FY2020
HAZARDOUS WASTE MANAGEMENT FUND
A Report to the General Assembly

KENTUCKY ENERGY &
ENVIRONMENT CABINET

Department for Environmental Protection
Division of Waste Management
502-564-6716
waste.ky.gov

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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) 2019 and 2020.

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 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 6,386 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 $83.2 million have been spent remediating more than 582 contaminated sites, making the Commonwealth of Kentucky a cleaner and safer place to live. In FY2019 and FY2020, the cabinet registered 75 new Superfund sites and oversaw remediation of 107 sites. In addition, the cabinet performed 542 technical site reviews, supervised managed closures for 267 sites, and designed and managed state-lead actions at 14 sites, expending over $314,484.00. Additionally, the cabinet finalized state-lead actions that resulted in the closing of six state-lead sites.

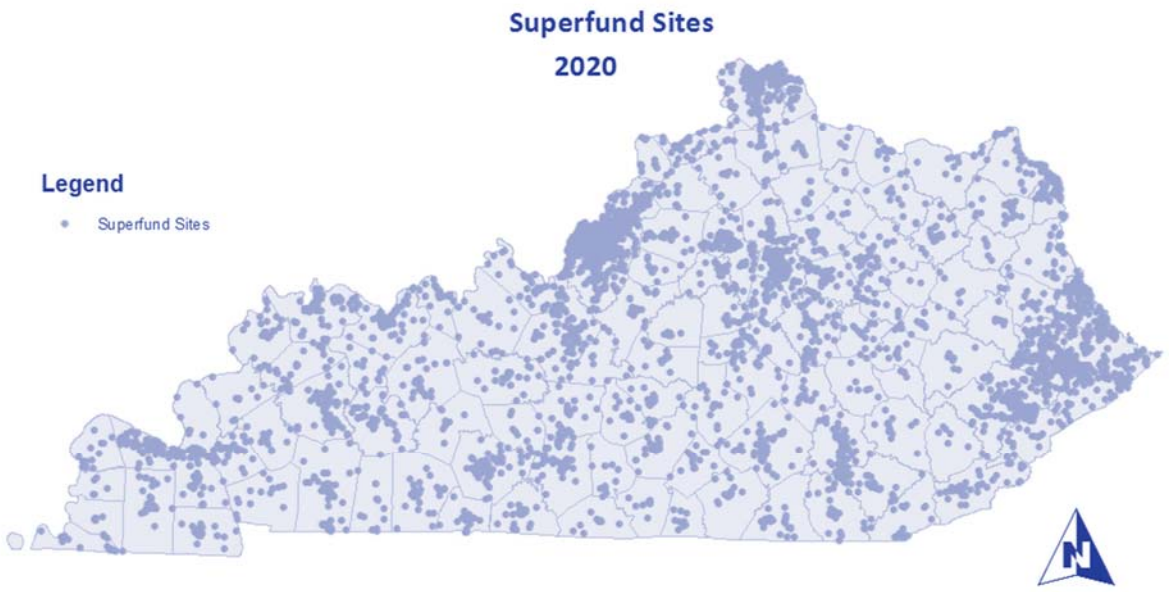


Figure 1: Active, Managed, and Closed Superfund Sites in Kentucky

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 $9.4 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 per 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 FY2019 and FY2020.

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).

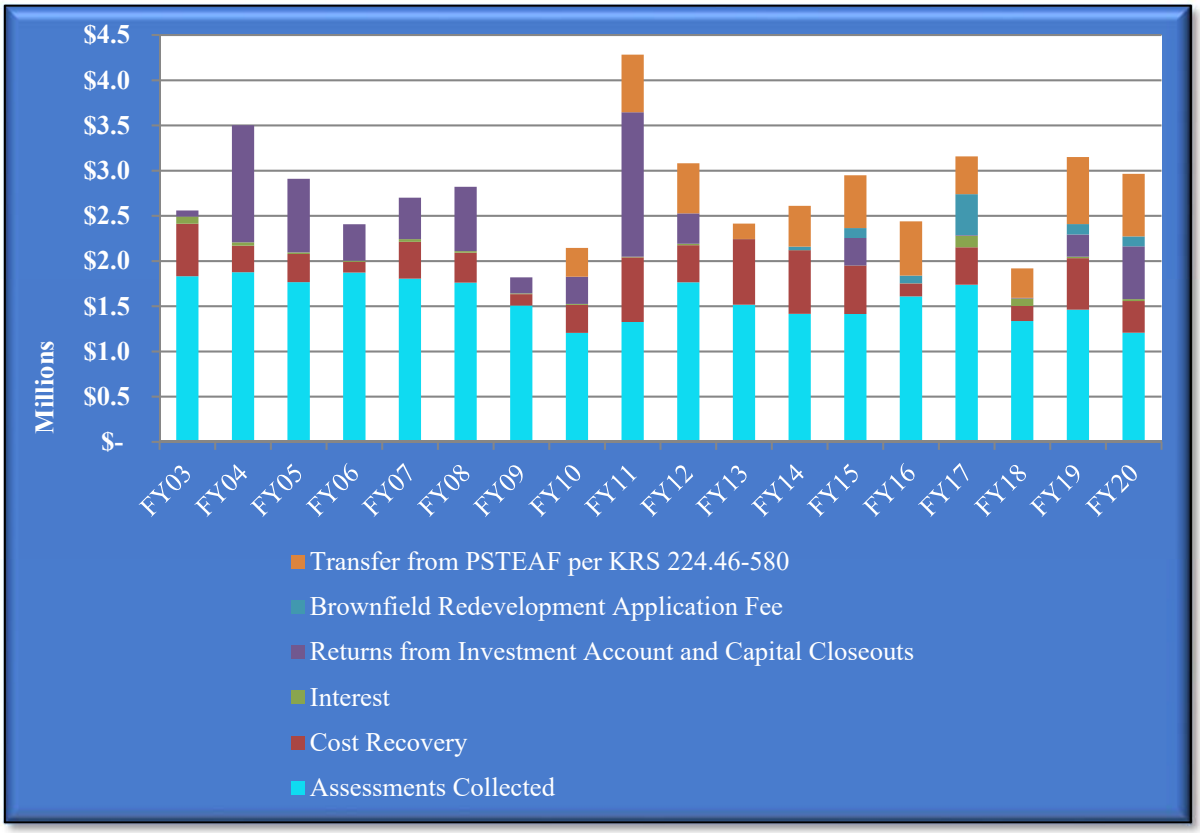


Figure 2: HWMF Revenues for FY2003 - FY2020

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 (

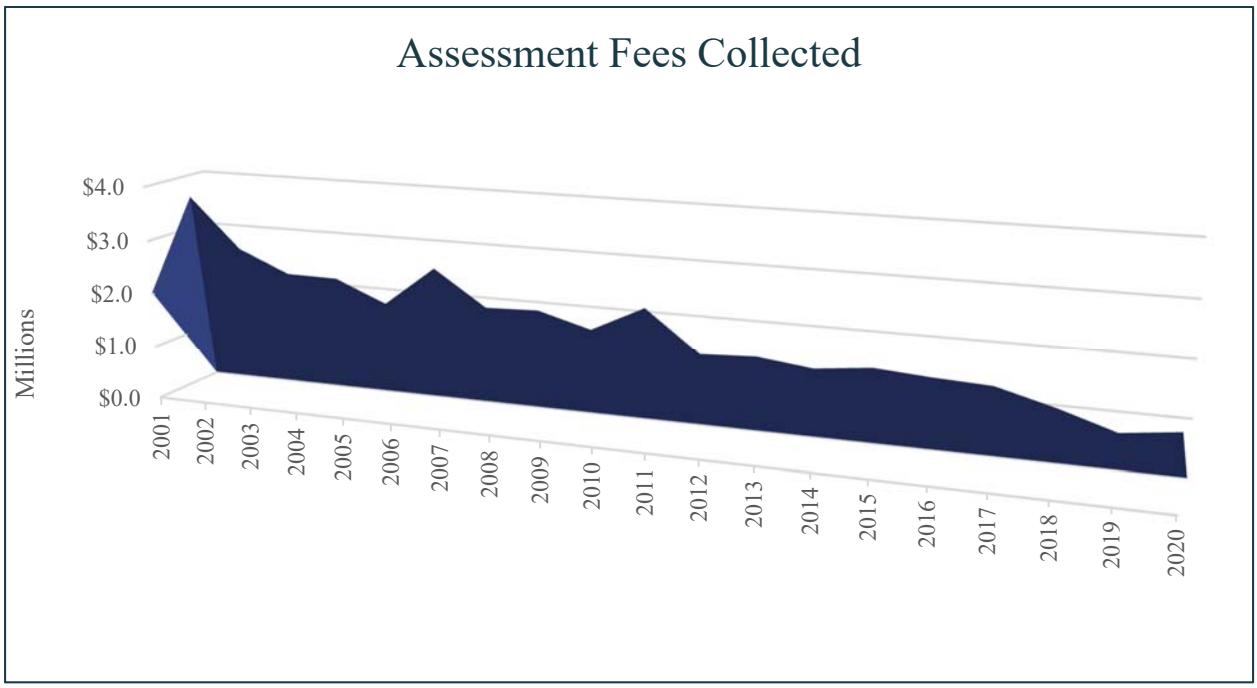


Figure 2).

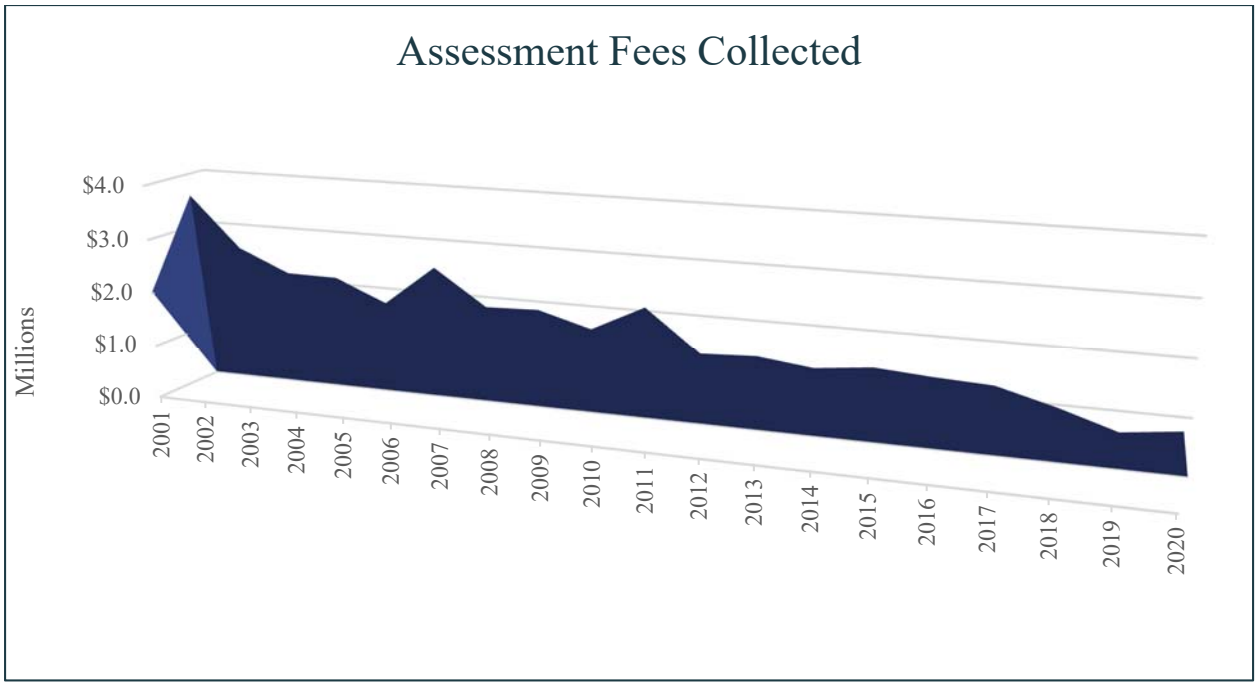


Figure 2: HWMF Assessment Fee Revenues FY2003 - FY2020

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

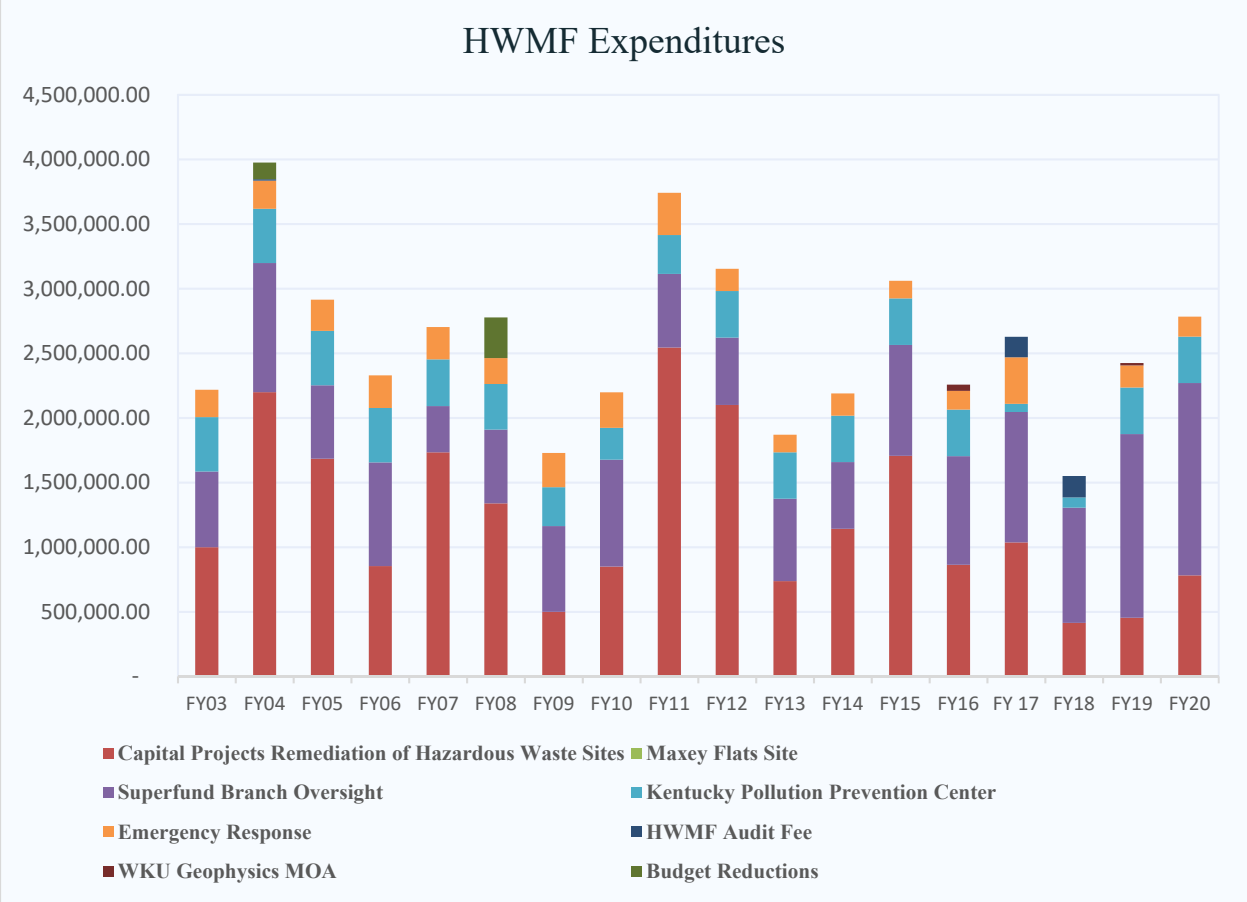
- Emission control dust and sludge from the primary production of steel that is recycled by temperature metals recovery or managed by stabilization of metals, effective 2004;
- Assessment fee waiver granted for hazardous waste generators owing less than fifty dollars ($50), effective 2006; and
- Waste 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 a declared environmental emergency; typical costs range 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. HWMF expenditures have declined in direct proportion to the decline in revenue available (Appendix, Table 2 and Figure 3).



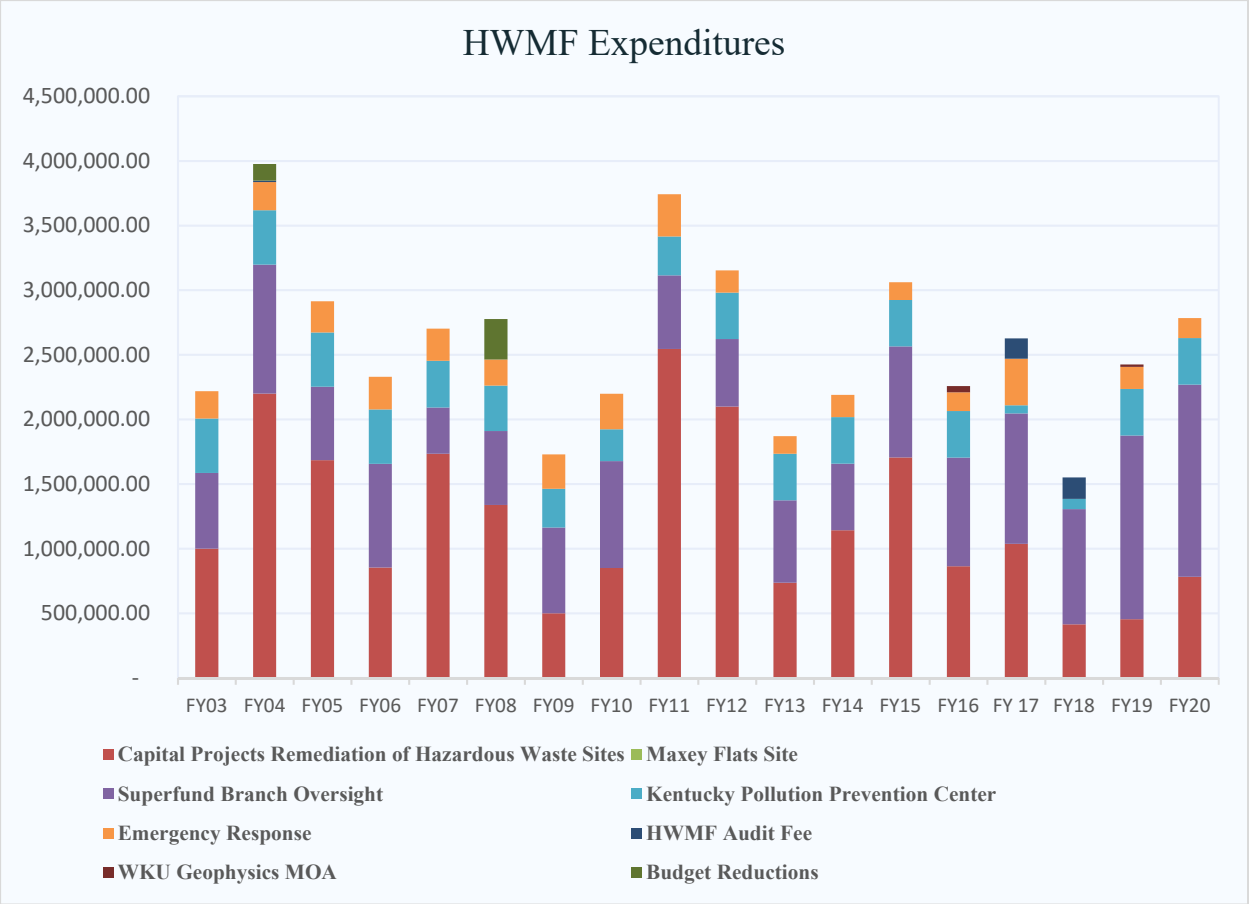


Figure 3: HWMF Expenditures FY2003 - FY2020

The cabinet provides a service to the citizens of Kentucky through technical and professional oversight activities ensuring emergency response and cleanup projects are properly conducted. Cabinet personnel response typically includes the following:

- Contracting for and conducting state-lead cleanups in the role of an absentee responsible party;
- Assisting responsible parties in the cleanup of their sites, and
- Participating 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 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 Emergency 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 FY2019 and FY2020, ERT received 27,266 notifications; 748 required an emergency response. Of those, four were declared an emergency and addressed using HWMF monies. Superfund site remediation and responses to emergencies throughout the commonwealth are costly expenditures.

CAPITAL PROJECTS

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. Figure 5 summarizes capital projects with expenditures for the period of FY2019-2020.

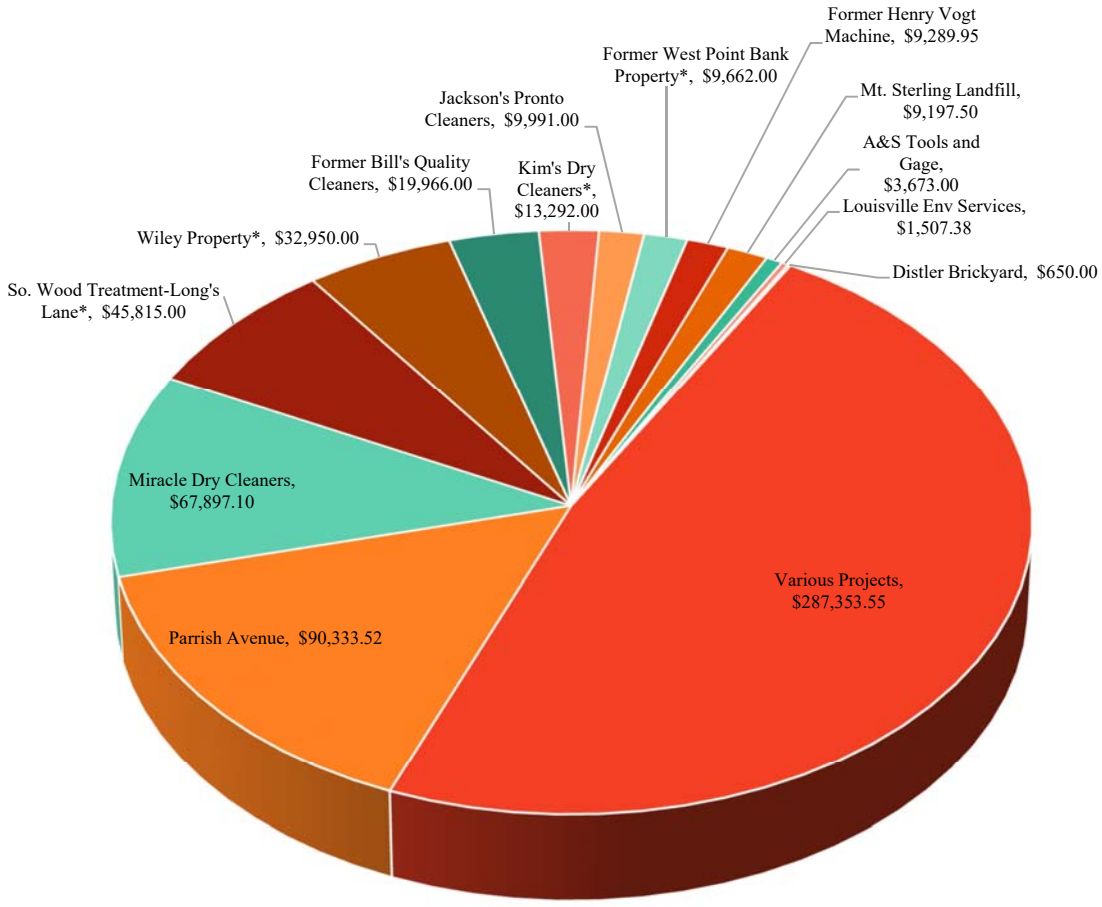


Figure 5: HWMF Active Capital Project Expenditures FY2019-2020

Western Kentucky Wildlife Management Area (WKWMA) Wire Burn Site
Kevil, McCracken County
Expenditures FY2019 and FY2020 - $260

This site is located within the WKWMA. During the early 2000s, KY Fish & Wildlife employees reported several 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 (SFB) used its X-Ray Fluorescence (XRF) units to determine the horizontal and vertical extent of the contamination. An XRF allows real-time measurements of metals concentrations in soil. The Branch's investigation has determined the contaminated areas total just over 1.5 acres. Fortunately, the contaminants extend only a few inches below the ground surface.

By using the XRF, SFB did not need to hire a characterization consultant which allowed funding for this project to be primarily allocated into remediation instead of characterization. The remediation work will take place during the next fiscal year.

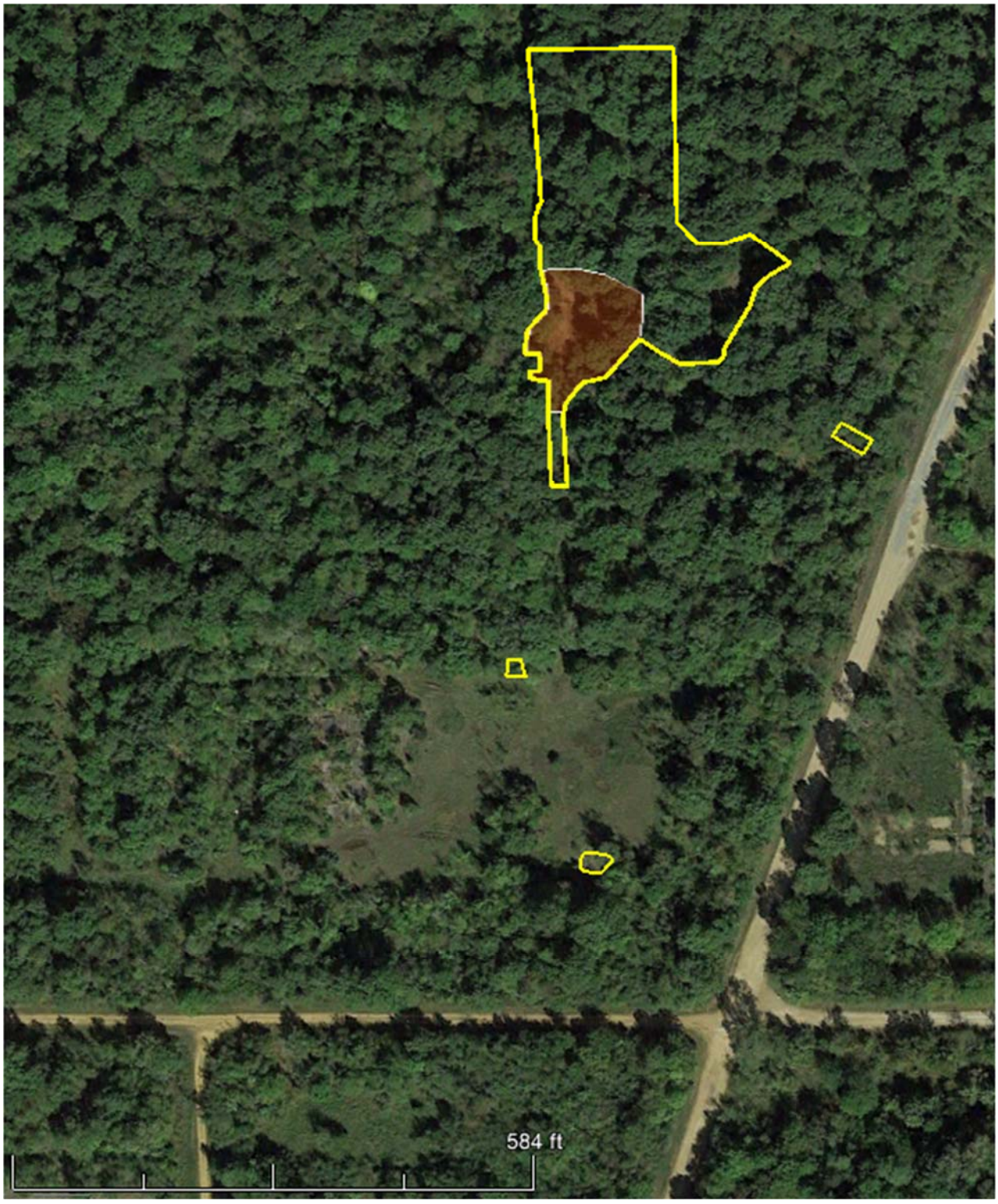
Capital Construction Account: C83H
Account balances: $20,000 in 701 (investigation) monies, $238,000 in 703 (cleanup) monies, and $1,480 in E166 (lab expense) monies.

Status: During early 2020, SFB collected samples of the contaminated material to determine if the material is a hazardous waste. One portion of the largest burn area was found to be hazardous. The hazardous material will require pretreatment with an additive so it can be disposed of in a sanitary landfill, a cheaper alternative than transporting the material to an out-of-state hazardous waste landfill. The Branch is currently working with Kentucky Fish & Wildlife officials to determine any special conditions that must be followed during soil removal within the wildlife management area. Bid specifications for the removal will be prepared once any special conditions have been determined.

WKWMA wire burn site, former wire burn locations (bare areas).

Close-up view of typical debris and barren nature of the former burn areas.

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



Yellow outlines indicate the contaminated areas. The brown shading indicates the area considered to be a hazardous waste.

Louisville Dry Cleaning Sites
Louisville, Jefferson County
Expenditures FY2019 and FY2020 - $13,297

The SFB 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. These three sites, located in Louisville, are geologically similar; therefore, the cabinet contracted with a single environmental firm to investigate and remediate all three. Wood Environment & Infrastructure Solutions, Inc. (Wood) was selected through the Finance Cabinet's request for proposals process to provide the needed environmental engineering services.

Capital Construction Account: C2PW, C83A, and C83G

Account balances (total): $132,069.60 in 701 (investigation) monies, $150,000 in 703 (cleanup) monies, and $915 in E166 (lab expense) monies.

Status: Wood began the assessment of the first site (formerly Kim's Dry Cleaners) during April 2020. Soil and groundwater samples were collected at nineteen (19) locations. The laboratory analysis is still pending. However, field screening and visual evidence detected the presence of chlorinated (dry cleaning solvent) and petroleum compounds. The property was used for a filling station prior to the dry cleaning operations.

Wood's drilling subcontractor advancing a soil boring to also serve as a temporary groundwater assessment well. A previous dry cleaning business was razed during the early 2000s. The current owner redeveloped the property based on a site-specific property management plan.

Wood personnel examining the soil cores as the drilling subcontractor works in the background.

Evidence in Geoprobe sample of petroleum release.

Southern Wood Treatment Long Lane
Montgomery County.
Expenditures FY2019 and FY2020 - $45,815

March 2015 through August 2016. In preparation for an upcoming office move, the Long Lane site was rediscovered by SFB 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. The 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 SFB's Geoprobe®. Site access agreements were obtained and numerous SFB 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 yd^3 of contaminated soil was disposed of as hazardous waste, and 24,100 yd^3 of contaminated soils were disposed of as solid waste.

January 4, 2017. The excavation and disposal were completed. The 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. Before the placement of clean soils, a marker fabric was installed to signify the transition from clean to contaminated soil. Depending on the 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 a 3-foot cap. Two vacant properties that contained the former treatment areas were capped with 2 feet of soil. A total of 15,600 yd^3 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 of 2017. Erosion control measures were implemented before vegetation reestablishment. The total expenditure of the emergency phase was 5.4 million dollars.

Upon completion of the emergency phase of the Long Lane site, the SFB 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 SFB 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.

August 2019. The SFB contracted with Chase Environmental to drill monitoring wells to assess the groundwater conditions at the site. Additional applications of these funds included the purchase of a commercial lawnmower, 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 SFB will conduct periodic site visits to oversee the site and perform required maintenance and monitoring until the final remediation is achieved.

October 2019. Signage was placed on and around the outlying areas that have been assessed for elevated levels of Arsenic. These signs were placed in strategic locations warning of possible exposure risks to the public.

Signs placed at various locations at the site to warn of potential exposures.

June 2020. The facility area is maintained by mowing the property once a month or as needed. Repairs are also made to the infrastructure to prevent exposures.

Capital Construction Account: C95Q

Account balances: $0 in 701 (investigation) monies, $154,185 in 703 (cleanup) monies, and $0 in E166 (lab expense) monies.

Mellow Mushroom (formerly Miracle Dry Cleaners)
Louisville, Jefferson County
Expenditures FY2019 and FY2020 - $67,897

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 and commercial 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 previous dry cleaning operation. 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 except for 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, the project consultant, and approved by the SFB. This plan included at least two properties that are currently residential and several non-residential tracts. Work was completed late in 2018 on tracts where property access was granted, which did not include two properties directly across the alley at the rear of the property (access was not granted). At all points except one, results were either non-detect for parameters sampled (volatile organics) or samples could not be obtained due to very low permeability of soil media. In the single sample with detectable results, the value was above residential but below industrial/commercial RSLs and was located in a paved parking area at the rear of a business fronting Bardstown Road to the north (side gradient direction).

After evaluation of data that was collected during investigations at the site, the construction contract with Wood PLC was terminated. This site will now undergo routine groundwater monitoring from three monitoring points as the primary constituent of interest (tetrachloroethylene) continues to degrade. Tetrachloroethylene levels at the downgradient monitoring point continue to be well below regional screening levels consistent with past sampling events.

Capital Construction Account: C7TS

Account balances: $0 in 701 (investigation) monies, $0 in 703 (cleanup) monies, and $10,005 in E166 (lab expense) monies.

Familee Laundry
Hodgenville, Larue County
Expenditures FY2019 and FY2020 - *None

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 SFB 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 SFB contracted S&ME, 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. SFB requested a pilot study to characterize the soils at the site to determine if using an injection method was feasible for remediating the chlorinated solvent that is present. Results from the soil testing determined that the soil conditions are not favorable for using an injection method. It has been determined that the best possible option for the site at this time is to monitor groundwater for any changes in concentration. *Therefore, this site was removed as a state lead site and there were no additional funds expended.

Parrish Avenue Dry Cleaner Site
Owensboro, Daviess County
Expenditures FY2019 and FY2020 - $90,333

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.

Ensafe 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 SFB through a Memorandum of Agreement (MOA) with Thomas Brackman (Western Kentucky University/Near Surface Geophysics) has completed geophysics of the preferential pathways on-site. Ensafe is developing a groundwater investigation to determine the impacts and extent of the TCE/PCE contamination in groundwater. Ensafe completed the Groundwater characterization in February 2020.

The SFB is gathering groundwater data to determine TCE/PCE concentrations in the wells. The extent of groundwater contamination has been defined and groundwater monitoring or corrective action may be requested in the FY2021-2022 budget cycle.

Nested Wells at Parrish Avenue to monitor three groundwater zones. Drums are cuttings to be disposed.

Capital Construction Account: C7TR

Account balances: $244 in 701 (investigation) monies, $0 in 703 (cleanup) monies, and $2,000 in E166 (lab expense) monies.

Tri-State Oil Refinery
Spottsville, Henderson County
Expenditures FY2019 and FY2020 - $242,699.12

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. 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 before its disposal at a Subtitle D landfill. Clearing the site and initiating work started on August 29, 2018, under Chase Environmental. A temporary access road was constructed, large debris cleared and Terribond™ soil amendment was ordered to treat generated hazardous waste. XRF screening of the main pit removal area was conducted on October 10-11 as well as confirmatory pit sampling based on 1-405 closeout procedures. Those results indicated that removal was successful for the main impact area. The pond was originally supposed to be a wider area removed down to 4ft bgs (below ground surface), but it ended up being a narrow impact area that went down between 6-8ft bgs. The amount of soil that required amendment and removal was smaller than anticipated. It was around 1560 tons of soil that required amendment.

Removal of the 1ft areas outside of the pond was completed on 10/24, 10/26, and 10/30 of 2018. Six hundred and ninety-two (692.77) tons of impacted soil was removed from the site and disposed of at the Owensboro landfill under the guidance of Chase Environmental and the Madisonville Regional Office. Concentrations of sample results post-removal range from 10.6-667 mg/kg. There were 44 samples collected, and only one sample exceeded the residential limit as a composite sample from the east 1ft removal area. Adjacent grab samples (B-33, B-31, and B-26) collected in this same area were all below the residential limit by several orders of magnitude. The only explanation is that perhaps material came off the loading area during sampling collection and caused a spike that is not representative of the site conditions as a whole.

Stockpiling of soil in the pond area for soil amendment before removal.

Site conditions post-removal spring 2019.

The site was backfilled, seeded, and the temporary road removed. Additional road repairs had to be conducted on Resinerg Road due to impacts by the Tri-Axel dump trucks leaving the site. Total

tonnage removed was considerably lower than expected. Due to Finance Project Management, backfilling of the excavation occurred; the temporary road was the source of this backfill. Costs remained close to original estimates. All construction work was completed and the project was closed on December 5, 2018.

Leitchfield Cleaners and Rentals
Leitchfield, Grayson County
Expenditures FY2019 and FY2020 - $65608

Due to the change in land use to multiple domestic living units (apartment complex) and the high potential risk to human receptors, the Division of Waste Management's (DWM) Superfund Branch in cooperation with the U.S. Environmental Protection Agency (EPA) conducted a preliminary site assessment of soil vapors adjacent and around the on-site apartment complex and other buildings at the above reference former dry cleaner property on August 16, 2019, and December 2, 2019. The findings of this preliminary analysis discovered high levels of tetrachloroethene (PCE) and Trichloroethene (TCE) in soil vapor across the property. Based on these results the U.S. EPA and DWM Superfund branch proceeded to an initial site investigation concerning the high-level impacts to soil and soil vapor.

The site investigation was conducted on January 13, 2020, and consisted of sub-slab and indoor air sampling of the apartment complex living spaces. Analytical data revealed sub-slab vapor intrusion levels as high as **180,000 µg/m^3** with indoor air levels above **73 µg/m^3** for PCE, and **1,700 µg/m^3** for sub-slab vapor intrusion with indoor air levels of **2.7 µg/m^3** for TCE—with detections of cis-1,2-Dichloroethene and trans-1,2-Dichloroethene. Regional Screening Levels for Residential Air exposures to PCE and TCE are **11 µg/m^3** and **0.48 µg/m^3** respectively. Also, current measured concentrations of TCE exceed the acute threshold for a pregnant receptor generally accepted at **2.0 µg/m^3**.

PCE is the most frequently used solvent in the dry cleaning industry. When releases have occurred by spillage or by other means during operations, PCE travels to the soil, groundwater, soil vapor, air, and drinking water supplies where it also may degrade further into more toxic COCs over time. Additionally, PCE, TCE, and other degradation products (including Vinyl Chloride) are the primary COCs associated with vapor intrusion into structural spaces from the subsurface.

As a result of these findings concerning significant impacts to soil, sub-slab, and indoor air vapor, and their associated observed levels, it was necessary for SFB to implement emergency abatement procedures to mitigate the immediate vapor exposures to residents living in the apartment building and eliminate any further on-going human health exposures from this release. The financial

viability of the responsible party was not known at the time, so emergency abatement procedures at the four-unit apartment complex housing 10 people were implemented by SFB.

On February 17, 2020, SFB staff informed the residences of potential exposures and provided them per diem to leave the residences while SFB took steps to mitigate the apartments. The residences were out of their apartments for less than one month, as SFB contracted vapor mitigation professionals to install a system (similar to a radon system). The newly installed mitigation system actively vacuums the sub-slab vapors routing it away from the residents.

Capital Construction Account: C9PC

Account balances: $40,000 in 701 (investigation) monies, $80,000 in 703 (cleanup) monies, and $0 in E166 (lab expense) monies.

Leitchfield Cleaners -Vent line and vacuum routing vapors through the attic.

Formerly Henry Vogt Machine Company
Louisville, Jefferson County
Expenditures FY2019 and FY2020 - $9290

The referenced site was a large industrial facility in Louisville that started operating in the early 1900s. The facility primarily produced industrial valve equipment. In the 1990s, an environmental site assessment was conducted to determine if the operations resulted in releases to the environment. The assessment determined that the chlorinated solvent trichloroethylene (TCE) and other associated compounds were present in the groundwater beneath the property. Although Vogt's production slowed until it ceased during 2007, the groundwater investigation continued until 2011.

During early January 2012, Vogt developed a site management plan that was approved by SFB. An environmental covenant was recorded on the affected property during late 2011 as part of the plan. The approved plan required annual groundwater monitoring as well as the maintenance of the property's engineered surfaces and institutional controls. At the time of the plan's approval/implementations, vapor intrusion was not considered to be an issue.

During 2012, Vogt entered bankruptcy. The Vogt property was divided and sold to two private entities as part of the proceedings. Both parties acquired their property in accordance with the Brownfields Redevelopment Program KRS 224.415. Each owner developed a site-specific property management plan as required by the Brownfields program.

During late 2017, a new party was interested in purchasing part of the former Vogt property. As part of their environmental due diligence, soil vapor samples were collected beneath certain buildings located above the groundwater contamination. Elevated levels of TCE and associated compounds were detected in the samples. The prospective purchaser decided not to purchase the property but shared the soil vapor data with SFB. SFB directed the two owners to reassess their property management plans to address any potential for soil vapor intruding into their buildings.

The historic groundwater monitoring indicates that the TCE plume extends north and beyond the former Vogt properties. Most of the properties at the edge of the plume were vacant or industrial. However, two off-site parcels contain structures used for residential purposes. Vogt is no longer a viable, responsible party, and the Brownfield owners are not liable under KRS 224.1-400 for additional investigation or cleanup. SFB created a capital construction account so HWMF monies could be used to determine if the off-site residences are at risk of vapor intrusion.

GeoScience Consultants, Inc. (Geoscience) was contracted through a Master Services Agreement. Geoscience developed and implemented a plan to install six (6) subsurface soil vapor probes on

the offsite properties. GeoScience sampled the probes during March 2020. The analytical results did not detect the presence of TCE or any associated chlorinated solvent compounds.

Capital Construction Account: C8ZG

Account balances (total): $3,000 in 701 (investigation) monies, $0.00 in 703 (cleanup) monies, and $0.00 in E166 (lab expense) monies.

Status: Although the March 2020 sampling did not indicate a risk for soil vapor intrusion, the vapor probes will be resampled during 2020. The additional sampling will determine if any seasonal variation results in an increased potential for vapor intrusion.

Aerial view of two residential structures and soil vapor probe locations. The former Henry Vogt facility is south (located below the bottom of this photo) of these residences.

Soil vapor probes installation. Vapor inlet screen installed 15 feet below the surface. Flexible tubing attached to probe and extends to surface. Steel box and concrete pad constructed to protect tubing.

Vapor sample collected from a soil vapor probe. Summa canister (left) under vacuum that is used to extract soil vapor from probe via flexible tubing.

BROWNFIELD REDEVELOPMENT SITES

Premier Packaging
Louisville, Jefferson County
4301 Produce Road

Premier Packaging entered the Brownfield Development Program in 2015 for a property that had documented groundwater and soil impacts. The property had sat vacant for six years before to their purchase. Based on the accessed environmental conditions, Premier submitted a plan that would ensure that the property would be safely reutilized as they expanded their distribution network. In 2018, Premier broke ground on its new warehouse distribution facility completing the project roughly a year later in February of 2019. The property now contains 280,000 square feet of warehousing and 20,000 square feet of office space. The new distribution center has allowed Premier Packaging to consolidate its operations and increase warehouse space. Approximately 100 staff now use the 4301 property as their primary workplace. Since the construction of the building, Premier has increased its overall workforce by approximately 30 staff. Premier provides access and assistance with the continuation of corrective action of impacted environmental media at the property.

4301 Produce Road remained vacant from 2009 to 2015 until Premier Packaging purchased property.

Premier Packaging building front after construction.

Superfund Brownfield Redevelopment Program Applicant and Stakeholder Responses:

Andy Hennessey with Premier Packaging stated, "the Brownfield Redevelopment Program was one of the initial agenda items on our checklist upon purchasing this property. The application acceptance helped advance our new construction vision to reality.". June 8, 2020 Hancock House (formerly Louisville Chemical Company) AI#53414 601, 613, and 615 East Jefferson Street.

Hancock House (formerly Louisville Chemical Company)
601, 613, and 615 East Jefferson Street, Louisville

This site was originally developed in 1885 as a hotel and operated as such from 1885 till 1916. In 1916 it became the (Runyon & Son Wholesale Grocery) until 1941. In 1947, it became Louisville chemical and operated until 1999. Louisville Chemical manufactured and mixed pesticides on each floor of the building. The process ended in a final packaging room at the first floor. Since 1999, this property was largely underutilized with various tenants that occupied only small portions of the property.

The property was purchased in 2016 under the brownfield redevelopment program. With a property management plan approved, Hancock House was able to follow a plan that had been verified protective by a professional geologist while having concurrence from SFB. After significant renovations, Hancock House opened at the end of February 2020. The Home2 Hotel across the street operates and manages the property as an Airbnb.

Former Louisville Chemical Company Building prior to renovation.

Hancock House (formerly Louisville Chemical Company) after renovation.

FY2019-2020 Brownfield Initiatives

The Superfund Branch has an established audit process 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 allowed to correct the issue and submit verification of the correction. If extreme or blatant mismanagement of a subject site is noted, the authority to void Brownfield status resides with the Director of the Division of Waste Management, as established in 401 KAR 102:010, Section 7. During FY2019 and FY2020, DWM conducted 15 audits. A total of 48 total audits have been conducted since the program's inception representing. Approximately 20% of all sites have been audited. To date, there have been no sites referred to the Director's Office.

The Superfund Branch has also established an audit program for the 267 managed closure sites. Since October of 2019, staff have been inspecting, managed closed sites. Although Brownfield statutes require the owners of these properties to certify that conditions of management are being met, no actual inspection or audit of site conditions by the state had been occurring. This verification project has noted noncompliance but has not necessitated any notice of violations as problems are corrected and documentation of those corrections are submitted back to the Superfund Branch.

COSTS OF CLEANUP

The Kentucky Superfund program currently is working with a total of 348 active Superfund sites. Many, possibly all of these sites, could become state-lead sites. Due to several emergency events caused by concerning old Resource Conservation and Recovery Information System (RCRIS) facilities, the Superfund branch was directed to evaluate and rank four major RCRIS category sites out of the RCRIS generator list that were likely to become future Superfund sites based on historic activities. Existing and former RCRIS generator Wood Treating Facilities (37), Plating Operations (73), Battery Operations (25), and Dry Cleaners (294) were identified. Approximately 3,600 other RCRIS generator sites, may also have had an unreported or unknown Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or 1-400/405 release. As a conservative estimate, if 10 percent of the sites have unreported or unknown releases this would result in 360 additional 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 the cost to complete a cleanup. Site-specific characteristics such as the mass of the contamination, the character of the contaminant, the geological setting, and the physical location of the site all influence costs. Using historic Kentucky Superfund cost information site costs range from $10,000 to several million dollars. 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 more than $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 conservative. Certain category sites such as former wood treating facility average cleanup costs over 20 million dollars per site. Additionally, larger industrial type sites range in cost from $1 million to $10s of millions of dollars per site. The Kentucky Superfund program has steadily averaged 173 registered new superfund sites annually. Additionally, 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 costs range from over $10,000 to over $500,000 per year based on the CERCLA NPL Records of Decision (RODs). Considering all these factors, and revising internal estimates based on national historic and similar industry-specific clean-ups, the total 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 2019 and 2020 Fiscal Years, emergency sites addressed and other annual state-led remedial actions, the superfund program is currently unable to adequately address the increasing number state-lead clean-ups.

SUPERFUND SITES NEAR YOU

Typical historical Superfund sites are primarily perceived to be sprawling industrial complex sites, 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 potentially 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. The typical sites that are entering into superfund are smaller sites that 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) is unlikely to achieve restoration within the next **50 to 100** years. These types of sites pose the greatest threat to the citizens of the commonwealth and to Kentucky's natural resources. They encompass the largest growing number of sites entering the state Superfund program.

The human health and natural resource concerns from these sites are increased by their proximity to areas where people live, eat, and play. These same areas often lack the kinds of property controls common to industrial sites. Additionally, the smaller lot sizes of many of these sites mean that a contamination plume typically impacts multiple neighboring properties, including residential homes, schools, recreational areas, and other locations that a person would not normally anticipate having contamination issues.

The Superfund program was directed to assess rank and then field screen 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 evaluation effort revealed that over 11 percent of these 1,000 plus sites were within 0 to 0.25 mile of a residence, daycare, school, and/or domestic, public, or municipal well-field. Moreover, approximately 57 percent were within 0.25 to .05 mile, eight (8) percent were situated within .05 to 1.0 mile, five (5) percent within one to two miles, and 28 percent over two miles from these same types of land use. To date, 37 of the RCRIS generator sites have been visited by staff to evaluate actual site conditions. Of that group of sites, five have been field screened to determine if releases are present. The project has already identified one property that had unacceptable levels of vapors potentially exposing residents at an apartment building that was formerly occupied by a dry cleaning business.

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 the value of the real property combined.

Most hazardous substances and contaminants released into the environment have scientifically-proven persistence as a risk to human health and resource damages from 50 to over 100 years and in many cases (such as metals) in perpetuity. Large multi-national Standard and Poore (S&P) Fortune 500 companies have maximum life spans of 40 to 50 years[1], while most U.S. S&P Fortune 500 companies have maximum life spans of less than 20 years[2]. 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 less than 20 years of financial solvency, and most smaller entities are financially insolvent relative to clean-up costs, Kentucky is the ultimate "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 such that the statutory duty to protect human health and the environment is tenuously attained.

[1] Crainer, Stuart. "The Living Company by Arie de Geus". *July 1998* Strategy+Business. https://www.strategy-business.com/article/18728?gko=8c8f1

[2] Sheetz, Michael. "Technology killing off corporate America: Average life span of companies under 20 years" *August 2017*.CNBC.com. https://www.cnbc.com/2017/08/24/technology-killing-off-corporations-average-lifespan-of-company-under-20-years.html

The state Superfund program and HWMF is the lone entity with authority and sufficient longevity to maintain protection of human health and the environment mandated by KRS 224.10-100. Due to the number, difficulty, and lack of financial resources, these sites place an increasing strain on the HWMF (Figure 6).

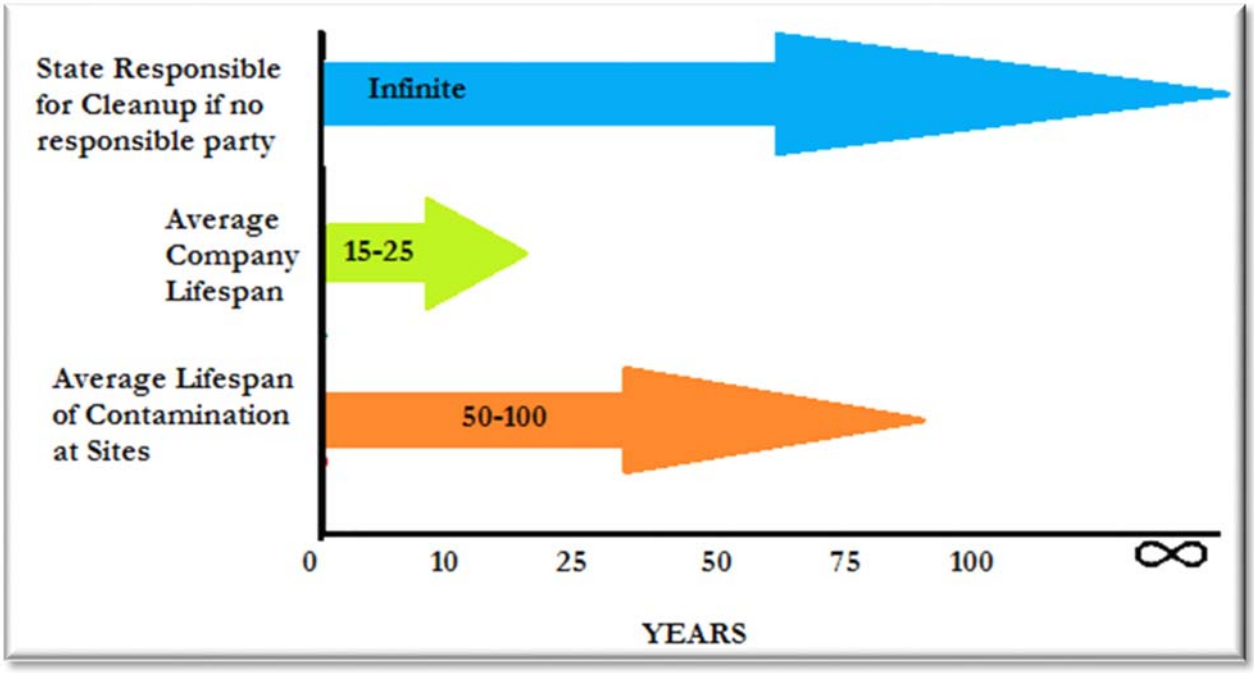


Figure 6: State Cleanup Responsibility Outlives Company Responsibility by 400 Percent.

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. During this biennial, the SFB purchased a portable gas chromatograph to assist with site screening. The SFB also routinely purchases passive

soil gas vapor monitors to screen vapor at sites with the potential of releases from volatile constituents. SFB also recently purchased a commercial grade front deck mower, a mid-level compact tractor, a 22' flatbed trailer, and a mobile sampling equipment trailer. HWMF monies routinely pay for the service and calibration of all their screening equipment. These purchases allow this branch to quickly mobilize to screen or perform maintenance and operations on-site.

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 sites and the 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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Commonwealth of Kentucky
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Energy and Environment Cabinet
Secretary Rebecca W. Goodman

Kentucky Department for Environmental Protection
Commissioner Anthony Hatton, P.G.
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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 2020

APPENDIX

TABLE 1: Hazardous Waste Management Fund Revenues, FY1993-2020

	Assessments Collected	Cost Recovery	Interest	Return on Investment Account & Capital Closeouts	Brownfield Redevelopment by county	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**
FY19	1,461,476.11	569,243.99	16,323.96	245,527.38	115,000.00	742,352.26	**3,149,923.70**
FY20	1,206,187.46	350,514.86	22,063.37	582,785.07	110,000.00	692,012.36	**2,961,629.45**
GRAND TOTAL	**$54,906,879.86 6**	**$10,839,352.04**	**$1,604,388.16**	**$12,967,448.41**	**$38,500.00**	**$5,490,443.33**	**$85,847,011.80**

TABLE 2: Hazardous Waste Management Fund Expenditures, FY1993-2020

	Capital Projects Remediation HW 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	$157,996.74	-	**$1,589,939.59**
FY18	$414,500.00	-	$79,156.12	$1,057,079.65	$360,000.00	$165,800.00	-	**$1,496,235.77**
FY19	$454,500.00	-	$17,991.00	$1,592,245.63	$360,000.00	-	-	**$2,424,736.63**
FY2020	$782,500.00	-	-	$1,640,874.92	$360,007.96	-	-	**$2,783,382.88**
GRAND TOTAL	**$41,744,793.65**	**$6,258,654.00**	**$66,214.17**	**$24,943,823.99**	**$9,418,162.69**	**$334,829.74**	**$442,200.00**	**$83,208,678.24**

TABLE 3: Cumulative Expenditures on Active Capital Project Accounts FY2019-2020

	Engineering	Construction	Analytical
Small Cleanups and Emergency Responses	60,831.11	190,262.06	36,260.38
Kim's Dry Cleaners	13,292.00		
Quality Cleaners			
Louisville Environmental Service	1,364.88		142.50
Distler Brickyard		650.00	
Jackson's Pronto Cleaners	9,991.00		
Familee Laundry			
Former Bills Quality Cleaners		19,966.00	
Parrish Avenue	90,333.52		
Miracle Dry Cleaners	59,450.00	8,447.10	
Former West Bank Property	9,662.00		
West KY Wildlife Arear Burn Site			260.00
Former Hartco	9,197.50		
Long's Lane	45,815.00		
Henry Vogt Machine	9,289.95		
A&S Tools and Gage			3,673.00
Wiley Property	32,950.00		
A.L. Taylor Site	9,500.00	16,597.98	10,296.00
TOTAL	**$351,676.96**	**$235,923.14**	**$50,631.88**

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KENTUCKY ENERGY &
ENVIRONMENT CABINET

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