

**Fiscal Year
2018**



Hazardous Waste Management Fund

A Report to the General Assembly



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EEC MANDATE

This report has been prepared as required by KRS 224.46-580(13)(c). The purpose of this report is to provide information related to the commonwealth's hazardous waste management fund (HWMF). Specifically, the report includes information related to the expenditures and revenues of the hazardous waste management fund for fiscal years (FY) 2017 and 2018.

KRS 224.46-580(13)(c): "The cabinet shall file with the Legislative Research Commission a biennial report, beginning two (2) years after July 15, 2008, on the revenues and expenditures of the fund."

HISTORY AND PURPOSE OF THE FUND

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) was enacted by Congress in 1980 in response to the threat of hazardous waste sites. The two sites that caused the need for this legislation were Love Canal in upper New York state, and A.L. Taylor, Distler Farms (also known as the Valley of the Drums) in Shepherdsville, Kentucky. Precipitated by the discovery of the A.L. Taylor, Distler Farms site, the Kentucky State Superfund Program was initiated in 1981. There have been more than 6,258 sites that have been investigated, characterized, cleaned up, or are being investigated, remediated, or under long-term management since the program started. The Superfund Program maintains an inventory of these Superfund sites (See Figure 1).

In 1980 the General Assembly created the HWMF to provide the Energy and Environment Cabinet with the funds necessary to protect the health of the citizens and environment of the commonwealth from threats associated with releases of hazardous substances, pollutants, and contaminants. Since then, over \$76 million have been spent remediating more than 598 contaminated sites, making the Commonwealth of Kentucky a cleaner and safer place to live. In FY 2017 and 2018 the cabinet registered 155 new Superfund sites and oversaw remediation of 246 sites. In addition, the cabinet performed 655 technical site reviews, supervised managed closures for 241 sites, and designed and managed state-lead actions at 28 sites, expending over \$8 million. Additionally, the cabinet finalized state-lead actions that resulted in closing five state-lead sites.

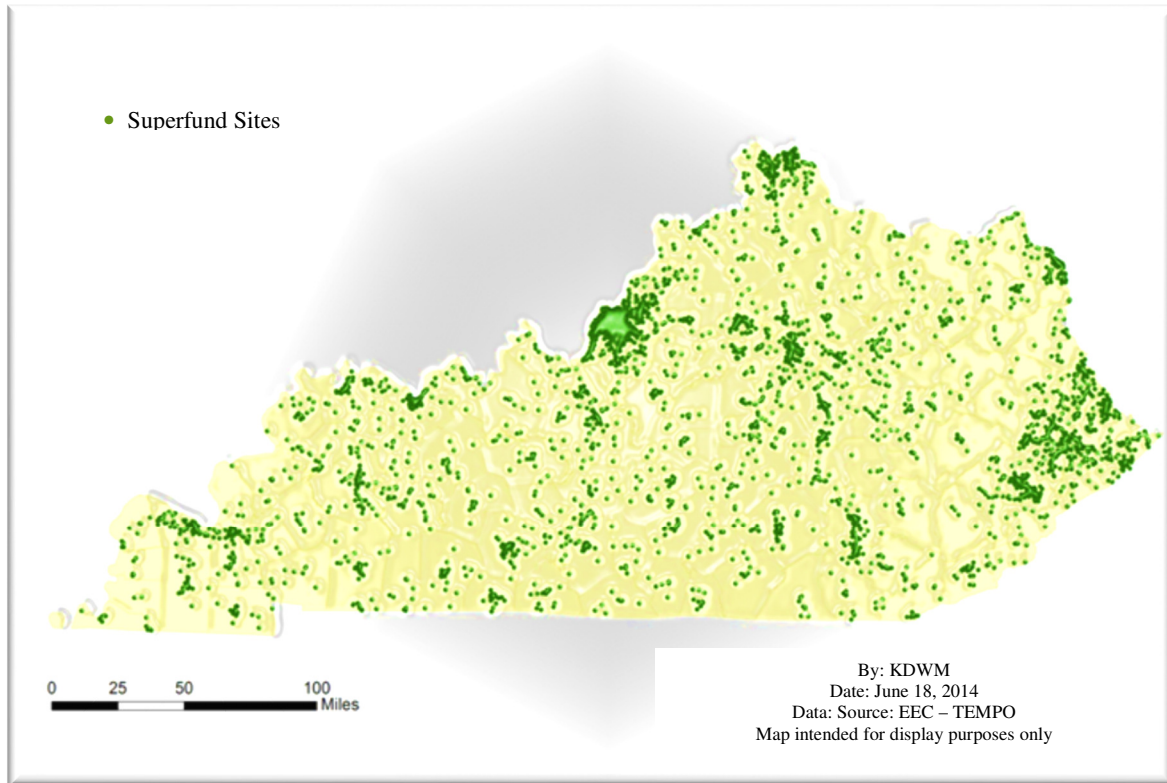


Figure 1: Active, Managed, and Closed Superfund Sites in Kentucky

The HWMF is the sole source of funding to clean up sites where a release of hazardous substances, pollutants or contaminants has been discovered and no viable responsible party is available.

Specifically, HWMF funds are used throughout the commonwealth for:

- Response to emergencies with releases of hazardous substances, pollutants, and contaminants;
- Assessments and remediation of contaminated sites where a viable responsible party cannot be identified;
- Technical reviews and oversight of state-lead and responsible party-driven remediation projects; and
- Provision of core funding for the Kentucky Pollution Prevention Center's (KPPC) technical assistance and outreach services as part of the University of Louisville's J.B. Speed School of Engineering.

The HWMF has cumulatively provided more than \$8.56 million in funding for the Kentucky Pollution Prevention Center (KPPC). KPPC was established in 1994 to provide technical

assistance to business and industry and promote pollution prevention technologies and procedures. The HWMF contributes a percentage of the assessment fee receipts to KPPC annually in accordance with the statute KRS 224.46-330 (Appendix, Table 1). For specific activities performed by KPPC, visit kppc.org.

During the 2008 legislative session, the HWMF was extended through June 30, 2016, and a requirement was added that tasks the cabinet to submit a biennial report regarding HWMF revenues, related activities, and expenditures. The legislation was extended again during the 2015 session to extend the HWMF through 2024. This biennial report is required by KRS 224.46-580(13)(c) and includes information from FY 2017 and FY 2018.

REVENUES

The HWMF sources of revenue include the hazardous waste generator assessment fees, transfers from the Petroleum Storage Tank Environmental Assistance Fund (PSTEAF), Brownfield Redevelopment Program application fees, interest earned on the HWMF account, cost recoveries (monies recovered from responsible parties), and returns from investment and capital closeout accounts (Appendix, Table 1 and Figure 2).

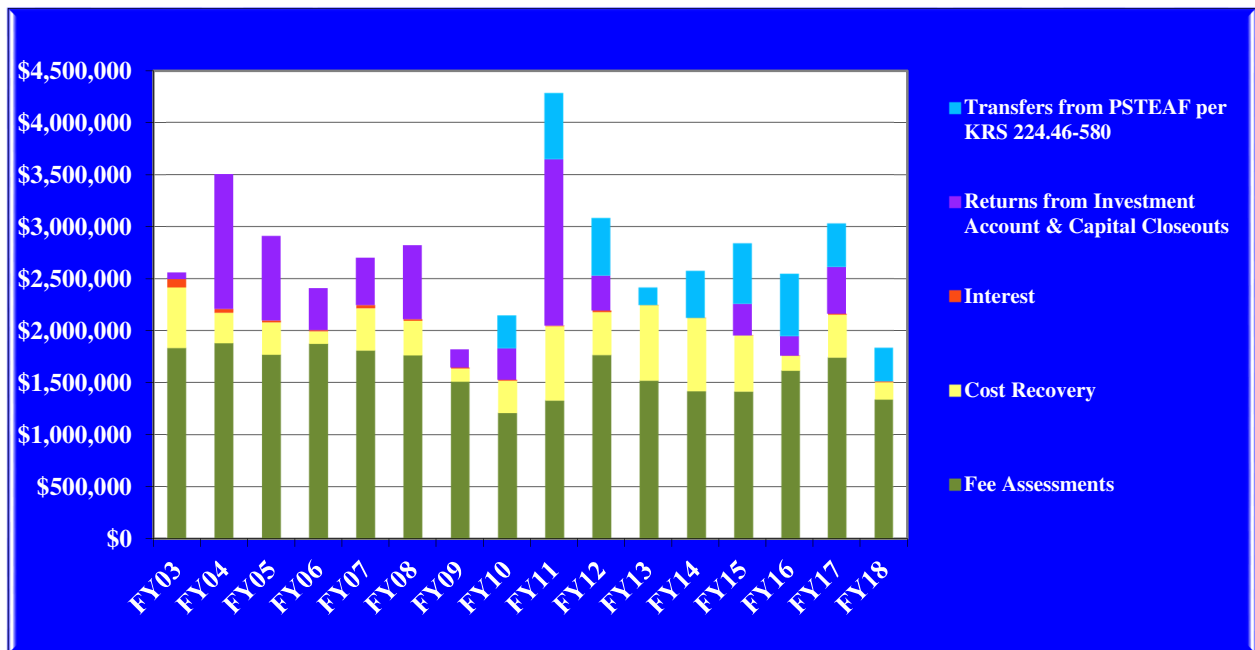


Figure 2: HWMF Revenues for FY 2003 – FY 2018

The hazardous waste generator assessment fee is authorized as established in KRS 224.46-580(8), and is collected from generators of hazardous waste at the rate of one and two-tenths cents (\$0.012) per pound for liquid waste and two-tenths of a cent (\$0.002) per pound for solid waste.

During the last twenty years there has been a steady decline in revenue generated annually through the HWMF assessment fee (Figure 3).

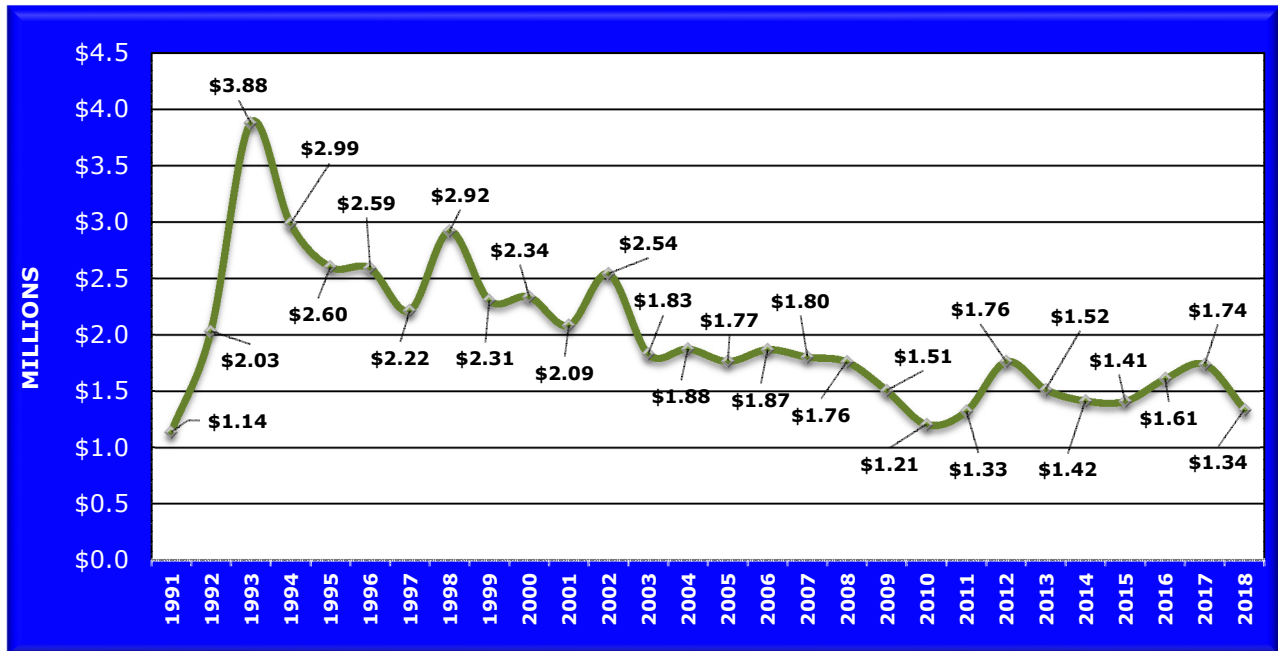


Figure 3: HWMF Assessment Fee Revenues FY 2003 – FY 2018

Factors which contribute to the decline in assessment fees include amendments to KRS 224.46-580 that provide these exemptions:

- Emission control dust and sludge from the primary production of steel that is recycled by high temperature metals recovery or managed by stabilization of metals, effective 2004;
- Assessment fee waiver granted for hazardous waste generators owing less than fifty dollars (\$50), effective 2006; and
- Waste that is delivered from the generator to an industrial boiler or furnace and burned for energy recovery shall be assessed at half the rate of the assessment, effective 2008.

Other declines in revenue can be explained by companies filing for bankruptcy, companies moving their operations out of state, a decline in the number of generators, and increases in waste minimization and recycling efforts. In recent years, the cabinet's cost recovery efforts have assisted in offsetting some of the decline in assessment fee revenue.

EXPENDITURES

The cabinet utilizes HWMF monies to provide technical reviews and oversight of state-lead and responsible party-driven remediation projects. Many of these projects result from previous heavy industrial activities such as wood treatment, metals plating, chemical production, and dry cleaning.

The cabinet directly manages (state-lead) the cleanup of contaminated sites if there are no viable responsible parties. When a significant amount of remediation is necessary, a capital project account is created within the HWMF (Appendix, Table 3). A capital project may include site investigation, site remediation, or may be a declared environmental emergency; typical costs range

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from \$20,000 to several millions of dollars per site. The costs may extend over multiple years, and do not include expenses for long-term monitoring, maintenance, operation, or costs for resources required at sites unable to achieve acceptable clean-up levels (i.e. unrestricted use). Project scope reductions or completions below projected costs will result in transfers of dollars back into the HWMF. Currently, due to limited funding, capital project expenditures are very minimal (Appendix, Table 4). HWMF expenditures have declined in direct proportion to the decline in revenue available (Appendix, Table 2 and Figure 4). Additionally, in FY 2017, due to cabinet emergency declared response, expenditures significantly exceeded revenues. As a result, and due to the nature of the environmental emergencies declared necessary, government funds were required to cover the costs. These funds exceeded an extra *\$4.84 million*. Therefore, funds actually expended for hazardous waste state-led operations in FY 2017 totaled in excess of *\$7.64 million*.

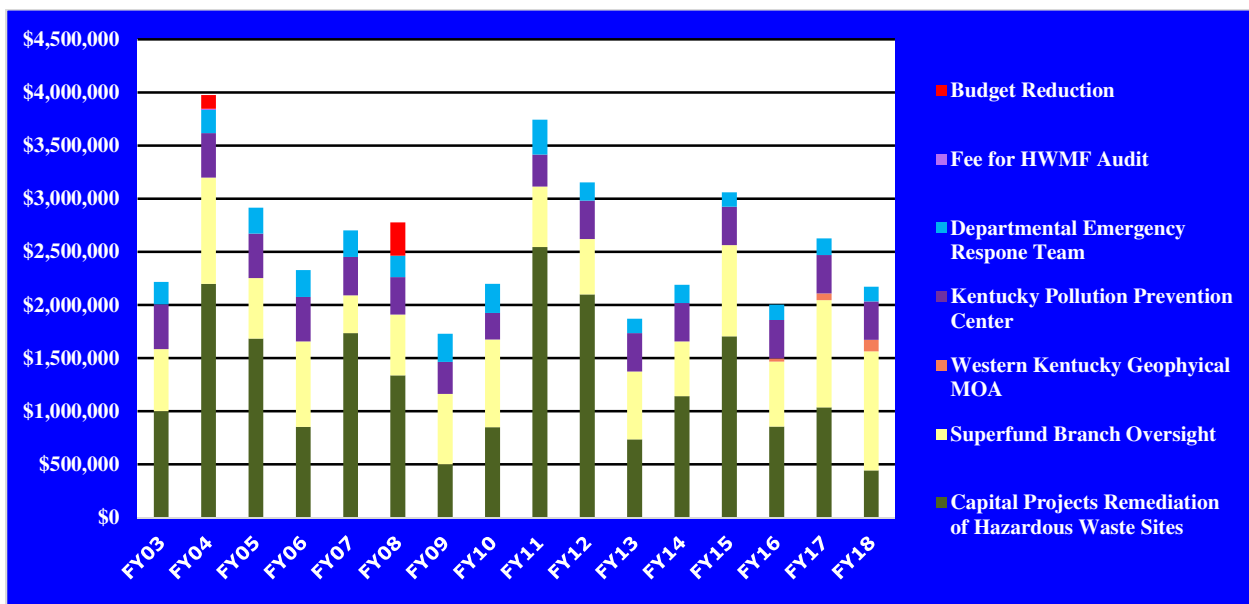


Figure 4: HWMF Expenditures FY 2003 – FY 2018

The cabinet provides a service to the citizens of Kentucky through Technical/Professional oversight activities ensuring emergency response and cleanup projects are properly conducted. Cabinet personnel respond in numerous methods including:

- Contracting for and conducting state-lead cleanups in the role of an absentee responsible party;
- Providing assistance to responsible parties to aid in the cleanup of their sites, and
- Active involvement in emergency responses.

The HWMF is also used to fund oversight and maintenance activities on federal Superfund sites that have been delisted by the United States Environmental Protection Agency (EPA). These sites are known as National Priority List (NPL) sites. The expenditures are likely to increase over time as more federal sites are delisted or reach the legal lifespan of federal oversight.

Large capital projects are a key component of state-lead oversight that the cabinet performs, but small, remedial actions can be equally important; they constitute a substantial volume of the remediation work performed. These corrective actions include anything from site characterization to remediation. Sites requiring cleanup can range from causes such as wire burning operations, collection and disposal of mercury waste and transformer spills, to industrial chemical spills, and the removal and disposal of abandoned drums. Some of the contaminants discovered at these sites include toxic heavy metals, including lead, arsenic, and mercury, or toxic or cancer-causing chemicals, such as polychlorinated biphenyls, benzene, and trichloroethylene. These sites have a strong potential to be immediately dangerous to local residents, wildlife, and vegetation, and they pose long-term threats to both the public and the environment. To compound the problem, these sites are typically located along highways or waterways, which are easily accessible to people.

The Environmental Response Team (ERT) is tasked with responding to environmental emergencies including petroleum releases, landfill fires, train derailments, tanker truck releases, industrial chemical releases, and many other environmental issues requiring immediate attention. During FY 2017 and FY 2018, ERT received 23,222 notifications; 816 required an emergency response. Of those, seven were declared an emergency and addressed using HWMF monies.

Superfund site remediation and responses to emergencies throughout the commonwealth are costly (Figure 5).

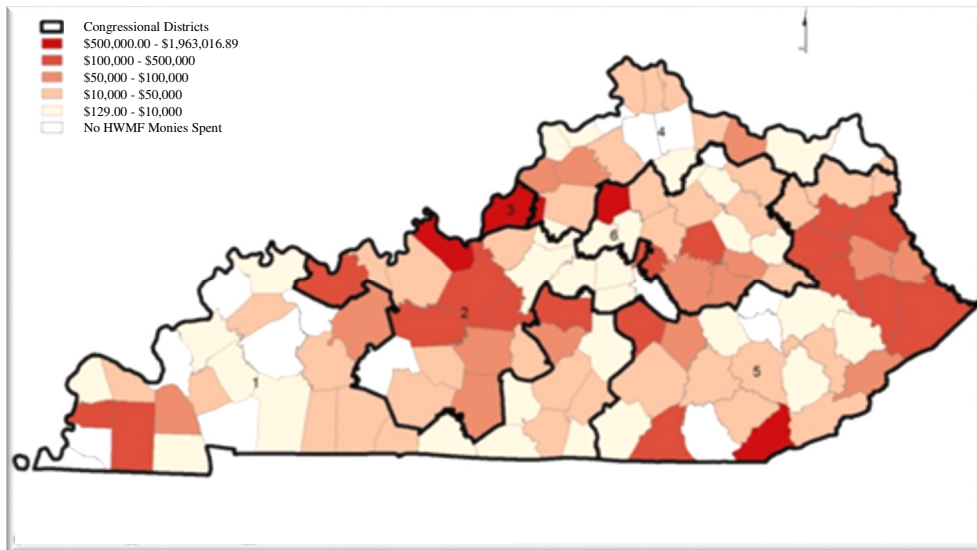
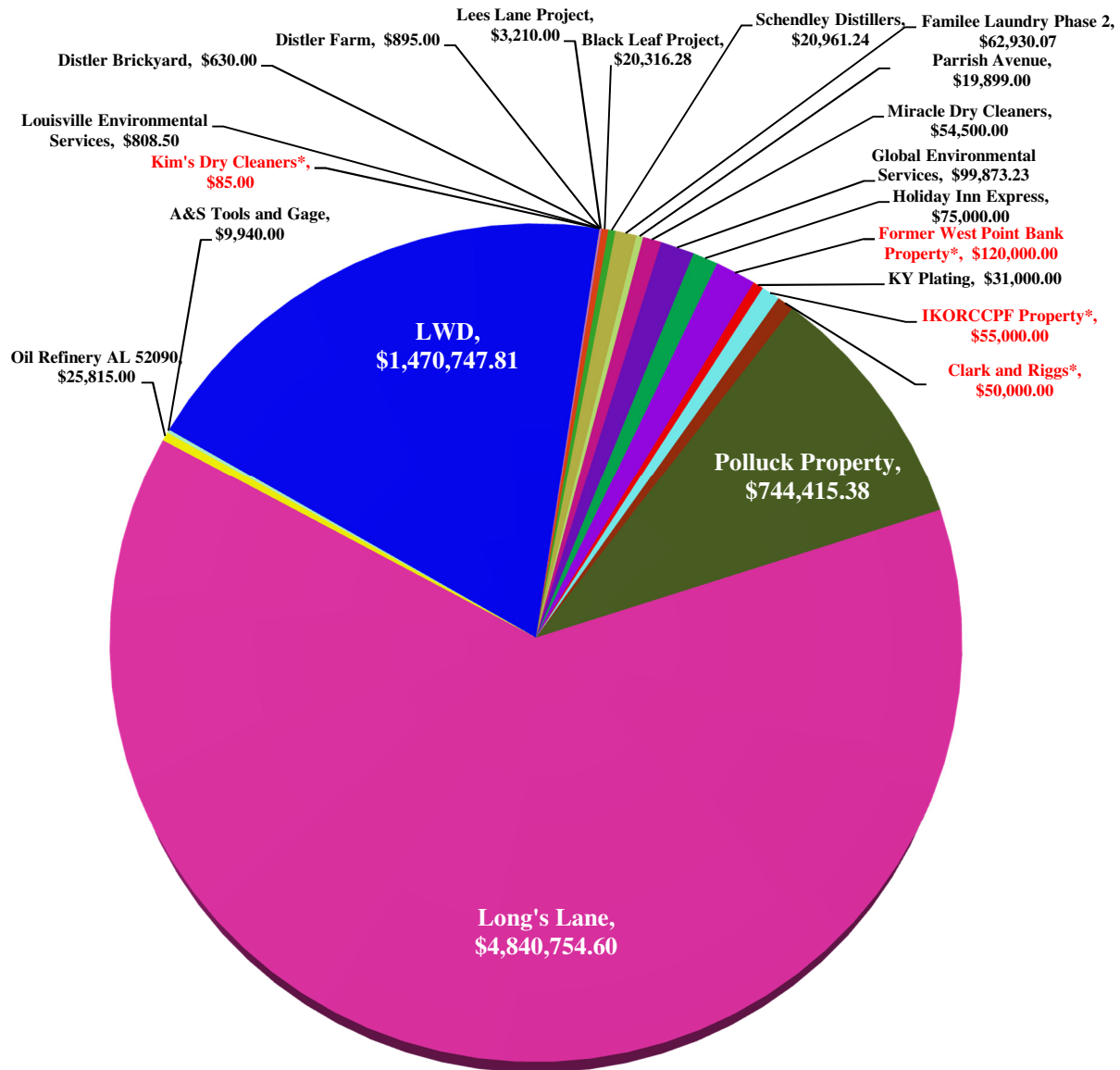


Figure 5: Superfund and Emergency Response Site Expenditures by County FY 2007 – 2018

CAPITAL PROJECTS

Table 4 (Appendix) and Figure 6 summarize capital projects with expenditures for the period of FY 2017 and FY 2018. These projects have ongoing remedial activities necessary to protect human health and the environment. Several projects are presented on the subsequent pages of this section of this report.



*** Allocations for these properties have not been disbursed at this time.**

Figure 6: HWMF Active Capital Project Expenditures FY 2017 – FY 2018

*Louisville Environmental Services
Louisville, Jefferson County
Expenditures FY 2017 and FY 2018 – \$14,454.24*

Louisville Environmental Services (LES), Inc. is a 27-acre property located along the Ohio River. A series of petroleum distribution and refining companies operated on the property from the 1940s until the mid 1980s. LES took ownership of the property during 1993 for use as a hazardous waste disposal facility. The company owner died in 2000 before the facility was permitted to treat and dispose of hazardous waste, and was abandoned.

During 2001, the Environmental Protection Agency (EPA) received reports that some of the above ground tanks were leaking. Because no viable responsible parties were available to address the issues, the EPA conducted an emergency removal action. Between 2001 and 2004, the EPA emptied the storage vessels and razed most of the remaining structures. The EPA also removed much of the remaining underground piping, which exposed considerable soil contamination. The EPA removed areas of gross soil contamination and installed groundwater monitoring wells. Surface soil samples collected by EPA and the cabinet detected the presence of lead and polycyclic aromatic hydrocarbons (PAHs) in excess of allowable residential and industrial standards. Although groundwater contamination was detected, the EPA concluded its actions in 2004 as no free product was found in the subsurface.

During 2008, the cabinet investigated reports of oily seeps along the shoreline of the Ohio River. Analysis indicated that elevated levels of petroleum compounds, including benzene, were present in water seeping into the Ohio River. The cabinet established a capital construction account to address the ongoing release as a state-lead project. The firm, AMEC Foster Wheeler (AMEC), was selected in 2010 as the state-lead engineering firm to address the site.

AMEC conducted a series of soil, groundwater, and geophysical investigations to determine the subsurface conditions responsible for the contaminated seeps. The process was occasionally halted when funding was prioritized for other state-lead projects. By 2016, sufficient investigation had been conducted in order to support the design of a remedial plan.

AMEC evaluated several remediation approaches based on the site conditions, costs, and the project's goals. The cabinet selected a remedial option that injects a subsurface "wall" of an activated carbon slurry to trap the petroleum compounds before they could reach the Ohio River. The carbon material contains nutrients and other compounds that facilitate degradation of the contaminants into nontoxic by-products. AMEC finalized the remedial action plan July 2017.

Capital Construction Account C4Q7

Account Balance: \$25,069 remaining in 701 (investigation) monies and \$305,000 in 703 (cleanup monies). \$2191.50 remaining in E166 (lab expenses) monies.

Status: AMEC is working with the Finance Cabinet to develop bid specifications for the remediation portion of the project. The completed specifications will be posted for bids by qualified remediation contractors.

Photo 1 shows petroleum seeping from the shoreline of the Ohio River.

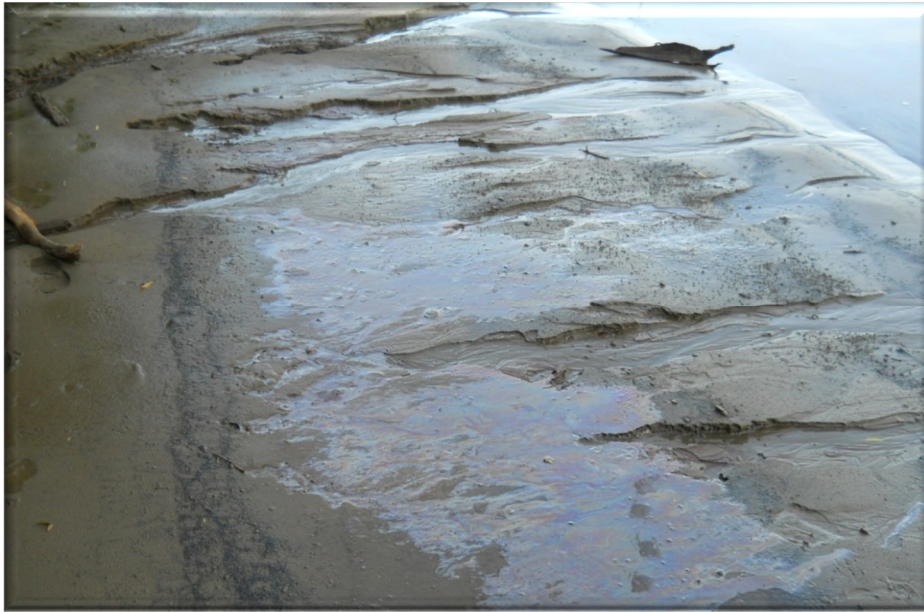


Photo 1: Petroleum-impacted groundwater on Ohio River shoreline

***Western Kentucky Wildlife Management Area (WKWMA) Wire Burn Site
Kevil, McCracken County***

Expenditures FY 2017 and FY 2018 – None (internal prescreening work – account created see below)

This site is located within the WKWMA. During the early 2000s, KY Fish & Wildlife employees reported a number of barren areas within a wooded portion of the WKWMA. These areas were littered with small pieces of various debris including metal fragments, broken glass, and ceramic insulators. This appearance suggested that wire and other electrical equipment were burned in the past for recovery of copper. Soil samples collected by the cabinet detected elevated concentrations of several metals, notably lead, as well as polychlorinated biphenyls (PCBs).

The cabinet has been unable to determine the parties responsible for the contamination. Historic aerial photographs suggest the burning could date back to the 1980s. Although the area is relatively isolated, hunters and other recreational users may be exposed to these contaminants. Game and other wildlife are exposed when foraging through these areas. The contaminants do not readily degrade and surface runoff will further expand the impacts over time. In late 2016, funding became available to establish a capital construction account to address this contamination as a state-lead project.

The Superfund Branch further investigated the site using its X-Ray Fluorescence (XRF) units. An XRF allows real-time measurements of metals concentrations in soil. Fortunately, the investigation has indicated the contaminants extend only a few inches below ground surface. However, the horizontal extent of the contamination has not been fully defined. Although the general limits are

known, further XRF screening will allow more precise definition of the impacted area which will reduce the area that will require cleanup. These efforts will eliminate the expense of hiring a private firm to conduct the investigation, enabling most of the funds to be used for the actual soil removal and restorative work.

Capital Construction Account: C83H

Account balances: \$20,000 in 701 (investigation) monies, \$75,000 in 703 (cleanup) monies, and \$1,000 in E166 (lab expense) monies.

Status: The Superfund Branch is conducting additional soil screening inspections in order to fully define the horizontal and vertical extent of the impacted soil. A March 2018 inspection located two additional suspected areas that will be included in the investigation.



Photo 2: WKWMA wire burn site, former wire burn locations

The bare spots in Photos 2, 3, and 4 represent former wire burn locations. These locations cannot support sufficient plant roots to retain fallen leaves. However, the contamination has spread beyond the visible burn areas where it was detected on the ground surface below the forest leaf litter.



Photo 3: A close-up showing typical debris in WKWMA burn area



Photo 4: Additional debris in WKWMA burn area

Louisville Dry Cleaning Sites
Louisville, Jefferson County
Expenditures FY 2017 and FY 2018 – \$17,671

The Superfund Branch contracted an environmental engineering firm to investigate and remediate three properties in Louisville that were contaminated by historic dry cleaning operations. In all three instances, environmental site assessments conducted by prospective purchasers discovered groundwater contamination from tetrachloroethylene, a common dry cleaning solvent.

Two of these properties were eventually purchased by entities that obtained liability protection through available state or federal Brownfields legislation. Such legislation allows these entities to own the impacted properties, but not become responsible for investigation or cleanup that might otherwise be required of a responsible party. The owners are required to utilize the properties under a cabinet-approved property management plan. This management plan allows the property to be used in a manner that does not contribute to the existing problem or expose the public and environment to unacceptable harm. However, such plans do not address the actual problem or prevent exposures that might occur on adjoining properties.

The third property was discovered by a party that purchased a property located next to a former dry cleaning company. This adjacent tract was found to have elevated tetrachloroethylene levels in the groundwater that likely migrated from the dry cleaning parcel. The previous dry cleaning operations closed several years ago and are no longer viable responsible parties. The current owner of the dry cleaning site leases the building for storage purposes. The cabinet has directed the owner to address the contamination. However, the party has not been responsive and does not appear to be financially viable.

The cabinet ultimately decided to address the contamination at all three sites using funds set aside in the HWMF. In 2017, the cabinet contracted Western Kentucky University (WKU) to conduct geophysical surveys on the three sites. These non-intrusive investigations provided information regarding the subsurface geology and likely migration paths for the contaminated groundwater. The three sites, located in Louisville, are geologically similar; therefore, the cabinet contracted with a single environmental firm to investigate and remediate all three sites. Bundling the sites into a single contract should provide substantial cost savings compared to establishing and managing three separate contracts with different firms.

Capital Construction Account: C2PW, C83A, and C83G

Account balances (total): \$208,740 in 701 (investigation) monies, \$150,000 in 703 (cleanup) monies, and \$915 in E166 (lab expense) monies.

Status: A consulting firm, AMEC Earth & Environmental (AMEC), was selected December 2017, in accordance with Finance Cabinet procedures. The contract negotiation process is currently in progress between the Finance Cabinet and the selected firm. Upon contract approval, the

Superfund Branch will work with AMEC to develop a plan to investigate and remediate these impacted sites.

The former dry cleaner business was located at the end of the strip mall visible in Photo 5. The survey provided information about the subsurface conditions along the length of the survey cable. This information will be used to plan future sampling efforts.

A test excavation revealed a contrast between highly contaminated surface soils (dark color) and ‘clean’ (lighter) soil beneath. Pieces of plastic are used to keep the XRF unit clean between screening locations.



Photo 5: WKU Staff onsite of former dry cleaner site

Photo 5 shows the WKU Staff preparing equipment for a geophysical survey at one of the three former dry cleaner sites in Jefferson County.

***Tri-State Oil Refinery
Spottsville, Henderson County
Expenditures FY 2017 and FY 2018 – \$25,815***

Tri-State Oil Refinery is believed to have been a collection point/oil water separator in the late 1930s and 1940s. This site was initially discovered during a No Further Remedial Action Planned (NFRAP) review in 2011 and 2012 as part of a Preliminary Site Assessment Investigation. Petroleum sludge, contained in one of two former ponds, was revealed on-site (See Photo 6). This pond contained elevated lead, and the sludge was considered flammable. Additional characterization was conducted in 2017 utilizing a combination of state Superfund personnel and the Madisonville Regional Office staff. An impact area was defined by using a combination of XRF field screening, via 36 soil borings that extended 4 to 8 feet below ground surface, and laboratory analysis. During 2017, the cabinet set aside a portion of HWMF funds to conduct remediation for this site. The petroleum sludge will be treated on-site prior to its disposal at a Subtitle D landfill. This site is scheduled to undergo 18,000 square feet of soil and sludge removal at various depths using HWMF monies in 2018. The current cost of removal is estimated at \$209,000.00. The site does not have a viable responsible party.



Photo 6: Division of Waste Management staff characterization sampling onsite

*Southern Wood Treatment**Long Lane, Montgomery County**Expenditures FY 2017 and FY 2018 – \$4,480,754.60*

March 2015 through August 2016. In preparation for an upcoming office move, the Long Lane site was rediscovered by Superfund staff (staff) reviewing archived paper files. This site had previously undergone active KRS 224.1-400 oversight, but appeared to have been referred to another program. The staff followed up on the status of the site, revealing that no oversight had been provided by regulatory agencies since the attempted referral. Potentially responsible parties still in existence were contacted and it was discovered that the site had been sold. The staff determined a site visit was necessary.

August 24, 2016. Actual location of the former wood treatment operations was uncertain when the team arrived on-site. This site had been redeveloped into a residential subdivision, and most of the landmarks referenced in hand-drawn archived maps were no longer present. Utilizing the branch's handheld XRF unit, the staff targeted metals known to be part of the former treatment process (ammoniacal copper arsenate). The initial concern was whether any of the residential properties were contaminated. XRF readings indicated that one of the residential property's surface soils contained arsenic at three orders of magnitude above normal background concentrations. Soil samples were collected and sent to the state laboratory for verification of field data. The laboratory analytical testing confirmed the results of the XRF within 48 hours, and an emergency action was immediately declared.

August 26, 2016. During the evening hours, residents of the subdivision were notified that their homes were either contaminated or potentially contaminated with arsenic. The health department was also notified. Fact sheets were quickly drafted and provided to these residents.

August 30, 2016. Site characterization activities commenced utilizing the Superfund Branch's Geoprobe®. Site access agreements were obtained and numerous Superfund and ERT staff were detailed to the collection and analysis of soil samples. By the end of the week it was determined that the parcel was too congested and unsafe to implement corrective measures while residents remained on-site. Residents asked to leave were initially reimbursed for a 14-day per diem away from their homes. This per diem was later adjusted to 90 days, and finally to 120 days. Resident not impacted, but requiring travel through the contaminated areas, were also required to leave and provided per diems. All residences accepted the terms of the per diem.

September 4, 2016. Contractors were mobilized to the site. The goal of the emergency phase of clean-up was to prevent the completed exposure pathways to residents. Upon completing the emergency phase, issues relating to long term management of the impacted property could be addressed. During the emergency phase, removal actions, capping, or some combination of these two procedures were conducted on fifteen properties. A total of 197 yd³ of contaminated soil was disposed of as hazardous waste, and 24,100 yd³ of contaminated soils were disposed of as solid waste.

January 4, 2017. The excavation and disposal was completed. Complexity of the waterline layout resulted in almost all the waterlines being moved and replaced to the meter for the entire site. Septic tanks were replaced at two residences, and new telephone lines were placed under direction from AT&T.

Most of the impacted properties were excavated to a depth of two feet to place a clean soil cap as a protective barrier. Prior to placement of clean soils, a marker fabric was installed to signify the transition from clean to contaminated soil. Depending on remaining arsenic concentrations after excavation, backfill was placed between 1 to 3 feet in thickness. Most of the excavated areas are now covered by a one-foot cap, with one of the residences requiring a 2- to 3-foot cap. Two vacant properties that contained the former treatment areas were capped with 2 feet of soil. A total of 15,600 yd³ of borrow material was used to cap the properties after excavation.

June 9, 2017. The Emergency Phase of this project was officially completed. Most of the corrective action work had been completed by January 4, 2017, but touch up work to restore landscaping and fencing continued into Spring 2017. Erosion control measures were implemented prior to vegetation reestablishment. The total expenditure of the emergency phase was 5.4 million dollars.



Photo 7: Long Lane – 12/1/16

The orange demarcation liner in Photo 7 indicates separation of clean and impacted soil.



Photo 8: Long Lane – 5/4/17

The blue tarp under the mobile home serves as a barrier. No excavation was conducted under the mobile home.

Upon completion of the emergency phase of the Long Lane site, the Superfund Branch initiated supervision of the remaining site for the foreseeable future. The immediate surface soil exposures to the various residences are now controlled, but the full scope of all exposure pathways have not been addressed. In addition the site is not in a final remedial state disallowing the state to leave it “as is” for any length of time. The main issues are: 1) Surface and subsurface arsenic impacts and exposure routes in three drainage ways east, north, and west of the central initial sources zones; 2) The fate and transport instability of the subsurface impacts left at one of the residences (subsurface impacts exceed hazardous waste thresholds); 3) Groundwater impacts associated with a highly soluble form of arsenic; arsenic concentrations 800 times to 2,000 times above accepted residential levels; 4) Remaining risks exceeding EPA’s immediate action levels; a lack of statutory mechanisms for the Superfund branch to impose a managed/controlled site; and 5) Uncontrolled reselling of residential properties.

Options for cleanup include a full restoration of the site at an estimated cost of \$11 million. Two other long term on-site management options range between \$7 and 9 million for initial construction and design costs. Although these remedies are less costly, their long term expenses eventually exceed the cost of full restoration. Long term maintenance and monitoring expenses are estimated at \$150,000 annually.

The Superfund Branch recently received funds to contract work for the drill monitoring of wells to assess groundwater conditions. Additional applications of these funds included the purchase of a commercial lawn mower, acquired through the state surplus process, which was obtained for mowing the temporary soil cap. The cap must be maintained to provide a barrier to the impacts of the former wood treating process area. The Superfund branch will provide periodic site visits to oversee the site and perform required maintenance and monitoring as feasible until final remedies are enacted.

Mellow Mushroom (Former Miracle Dry Cleaners)

Louisville, Jefferson County

Expenditures FY 2017 and FY 2018 – \$57,258

The former Miracle Dry Cleaners property is located at 1023-1025 Bardstown Road in Louisville, approximately 0.13 acre in area. Site improvements included dilapidated buildings in which former PCE solvent-based dry cleaning operations occurred from 1947 through 1999. This property is located in a mixed residential, commercial, and industrial area in north-central Jefferson County. Recognized environmental conditions were identified during due-diligence investigations related to dry cleaning operations. Additionally, the site was regulated by KRS 224.1-400 Superfund program, with identified soil and groundwater contamination associated with the former dry cleaning operations. Phase I and Phase II investigations confirmed these impacts to the soil and groundwater, in addition to identifying the potential for vapor intrusion into the on-site buildings.

A geophysical survey of the area was completed, and three groundwater monitoring wells were installed and sampled. The results indicated that impacts are limited to an approximate one-half block area and with the exception of one well (in an alley to the rear of the former facility), are relatively low.

In 2018, a soil gas survey plan was submitted by Wood PLC, consultant for the project, and approved by the Superfund Branch. This plan includes at least two properties that are currently residential, and several non-residential tracts. Work will be completed in the near future after, and options for remedial action will be evaluated.

The property is currently occupied by an active business operation, a Mellow Mushroom restaurant.

***Familee Laundry
Hodgenville, Larue County
Expenditures FY 2017 and FY 2018 – \$62,930.07***

The Familee Laundry site is a high concern due to its proximity to the Hodgenville water intake on the Salt River. Historic site characterization work was conducted by the responsible party's consultant and then by the Superfund Branch after the responsible party became nonviable. Chlorinated solvent contamination appears to be localized on-site with one well containing high levels of perchloroethylene. Monitoring wells have been placed along the Salt River just up-gradient of the Hodgenville water intake, which is also routinely sampled to ensure water quality. To date, contamination has not been detected in these wells. Although the plume appears limited, chlorinated solvents can migrate long after the original release creating a potential pathway for human exposures.

In 2017 and 2018, the Superfund Branch contracted SM&E, an engineering and environmental firm, to conduct characterization work to define site conditions and develop a remediation plan for this abandoned former dry cleaner property. This effort has defined the extent of historic releases at the site with an emphasis on source reduction, groundwater remediation, and cost effective containment or management strategies. A plan is being developed to conduct a pilot study for injection on the site to address any (PCE) on site. The plan will be developed late Spring 2018 and implemented Fall 2018.

***Parrish Avenue Dry Cleaner Site
Owensboro, Daviess County
Expenditures FY 2017 and FY 2018 – \$19,899***

This parcel is occupied by a former dry cleaner facility that released chlorinated solvents into soil and groundwater. The site most recently contained two buildings and a parking lot. The former dry cleaner was operating in a building that was most recently occupied by the Fraternal Order of Eagles. A second building closer to Parrish Avenue, formerly used as a shopping center, was razed in 2015.

Ensafé Incorporated was selected through the Finance Cabinet's Request for Proposal (RFP) process to determine if there are any preferential pathways for contaminant migration leading to vapor intrusion, by conducting site characterization in the area. The Superfund branch through a Memorandum of Agreement (MOA) with Thomas Brackman (Western Kentucky University/Near Surface Geophysics) has completed geophysics of the preferential pathways on site. Ensafé is developing a groundwater investigation to determine impacts and extent targeted for initiation during Summer 2018.

LWD

Calvert City, Marshall County

Expenditures FY 2017 and FY 2018 – \$1,470,747.81

LWD is a former hazardous waste treatment and storage facility that stored and incinerated hazardous waste. In 2004, the company filed for Chapter 11 bankruptcy protection. Monies posted prior to bankruptcy, as financial assurance to operate a hazardous waste treatment and storage facility, were collected by the Hazardous Waste branch. This money was later placed in a restricted account to reimburse the Hazardous Waste Management Fund for expenses the state might incur for corrective action. The state, through an agreement with a group of responsible parties that were former customers of LWD, directed these parties to implement corrective action to close the site as established in KRS 224.1-400. Upon completion of remedy construction, the group of responsible parties submitted receipts for their corrective action expenses. The state reimbursed the group for the balance of the account since expenses exceeded the balance. The responsible parties are currently implementing their obligation to operate, maintain, and monitor the site for the next 28 years.

BROWNFIELD REDEVELOPMENT SITES

Ruggles Sign Company

Versailles, Woodford County

Ruggles Sign Company became the inaugural applicant to enter into the Brownfield Redevelopment Program in 2013. Their facility is located on Industry Drive along the US 60 Bypass in Versailles, Kentucky. The building was formerly occupied by an electric transformer manufacturer from 1968 to 2009. Historical operations at the site prompted Ruggles Sign Company to conduct the appropriate due-diligence investigations to ensure liability protection under the Brownfield Program. As a result, several recognized environmental conditions were identified, including soil and groundwater contamination at concentrations that exceeded unrestricted use of the property.

Tim Cambron, Ruggles Sign Company's Chief Executive Officer, had anticipated a very different environment from the dark, narrow atmosphere the former facility offered. While the existing footprint of the 6.7-acre factory remained, the interior was completely restored and remodeled to offer a lighter, brighter, and more modern manufacturing and administrative space. The facility's exterior, parking areas, and surrounding greenspace were also revitalized. Prior to redevelopment,

the western portion of the site exhibited very poor drainage. To remedy this issue and prevent the completion of any potential exposure pathways, a new culvert and drainage channel were installed through the state's partnership with the City of Versailles.

Ruggles Sign Company entered into the Brownfield Program before the applicable statutes went into effect; therefore, a few minor issues were identified and corrected after Superfund Branch personnel conducted a compliance assistance audit.

Cambron commented on the appeal he felt towards purchasing the property due to its desirable location, utilitarian prospect, and the exciting opportunity to restore a building utilizing existing resources, in contrast to developing on a greenfield: "It is exciting to take a building that has been sitting idle and perhaps a bit blighted and give it a new life and purpose."¹ Without the liability protection and regulatory oversight offered under the Brownfield Program, the dilapidated facility would likely have remained an eyesore for area residents, commuters, and persisted as a potential concern to human health and the environment.



Photo 9: Ruggles Sign pre-purchase 2012

¹ Ruggles Sign Company testimonial regarding Tim and Anna Cambron's decision to enter the Brownfield Redevelopment Program for 93 Industry Drive Versailles, KY Message to DeBeck, Kaleigh. 30 April, 2018 Email



Photo 10: Ruggles Sign after remodeling



Photo 11: Ruggles Sign Company interior, pre and post purchase

***Presentation Academy Athletic Field
Louisville, Jefferson County***

Swiss Cleaners operated from 1914 to 1989 as a laundry and dry cleaning facility on South 6th Street, near West Breckinridge Street, in Louisville. Several underground storage tanks (USTs) were used to store Stoddard Solvent, tetrachloroethylene, fuel oil, and spent solvents in the northeastern corner of the property where most of the cleaning operations occurred. Efforts to characterize and remediate releases of these substances began in the early 1990s, and by 2010 constituent levels and the extent of the groundwater plume had decreased significantly, allowing for monitored natural attenuation/site management through placement of an environmental covenant. Since dry cleaning operations ceased, the property has remained a vacant lot. Several

entities, including Kroger, have expressed interest in developing the property after it became vacant, but none have been successful.

In early 2018 a local firm, Luckett & Farley (L&F), representing Presentation Academy, a local Catholic high school, contacted the DWM expressing interest in acquisition of the property for use as an athletic field. After entering the Brownfields Redevelopment program, the Academy acquired the property through funding from private donations in March 2018, and then received a Notice of Concurrence letter exempting the school from liabilities in accordance with KRS 224.1-400.

Presentation Academy was founded in 1831 by Mother Catherine Spalding and the Sisters of Charity of Nazareth, and moved to its present location at Fourth and West Breckenridge Streets in 1893. Recognized as Louisville's oldest Catholic high school, the female only private academy enrolls students in grades nine through twelve from Jefferson and surrounding counties in Kentucky, southern Indiana, and countries in Europe, Asia, and Africa. Declining enrollment and rising costs threatened to shutter the school in 1995, but immediate and positive responses by the Louisville community enabled the institution to remain open and prosper in recent years.

Acquisition of the former Swiss Cleaners property was a significant addition to school facilities that support a variety of programs, including a modern Arts and Athletic Center located across Fourth Street from the Academy that was dedicated in 2009. Soccer, field hockey, and softball programs will directly benefit from the new athletic field, and the timetable outlined in the L&F application indicates that the property should be ready for use by the 2018 fall term.

***HopCat
Louisville, Kentucky***



Photo 12: Hopcat restaurant prior to renovation and after completion

The former Spindle Draperies parcel is located at 1064 Bardstown Road in Louisville, Kentucky. Various operations have been located at the parcel including an automobile dealership, a diesel engine school, an auto transmission repair shop, a paint manufacturing company, and a drapery

manufacturing shop. Although impacts have not been confirmed to the soil or groundwater, the site's history raises a measure of concern.

Currently, the site has been redeveloped into a brew pub restaurant, "HopCat." Several dining rooms are located on the first floor, which also features a large bar that serves a variety of craft beers on tap. A second story was added to the original structure, and features a second bar area with indoor and outdoor seating.

Louisville Soccer Stadium

Louisville (Butchertown District), KY

This project is a leading example of the interconnection between economic redevelopment and environmental protectiveness. The City of Louisville expressed during pre-purchase meetings with the Superfund Branch that the Brownfield Redevelopment statutes and regulations were the *critical lynch pin* that allowed for successful initiation and the ultimate success of this project. They stated, "No state has a program like it."

The benefits on the economic development side include a \$30 million investment project by the city of which \$17 million will be recovered directly from pay back by the Louisville Football Club ownership group and developer. The balance of the investment will be recovered through future revenue generations via concerts and ancillary connected business activities in the area. Land values at these formerly fallowed sites transition from negative worth to high prices. All sports stadiums usually operate with negative revenues attributed cost to construct and manage, but the surrounding development, hotels, businesses and entertainment venues, typically generate highly profitable revenues, business, and jobs. Construction jobs for the project positively impact the local economy, and direct, indirect, and induced economic effects and benefits are anticipated to increase in the future.

This project will be constructed as a complementary facet of the larger stadium district project/vision that includes Slugger Field, the Yum Center, Botanical Gardens, and the Pedestrian Bridge. The total acreage for the Soccer stadium project alone is 35 acres. The sale of the previous separate parcels generated substantial income for the previous landowners, totaling millions of dollars; one landowner's parcel within the future stadium complex area opened a bank account to accept payment from the city.

The benefit relative to KRS 224.1-400: One entity, the City of Louisville, is joining several idle, aesthetically unpleasing, and dilapidated properties into a consolidated property management. Most of the individual properties purchased were previously assessed in accordance with KRS 224.1-400 and were required to implement various management plans that included environmental covenants and deed restrictions. The city's consolidation of the properties produced a single master property management plan as established in KRS 224.1-15, which considers all elements of the previous restrictions, and clearly defines management of the properties pre- and post-construction. Although the city is not obligated to own this property in perpetuity, their stewardship will likely exceed the lifetime of the companies or individuals that previously managed the individual properties. An additional, crucial benefit to the KRS 224.1-400 program is active utilization and

maximum control of property. If the property is profitable or beneficial, there will be vested interest in maintaining management controls.

Additionally the geotechnical and other land leveling requirements for construction at formerly isolated, impacted areas will either be removed or consolidated under cap of construction. Redevelopment far better and more efficiently manages environmental risk issues than the standard static and increasingly obscure deed instruments by actively controlling how the property(s) are used through economic structured land use control.

This project will result in effective consolidation and management of 19 commercial and industrial properties that are, or potentially could be, KRS224.1-400 sites.



Photo 13: Louisville Soccer Complex (Google Earth Photo)

Photo 13 shows the site of the Louisville Soccer Complex outline prior to the construction phase.



Photo 14: Louisville Soccer Complex, Construction Phase

Photo 14 depicts the Louisville Soccer Complex during the construction phase. Removal of salvage yard and tank farm is featured in foreground. This photo was taken approximately four months after construction was initiated.

2017/18 Brownfield Initiatives

The Superfund Branch has significantly increased the number of audits for Brownfield sites. An audit requires staff to review the existing property management plan to determine specific site management requirements. The participant is contacted by an auditor who arranges a site visit. The audit stresses compliance assistance rather than creating a confrontational inspection. Fines are not generated from the audits. If mismanagement is noted, the participant is given an opportunity to correct the issue and submit verification of corrections. If extreme or blatant mismanagement of a subject site is noted, the determination to void Brownfield liability status is determined by the Director of the Division of Waste Management, as established in 401 KAR 102:010, Section 7. During FY2017 and FY 2018, DWM has conducted 30 audits, currently there have been no sites referred to the Director.

Superfund Brownfield Redevelopment Program Applicant and Stakeholder Responses:

“Under the 415 program, the auditing aspect of the program post-purchase, a concern for most participants, appears to be a positive experience for Brownfield participants I have talked with.”²

“The big ‘what-if’ was taking over space that was occupied 40+ years by another manufacturer. The company retained SMG to investigate the Kuhlman site, and in doing so, Tim and Anna learned of the newly launched Brownfield Redevelopment (Pilot) Program. Through working with SMG and state officials, it became very clear that redeveloping 93 Industry Drive was our best option.”

COSTS OF CLEANUP

The Kentucky Superfund program currently is working with a total of 376 active Superfund sites. Many, possibly all of these sites, could become state-lead sites. Due to several cabinet level emergency precipitating events concerning old Resource Conservation and Recovery Information System (RCRIS) wood treating facilities, the Superfund branch was directed to evaluate and rank four major RCRIS category sites out of the RCRIS generator list that have very high likelihood of becoming future Superfund sites. The major category sites of concern identified were existing and former RCRIS generator Wood Treating Facilities (37), Plating Operations (73), Battery Operations (25), and Dry Cleaners (294). Additionally, there are approximately 3,600 other RCRIS generator sites, and a percentage are likely to have had an unreported or unknown Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or 1-400/405 release. Assuming a conservative professional estimate of 10 percent to have an unreported or unknown release would yield an additional 360 Superfund sites requiring some level of action. Any of these estimated 360 sites could become state-led superfund sites due to the non-viability or insolvency of potentially responsible parties.

Many variables affect costs to complete cleanups, which further depend on site-specific characteristics such as amounts and locations of spills, geology, and general locations. Site costs range from \$10,000 to greater than several million dollars. Historic Kentucky Superfund cost demonstrates and supports this estimate. Studies including: the U.S. Department of Defense, the EPA, national dry cleaner insurers’ estimates, and Kentucky’s historic database from 1993 to 2013 indicate a trending range from \$200,000 to in excess of \$700,000 per site. Using an average from these studies, an estimated cost per site can be calculated for the total active superfund sites and impending dry cleaner sites. This estimated cost for potential maximum liability, 1165 known sites, approaches \$582,500,000. This estimate is a conservative estimate; certain category sites such as former wood treating facility clean-ups average in excess of \$20 million dollars per site. Additionally, larger industrial type sites and dry cleaners cost in excess of \$1 million to \$10s of millions of dollars per site. The Kentucky Superfund program has steadily averaged 173 registered

² Thompson, Karen. (Smith Management Group) “Re: 415 Comments.” Message to Hall, Clifford. 23 April, 2018. Email

new superfund sites annually, and the state has 18 existing and delisted CERCLA National Priority List (NPL) superfund sites whose long-term annually cyclic monitoring and maintenance liabilities in one form or another eventually fall to the state. Internal estimates of the annual cyclic in perpetuity cost based on the CERCLA NPL Records of Decision (RODs) range well over \$10,000 to in excess of \$500,000 per year. Considering all these factors, and revising internal estimates based on national historic and similar industry specific clean-ups on total clean-up potential, the CERCLA and 1-400 release liabilities in Kentucky range from *\$1.8 billion to \$2.6 billion dollars*.

Based on the superfund's HWMF current level of funding in fiscal years 2017 and 2018, emergency sites addressed and other annual state-led remedial actions, the superfund program is currently unable to adequately address the increasing number and costs of state-lead clean-ups.

SUPERFUND SITES NEAR YOU

Typical historical Superfund sites are primarily perceived to be sprawling industrial complex sites, vast caches of illegally buried drums by large companies, or otherwise highly visible, newsworthy sites such as "Love Canal," "Maxey Flats," and the "Valley of the Drums." Most of these sites' concerns and liabilities are typically addressed by potential responsible parties with abundant, sustainable financial resources or by federal funding through the NPL program. Although these types of sites still exist they no longer reflect the greater number and pervasive threat to human health and the environment in the commonwealth. More common types of sites that are entering into superfund are smaller and have geological, technical, or chemical/contaminant characteristics that are complex and financially difficult to address. There is a consensus among practicing remediation professionals in government and private industry that this substantial population of sites (which are being recognized throughout the United States) are unlikely to achieve restoration within the next **50 to 100+** years. These types of sites pose the greatest, increasing threat to human health and Kentucky's natural resources. They encompass the largest growing number of sites entering the state Superfund program.

The human health and natural resource concern for the impacts from these sites is increased by the close proximity of these contaminated properties to areas people live, eat, and play; in commercial urban, suburban, and rural settings throughout the state where controlled or restricted access that is common to larger industrial locations is not available. Because of the smaller lot sizes of many of these sites, contamination often extends off-site under neighboring properties, including residential homes, schools, recreational areas, and other locations that a person would not normally consider to be an environmental problem.

In 2016 and 2017, the Superfund program was directed to assess and initially rank four high priority categories of RCRIS generator sites in Kentucky, based on their likelihood of having had a release, in addition to the present active sites in the state Superfund program. The additional four RCRIS priority category sites included Wood Treaters, Battery Operators, Plating Operations, and Dry Cleaners. This effort revealed that over 11 percent of these 1,000 plus sites were within 0 to 0.25 mile of a residence, day care, school and/or domestic, public, or municipal well field.

Moreover, approximately 57 percent were within 0.25 to .05 mile, eight percent were situated within .05 to 1.0 mile, 5 percent within one to two miles, and 28 percent over two miles from these same types of land uses.

Many of these sites from which hazardous substances have been released into the environment, such as dry cleaners, are proprietary, small businesses with limited to no resources. Most do not have adequate assets or insurance to pay clean-up costs resulting from releases on their parcels. These clean-up costs typically exceed the owner's equity in the entire venture and property value combined.

Most hazardous substances and contaminants released into the environment have scientifically-proven persistence as a risk to human health and resource damages for 50 to over 100 years and in many cases (such as metals) exist in perpetuity. Large multi-national Standard and Poore (S&P) Fortune 500 companies have maximum life spans of 40 to 50 years³, while most U.S. S&P Fortune 500 companies have maximum life spans of only 15 years⁴. These figures represent the most financially solvent types of companies and their lifespans, which greatly outlive most locally or regionally owned companies that release hazardous substances into the environment (i.e. a "best financially solvent case scenario"). With most contaminants lasting 100 or more years, the "best" of businesses averaging 15 years of financial solvency, and most smaller entities already being financially insolvent as responsible parties, Kentucky increasingly becomes the "steward" of these issues. In addition to annual clean up issues that result from modern society using hazardous substances as part of its production of goods, these concerns increasingly burden the state's resources in personnel and funding beyond realistic goals to address increasing environmental problems while fulfilling statutory duty to protect human health and the environment.

The state Superfund program and HWMF is the lone entity with authority and sufficient longevity to maintain protection of human health and the environment⁵. Due to the number, difficulty, and lack of financial resources, these sites place an increasing strain on the HWMF (Figure 7).

³ Crainer, Stuart. "The Living Company by Arie de Geus". *Third Quarter 1998, Issue 12*. Strategy+Business. <http://www.strategy-business.com/article/18728?gko=8c8f1>

⁴ Gittleson, Kim. (2012). "Can a Company Live Forever". *BBC News, New York - Business*. <http://www.bbc.com/news/business-16611040>. (accessed May 2016)

⁵ KRS 224.10-100 Powers and duties of cabinet.

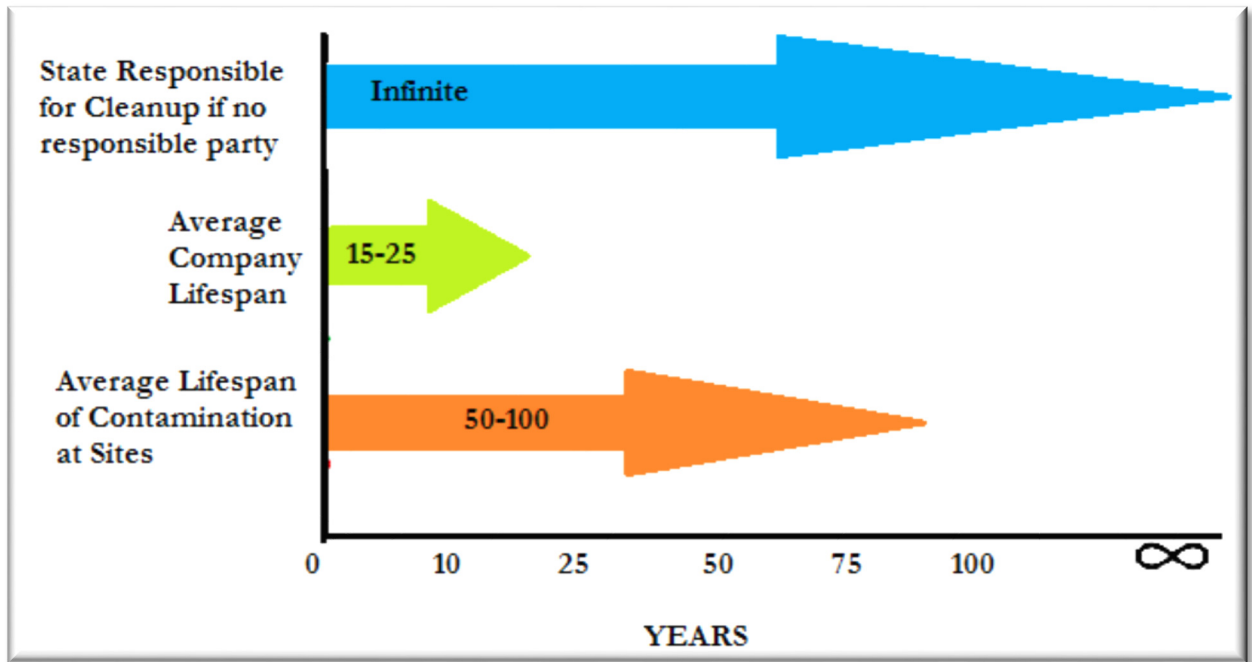


Figure 7: State Cleanup Responsibility Outlives Company Responsibility by 400 Percent

FUTURE OF THE FUND

The HWMF was created to provide the Energy and Environment Cabinet with necessary funds to protect the health of the citizens and natural resources of the commonwealth from threats associated with releases of hazardous substances, pollutants, and contaminants. The cabinet uses the HWMF to provide technical reviews, oversight of responsible party-driven, and state-lead remediation projects. The HWMF is the Commonwealth's single source of financial support for contaminated sites where there are either no known responsible or financially solvent parties available to take action. The HWMF finances regulatory oversight, emergency responses, state-lead, and time-critical remediation projects at sites throughout Kentucky. These projects range from large industrial sites and persistent dry cleaner plumes to small projects including roadside drums, orphan wastes, and transformers. There are no other current available funding sources to conduct emergency response, state-lead cleanup actions, or regulatory oversight.

In addition to evaluation and mitigation measures, HWMF funds are used to purchase leading edge equipment to complement time critical projects. For instance, DWM purchased a FROG 4000 portable gas chromatograph through Defiant Technologies, Inc. using restricted Hazardous Waste Management funds. The benefit of this tool is its ability to provide on-site analyses of sites for contaminants, which reduces timelines of collection, delivery, and queues in the state laboratories.

The FROG 4000 is a hand held micro system used for field studies necessary for the detection of benzene, toluene, ethylbenzene, and xylenes (BTEX), and other volatile organic compounds (VOCs) in water, air and soil. This five-pound tool can be used for:

- Groundwater monitoring;
- Surface water monitoring;
- Vapor intrusion monitoring;
- Soil vapor extraction process monitoring;
- Environmental remediation;
- Site characterization; and
- Process monitoring.

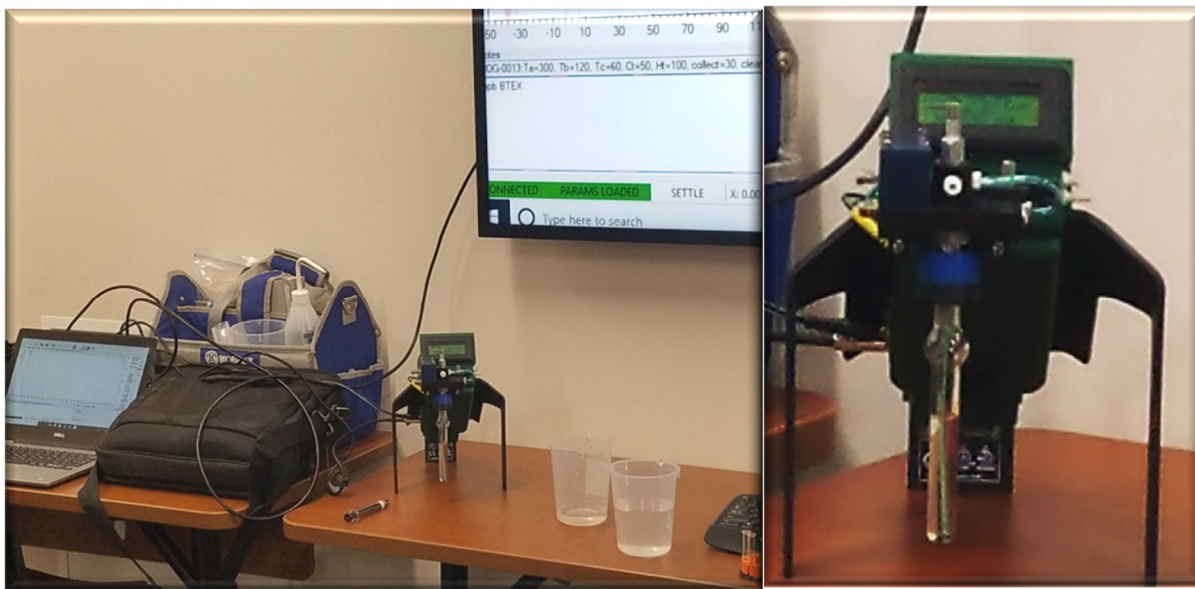


Photo 15: FROG 4000 Chromatograph conducting simulated test at June 2018 training

In May of 2018, DWM hired Defiant Technologies, Inc. through a personal service contract to provide training to field staff on the functionality of the instrument. Funding for this training was approved and paid with EPA Region 4 grants funds (Site Assessment Cooperative Agreement). This training enables staff to efficiently and accurately receive results on-site.

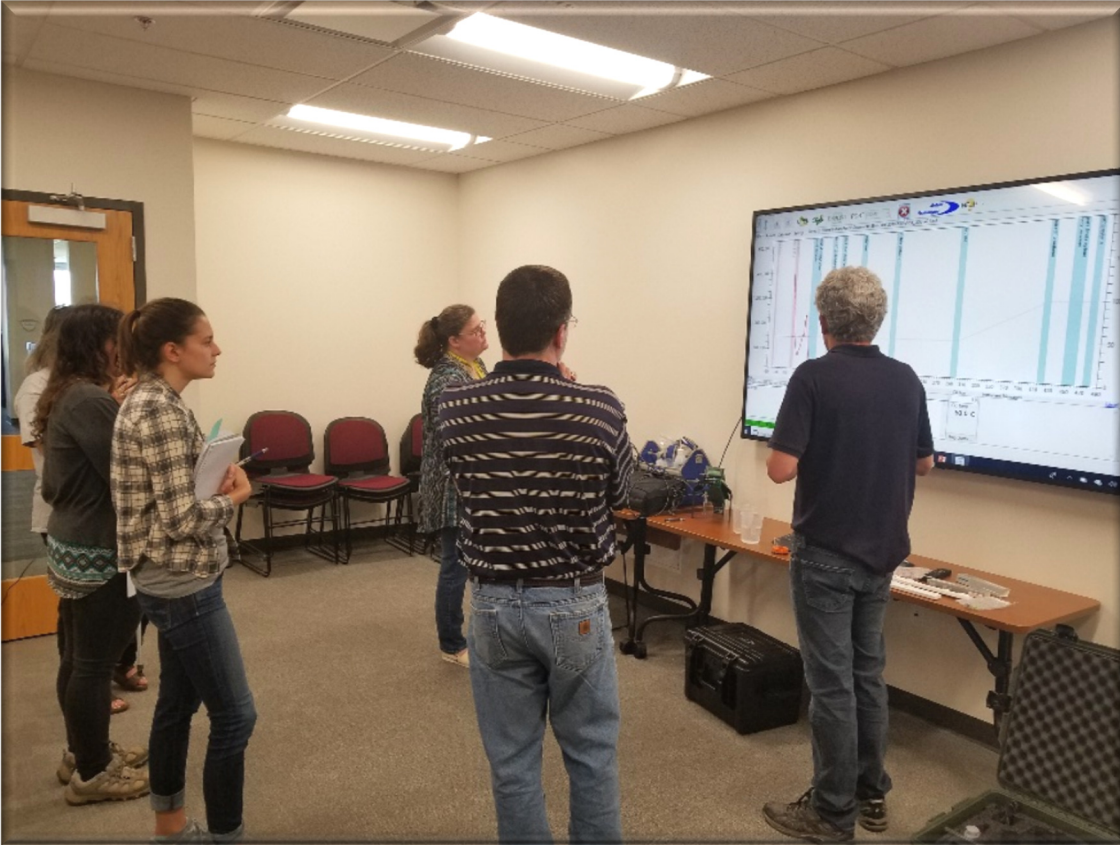


Photo 16: DWM Employees receive training on the portable chromatograph

The HWMF has experienced challenges since 2008 resulting from decreases from exemptions and reductions of general, and federal funds available to the cabinet. Additional negative impacts include increased costs for:

- Cleanup;
- Growing numbers of non-viable and financially insolvent responsible parties from which to recover cost;
- Cyclic annual in perpetuity cost for the long-term maintenance and monitoring of NPL sites; or
- Potential large scale type and number of RCRIS sites, and new superfund sites.

These impacts have resulted in the HWMF no longer being able to sustain and manage all existing and projected superfund backlogs. Insufficient funding to support large scale emergency remedial projects that arise unpredictably year-to-year, and the inability to reasonably fulfill its statutory mandate to protect human health and the environment continue to burden the funds.

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The mission of the Kentucky Division of Waste Management is to protect human health and the environment by minimizing adverse impacts on all citizens of the Commonwealth through the development and implementation of fair, equitable and effective waste management programs.

July 2018

APPENDIX

HAZARDOUS WASTE MANAGEMENT FUND FY 2018

TABLE 1: Hazardous Waste Management Fund Revenues, FY 1993-2018

| | Assessments Collected | Cost Recovery | Interest | Return on Investment Account & Capital Closeouts | Brownfield Redevelopment Application Fee | Transfer from PSTEAF per KRS 224.46-580 | TOTAL |
|--------------|------------------------|-----------------------|-----------------------|--|--|---|------------------------|
| FY93-FY02 | \$26,497,996.00 | \$3,623,784.00 | \$1,114,921.00 | \$5,663,178.00 | | | \$36,899,879.00 |
| FY03 | \$1,831,535.00 | \$579,544.00 | \$81,162.00 | \$65,735.14 | | | \$2,557,976.14 |
| FY04 | \$1,876,572.00 | \$293,420.00 | \$37,370.00 | \$1,295,046.00 | | | \$3,502,408.00 |
| FY05 | \$1,766,239.12 | \$311,827.28 | \$17,565.74 | \$812,841.38 | | | \$2,908,473.52 |
| FY06 | \$1,871,802.74 | \$119,138.54 | \$11,916.21 | \$404,327.01 | | | \$2,407,184.50 |
| FY07 | \$1,804,954.42 | \$407,829.27 | \$28,873.17 | \$457,975.78 | | | \$2,699,632.64 |
| FY08 | \$1,760,870.25 | \$331,372.35 | \$16,201.64 | \$711,505.58 | | | \$2,819,949.82 |
| FY09 | \$1,506,853.23 | \$126,314.75 | \$8,238.64 | \$178,204.44 | | | \$1,819,611.06 |
| FY10 | \$1,205,801.18 | \$309,757.11 | \$10,645.88 | \$300,000.00 | | \$318,346.77 | \$2,144,550.94 |
| FY11 | \$1,325,342.34 | \$715,588.96 | \$6,512.49 | \$1,597,180.97 | | \$637,062.05 | \$4,281,686.81 |
| FY12 | \$1,764,288.24 | \$410,100.86 | \$16,362.73 | \$335,760.36 | | \$554,562.44 | \$3,081,074.63 |
| FY13 | \$1,515,949.68 | \$725,993.60 | \$1,098.03 | - | | \$170,697.75 | \$2,413,739.06 |
| FY14 | \$1,415,327.98 | \$704,332.51 | \$683.31 | - | \$38,500.00 | \$450,932.31 | \$2,609,776.14 |
| FY15 | \$1,413,123.93 | \$536,705.15 | \$1,052.53 | \$303,833.88 | \$110,131.00 | \$582,465.64 | \$2,947,312.13 |
| FY16 | \$1,612,788.65 | \$143,713.98 | \$1,218.62 | \$188,137.62 | \$70,000.00 | \$599,253.59 | \$2,615,112.46 |
| FY17 | \$1,738,004 | \$413,625 | \$7,087 | \$452,080 | \$125,000 | \$417,421 | \$417,421.00 |
| FY18 | \$1,336,545 | \$166,246 | \$6,461 | \$0 | \$82,500 | \$325,337 | \$325,337.00 |
| TOTAL | \$52,243,993.76 | \$9,919,293.36 | \$1,353,822.02 | \$9,888,813.33 | \$426,131.00 | \$4,056,078.55 | \$76,451,124.85 |

HAZARDOUS WASTE MANAGEMENT FUND FY 2018

TABLE 2: Hazardous Waste Management Fund Expenditures, FY 2015-16

| | Capital Projects Remediation of Hazardous Waste Sites | Maxey Flats Site | WKU Geophysical MOA | Superfund & ERT Technical/Professional Oversight | Kentucky Pollution Prevention Center | HWMF Audit Fee | Budget Reduction | TOTAL |
|--------------|---|-----------------------|---------------------|--|--------------------------------------|--------------------|---------------------|------------------------|
| FY93-FY02 | \$19,800,000.00 | \$6,258,654.00 | - | \$7,131,214.00 | \$3,514,900.00 | - | - | \$36,704,768.00 |
| FY03 | \$1,000,000.00 | - | - | \$797,991.00 | \$420,000.00 | - | - | \$2,217,991.00 |
| FY04 | \$2,200,000.00 | - | - | \$1,215,955.00 | \$420,000.00 | \$11,033.00 | \$128,600.00 | \$3,975,588.00 |
| FY05 | \$1,684,853.34 | - | - | \$809,567.75 | \$420,000.00 | - | - | \$2,914,421.09 |
| FY06 | \$853,900.00 | - | - | \$1,055,581.73 | \$420,000.00 | - | - | \$2,329,481.73 |
| FY07 | \$1,734,387.89 | - | - | \$606,379.41 | \$362,080.00 | - | - | \$2,702,847.30 |
| FY08 | \$1,338,707.98 | - | - | \$772,847.34 | \$351,793.85 | - | \$313,600.00 | \$2,776,949.17 |
| FY09 | \$500,000.00 | - | - | \$929,296.70 | \$299,705.39 | - | - | \$1,729,002.09 |
| FY10 | \$850,000.00 | - | - | \$1,100,956.70 | \$247,078.50 | - | - | \$2,198,035.20 |
| FY11 | \$2,544,731.00 | - | - | \$897,226.30 | \$300,000.00 | - | - | \$3,741,957.30 |
| FY12 | \$2,100,000.00 | - | - | \$693,369.49 | \$360,000.00 | - | - | \$3,153,369.49 |
| FY13 | \$737,000.00 | - | - | \$773,016.63 | \$360,000.00 | - | - | \$1,870,016.63 |
| FY14 | \$1,142,160.94 | - | - | \$886,037.02 | \$360,000.00 | - | - | \$2,388,197.96 |
| FY15 | \$1,706,300.00 | - | - | \$994,676.38 | \$360,000.00 | - | - | \$3,060,976.38 |
| FY16 | \$855,500.00 | - | \$29,830.35 | \$758,065.20 | \$360,000.00 | - | - | \$1,643,395.55 |
| FY17 | \$1,037,253.50 | - | \$63,441.87 | \$1,166,497.72 | \$360,000.00 | - | - | \$1,589,939.59 |
| FY18 | \$414,500.00 | - | \$79,156.12 | \$1,057,079.65 | \$360,000.00 | - | - | \$1,496,235.77 |
| TOTAL | \$40,499,294.65 | \$6,258,654.00 | \$172,428.34 | \$21,645,758.02 | \$9,275,557.74 | \$11,033.00 | \$442,200.00 | \$76,493,172.25 |
| TOTAL | \$39,047,541.15 | \$6,258,654.00 | \$29,830.35 | \$19,223,505.69 | \$8,195,557.74 | \$11,033.00 | \$442,200.00 | \$68,702,624.96 |

HAZARDOUS WASTE MANAGEMENT FUND FY 2018

TABLE 3: Cumulative Expenditures on Active Capital Project Accounts

| | Engineering | Construction | Analytical |
|--|-----------------------|------------------------|---------------------|
| Small Cleanups and Emergency Responses | \$967,605.56 | \$5,144,189.04 | \$19,457.75 |
| KY Tire & Timber | \$179,066.25 | \$37,685.25 | 0.00 |
| Kim's Dry Cleaners | \$1,260 | \$88,740.00 | \$85.00 |
| Quality Cleaners | \$35,292.91 | \$33,676.82 | 0.00 |
| Louisville Environmental Service | \$234,639.21 | \$58,369.90 | \$808.50 |
| Distler Brickyard | \$11,584.72 | \$168,287.21 | 0.00 |
| Distler Farm | 992.6 | \$148,585.39 | 0.00 |
| Jefferson Forest Drum Site | \$88,251.12 | 0.00 | 0.00 |
| Walgreens Hogan Project | \$130,700 | 0.00 | 0.00 |
| Lees Lane Project | \$36,998.06 | \$34,169.81 | 0.00 |
| Jackson's Pronto Cleaners | \$9,350 | \$2,999.99 | 0.00 |
| Familee Laundry | 66207.78 | \$832.20 | 0.00 |
| Former Bills Quality Cleaners | \$1,247.6 | \$234.00 | 0.00 |
| Parrish Avenue | \$19,899 | 0.00 | 0.00 |
| Miracle Dry Cleaners | \$73,758 | 0.00 | 0.00 |
| Kroger L-315 Euclid Avenue | 0.00 | 0.00 | 0.00 |
| Global Environmental Services | \$1,044 | \$165,098.77 | 0.00 |
| Former West Bank Property | 0.00 | 0.00 | 0.00 |
| KY Plating | 0.00 | 0.00 | 0.00 |
| IKORCCPF Property | 0.00 | 0.00 | 0.00 |
| Clark & Riggs/King's Cleaner | 0.00 | 0.00 | 0.00 |
| West KY Wildlife Arear Burn Site | 0.00 | 0.00 | 0.00 |
| Polluck Property | \$75,000 | \$661,551.38 | \$19,211.00 |
| Star Rt. Industrial Salvage Property | 0.00 | 0.00 | 0.00 |
| Long's Lane | 0.00 | \$4,791,863.64 | \$48,890.96 |
| Oil Refinery AL 52090 | \$9,650 | 0.00 | \$16,165.00 |
| A&S Tools and Gage | 0.00 | 0.00 | \$9,940.00 |
| Wiley Property | 0.00 | 0.00 | 0.00 |
| A.L. Taylor Site | 0.00 | \$71,648.52 | \$142,162.80 |
| TOTAL | \$2,084,709.61 | \$11,407,931.92 | \$256,721.01 |

HAZARDOUS WASTE MANAGEMENT FUND FY 2018

TABLE 4: Active Capital Project Account Expenditures, FY 2017 - 2018

| | 2017 | 2018 | TOTAL |
|--|-----------------------|---------------------|-----------------------|
| Small Cleanups and Emergency Responses | \$323,372.11 | \$196,958.11 | \$520,330.22 |
| Kerschner Property | 0.00 | \$56,291.44 | \$56,291.44 |
| LWD | \$1,470,747.81 | 0.00 | \$1,470,747.81 |
| Kim's Dry Cleaners | \$85.00 | 0.00 | \$85.00 |
| Louisville Environmental Services | \$808.50 | 0.00 | \$808.50 |
| Distler Brickyard | \$630.00 | 0.00 | \$630.00 |
| Distler Farm | \$895.00 | 0.00 | \$895.00 |
| Lee's Lane Project | \$3,210.00 | 0.00 | \$3,210.00 |
| Black Leaf Project | \$20,316.28 | 0.00 | \$20,316.28 |
| Schendley Distillers | \$20,961.24 | 0.00 | \$20,961.24 |
| Familee Laundry Phase II | \$55,821.17 | \$7,108.90 | \$62,930.07 |
| Parrish Avenue | \$19,899.00 | 0.00 | \$19,899.00 |
| Miracle Dry Cleaners | \$26,500.00 | \$28,000.00 | \$54,500.00 |
| Global Environmental Services | \$99,873.23 | 0.00 | \$99,873.23 |
| Holiday Inn Express | \$75,000.00 | 0.00 | \$75,000.00 |
| Former West Point Bank Property | \$120,000.00 | 0.00 | \$120,000.00 |
| KY Plating | \$31,000.00 | 0.00 | \$31,000.00 |
| IKORCCPF Property | \$55,000.00 | 0.00 | \$55,000.00 |
| Clark and Riggs | \$50,000.00 | 0.00 | \$50,000.00 |
| Polluck Property | \$733,741.49 | \$10,673.89 | \$744,415.38 |
| Long's Lane | \$4,840,754.60 | 0.00 | \$4,840,754.60 |
| Oil Refinery AL 52090 | \$16,165.00 | \$9,650.00 | \$25,815.00 |
| A&S Tools and Gage | 0.00 | \$9,940.00 | \$9,940.00 |
| TOTAL | \$7,964,780.43 | \$318,622.34 | \$8,283,402.77 |



Photo 17: April 17 2018 – Black Leaf Settlement Fund public meeting in Jefferson County



Kentucky Division of Waste Management
300 Sower Boulevard, 2nd Floor
Frankfort, KY 40601



**KENTUCKY ENERGY &
ENVIRONMENT CABINET**

*Report an Environmental Emergency 24-hours to Environmental Response Team
502-564-2380 or 800-928-2380*