package gas station sites and other petroleum contaminated properties to maximize their reuse potential, to tap into cost recovery and insurance tools); and
- preparing basic outreach and marketing information for prospective site reusers which clarify regulatory issues for them.

IV. THE USTFIELD PILOTS AT 4 YEARS: HIGHLIGHTS AND LESSONS LEARNED FROM SELECTED STATES

This section profiles activities from a select few of the initial USTfield pilots. These profiles aim to focus on key issues and highlights from the pilots state and communities, with especially promising USTfield redevelopment initiatives underway.

DELAWARE

In Delaware, the private sector has rehabilitated petroleum contaminated brownfields for commercial reuse at desirable sites, such as prime corner lots, and the Department of Natural Resources and Environmental Control (DNREC) has spurred cleanup at sites with financially solvent owners. The State has instituted its "FIRST fund", which is being used to clean up tanks in less desirable locations, and orphan sites lacking responsible parties. The fund also will address tanks whose owners are not required to notify the state of their existence because they were taken out of operation before 1974.

Delaware used its USTFields pilot money to leverage its FIRST Fund program, and to support efforts to identify additional potential FIRST Fund eligible sites statewide through outreach efforts targeting local government and local economic development agencies.

DNREC developed the FIRST fund with a stakeholder group of government entities, industry groups, and environmental and citizen organizations. The program is funded at $500,000 annually, and is financed through a petroleum tax. While concerns were raised about using state funds to remediate sites that ultimately will increase the property value for a subsequent owner who will reap financial benefits, the State decided that the alternative, leaving numerous sites sitting idle, was unacceptable.

Under the program, at its discretion DNREC may pursue cost recovery for certain sites from the owner, defined as the last person to use the tank rather than former owners of the system or the current property owner. In addition, DNREC pursues private sector insurance coverage at sites with no identified solvent owner.

KEY SITES ADDRESSED

Delaware worked with Wilmington to cleanup and reuse several petroleum-contaminated sites. Rolling Mills, a three-acre property bordered on the east by Brandywine Creek, was a former manufacturing site where four USTs and one dispenser island were removed. The property is being redeveloped for residential purposes. At the second property the State funded an UST removal and remediation, so that an abandoned retail gasoline station site will be used as a bus-layover terminal. At the third site, gasoline dispensers and USTs have been removed, soil samples taken, and corrective action performed. The property owner plans to transform the site into a fenced, asphalt-paved parking lot.

Rolling Mill Hill site in Wilmington

A fourth site was located in the historic Brandywine Village section of Wilmington, a neighborhood first established in colonial times and is primarily residential with a three-block commercial district consisting of historic homes converted into businesses. An abandoned gas station sat idle from 1995 until fall 2001 and undermined a key point in the commercial district, a highly traveled, gateway intersection across the street from colonial homes and an historic church. Even though Delaware and Wilmington both received revitalization grant funds to address the site, the City had difficulty making progress because of problems with locating the property owner. In an innovative move to avoid a lengthy enforcement process, Delaware proposed that if Wilmington obtained site control from the owners, and thus avoided enforcement, the State would pay for site clean-up with monies designated for cleaning up orphaned UST sites in Delaware. This successful partnership between the State and the City created an atmosphere of change that allowed the partnership to accomplish what neither

had been able to do alone. This previous eyesore went from rags to riches and today is the Brandywine Village Green, which combines aesthetically pleasing green space with a useful pervious pavement parking lot that publicly demonstrates a creative way to reduce storm water run off.

In *Odessa*, the Delaware FIRST fund is spurring rehabilitation at Trader's Gulf, a former gas station located near the center of Odessa at the gateway to a historic district. The owner/operator and his wife died with no will before 1995, leaving the site ownership uncertain. A prospective buyer who intends to run a plumbing business from the property will not purchase it until the tank issues have been addressed.

There is a strong possibility that MTBE and other contaminants are present at the site. The registered USTs have incurred numerous violations and do not meet the 1998 upgrade requirements. In 1992, a tank system failure resulted in taking one tank out of service, with the remainder of the registered tanks removed from service in 1996. It is unknown when the unregistered regulated tanks were taken out of service. None of the USTs was properly closed and the 1992 release has not been investigated. In July 2001, an USTfield grant funded the removal of all the UST systems and the sampling needed to assess the site for contamination.

LESSONS LEARNED

The Delaware experience illustrated how the ability to deal with orphan sites could play a key role in larger community revitalization efforts. Pinpointing and addressing blighted gas stations proved critical in each of the communities addressed through the USTfield pilot effort. A critical component of this proved to be the catalyzing effect of UST resources on redevelopment partnerships. The applicability of UST resources at petroleum contaminated sites with no viable owner stimulated the participation of both public and private entities, and resulted in important new investments.

Other lessons from Delaware include the importance of gaining site control. Efforts in Delaware reinforced the notion that partnerships and leveraging work most efficiently and effectively when sites can be addressed without the uncertainty of recalcitrant or indecisive owners. Delaware also had concerns about the time and expense needed to locate owners (for example, orphan sites). Delaware is also concerned about pursuing and negotiating cost recovery agreements with small-scale owners with few or no assets.

MISSOURI

The State of Missouri received USTfield pilot funds on two occasions. In October 2000, Missouri and the City of Kansas City received an USTfield pilots designation from EPA's Office of Underground Storage Tanks (OUST). In 2003, an additional 40 USTfield pilots were named, which included Missouri and the City of St. Louis. Kansas City and St. Louis, Missouri both use 'inventories' and partnerships to catalyze UST reuse efforts.

Both cities worked closely with their States for a successful UST program at the local level. However, through the pilot designation the relationship between the cities and the Missouri Department of Natural Resources and Missouri Petroleum Storage Tank Insurance Fund (PSTIF) enabled all organizations to learn more about best practices for UST cleanup and reuse.

According to both localities and the State, a key to the success of these local initiatives was knowing what was in the local USTfield universe. Kansas City utilized feasibility studies and St. Louis built a site inventory to help make local, state, and federal resources stretch as far as possible.

THE STATE OF MISSOURI DEPARTMENT OF NATURAL RESOURCES (DNR) & PETROLEUM STORAGE TANK INSURANCE FUND (PSTIF)

The State still finds that more cooperation is need with localities, especially small municipalities throughout the State. The participation in the USTfield pilots have given the State agencies experience about how to work with various stakeholders, including local governments, site owners and operators, and other state agencies. State officials have learned a lot about approaching the many different types or localities and local teams. The State would like to take see more communities, especially small municipalities, approach them early in the site investigation process. Small communities have a limited local capacity for UST and brownfield efforts and the state agencies are an invaluable resource.

A specific USTfield pilot lesson that continues to echo within the Missouri agencies, is the value of the efforts like feasibility studies and inventories. These efforts enabled all project stakeholders to be aware of site challenges and how to best allocate resources, like USTfield pilot funds.

Besides receiving USTfield pilot designations, the State of Missouri has also gone through new program changes. Since the original *Recycling America's Gas Stations* report there has been a major policy change at the state level. The Missouri DNR has conducted a Risk Based Corrective Action (RBCA) rulemaking process to expedite cleanups and reduce their costs. The state rulemaking process is nearly complete. In 2004, the State issued a guidance document on the RBCA standard, which is now in daily use and no further action letters are being issued. In 2006, State officials hope to make revisions to the guidance document and implement stakeholder feedback. During the entire process the state has worked closely with a wide stakeholder group that has forged new relationships, especially with tank owners and operators. Other stakeholders involved in the rulemaking included the general public, environmental groups, consultants, private sector, and localities.

For more information, contact State of Missouri's Ken Koon at 573.751.6822 or ken.koon@dnr.mo.gov; or Carol Eighmy at the Missouri Petroleum Storage Insurance Tank Fund at 573.522.2352 or visit www.dnr.state.mo.us/deq/hpw/tanks.htm.

ST. LOUIS, MISSOURI

In the late 1990's, the St. Louis Development Corporation (the "SLDC") began a comprehensive effort to identify and assess petroleum brownfield properties in the City of St. Louis. The SLDC gathered information about possible petroleum brownfield properties from many sources including historical telephone directories and local property records. The SLDC also gathered information from "Neighborhood Stabilization Officers" – a network of local officials in each ward of St. Louis who provide support to residents and businesses on various city-related issues. Upon completion of a "preliminary" inventory of all possible abandoned gas station sites city-wide, the SLDC visited every site to perform a visual inspection for conformation and used a Geographical Information System ("GIS") to map the location of each site. By undertaking a comprehensive effort to gather information about abandoned and potentially contaminated properties, the SLDC was able to develop a reliable inventory of more than 70 petroleum brownfield sites. Approximately 30 of these sites were publicly owned and approximately 40 were privately owned.

The information gathered by the SLDC for the inventory enabled the SLDC to quickly rank the priority of sites for cleanup and redevelopment. The inventory suggested several simple screening criteria. For example, the SLDC decided to focus initially on publicly-owned properties. This criterion eliminated the complex and protracted issues over property ownership that often accompany privately-owned sites. The information in the inventory, particularly the visual site inspection, also enabled the SLDC to focus on sites with run-down infrastructure in need of demolition. By applying these simple screening criteria, the SLDC was able to quickly focus on a smaller number of priority sites.

More importantly, the inventory enabled the SLDC to demonstrate the scope of the brownfields problem to key decision-makers. The inventory and GIS maps demonstrated the areas of the city most affected by petroleum brownfields. The inventory also convinced local officials and state and Federal regulators to support the SLDC's effort to cleanup and revitalize these brownfield properties.

The inventory was the critical tool that mobilized broad-based support for the SLDC's petroleum brownfields initiative. The inventory ultimately led to a program to clean up and reuse USTFields that utilized financial support, technical assistance, remediation services, and staff assistance from the U.S. EPA, the Department of Housing and Urban Development, the Missouri Department of Natural Resources, the state-managed Petroleum Storage Tank Insurance Fund, and the city's Land Reutilization Authority.

Due in large part to the SLDC's thorough inventory of petroleum sites, the U.S. EPA awarded an USTField Pilot grant to the State of Missouri in June 2002 to work with the City of St. Louis to assess and clean up their petroleum-contaminated sites. EPA's USTField initiative complemented the SLDC's inventory of petroleum sites, and served as a critical component of the SLDC's effort to cleanup and reuse abandoned gas stations.

The State of Missouri used EPA USTFields money at four sites in St. Louis. The State (hereinafter MDNR) worked closely with the SLDC to identify priority sites and coordinated with the SLDC in performing site investigations, tank removals, and other remediation where necessary. In addition, the SLDC performed all building demolitions in conjunction with MDNR activities at each site.

- 3603 Cass Avenue: Cass Avenue is a main thoroughfare on the City's north side that is primarily made up of small businesses and store fronts. Land use behind the subject property and in properties not located along Cass are residential (mostly brick multi-family/multi-story structures) with basements, possibly limestone blocks.

  MDNR performed a site assessment in May 2003 and the SLDC demolished the old service station building on this site in February 2004. MDNR removed three tanks from this site in July 2004, and sampled both the soil and groundwater. The soil samples did not exceed target levels for non-residential property, but a GW investigation is needed based on observances of free product. SLDC plans to market the site for future commercial redevelopment.

- 4364 Maffitt Avenue: This property is located on the City's north side at an intersection with both residential and non-residential uses. Properties along the main road are 2-3 stories with storefronts on the main floor. Properties away from main streets are brick multi-family residences. Several abandoned properties are in the vicinity.

  MDNR completed their initial investigation in February 2003. A follow-up site characterization performed in July 2004 found widespread soil and GW contamination extending to the property boundaries. MDNR plans to perform an off-site investigation. SLDC plans to market the site for future commercial redevelopment.

- 3024 Elliott Avenue: The property is a former gas station located on the city's north side in a residential neighborhood. The lot immediately adjacent to the former station is cleared. Several abandoned properties are located nearby.

  MDNR completed their site investigation in February 2003 and SLDC demolished the old service station building in February 2004. The MDNR removed three tanks from the site in August 2004 and because initial soil samples exceeded Tier 1 residential target levels, the SLDC plans to perform additional site characterization and soil remediation. SLDC plans to market the site for future commercial and/or residential redevelopment.

- 4700 Delmar Boulevard: Delmar Boulevard is a main thoroughfare running east and west in the center of the city which is primarily made up of small businesses and store fronts. Land use behind the subject property and in properties not located on Delmar are generally residential (mostly brick multi-family/multi-story structures) with basements. The site is located just outside of an area commonly referred to as "The Loop", which is an ever-expanding urban retail and entertainment district.

  MDNR performed the site assessment in February 2003 and SLDC demolished the old service station building in February 2004. In July 2004, the MDNR removed seven tanks from the site and the soil samples revealed no contamination above the Tier 1 non-residential target levels. However, the site may need additional GW investigation for site closure under MDNR closure requirements. The property will be used temporarily as parking for the adjacent businesses, with future plans to use the site for commercial purposes.

LESSONS LEARNED

The USTFields pilots were a big success. Kevin McGrew of the St. Louis Development Corporation describes the USTFields pilot initiative as "a very positive success." The SLDC worked collaboratively with MDNR and EPA to identify the SLDC's priority sites, and the program provided MDNR with the additional resources to target these sites. The pilot resulted in improved coordination between the SLDC and MDNR, and in fact, MDNR now actively supports SLDC's petroleum brownfields initiative. The pilot also contributed to the SLDC's broader brownfields initiative to leverage resources from multiple agencies and address blight and economic development in several targeted neighborhoods.

An inventory of brownfield sites is a powerful tool. The SLDC's inventory demonstrated the scope, location, and nature of the problem to key decision-makers and the inventory was the critical tool that generated support for the SLDC's effort to clean up and redevelop petroleum brownfields.

Use simple criteria to rank your brownfield sites. The SLDC initially identified over 150 potential petroleum brownfield properties. Staff from the SLDC then visited every site. Because the SLDC identified so many sites, they used several simple criteria to rank their sites for funding. The SLDC focused on:

- properties that were publicly owned;

- properties with obvious blight (e.g., run down infrastructure);
- properties where active redevelopment was proposed; and
- properties located in targeted neighborhoods such as empowerment zones.

These criteria allowed the SLDC to save substantial time and resources both during their site inspections and during the process of ranking sites for funding.

Use GIS to show the locations of your brownfield properties on a map. The SLDC used a Geographic Information Systems (GIS) to visually demonstrate the number and location of their petroleum brownfield properties. The GIS maps gave the SLDC a powerful tool that also assisted in targeting neighborhoods and sites. The SLDC used the GIS maps not just to plan and coordinate their brownfield efforts, but was used to convince local officials and state and federal regulators about the need in St. Louis for additional support to assess and clean up these brownfield properties.

Use the USTFields pilots resources as part of a larger initiative. The SLDC used their inventory of brownfield petroleum properties as the basis for a broader brownfield initiative. Once the SLDC had used their inventory and GIS maps to demonstrate their need, they were able to leverage many other resources to address their brownfield sites. For example, the SLDC used the State's Petroleum Storage Tank Insurance Fund for some sites in their inventory. The Missouri DNR used some of their Leaking Underground Storage Tank (LUST) resources to address some of the SLDC's priority sites, and the SLDC used some of their CDBG resources for other sites. Finally, the SLDC contributed more than $240K from the local "Land Revitalization Authority" for still other sites. By assembling resources from multiple agencies, the SLDC has been able to clean up not just the four sites in the original USTField pilots, but has more than 25 petroleum brownfield sites in various phases of investigation and/or cleanup.

The USTFields Pilots were a big success in St. Louis because the pilot designation enabled the SLDC to launch a broader brownfield initiative focused on a large number of sites that went well beyond the scope of the USTField Pilots. The comprehensive inventory allowed the SLDC to launch a broad program utilizing resources from Federal, State and local entities and the Pilots also encouraged close cooperation between the SLDC and MDNR.

For more information, contact Kevin McGrew in St. Louis at 312.622.3400 or mcgrewk@stlouiscity.com; State of Missouri's Ken Koon at .573.751.6822 or ken.koon@dnr.mo.gov*; or Carol Eighmy at the Missouri Petroleum Storage Insurance Tank Fund at 573.522..2352 or visit www.dnr.state.mo.us/deq/hpw/tanks.htm.*

KANSAS CITY, MISSOURI

Kansas City has used USTfield pilot funds to make local resources have a larger community impact. Participating in the USTfields pilot initiative in partnership with the State of Missouri enabled Kansas City to implement a new local strategy to focus on area-wide approaches that consisted of a feasibility study of the Prospect Avenue and Troost Street Corridors. This initiative allowed the City's funds and resources to go the extra mile to address blighted petroleum brownfield or UST sites in their community. Kansas City, along with the State of Missouri's Department of Natural Resources Tank Division, was one of EPA's original ten USTfield Pilots and received $100,000 in pilot funds.

One of the main goals of the Kansas City program is to be able to present information most useful for decision-makers considering USTfield sites in redevelopment plans. Completing area-wide feasibility studies enabled local officials to build their knowledge base about specific sites and the surrounding neighborhood. Tasks involved in the feasibility studies included Phase I assessments of corridor sites; study of redevelopment potential; identifying resources; and ranking sites for resource allocation.

The Prospect Corridor Study found 47 potential UST sites, which included 23 former and current service stations and 24 garages and other tank sites. The USTfield pilot enabled Kansas City to focus on a few sites along the Corridor, which the utilized USTfield pilot funds. Other sites along the Corridor utilized local funds or EPA brownfield grants.

The success generated from this initial partnership of the Prospect Corridor Study spurred the State to return to Kansas City in 2004 and provide assistance with another feasibility study – the Troost Street Corridor, a main north – south artery in Kansas City. The study began with 203 suspected petroleum release sites, but further investigation only confirmed approximately dozen sites.

One of the major projects that resulted from the second feasibility study is being led by a local education organization. The De La Salle Education Center, along Troost, works to meet the education needs of students with challenges. The expansion of the Center's campus has become the major Troost project resulting from the feasibility study. The Center hopes to make a safe haven in a troubled area and offer an expanded campus with athletic and art facilities. The Center has completed their concept plan and is working to complete their capital campaign. Kansas City is using EPA Funds to complete an area-wide Phase I assessment.

Former auto sales yard in Kansas City is now a public library. (Before and after photos)

Overall, Kansas City has realized that feasibility studies have become an essential part of their petroleum brownfield efforts. The studies allow them to enter their cleanup and reuse efforts with more knowledge about specific sites, utilizing local resources more efficiently.

LESSONS LEARNED

In tackling urban UST sites, Kansas City has encountered challenges to cleanup and redevelopment. Mostly, Kansas City must overcome unregistered and unregulated "mom and pop" sites, aesthetic and economic blight, and lack of resources. The City has also found that overall, UST sites are difficult to redevelop due to their often small size, low value, high transaction costs, and little developer interest. In addressing UST or petroleum brownfield sites, Kansas City has garnered valuable experiences that will assist the City in addressing all sites for redevelopment, which include:

Build contacts within the community. Kansas City works closely with the community and neighbors to find a cleanup and reuse plan that can benefit residents. Community involvement is key for a successful revitalization project.

Focus on sites that have potential. Kansas City has found that working on sites that have potential and will give confidence to the community, elected officials, and UST stakeholders. Simply, nothing succeeds like success.

Work to facilitate the interest that is present to build a success. Engaging the community, private sector, and local officials builds needed support for cleanup and reuse projects in Kansas City.

CASE STUDY: FROM GAS STATION TO OPEN SPACE

In Kansas City, a former gas station at 2600 East 28th Street is being transformed into open space that honors the history of the surrounding neighborhood and a salute to Satchel Paige, one of the best pitchers in professional baseball history. The quarter acre site is being redeveloped into an interim use through the use of city, state, and federal grant dollars, as well as community participation to reflect the history of this Kansas City neighborhood.

Discussions regarding the redevelopment of the site began in 1999, when the Kansas City Brownfields office was approached by a city councilman and the community. The site was acquired by the LCR of Kansas City from the previous owner, who operated a convenience store, but wanted to re-open a gas station with modern tanks. However, the state wasn't comfortable opening another station without community support. The City began negotiations with the site owner and was later able to acquire the property. Tanks at this site were removed using USTfield pilot grant funds. Grant funds also contributed to some cleanup costs, but City funds enabled further cleanup activity at the site. The structures on the property were demolished using city funds.

The community was involved in planning the interim use at this site and wanted a space that would reflect the history of the neighborhood. The site will become an open space with a play area that honors Satchel Paige. Landscaping will be done to resemble a baseball diamond and includes a statue of the famous baseball player. Since this is the site's interim use, many elements, including planters and a mural, are being designed so that they may be moved to another site, at a later date, making full use of limited local funds. The space will also include a children's play area.

Kansas City is using capital improvement funds to make the park a reality using maintenance funds to maintain the space. The final use for this site is now being planned by the community to include a mixed-use development.

For more information, contact Andrew Bracker in Kansas City at 816.513.3002 or andrew_bracker@kcmo.org; State of Missouri's Ken Koon at 573.751.6822 or ken.koon@dnr.mo.gov; or Carol Eighmy at the Missouri Petroleum Storage Insurance Tank Fund at 573.522.2352 or visit www.dnr.state.mo.us/deq/hpw/tanks.htm.

NEW HAMPSHIRE

New Hampshire, one of the ten initial USTfield pilots, has been a leading state in developing and carrying out initiatives focused on petroleum brownfields. Approximately 60 percent of the contaminated sites in the state involve gasoline or heating oil from a leaking UST or aboveground storage tanks. In fact, New Hampshire currently has approximately 1,400 known petroleum contamination sites, with 800 involving USTs. Many of the state's petroleum brownfield sites are small in size and located in urban or commercial areas.

The State has built on its USTfield experience to develop and deploy a combination of tools and techniques aimed at the revitalization of petroleum brownfield sites. In New Hampshire, the Department of Environmental Services (DES), private parties, and public-private partnerships are successfully redeveloping these properties. From 2001 through 2004, DES received approximately $235,000 from EPA's LUST Trust Fund for petroleum projects, which it has used to help address approximately 14 sites across the state, ranging from former gas station properties to a large manufacturing facility. In most instances, the grant money was used as a gap filler to pay for work that was not eligible under other state or federal funding programs.

New Hampshire has shown how such seemingly small efforts can have big impacts on site viability and larger community livability. For example, by simply removing the tanks at several sites using USTfields pilot funds and determining that there was no associated soil or groundwater contamination, the DES was able to close those sites and effectively remove any stigma associated with the suspicion of contamination.

KEY SITES ADDRESSED

The former East Coast Steel site in Greenfield involved the use of USTfield pilot project funds to pay for a tank removal, thereby triggering state petroleum reimbursement funds, which were used to cover soil removal costs. DES also used EPA brownfields targeted site assessment funding to complete a site investigation. Greenfield matched these efforts with money for removal of waste drums and site development funding. The result is a town green that also serves as a community leach field to address septic system failures at numerous nearby homes, and further brownfields redevelopment work with other funding sources may follow.

The Whitney Screw site in Nashua, which got New Hampshire's first EPA brownfield cleanup revolving loan, is being cleaned up and redeveloped to provide expanded facilities for two local businesses, Goodale's Bike and Outdoor Power. Goodale's Bike is New England's largest bicycle dealer, which has been in business since 1919 and at their downtown location for the past 31 years. They combined and relocated their three separate Nashua facilities to the renovated building in July 2002. There they have approximately 12,000 square feet of retail and showroom space, as well expanded service and storage areas. Outdoor Power, the largest John Deere equipment distributor in New England, relocated to meet their expanded needs as well.

This project involved numerous public and private partners; a focal point of the effort was remediation of numerous USTs on site. The strength and credibility of the partnerships resulted in approximately $2,000,000 of leveraged private investments by the developers on improvements to demolish approximately 20,000 square feet of the existing warehouse complex and to renovate approximately 50,280 square feet of building space to house the two new tenants.

LESSONS LEARNED

New Hampshire has shown that funding availability, flexibility, and leveraging capacity are key to a successful effort. State efforts also illustrated the importance of identifying end uses and their redevelopment requirements. And with its USTfield pilot track record, New Hampshire has reiterated a key brownfield lesson -- creativity is key. The State proved willing to innovate as needed with its various petroleum and brownfield-related programs in order to make reuse projects come together.

Finally, the New Hampshire pilot experience has triggered additional private interest in remediating petroleum brownfield sites. For example, in a project recently undertaken in the Seacoast area, state tank fund coverage will enable the cleanup of two separate releases of petroleum products from an UST at a former small-scale metal fabrication facility. The remediated portion of the property will underlie the landscaped entrance and access road to a new commercial office campus that is expected to provide jobs and increase the community's tax base. A "comfort letter" issued by the DES helped provide the parties to the transaction with the certainty that state fund coverage could be transferred from seller to buyer in a manner that would enable the transaction to go forward and position the buyer to be able to coordinate site investigation and remediation work with site development work.

For more information about the New Hampshire UST program, contact Gary Lynn 603.271.8873 or at *glynn@des.state.nh.us*. Visit the State UST website at *http://www.des.state.nh.us/orcb/ustprog.htm.*

V. RAGS TO RICHES - EXEMPLARY EMERGING LOCAL INITIATIVES

U.S. ROUTE 66 INITIATIVE -- ARIZONA

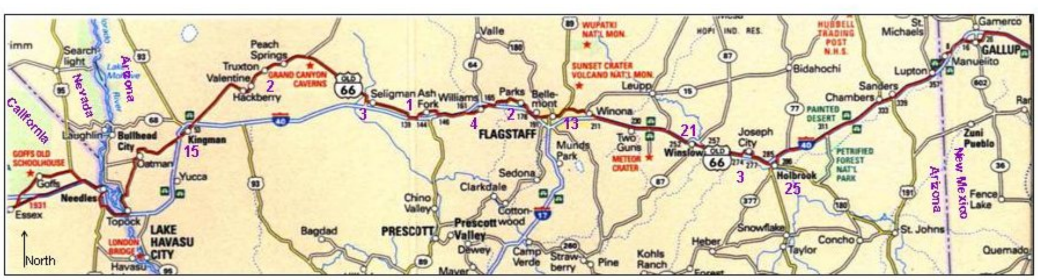
U.S. Route 66 was the first highway connecting Chicago, Illinois, to Los Angeles, California. By 1938, the entire highway was continuously paved, and was in operation until the Interstates passed it by. Of course, a lot of gas stations were needed along the way. They deteriorated and fell into disuse with the shift in traffic to the new highways and many of their tanks leaked into the soil and groundwater. To address this situation, the state of Arizona and the federal EPA have joined forces in an unusual partnership to help sti mulate the reuse of petroleum contaminated sites along the 200 miles of the old Route 66 corridor in Arizona. This inter-governmental collaboration has attracted the interest and participation of several communities along the former "Mother Road."

About 350 sites with leaking USTs or piping have been reported along the historic route; about two-thirds of them have been closed. However, in order to advance the assessment and cleanup of the nearly 100 petroleum contaminated brownfield sites that remain open, including orphan sites, the Arizona Department of Environmental Quality (ADEQ) developed the Route 66 Initiative. It aims to work with owners, consultants, and the several communities to move many of these sites into the cleanup phase and eventual closure. It would also like to expedite LUST case closures before the State assistance fund terminates in 2011.

Several cities and towns along Route 66 are part of the initiative. Since August 2004, ADEQ has concentrated on Winslow, Holbrook and Joseph City because of the large number of UST releases that have affected groundwater in the area. However, beginning in May 2005, the effort was broadened, and case managers were assigned to sites in other communities along Route 66 west of Winslow.

The Route 66 Initiative intends to galvanize support for the cleanup and reuse of petroleum contaminated brownfields by educating various stakeholders about the issues and opportunities of tank site reuse, as well as cleanup technologies and methods. Its regional approach is unique. To this end, EPA and ADEQ will conduct public meetings, enhance coordination between state and local officials, and communicate options for cleanup and reuse to site owners and operators. They will also work to identify possible reuses of these sites, and promote their implementation. As part of this overall effort, the Route 66 Initiative team went "on the road" with kick-off meetings in Winslow and Holbrook in late January 2006.

Map of Route 66 initiative.



Number of Open LUST Sites 40 miles December 2005

For more information, please visit http://www.azdeq.gov/environ/ust/66/.

A HISTORIC INTERPRETIVE CENTER -- ROSALIA, WASHINGTON

Rosalia, Washington, a rural town of about 600 residents, was one of the second round USTfield pilots and one of the smallest communities in the nation to participate. Their project focused on a former Texaco gas station, a 1923 vintage historic structure that had been abandoned more than 20 years, located in the middle of the Town's small business district. The station had leaking USTs, and required cleanup and rehabilitation. Cleanup work was done in 2003 and as a result, in June 2004, the Town officially opened their new downtown visitor's center.

For years local citizens considered strategies to invigorate the local economy and bring attention to the history of the community. Chamber of Commerce discussions included ideas about utilizing the quaint, old Texaco gas station, considered a symbol of downtown. This had also been the site of a livery stable, a blacksmith's shop and in the 1870s, a stop for the Pony Express. Eventually, the Chamber and a local citizens committee identified the site as a candidate for a visitor's center and historical interpretive center.

In October 2001, a local citizens committee contacted the Washington State Department of Ecology's Toxics Cleanup Program (Ecology) asking what resources might be available to resolve potential cleanup issues at the site. In 2002, using information developed by State Department of Ecology and the local community group, the site was nominated for and received an USTfields pilot grant of $33,000. Funds from this grant provided for UST removal and the cleanup of associated petroleum contaminated soils. Five USTs and associated piping were removed from the site in June 2003. Three of these USTs were the original tanks from 1923. Ecology provided an additional $54,000 to supplement the cleanup associated with the tanks and to address non-tank related contamination associated with an adjacent automotive service building.

With cleanup activities on the site completed, local volunteers immediately began the cleaning, painting and structural repairs to the historic building. Soon after site clean-up work started, the community obtained funding for the restoration of the station building and rehabilitation tax credits were also used. In the fall of 2003, Rosalia was awarded a community development grant from Whitman County. Also, in a demonstration of regional cooperation, a nearby community offered a portion of its own grant money for the Rosalia project.

The Visitor Center. Before and after photos.

The visitor's center recently opened, and now serves as an interpretive center for the nearby Steptoe Battlefield, the site of a historically significant battle in 1858 between US Army soldiers and several regional Native American tribes.

It has taken the extraordinary efforts of community volunteers to keep this project moving forward. In addition to cleaning, painting and pounding nails, local volunteers have been responsible for project planning, compiling historic photos, documents and site information, local fund raising efforts, researching grant funding opportunities, presenting the project to local, county and state government agencies and talking with historic and environmental interest groups. And in what may be a brownfield first in terms of creative financing, the mayor persuaded the Washington Department of Corrections to have inmates manufacture commemorative license plates, which were sold as part of the fund raising efforts. At the annual EPA brownfields conference in 2005, Rosalia was awarded a Phoenix Community Impact Award in recognition of the Town's efforts with the Texaco site.

For more information, contact the Rosalia Visitors Center at 509.523.4200 or www.rosaliavic.org.

SHERMAN PERK -- MILWAUKEE, WISCONSIN

Sherman Perk, a successful independent coffee shop developed on an odd-sized, triangular shaped petroleum brownfield site, is located in the Sherman Park area, one of Milwaukee's most diverse neighborhoods. The building on the site, which was renovated into the coffee shop, was built in 1939 and operated as a gas station by two generations of the same family for 50 years, until the last family member retired and sold the property in 1989. Unfortunately, subsequent owners let the site sit vacant for the following ten years, and it slipped into tax delinquency and was boarded up.

In the mid-1990s, a local community group, Grasslyn Manor, launched the process to register gas station with the City of Milwaukee's list of Historic Properties. The building was one of the few remaining unaltered examples of a Streamlined Moderne architectural style gas station in the Midwest, a feature which the group felt could give it a unique commercial advantage. Grasslyn Manor tried to acquire the property with the intent of converting it into a coffee shop -- and even came up with the name "Sherman Perk" that would survive their efforts -- but the group was unsuccessful. But it had laid the foundation, and identified a market, for this type of revitalization.

In spring of 2000, Bob Olin, current owner of the site, developed an interest in the property primarily because of its historic value. But the site had serious problems. The city of Milwaukee had ordered the gas station building demolished because of the hazard it posed; the structure was seriously deteriorated and the site was contaminated due to fuel leakage over the years. In addition, the site also bore a significant financial burden which had discouraged any developer to come forward -- the property was nine years tax delinquent.

But Olin persevered, and in mid-May, 2000, he attended a meeting of the Sherman Park Historic Preservation Council to express his interest in reviving the idea of developing a coffee at the site. Olin was aided in his effort by a new Wisconsin state law, in fact promoted by Milwaukee officials, designed to encourage reuse of tax delinquent, contaminated properties by linking cleanup and reuse to tax foreclosures, assigned tax liens, and a tax forgiveness process. This statute became the tool that facilitated the saving of the gas station, and the coffee shop project was the pilot case under this new law.

In the case of Sherman Perk, the parties to the foreclosure included the city of Milwaukee and the Wisconsin Department of Natural Resources. The city's role was to commence with the tax foreclosure and then place the property in the hands of a developer (in this case, Mr. Olin) who would do what was needed to get the property back into tax-paying status. DNR's role was to oversee the environmental remediation of the property, which it did through the state voluntary cleanup program. After five months of effort, the statute was applied and the petroleum contaminated Sherman Perk site was transferred to Mr. Olin for cleanup and redevelopment. .

As a small, community-based developer, Olin faced critical financial hurdles in getting his project underway. He worked with a variety of public agency partners to structure a package of financial incentives that made Sherman Perk a reality. The city and county of Milwaukee provided $30,000 in grants to help cover the costs of site cleanup, including removal of underground storage tanks, and the Wisconsin Department of Commerce awarded $100,000 through its brownfield revitalization program to help finance redevelopment. A key component of the "financing" proved to be the hundreds of hours of sweat equity provided by friends, and neighborhood groups, who clearly wanted this project to succeed in their community.

The grand opening of Sherman Perk took place on August 20, 2001, and the coffee shop has become a thriving neighborhood anchor. Olin recently received confirmation from the National Park Service that the restoration met standards for historic preservation, and soon the property will be listed in the National Register of Historic Landmarks. Sherman Perk has also received a Mayor's Design Award in 2002.

Before

After

In 2003, Sherman Perk's owner paid the greatest tribute possible to the opportunities and process of converting an abandoned petroleum brownfield site -- he did it again! Bob Olin recently opened a second coffee shop at an old gas station site in the historic Kletzsch Park neighborhood in Glendale, Wisconsin (not surprisingly called Kletsch Perk) and is looking for more sites for additional outlets.

For more information, contact Bob Olin at 414.875.7376 or www.shermanperk.com, or Michael Prager, Land Recycling Team at the Wisconsin Department of Natural Resources at 608.26.4927 or Michael.prager@dnr.state.wi.us.

CHEVY PLACE --- ROCHESTER, NEW YORK

The 2.2 acre former Hallman Chevrolet automobile dealership and service garage, now known as Chevy Place, is located in downtown Rochester. This site was redeveloped for primarily for residential purposes. Some $10.6 million was invested in Chevy Place, for site preparation and construction of 77 new residential townhouses and apartments. Chevy Place also included the construction of a below-grade parking garage, and the renovation of the historically significant Hallman Chevrolet showroom as a restaurant.

From 1930 until 1990, the site was one of the largest new car dealerships in Rochester. The dealership included a large, multi-bay service and repair garage, as well as a gasoline station. The site was vacant from 1990 until the city purchased the property in 1996. The project, which ultimately would take five years from start to finish, had to overcome several challenges to the city and the developer, including shifting redevelopment plans, historic preservation restrictions, street reconstruction, and funding constraints – and these were in addition to the environmental concerns at the site, which included several abandoned USTs.

Total cleanup project costs, including both phases of remediation, were approximately $750,000. Rochester financed the initial phase of the cleanup with part of its HUD Community Development Block Grant allocation. The developer funded the second phase of the cleanup. In addition, the city assisted Home Properties with environmental costs via direct reimbursement for certain disposal costs, by providing the company with a $2.35 million dollar loan for the redevelopment project, and reducing the purchase price of the property due to the environmental cleanup costs.

But both city and developer agree with project's benefits outweighed the hassles and were worth the investment. Chevy Place is Rochester's first new downtown apartment complex in 20 years. All 77 units are rented. Chevy Place's most distinguishing architectural feature is its Art Deco showroom, which remains standing due to its historic site designation. The former showroom has been renovated as a 24-hour coffee shop. The apartment complex is located on Rochester's east end cultural and theater district, near the Little Theatre, the Eastman School of Music and the Eastman Theatre, and several restaurants and museums. This project has been a catalyst for additional private development in the area.

For more information, contact Mark Gregor, Environmental Manager for the City of Rochester at 484.428.5968 or mgregor@cityofrochester.gov.

VI. CONCLUSION: WHAT HAVE WE LEARNED ABOUT THE USTFIELDS INITIATIVE AND WHAT HAS IT ACHIEVED?

Four years after its inception, EPA's USTfields pilot initiative is changing the way in which states, cities, neighborhoods, and the private sector think about abandoned gas stations and other petroleum brownfield sites. Like any new initiative, the USTfields pilot program faced some kick-off difficulties that typically accompany any new initiative and some thorny issues remain.

However, sites are being cleaned and reused, and new development is transforming old corner gas stations and other petroleum brownfield sites into new enterprises and community amenities. This is taking place because the pilot initiative has been instrumental in changing the mind set of how states and communities approach petroleum contaminated sites. A more comprehensive and proactive redevelopment approach requires new types of practical partnerships, and can not be achieved with a traditional, reactive UST enforcement mentality. Many of the initial pilots also succeeded in devising good, workable reuse strategies to bring petroleum brownfields into the traditional economic and community development fold. This initiative will go a long way towards success on the ground if these strategies can evolve to become real estate development opportunities with an environmental twist, rather than simply environmental impediments.

This report reaffirms earlier findings in the *Recycling America's Gas Stations* report, that the USTfield pilots enhanced state and local partnerships, and increased interagency connections, communications, and outreach efforts. This report also underscores the importance of a full range of community, agency, and private sector stakeholder involvement to address petroleum contaminated sites.

If tank site reuse is to succeed in achieving its full potential as a community recovery and growth initiative, then a strategy for reuse must be framed that builds on the lessons identified in this report. Such a strategy must encourage public-private partnerships and address investor and developer concerns in a way that is environmentally responsible.

In short, abandoned gas stations and other UST facilities remain a national concern. They are testimony to the many changes in local and world markets. The combined efforts of the public and private sectors will be needed to bring prosperity back to these sites. While the obstacles to revitalize old gas station properties are formidable, they are not insurmountable. From rags to riches, the benefits of doing so can be considerable.