Division of Waste Management
Annual Report

2005-2006

Commonwealth of Kentucky
Environmental and Public Protection Cabinet
Department for Environmental Protection
Division of Waste Management
www.waste.ky.gov
www.recycle.ky.gov

FROM THE DIRECTOR

I am pleased to present the Kentucky Division of Waste Management's *Annual Report* for 2006. This report presents clear, factual information about progress made and the challenges that remain to minimize our waste generation, to increase our recycling and beneficial reuse, to properly dispose of our waste and to remediate lands degraded by illegal dumping and other releases to the environment.

In 2004, the Environmental and Public Protection Cabinet formulated a strategic plan to guide this agency's operations. This report serves to update the public on the progress we've made toward achieving the goals and objectives stated in our strategic plan.

In preparing this report, we envisioned a document that will continue to be updated through the years; one that will provide an easy-to-use tool to measure our progress and to identify our deficiencies.

I encourage all Kentuckians to **get involved** in improving our environment:

- **educate** yourselves on solid waste issues affecting your town [do you really know where your garbage goes?];
- **meet** your county's solid waste coordinator;
- **contribute** your time to help your community profit from recycling;
- **organize** local groups to participate in Commonwealth Cleanup Week;
- **think** before you use or dump chemicals and other pollutants into the environment;
- **take action** to reduce your waste --- and expect others to do the same.

Together we can make Kentucky a better place in which to live and work for future generations.

Sincerely,

R. Bruce Scott, P.E., Director
KY Division of Waste Management

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Annual Report

2005-2006

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(31) **"Waste"** means:

(a) "Solid waste" means any garbage, refuse, sludge, and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining (excluding coal mining wastes, coal mining by-products, refuse, and overburden), agricultural operations, and from community activities, but does not include those materials including, but not limited to, sand, soil, rock, gravel, or bridge debris extracted as part of a public road construction project funded wholly or in part with state funds, recovered material, special wastes as designated by KRS 224.50-760, solid or dissolved material in domestic sewage, manure, crops, crop residue, or a combination thereof which are placed on the soil for return to the soil as fertilizers or soil conditioners, or solid or dissolved material in irrigation return flows or industrial discharges which are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923):

1. "Household solid waste" means solid waste, including garbage and trash generated by single and multiple family residences, hotels, motels, bunkhouses, ranger stations, crew quarters, and recreational areas such as picnic areas, parks, and campgrounds;

2. "Commercial solid waste" means all types of solid waste generated by stores, offices, restaurants, warehouses, and other service and nonmanufacturing activities, excluding household and industrial solid waste;

3. "Industrial solid waste" means solid waste generated by manufacturing or industrial processes that is not a hazardous waste or a special waste as designated by KRS 224.50-760, including, but not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer or agricultural chemicals; food and related products or by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment; and

4. "Municipal solid waste" means household solid waste and commercial solid waste; and

(b) "Hazardous waste" means any discarded material or material intended to be discarded or substance or combination of such substances intended to be discarded, in any form which because of its quantity, concentration or physical, chemical or infectious characteristics may cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed;

[Kentucky Revised Statutes, Chapter 224, Subchapter 1, Title 010]

EXECUTIVE SUMMARY

The largest division of the Department for Environmental Protection with over 275 staff positions, the Division of Waste Management (DWM) oversees a vast array of programs dealing with solid waste management, recycling, hazardous waste, underground storage tanks (USTs) and site remediation at contaminated properties such as "brownfields." DWM is a regulatory agency; permits from DWM are required for certain facilities to ensure that wastes are managed properly. These include solid waste disposal facilities (landfills) and entities that transport, store and dispose of hazardous waste (TSDs).

- The division has completed a comprehensive review of its regulations germane to two major program areas: hazardous waste and underground storage tanks. In 2006 the division foresees promulgating new regulatory amendments to completely overhaul these two programs. Hazardous waste regulations will be updated to match federal standards adopted through 2005 [with a few appropriate Kentucky-specific standards]. The UST program will change the way cleanups are financed through the Petroleum Storage Tank Environmental Assurance Fund. Tank cleanups will be done faster, more efficiently and at lower cost under the revised program.

- The number of pending solid waste permits (the backlog) has dropped dramatically from over 250 in the summer of 2004 to 50 in December 2005.

- Prices for certain recyclable materials are going up (PET, steel, aluminum). Recycling commodities prices are holding at solid sustainable levels with some commodities, such as aluminum beverage cans, scrap copper, scrap steel and plastic containers (PETE and HDPE) at historic highs. The long-term outlook (over the next 5 – 7 years) is for continued favorable pricing levels to recyclers.

- Recycling in Kentucky is improving slightly but still lags behind the national average.

- Over 85 percent of Kentucky households receive door-to-door garbage collection service.

- Waste disposal is 15 percent cheaper at Kentucky landfills than the average of surrounding states. While cheaper disposal prices may help encourage proper disposal they also can adversely affect the ability to build recycling infrastructure as an alternative to high waste disposal costs.

- There are roughly 2,500 known underground storage tank cleanup projects to be completed in Kentucky.

- In 2005-06, the DWM reimbursed counties over $1.1 million for the cleanup of 361 illegal open dumps.

- During 2004, the counties reported collecting 697,047 bags of litter at a cost of $9.4 million.

- In 2005, DWM conducted 5,951 inspections (roughly 500 per month on average) and issued 793 notices of violation.

- In 2005, DWM conducted waste tire amnesty days in 35 counties and collected over 1.2 million waste tires.

- A total of 60 major state Superfund sites have been remediated since 1993. Since 2003, 67 removals/responses for smaller sites (abandoned or leaking drums, mercury assessments and removals, soil cleanups, etc.) have been conducted.

- The number of incidents per day to be addressed by the cabinet's Environmental Response Team has nearly doubled since 2003.

The division is considering promoting legislation to address the following areas:

- Increasing the bonding (financial assurance) requirement for waste tire accumulators, transporters, and processors. Presently, the $1 per tire bonding requirement outlined in KRS 224.50-862 is insufficient to address remediation costs for tire facilities that improperly disposed of waste tires. Kentucky recently completed a multi-million dollar cleanup to address a landfill that was ablaze due in part to improper management of waste tires.

- Creating an allowance in the statute (KRS 224.01-400) for the cabinet to seek a windfall lien to recoup costs incurred in remediating releases to the environment. This would provide a cost recovery mechanism (similar to the federal government's authority) to assure the state is compensated when taxpayers' funds are used to conduct cleanups at private property.

- Making revisions to the waste tire statutes (KRS 224.50-850 through -880) to provide for reporting by registered waste accumulators/transporters/processors of the number of waste tires accepted and final disposition (recycled or landfilled), increasing the number of waste tires a tire retailer may accumulate without having to register to be in line with usual transportation methods, providing that certain state and local government recycling facilities may accumulate the same number of waste tires as a tire retailer without having to register and eliminating the exemption from registration for salvage/junkyards.

INTRODUCTION

The Division of Waste Management (DWM) is one of six divisions of the Department for Environmental Protection in the Environmental and Public Protection Cabinet (EPPC). The cabinet strategic plan was developed in September 2005; it describes the mission of the agency:

"to improve the quality of life for all Kentuckians and to enhance Kentucky's economy while protecting Kentucky's environment, workers and the general public."

To accomplish this mission, the cabinet has developed a set of objectives to be implemented by each department from 2006-2009. The objectives and tactics germane to DWM are:

Cabinet Goal #1: Improve regulatory procedures and implementation. Make Kentucky's regulatory program rational, reasonable and user-friendly.

Cabinet Goal #4: Improve the quality of the Kentucky environment and minimize the health impacts to the citizens from environmental risks in the Commonwealth.

Tactic 4.2.3: Restore or manage contamination at sites with known or suspected releases to soil or groundwater.

Tactic 4.2.4: Encourage reduced waste generation and disposal by promoting beneficial reuse, recycling, waste minimization and pollution prevention.

Tactic 4.2.5: Assure proper management and disposal of waste.

In other words, the division's approach is to first minimize waste generation. When waste *is* generated, we work to reclaim that which has value as a resource (recycling), and then assure that the remaining waste is disposed of properly.

Then, we work to restore those lands that are contaminated when wastes are *not* managed properly. In the sections that follow, we report on our activities in these main areas: waste generation, recycling, collection/disposal and site remediation.

To track our progress, DWM has developed a set of environmental indicators that we will track in this *Annual Report*, and in the future.

Measures for **Waste Generation:**

- Tons of waste generated each year in Kentucky, by type [see pp. 3-4].

Measures for **Recycling**:

- The tons of solid and special waste recycled or reused, by type [see p. 5].
- The tons of material recycled through the state government recycling program [see p. 6].

- The number of tires reused through tire-derived fuel projects and crumb rubber grants [see pp. 10-11].
- The number of notable business establishments that utilize recovered materials to manufacture a product [see pp. 37-38].
- Numbers and types of new recycling operations established across the state [see pp. 37-38].
- The tons of hazardous waste recycled or reused [not available].

Measures for **Collection and Disposal**:

- The compliance rates for authorized solid waste management facilities [see p. 32].
- The amount, by weight, of litter collected by counties through the Kentucky Pride program (see p. 24).
- The compliance rates for authorized hazardous waste facilities [see p. 32].
- The compliance rates for registered underground storage tanks [see p. 32].

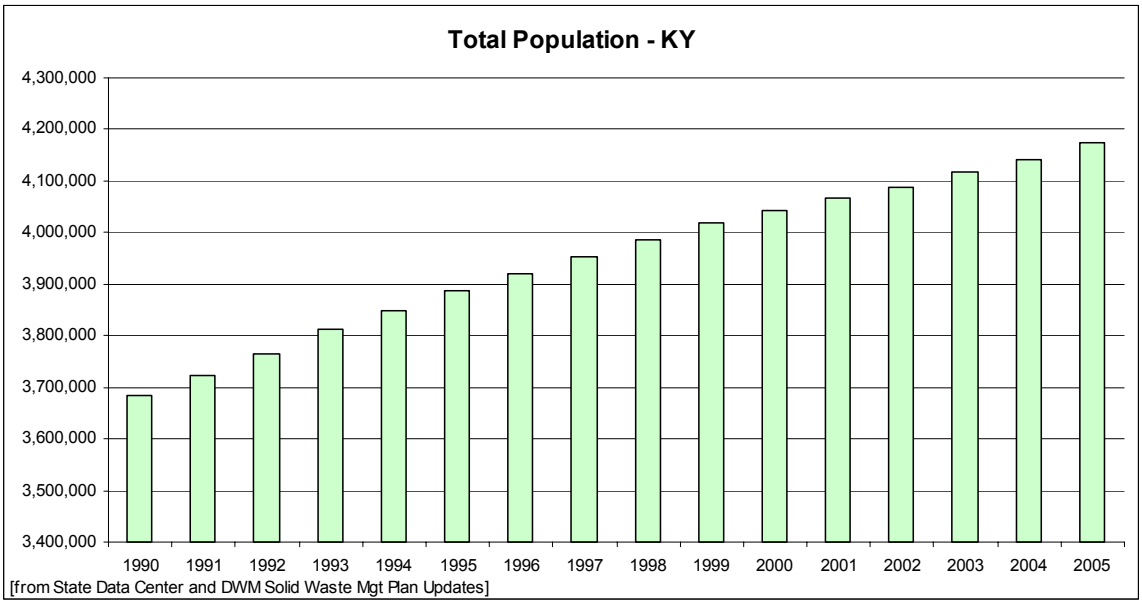
Measures for **Site Remediation** are as follows: The number of sites with known or suspected releases where no further action is required or human exposures are otherwise controlled as a result of implementing a management-in-place technique.

This item can be further distinguished along programmatic lines:

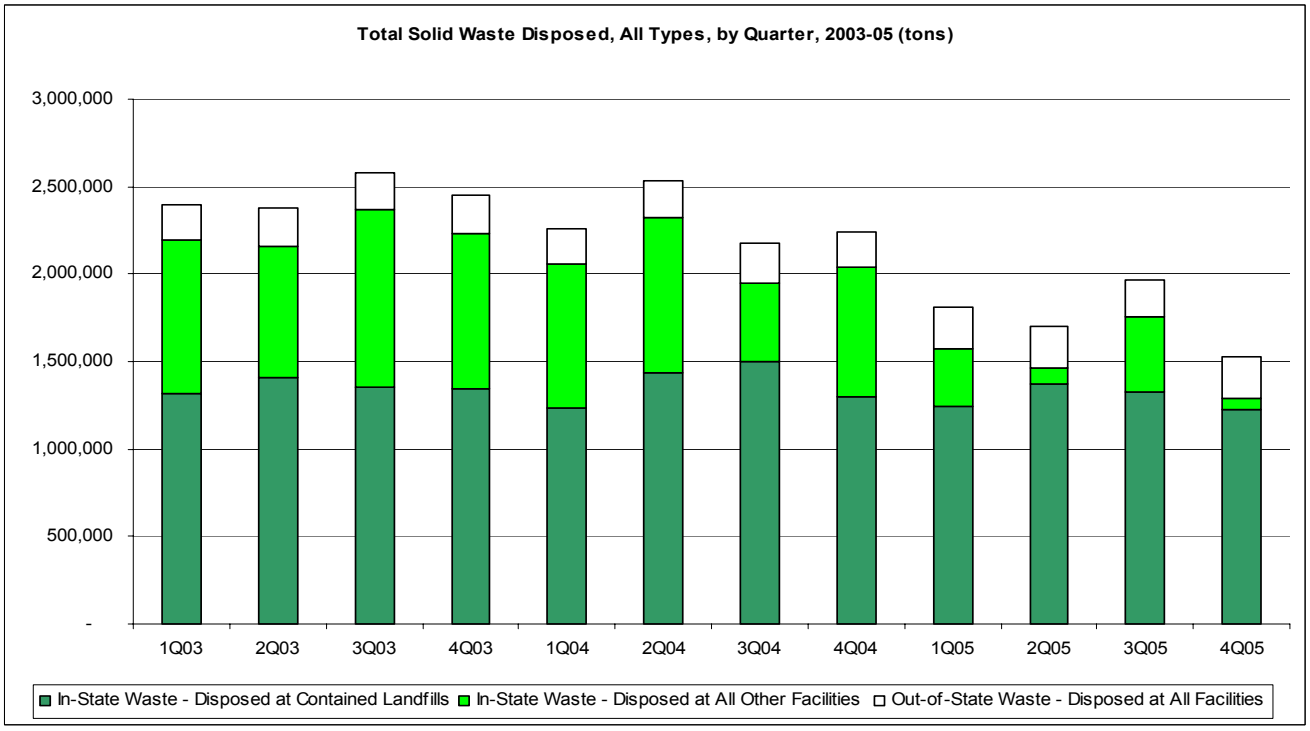
- Number of underground storage tank cleanups conducted, remaining [see pp. 15-16].
- Number of hazardous waste program corrective actions completed, remaining [see pp.16-17 and 30].
- Number of historic landfills characterized, number remediated, remaining [see pp. 22-23].
- Number of illegal dumps remediated under the Kentucky Pride program, remaining [see p. 23].
- Number of state Superfund sites characterized, number remediated [see pp. 17-22].
- Number of emergency or incident responses made and number of cases closed [see p. 25-26].
- Number of cleanups conducted under state oversight via the Voluntary Environmental Remediation Program [no sites have completed the VERP process to date; one applicant is presently in the process].
- Number of National Priority List (NPL) sites with controls in place and under state oversight, including Maxey Flats, remaining [there are 22 sites plus one other site under federal control; see pp. 20-22 for a discussion of the Maxey Flats site].

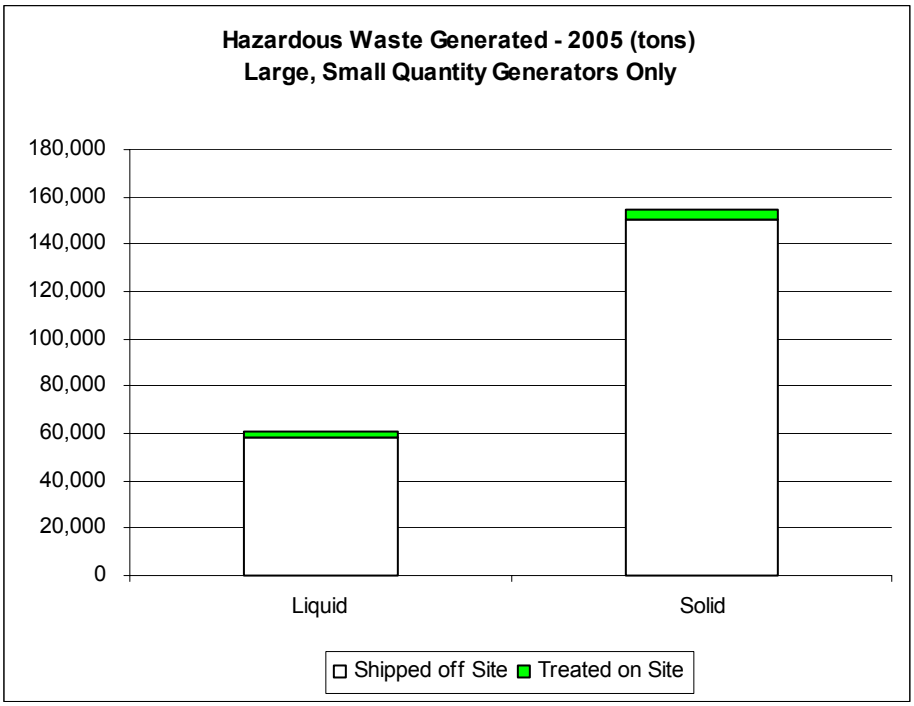
WASTE GENERATION

All counties in Kentucky offer a system of universal waste collection. Universal waste collection means that collection service is made available to households, either through curbside collection or through drop-off centers/collection centers/transfer stations for use by households.



As reported on Quarterly Solid Waste Quantity Reports submitted by facility operators:

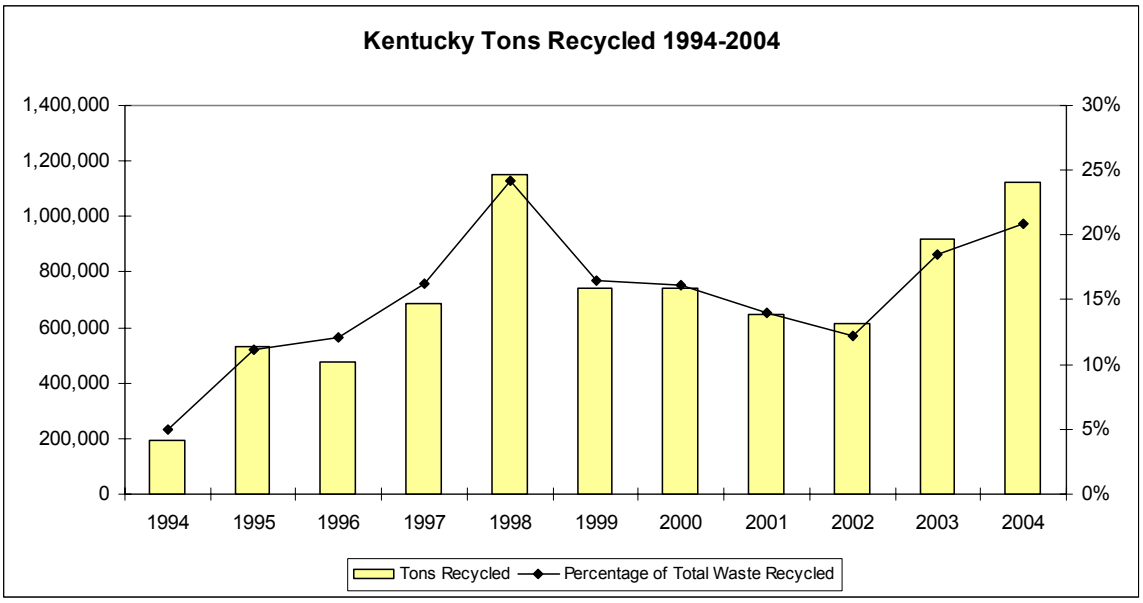




Note: The chart above does not include 15,329,864 tons of hazardous waste that is exempt from assessment, such as process wastewaters regulated under the Clean Water Act. This also excludes "limited quantity generators" who are exempt from filing generator reports or annual tax assessments.

RECYCLING

Recycling in Kentucky is improving slightly, but still lags behind the national average.



Prices for certain recyclable materials are going up (PET, steel and aluminum). Recycling commodities prices are holding at solid sustainable levels with some commodities, such as aluminum beverage cans, scrap copper, scrap steel and plastic containers (PETE and HDPE) at historic highs. The long-term outlook (over the next 5 – 7 years) is for continued favorable pricing levels to recyclers.

Electronic waste (E-scrap) recycling is becoming an important part of the recycling industry here in the Commonwealth, generating many new jobs. Recycled commodity pricing has been driven by export demand and the outlook for this to continue is good as long as there are no disruptions in the consumer sector growth in China and India, in particular.

Steady growth in the U.S. economy will add to demand for resources recovered from the waste stream, as petroleum-based materials become unaffordable. "Waste" is rapidly becoming the new resource of the 21st century.

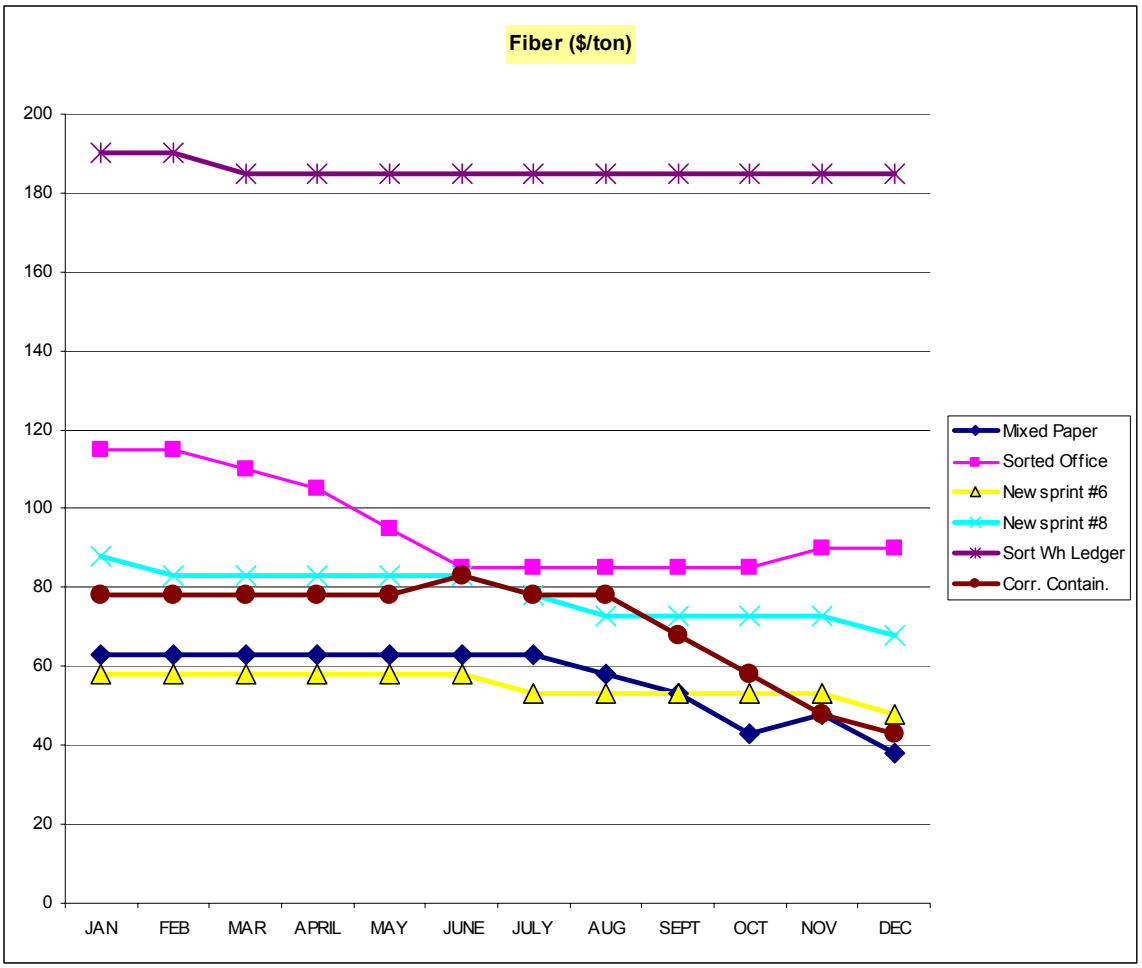
Senate Bill 50 [2006] established a fund for the building of recycling infrastructure and the collection of household hazardous waste. This program has the potential for significantly increasing the volume being recycled in the state.

The State Government Recycling Program:

KRS 224.10-650 establishes a program, administered by DWM, for collection and source separation of waste materials generated as a result of state agency operations, including, at a minimum, aluminum, high-grade office paper and corrugated paper.

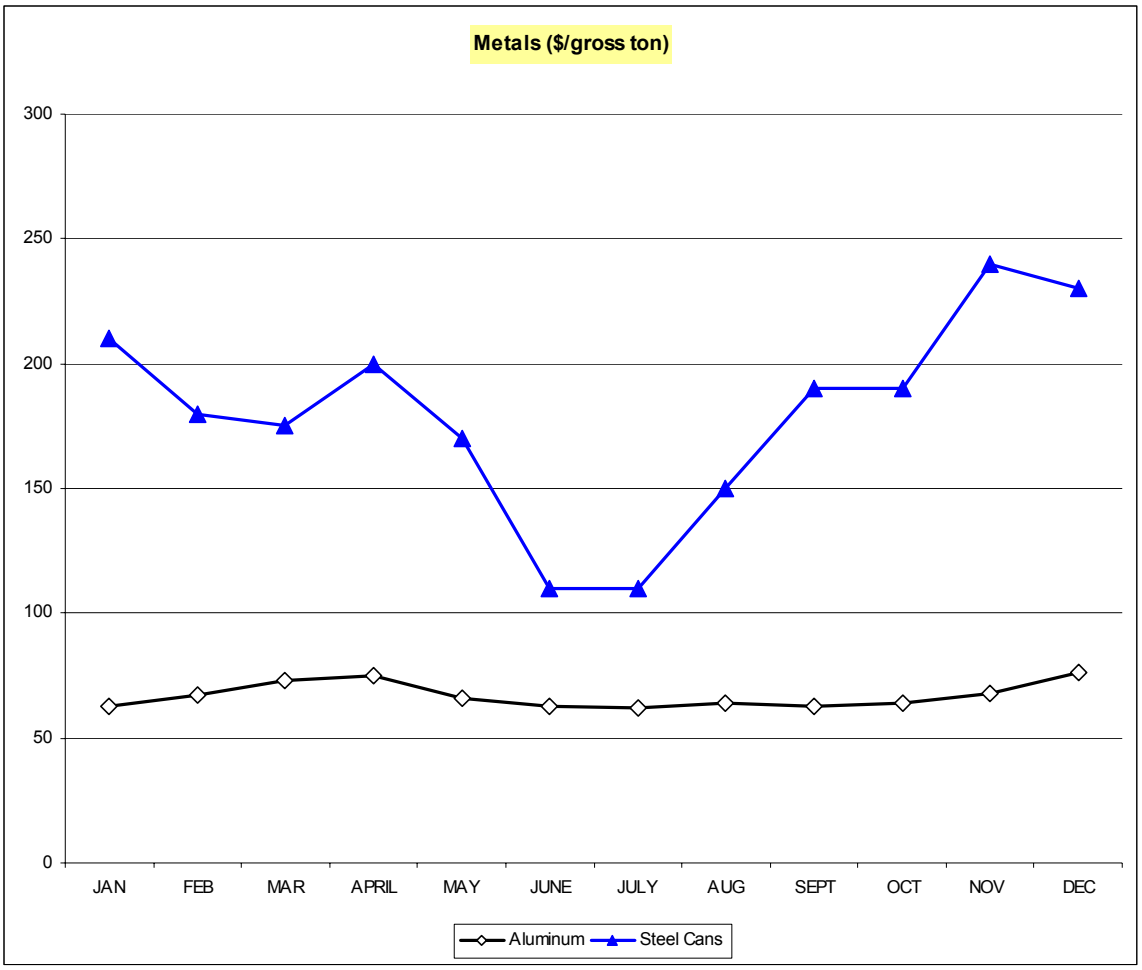
During 2005, the state government recycling program collected over 3 million pounds of office paper alone from state agencies.

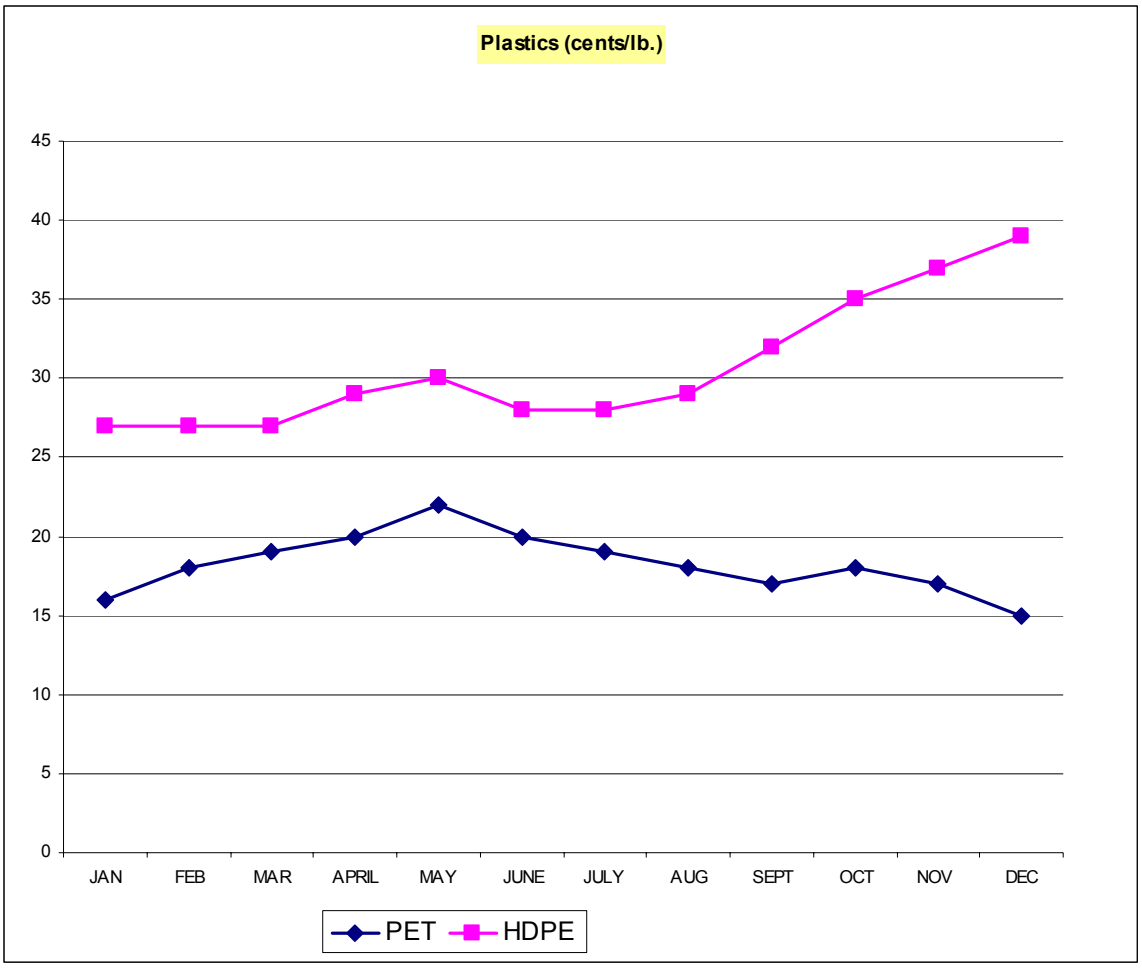
Through publication of its *Marketplace* newsletter, the DWM reports on the prevailing prices paid for aggregate recyclable materials. The following charts show the trends for various commodities.



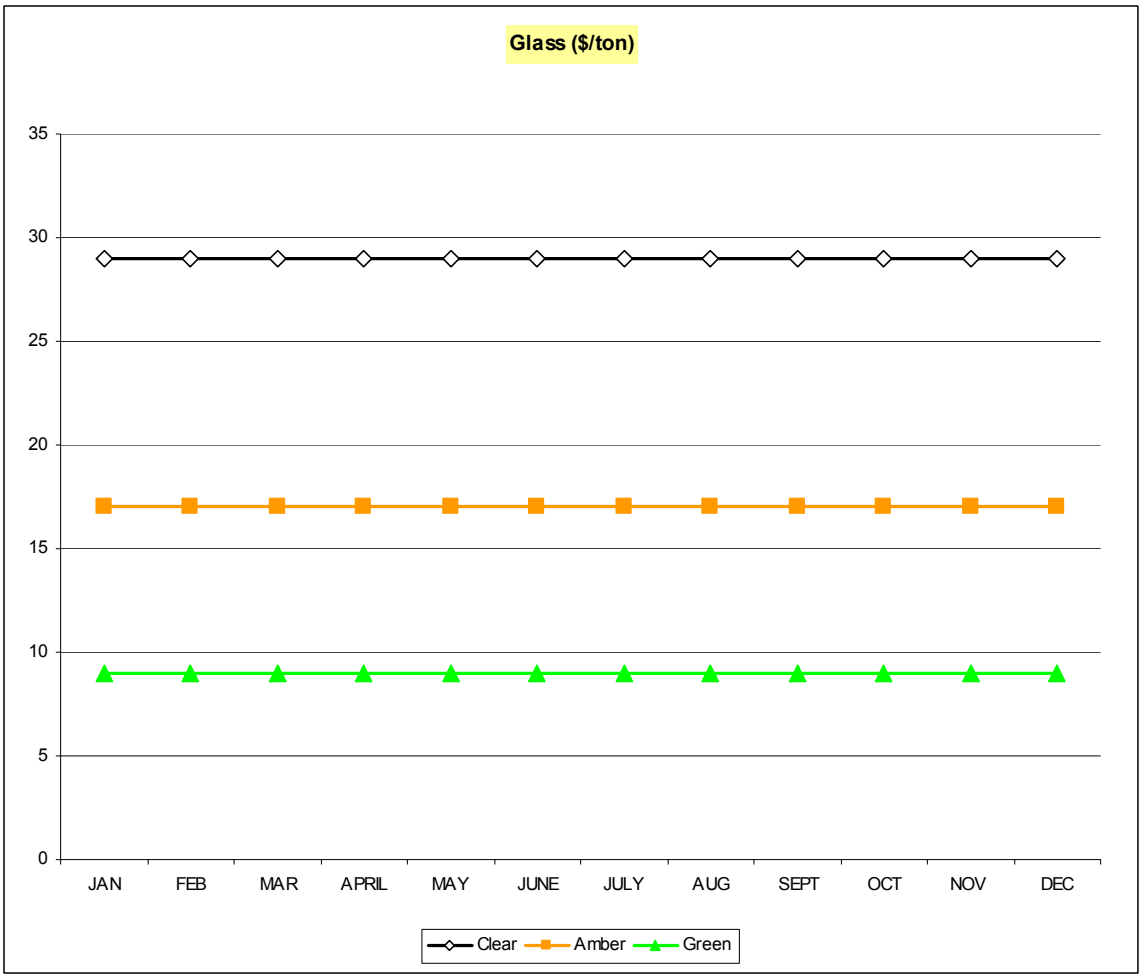
Note:
"Newsprint #8" means baled sorted newspaper, with no sun exposure, with less slick advertising inserts.
"Newsprint #6" means baled newspaper that typically has advertising slicks in it.
"Sorted office" means mostly white and colored, groundwood-free copier and printer paper.
"Mixed paper" means a lesser-grade of material that can include slick advertising inserts, envelopes and other things with gummy surfaces.
"Sorted white ledger" means higher class white paper such as stationery (free of groundwood fiber)
"Corrugated containers" means, typically, cardboard boxes.

China remains the No. 1 buyer of recovered paper from the United States, buying more than half of our recovered paper exports. China bought 29.5 percent more recovered U.S. paper in 2005 than in the previous year, amounting to 7.7 million metric tons and more than half of U.S. paper exports. Mixed paper is the largest paper category exported, with cardboard following. Last year the amount of recovered paper exported rose by 13.3 percent over 2004 to 14.6 million metric tons. Other top foreign buyers besides China are South Korea, Canada, Taiwan and Thailand.


Metals ($/gross ton)
300
250
200
150
100
50
0
JAN
FEB
MAR
APRIL
MAY
JUNE
JULY
AUG
SEPT
OCT
NOV
DEC
Aluminum
Steel Cans



Note: *"PET" means: Polyethylene Terephthalate, typically in the form of soft drink bottles.*
"HDPE" means: High Density Polyethylene, typically in the form of milk jugs.



Waste Tire Program:

The Waste Tire Program mandated by KRS 224.50-850 was established in 1998 and directs the cabinet to "…manage waste tires in a way that protects human health, safety and the environment, and which encourages the development of markets for waste tires."

The waste tire program is focused on four primary activities to achieve its statutory mandate. These include:

Waste Tire Amnesty Program – A state and local government coordinated initiative that enables residents to dispose of privately accumulated waste tires free of charge and without fear of legal prosecution. Recovered tires are required to be recycled under a state-administered contract. Additionally, the program is able to promote and educate the public first hand on responsible waste tire management practices. The first statewide amnesty program, which took place from 1998 though 2001, recovered 6,979,806 Passenger Tire Equivalents (PTEs). The 2002 General Assembly reauthorized funding for the program through June 2006 and a second round of amnesty programs was initiated in the spring of 2003. This effort concluded with the nine counties in the Pennyrile Area Development District in the fall of 2005 and recovered an additional nearly 4 million waste tires.

Tire Dump Remediation Projects – A coordinated effort between state and local solid waste management officials to identify and remediate abandoned tire dumps. Through 2003, the program had removed 45 tire dumps, recovering approximately 3,650,000 PTEs. As a result of this effort only one large tire dump has been identified since that time and clean up is under way. To date approximately 125,000 PTE have been removed. This ongoing effort to rid Kentucky of illegal tire dumps is necessary to protect public health and maintain a high standard for environmental quality.

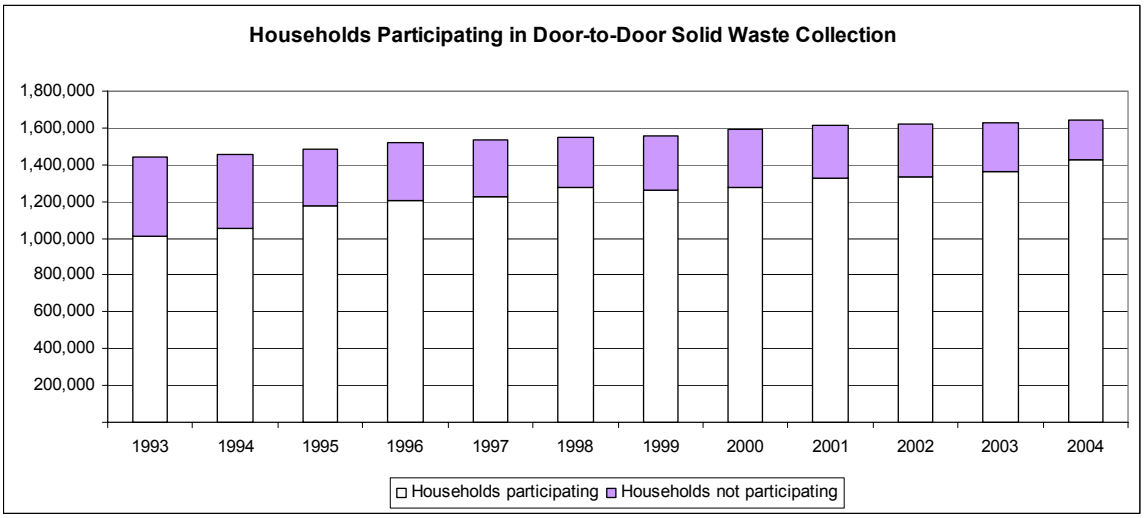
Reimbursement for Tires Collected During Litter and Illegal Dump Cleanups – An incentive program that reimburses area development districts and various PRIDE organizations for tire cleanup costs incident to Commonwealth Cleanup Week and PRIDE cleanup events. Through 2005, the program has contributed approximately $1.7 million toward these organizations' tire cleanup efforts. Continued support of these projects ensures that sound-minded initiatives to clean up tires are properly supported

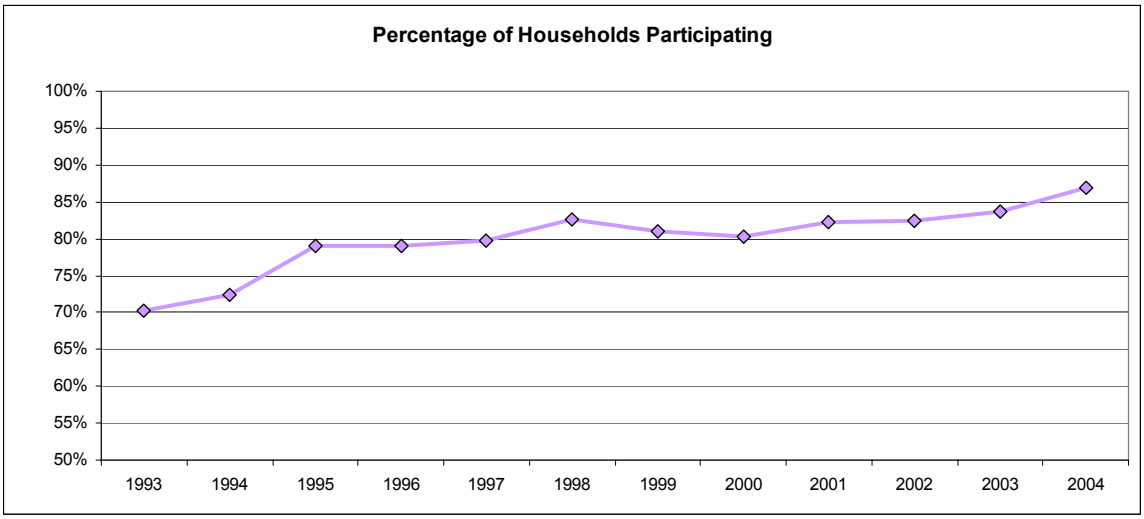
Market Development Projects –A sustained and long-term initiative that proactively seeks and develops beneficial end use markets for waste tires. The program funds the purchase of equipment or materials that are shown to be both technically and economically viable, and demonstrate a clean market development benefit. Establishing self-sustaining waste tire markets is the most critical component to developing a permanent solution to Kentucky's waste tire problem. Without developed markets, all other attempts to solve the waste tire problem are unsustainable solutions. One of the new programs in this area is the land application of "crumb rubber" [finely shredded tires that are free of metal wire and other tire parts] at athletic fields and park lands. Using grants awarded by DWM from the Waste Tire Trust Fund, 500,000 waste tires were reused via crumb rubber projects in calendar year 2005.

Funding of the program is established in KRS 224.50-868, which imposes a $1 fee on every new tire sold in the state. The "new tire fee" generates approximately $2.8 million each year for program implementation.

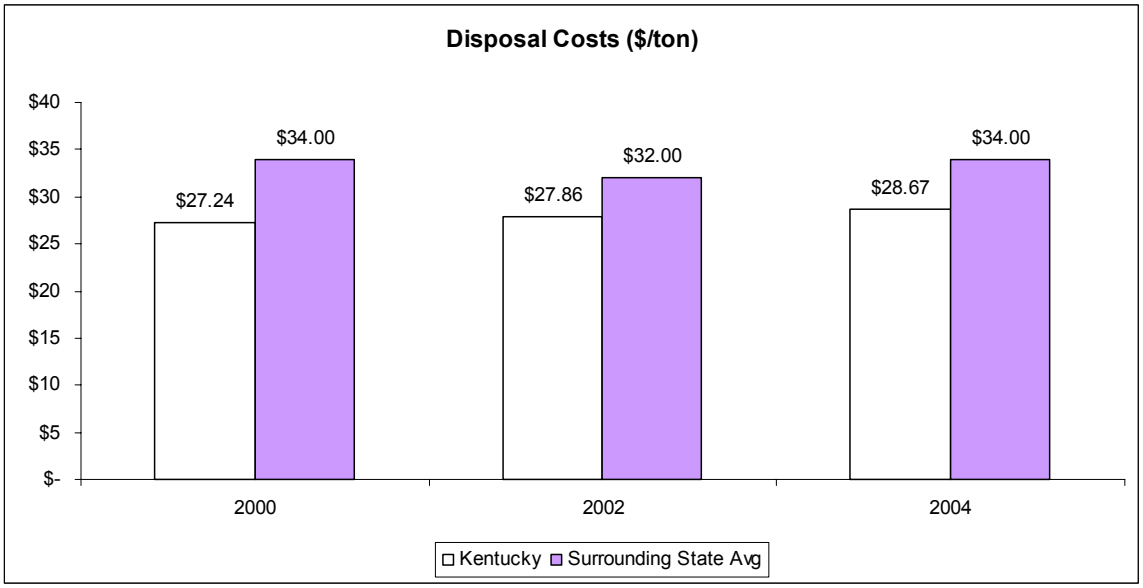
COLLECTION AND DISPOSAL

Each Kentucky county offers some form of universal waste collection, and most offer door-to-door pickup.





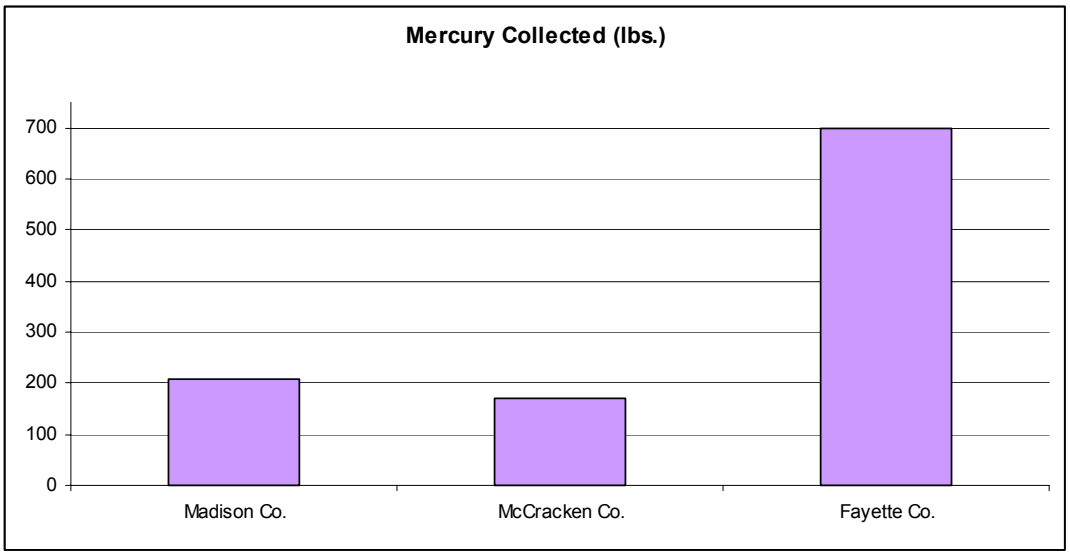
Waste disposal is cheaper in Kentucky than the average of surrounding states. While cheaper disposal prices may help encourage proper disposal, they adversely affect the ability to build recycling infrastructure as an alternative to high waste disposal costs.



A New Initiative at DWM – Mercury Collection Events:

Under the leadership of cabinet Secretary LaJuana S. Wilcher, DWM coordinated local events to collect mercury and mercury-containing items. This is a new effort by the agency to address an under-acknowledged waste stream: household hazardous waste.

By partnering with other state agencies and local governments DWM has collected and properly disposed of hundreds of pounds of mercury and mercury-containing items.



The chart includes collections of both 'elemental' mercury and mercury-containing items.

	Madison Co.	McCracken Co.	Fayette Co.
Total amount of mercury collected (lbs.)	207	169	700
EPPC Staff Involved	9	5	5
EPPC Staff Hours	152	86	n/a
Cost to Dispose of Mercury	2285	7500	7500
Date of Event	10/14/2005	4/1/2006	4/22/2006

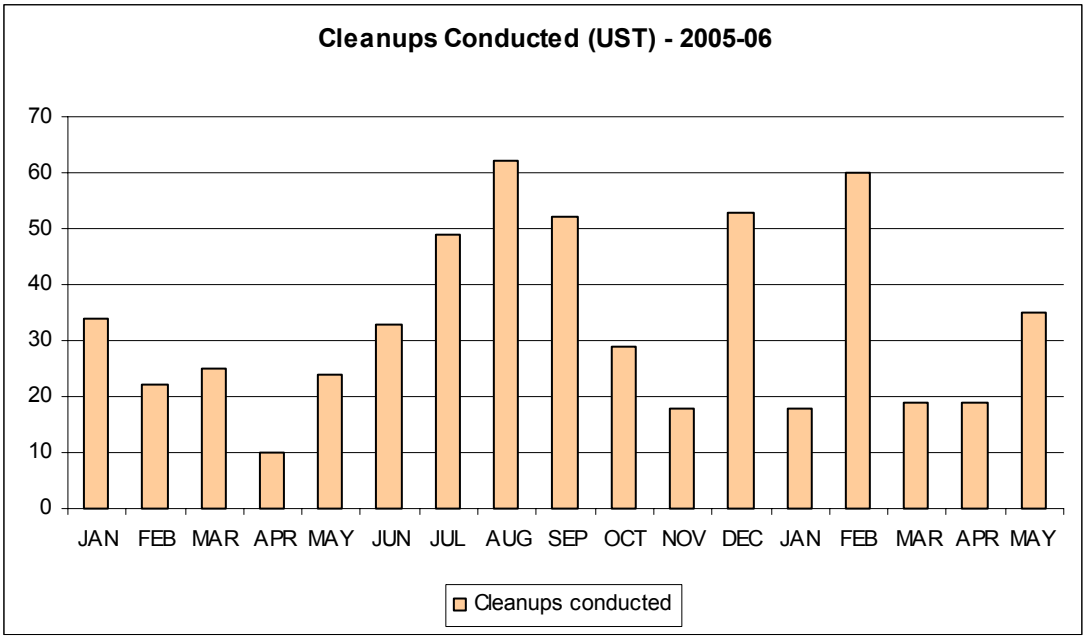
Eighty-nine mercury spills have been reported in Kentucky since 2000, of which 31 were in schools. In 2005 alone, 16 mercury spills in schools required emergency responses, including evacuations. Liquid mercury or "quicksilver" (also known as elemental or metallic mercury) is found in a variety of household items including silver-bulb thermometers, fluorescent lights, old chemistry sets, thermostats and switches including "silent" light switches made pre-1991.

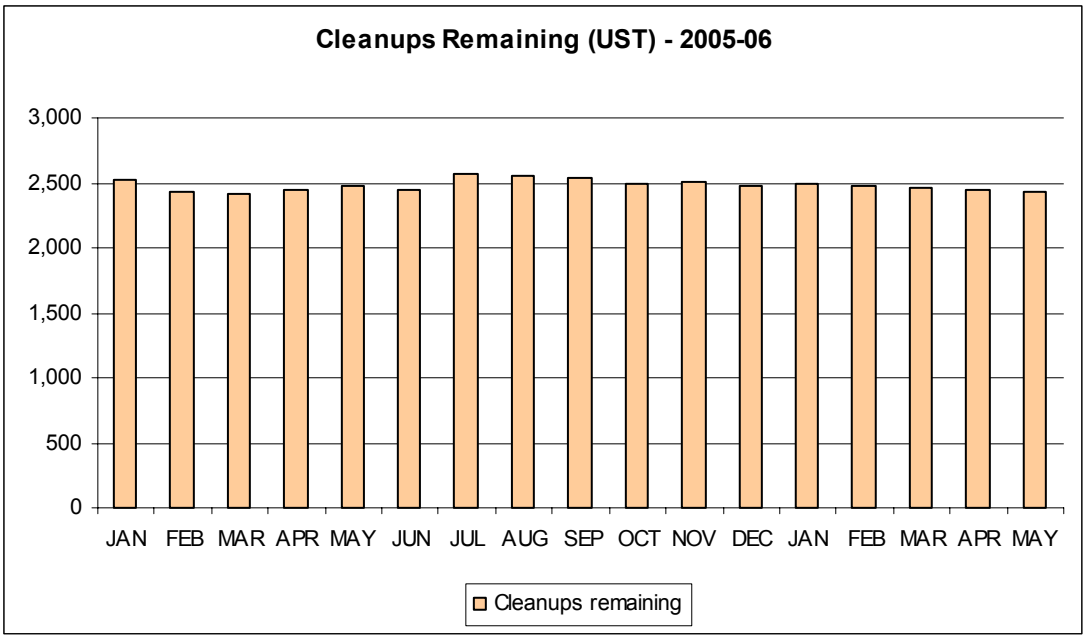
According to the Environmental Protection Agency (EPA) almost 79 percent of all fish consumption advisories issued in the United States are at least partly due to mercury contamination in fish and shellfish. (*Mercury Update: Impact on Fish Advisories*, EPA-823-F-01-011, June 2001).

SITE REMEDIATION

When wastes are dumped, released or otherwise improperly disposed of, the DWM intervenes. Four major programs address these problems: Underground storage tanks, hazardous waste corrective action, state Superfund and the Kentucky Pride program which addresses illegal dumps and improperly-closed historic landfills.

Underground Storage Tanks:





Note: 'Cleanups remaining' for the UST program continues to hover around 2,500, due to new releases occurring faster than the agency can declare old sites "clean." Also, some sites have been around a long time due to the presence of groundwater contamination, which requires long-term remedial action.

Hazardous Waste Facilities in Corrective Action:

The Hazardous Waste Corrective Action Program achieved several milestones in 2005.

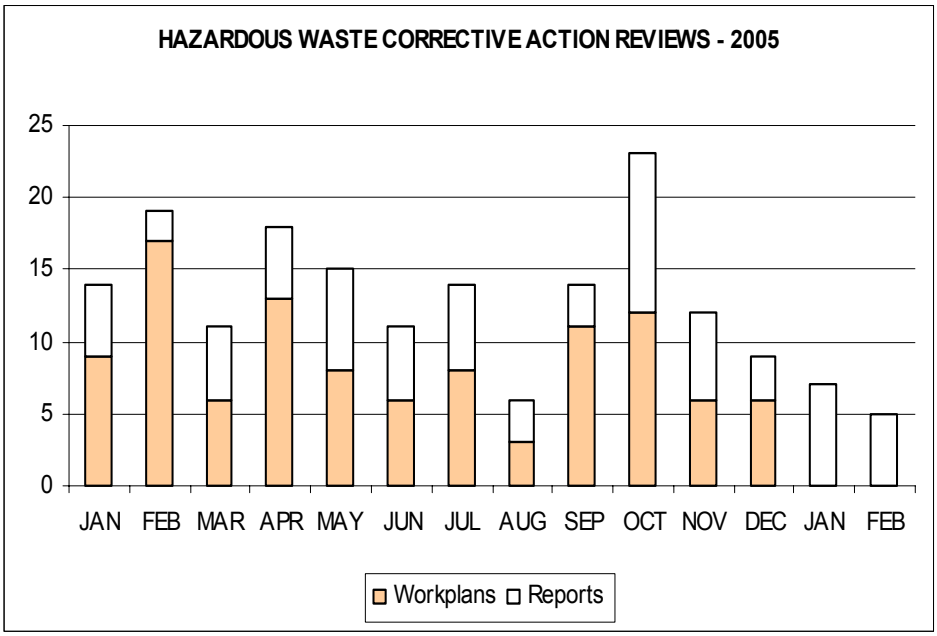
Environmental Indicators:

Perhaps the most significant milestone was attaining the final 2005 Environmental Indicator goals, which are high-priority goals that were set by U.S. EPA in 1997. The first goal achieved was having all current human exposures under control at 95 percent of the 32 Kentucky baseline facilities by the end of 2005. Kentucky met the goal with a **96 percent** achievement. The second goal was controlling groundwater releases at 70 percent of the 32 baseline facilities. Kentucky surpassed this goal, with **78 percent** of its facilities meeting the goal.

The next round of EPA environmental indicators will end in 2008, and includes additional facilities (41 total) as well as two additional goals (final site-wide remedies selected and remedies in place).

Base Closure Cleanups:

Cleanups were completed in 2005 for Kentucky's two military base closure sites, Naval Ordnance Station Louisville (NOSL) and Lexington Bluegrass Army Depot (LBAD). NOSL was given final site-wide approvals for all cleanups. LBAD completed cleanup actions but is still finalizing language for long-term management of the site.



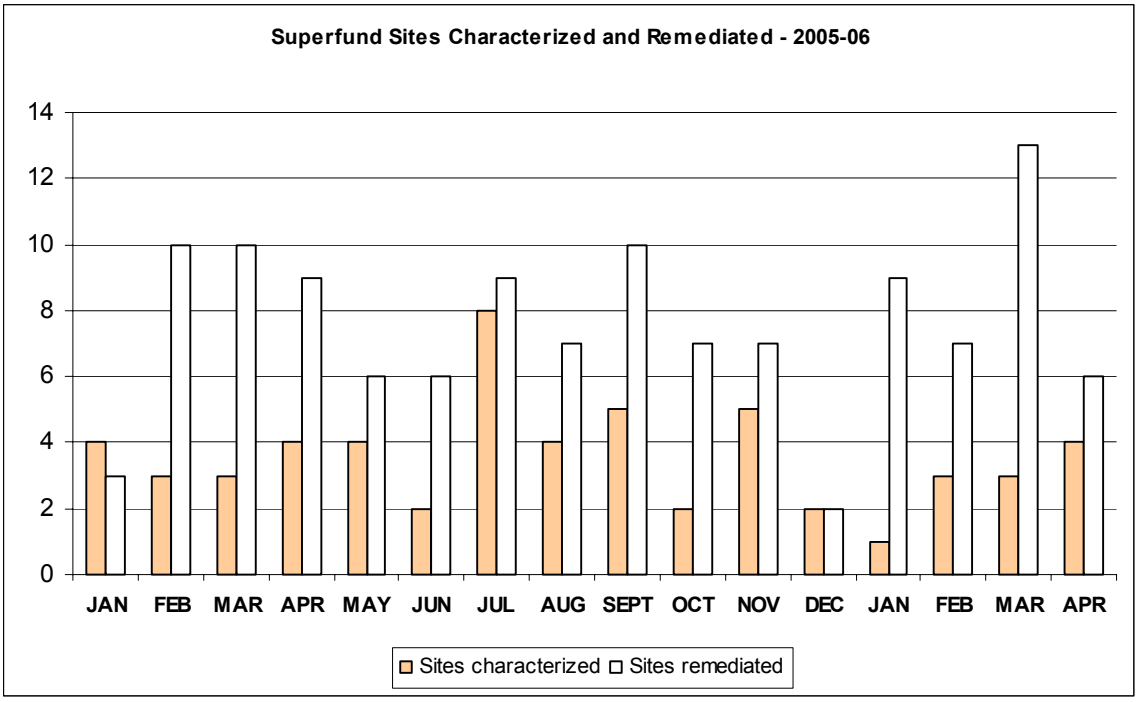
Superfund:

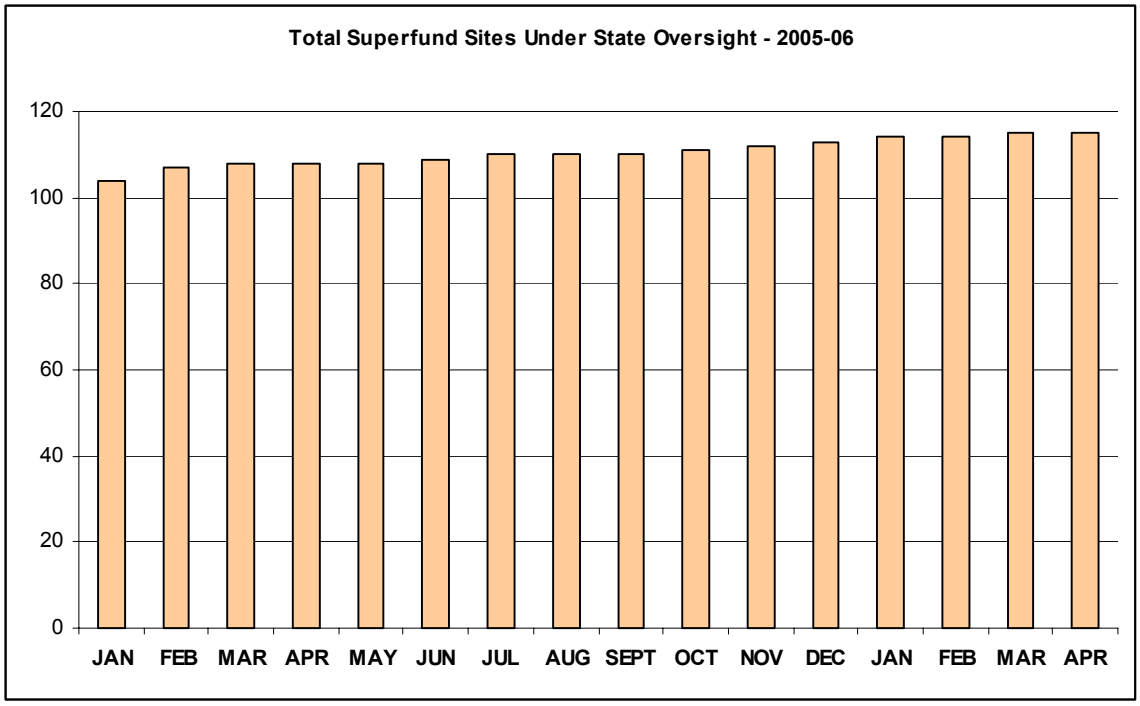
In 1980, following discovery of several toxic waste dumps in the country, including Valley of the Drums in Kentucky, Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as the federal Superfund law. Under this law, the federal EPA investigates sites contaminated with hazardous materials, located across the country.

The worst sites are placed on the National Priorities List (NPL) for federal cleanup funding. Kentucky has a state Superfund program which handles oversight of cleanup of hazardous substance releases and non-UST petroleum across the Commonwealth. The chart shows the number of sites that the State Superfund program has characterized or sampled, and remediated.

For those releases of hazardous substances where there are no viable responsible parties to perform the cleanup, or if the release creates an environmental emergency, the **state Superfund** program utilizes money from the Hazardous Waste Management Fund to remediate the release. Sixty **major** state-lead sites have been remediated since 1993 (see chart). Since 2003, 67 removals/responses for smaller sites (abandoned or leaking drums, mercury assessments and removals, soil cleanups, etc.) have been conducted.

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
3	2	4	9	6	8	8	5	0	3	4	6	2





In the chart above, these are sites that were capped or had releases that were otherwise 'managed in place.' These totals would drop if a complete "restoration" to background levels was conducted. See KRS 224.01-400 (18) for the legal basis for these terms.

Note: DWM staff believe the slight upward trend in the chart above is attributable to better accounting tools in the agency.

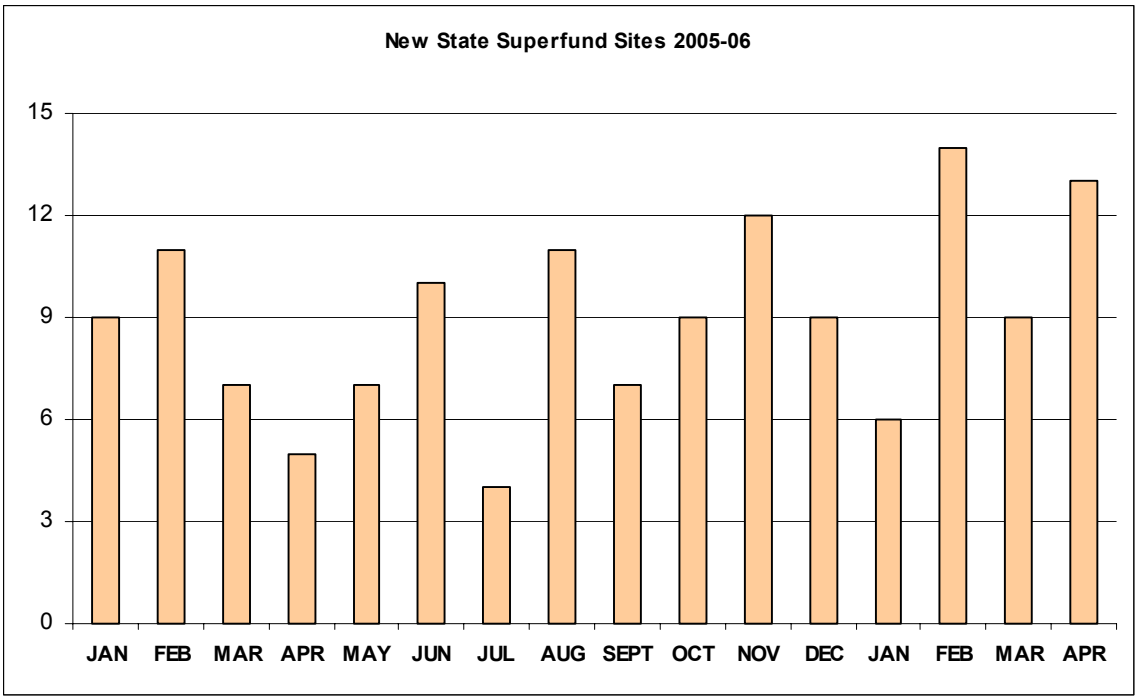
Brownfields:

In 2005 the DWM began to solidify its ideas on how it could best serve the Commonwealth through the utilization of the brownfields grant monies it had received in 2004. The purpose of the brownfields program is to assist municipal and county governments as well as non-profit organizations in assessing properties that have real or perceived environmental contamination.

In 2005 DWM completed three Phase II assessments for the city of Ludlow and began work on a seven-property site for a Habitat for Humanity project in Louisville. In addition to that work the branch started Phase I for the Lincoln Scrap Yard in Crab Orchard. In performing these actions, the branch enabled the property owners to move forward with redevelopment of these properties that would otherwise be idle for years to come.

Brownfield redevelopment in the department is a joint effort between the Division of Waste Management and the Division of Compliance Assistance (DCA). For more information on DCA, see the agency's Web site at http://www.dca.ky.gov/brownfields/ or call 1 (800) 926-8111.

Note: "Brownfields" are properties that are abandoned or underutilized due to real or perceived contamination. These properties include abandoned factories, former dry cleaning establishments, vacant gas stations, illegal drug labs, old dumps and mine scarred lands.



Non-UST Petroleum:

The Petroleum Section of the Superfund Branch provides regulatory oversight to all other petroleum releases outside of the Underground Storage Tank (UST) program. These include tanker truck spills, oil refineries, oil fields, train derailments and spills, exempt UST releases and removals, above ground storage tanks (AST), oil/water separators, tornado spawned releases, oil bulk plants and terminals, oil pipelines and other petroleum release scenarios. The section oversees projects that can be either limited in scope or have had numerous releases over time. During 2005, the section closed 33 such incidents.

Federal Superfund Case - Maxey Flats:

The 280-acre Maxey Flats nuclear disposal site is an inactive low-level radioactive waste disposal facility in Fleming County. From 1962 to 1977, a private company operated a solid by-product, source, and special nuclear material disposal facility under a license with the state. During this time, the company disposed of approximately 4.75 million cubic feet of low-level radioactive waste in an approximately 45-acre area designated as the "restricted area." Today, the site is owned by the Commonwealth.

The site in the '70s:

As synthetic cap is installed and other remedial work is under way:

The remedial actions for Maxey Flats have included extracting, solidifying, and disposing onsite of approximately 3 million gallons of trench leachate; demolishing and disposing of structures onsite; excavating additional disposal trenches for disposal of site debris and solidified leachate; installing an approximately 50-acre initial cap consisting of a clay and synthetic liner after disposal of solidified leachate and debris in the trenches; temporarily storing any additional wastes generated after constructing the initial cap onsite, followed by solidification and onsite disposal of those wastes in a newly constructed disposal trench; and procuring a buffer zone adjacent to the site to prevent deforestation or erosion of the hill slopes, which could affect the integrity of the selected remedy. As owner of the site, the responsibility for monitoring and maintenance falls to the Commonwealth.

The site today, with cap installed, and drainage issues resolved:

Future actions include maintaining and periodically replacing the initial cap synthetic liner as needed every 20 to 25 years; re-contouring the capped disposal area as needed to enhance the management of surface water run-on and runoff; installing a groundwater flow barrier, if necessary; installing an infiltration monitoring system to continuously verify remedy performance and detect the accumulation of leachate in disposal trenches; installing a final engineered multi-layer cap once natural subsidence of the trenches has nearly ceased, which could take 100 years; installing permanent surface water control features; monitoring soil, sediment, surface water, groundwater, leachate, air, selected environmental indicators and rates of subsidence; and to provide an area for monitoring; and implementing institutional controls including land use restrictions.

Kentucky Pride Program:

KRS 224.43-500 establishes the Kentucky Pride Fund to address three facets of solid waste management. First, $5 million per year is paid to local governments, by formula, to abate the effects of roadside litter. Next, $2.5 million per year, plus the proceeds from a one-time bond issue of $25 million, is devoted to cleanups at landfills (historic landfills) that ceased accepting waste prior to 1992. The balance of the fund each year, roughly $5 million, is set aside to clean up illegal open dumps (though SB50 [2006] expands this aspect to include recycling and household hazardous waste collection). The fund is financed through the "environmental remediation fee" of $1.75 per ton of waste disposed in Kentucky landfills, plus the aforementioned bond proceeds.

Historic Landfills:

Before waste management was regulated in Kentucky, most towns had a common location where garbage, and a vast array of other materials, was disposed. These "old town dumps" were the de facto landfill for the area, and hardly any were managed to

today's standards. Nor were they properly capped to prevent migration of contaminated leachate and other pollutants. Hundreds of these sites are scattered across the state (approximately 650 documented by DWM).

The historic landfill cleanup program has been under way for the past three years; major cleanup work is under way at several sites, with the costs covered by the $25 million bond proceeds, plus the $2.5 million received each year in environmental remediation fees.

First priority sites to be addressed are as follows:

Floyd County	Harlan County	City of Campbellsville
Perry County	City of Manchester	WMU-Clark County
Letcher County	City of Barbourville	Briar Hill (Georgetown)
Sims Road (Scott Co.)	Glover Dump (Jessamine Co.)	

The **second tier** of sites targeted for cleanup is as follows:

Old City of Leitchfield	FIVCO (Carter Co.)	Marshall County
City of Franklin	Jacks Creek Pike (Fayette Co.)	Trigg County
City of Fulton		

Eight landfills have a relatively low-cost remedy of installing leachate collection systems. They are:

City of Leitchfield	City of Cynthiana	City of Richmond
Johnson County	Bullitt County	Marion County
Mercer County	Warren County	

Contracts have been executed to conduct a region-by-region preliminary assessment of all known (and newly discovered) orphan landfills in the state. When completed, these inventories will provide critical data to guide future cleanups. DWM expects a complete preliminary assessment of roughly 200 sites by October 2006. A full inventory of sites in need of remediation should be completed in the coming years.

Illegal Open Dumps:

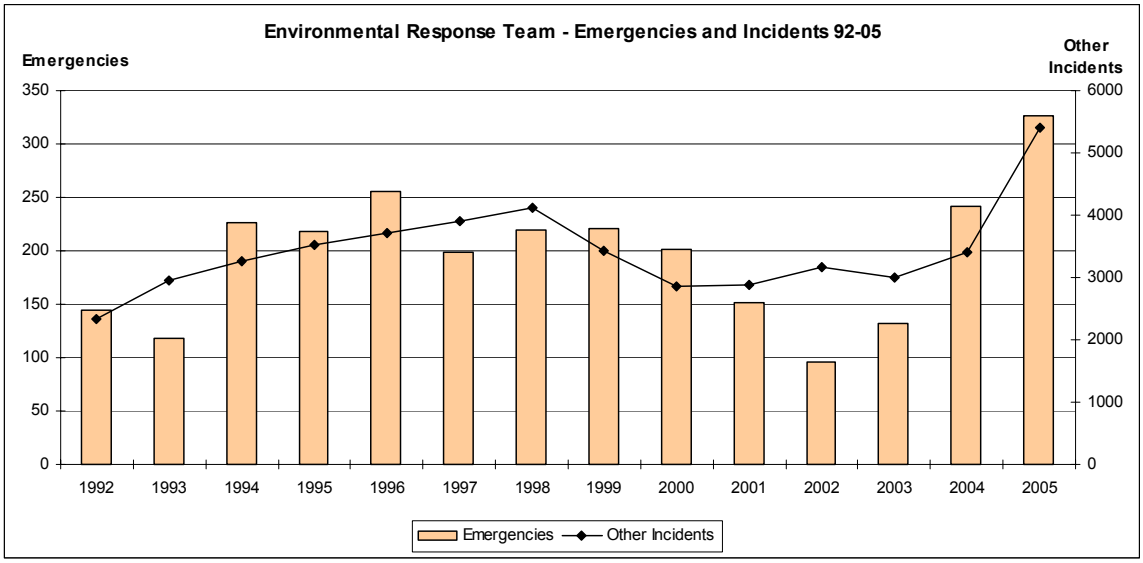
A portion of Kentucky Pride funding is available to reimburse counties for 75 percent of the cost of remediating illegal open dumps. In 2005-06, the DWM reimbursed counties over $1.1 million for the cleanup of 361 illegal open dumps.

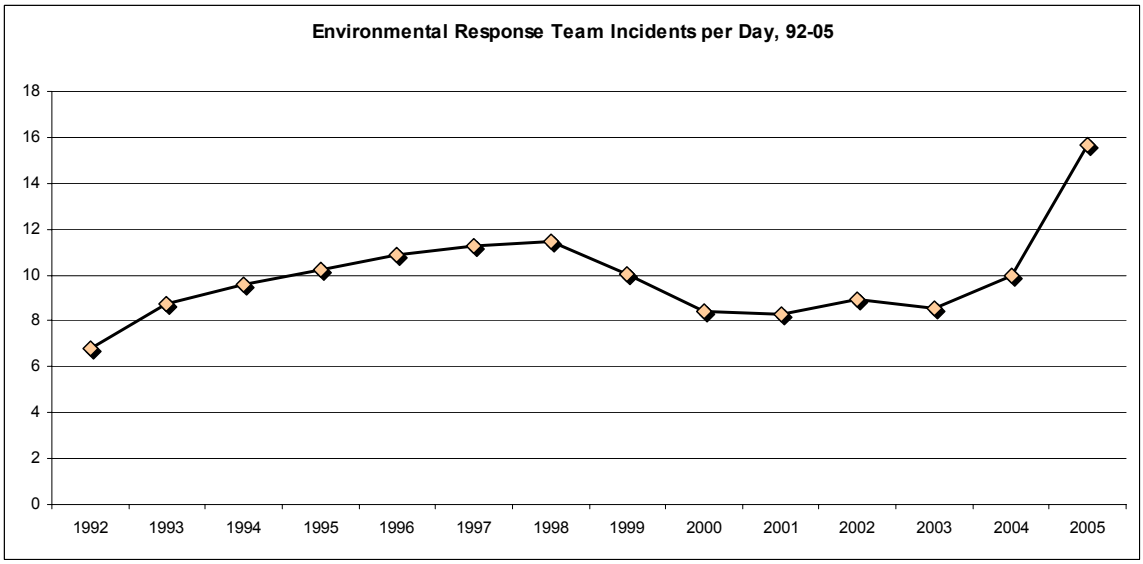
Litter Abatement:

During 2004, the counties reported collecting 697,047 bags of litter at a cost of $9.4 million. Obviously the $5 million allotted form the Pride Fund is being supplemented by local funding for litter abatement.

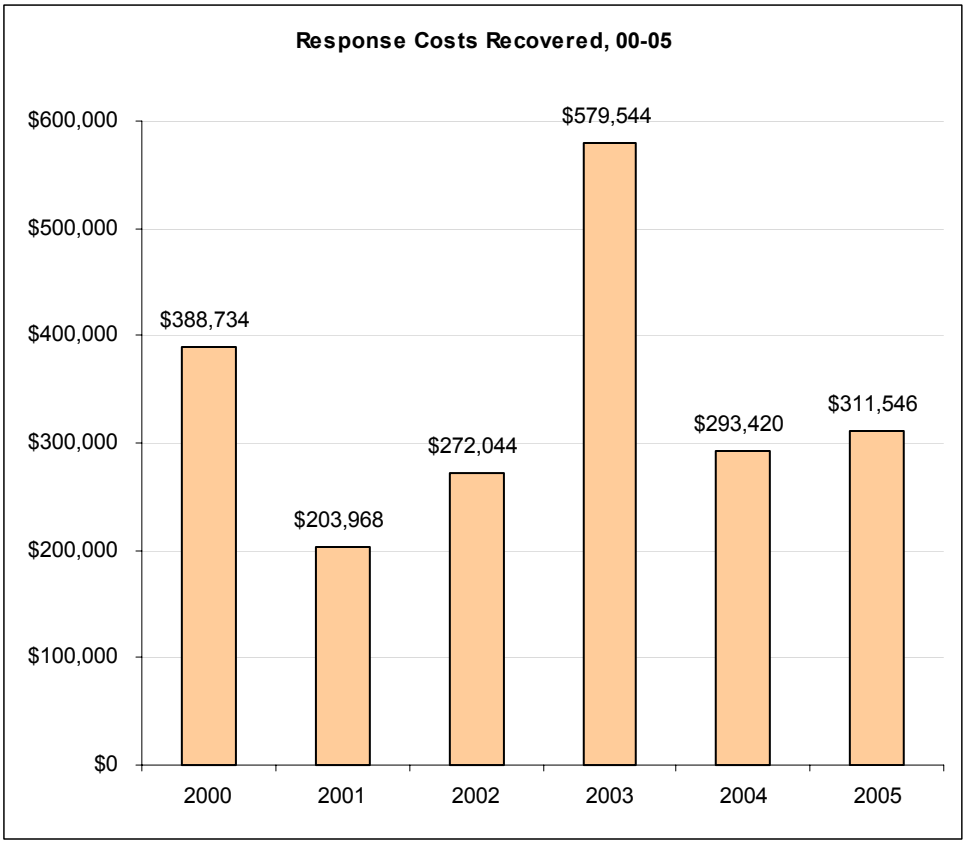
Emergency Response:

KRS 224.01-400 establishes the cabinet as the lead agency for hazardous substance, pollutant or contaminant emergency spill response. The Department for Environmental Protection maintains a roster of field staff who serve on the Environmental Response Team; they are the first to respond to environmental emergencies. The charts below indicate a sharp increase in incident response during the past two years.





Per KRS 224.01-400 the cabinet has the authority and duty to recover response costs expended in remediating releases to the environment. The chart below shows the progress made by the agency in cost recovery; all collections are deposited into the Hazardous Waste Management Fund.



ADMINISTRATION

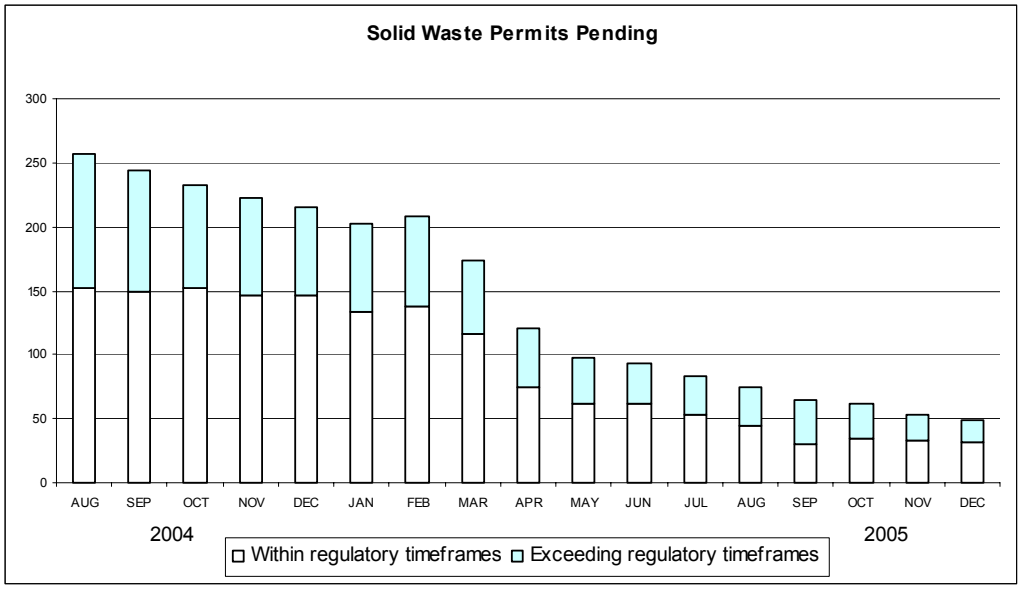
The largest division of the department with over 275 staff positions, DWM oversees a vast array of programs dealing with solid waste management, recycling, hazardous waste, underground storage tanks (USTs) and site remediation at contaminated properties such as "brownfields." DWM is a regulatory agency; permits from DWM are required for certain facilities to assure that wastes are managed properly. These include solid waste disposal facilities (landfills) and entities that transport, store and dispose of hazardous waste (TSDs).

One of the primary goals of the EPPC Strategic Plan is to "*reduce permit backlogs. Improve regulatory procedures and implementation. Make Kentucky's regulatory program rational, reasonable and user-friendly*."

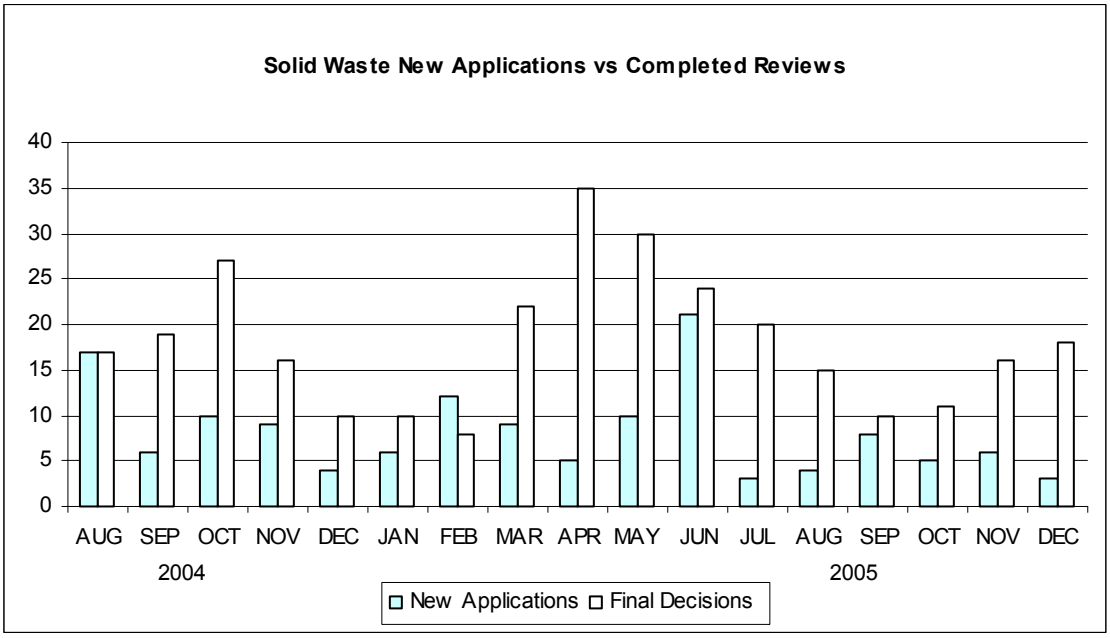
In DWM, we are pleased to report great progress in this effort. The division has completed a comprehensive review of its regulations germane to two major program areas: hazardous waste and underground storage tanks. In 2006 the division foresees promulgating new regulatory amendments to completely overhaul these two programs. Hazardous waste regulations will be updated to match federal standards adopted through 2005 [with a few appropriate Kentucky-specific standards]. The UST program will change the way cleanups are financed through the Petroleum Storage Tanks Environmental Assurance Fund. Tank cleanups will be done faster, more efficiently, and at lower cost under the revised program.

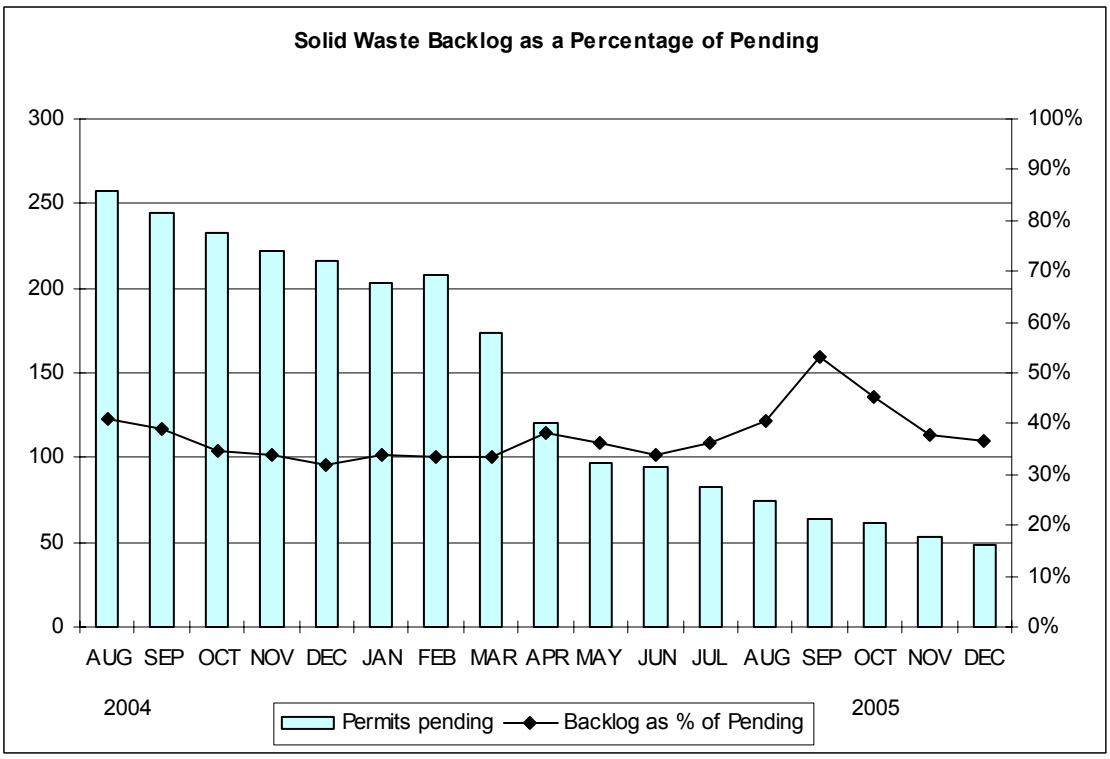
In regard to permit backlogs, we are proud to report drastic reductions in the number of solid waste permits pending beyond the statutory or regulatory time frames for permit review.

Solid Waste Permitting:

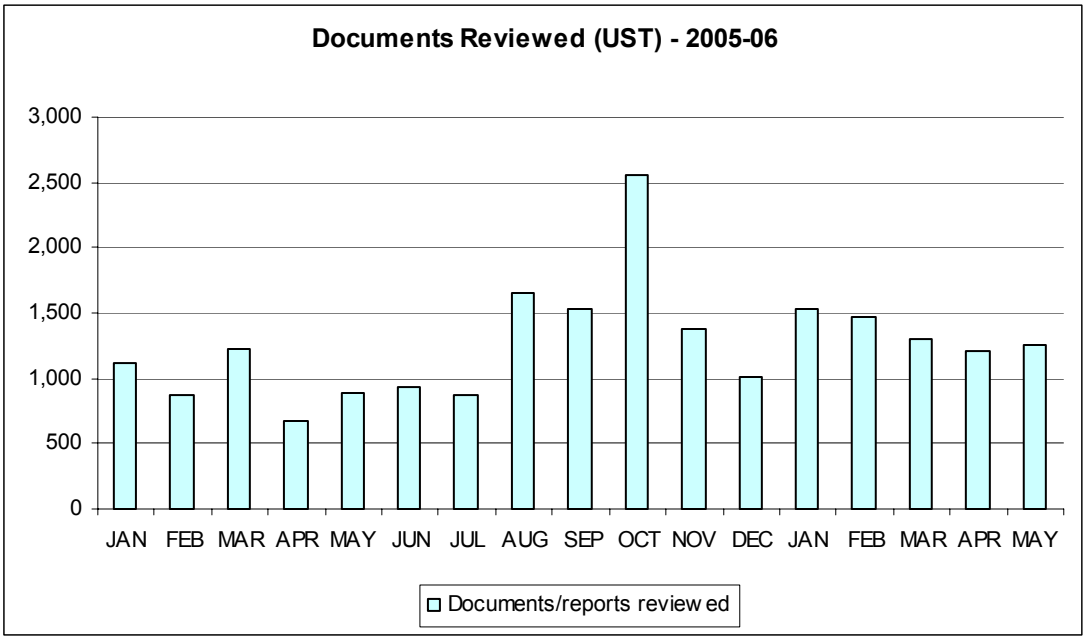


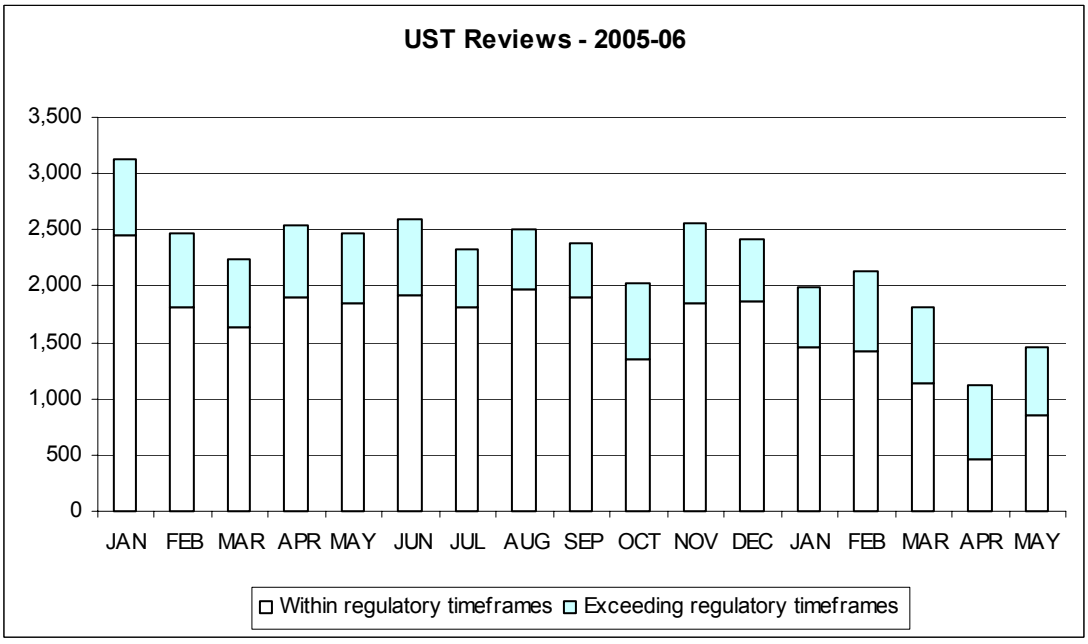
The chart above shows a steady decline in both total number of permits pending and the number that are beyond regulatory timeframes.


Solid Waste New Applications vs Completed Reviews
40
35
30
25
20
15
10
5
0
AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
2004
2005
New Applications
Final Decisions

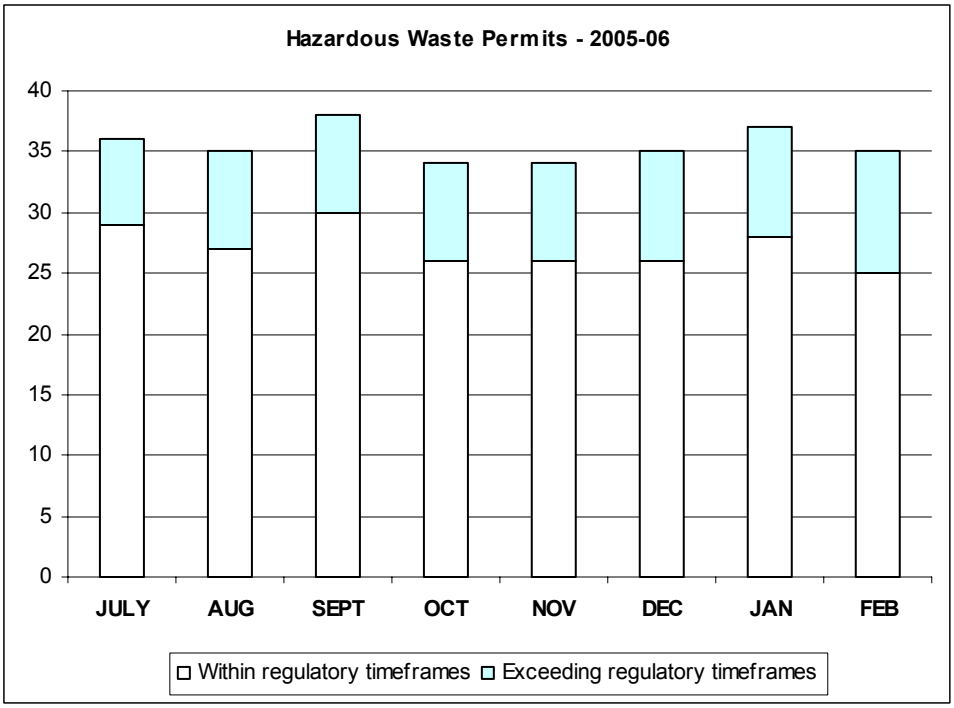

Solid Waste Backlog as a Percentage of Pending
300
250
200
150
100
50
0
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
2004
2005
Permits pending
Backlog as % of Pending

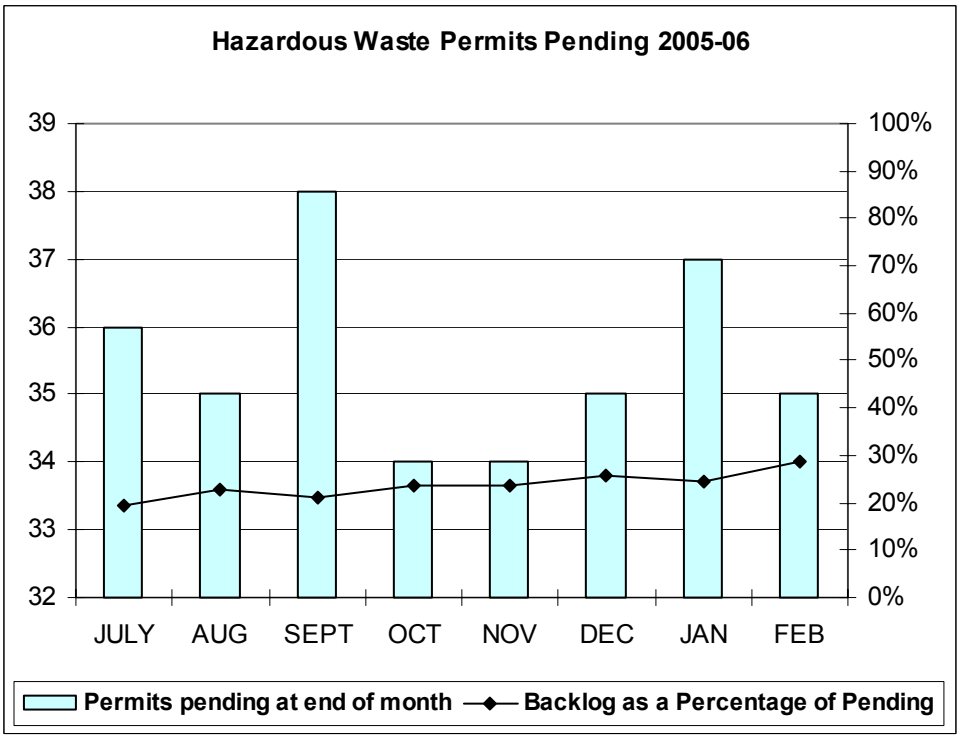
UST Approval / Reviews:





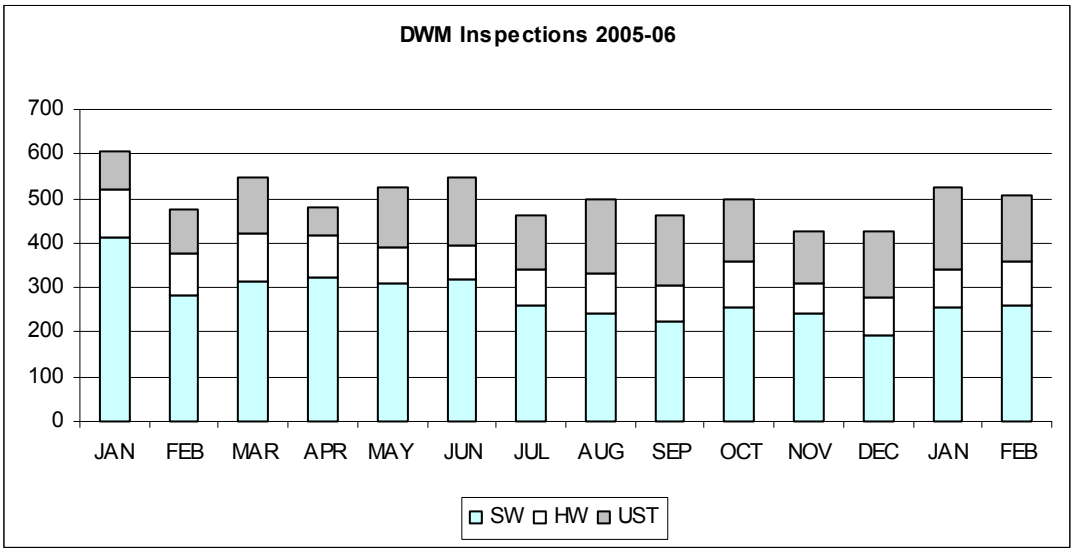
Hazardous Waste Permitting:

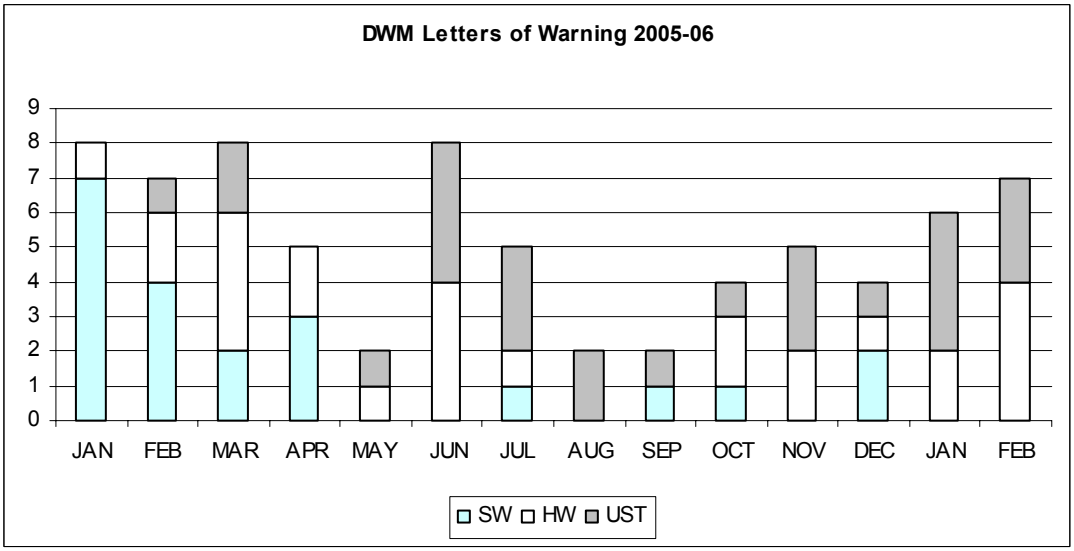


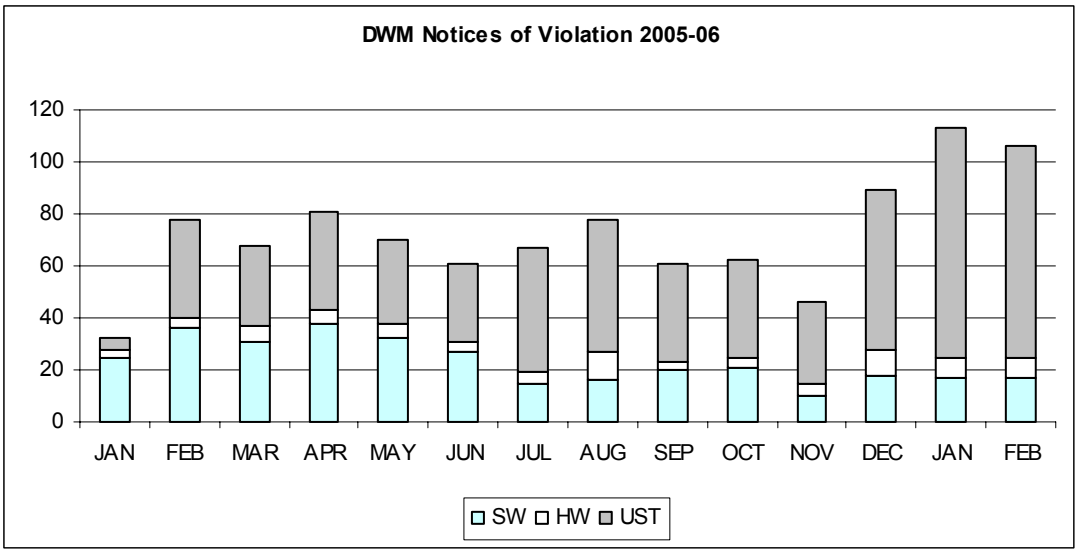


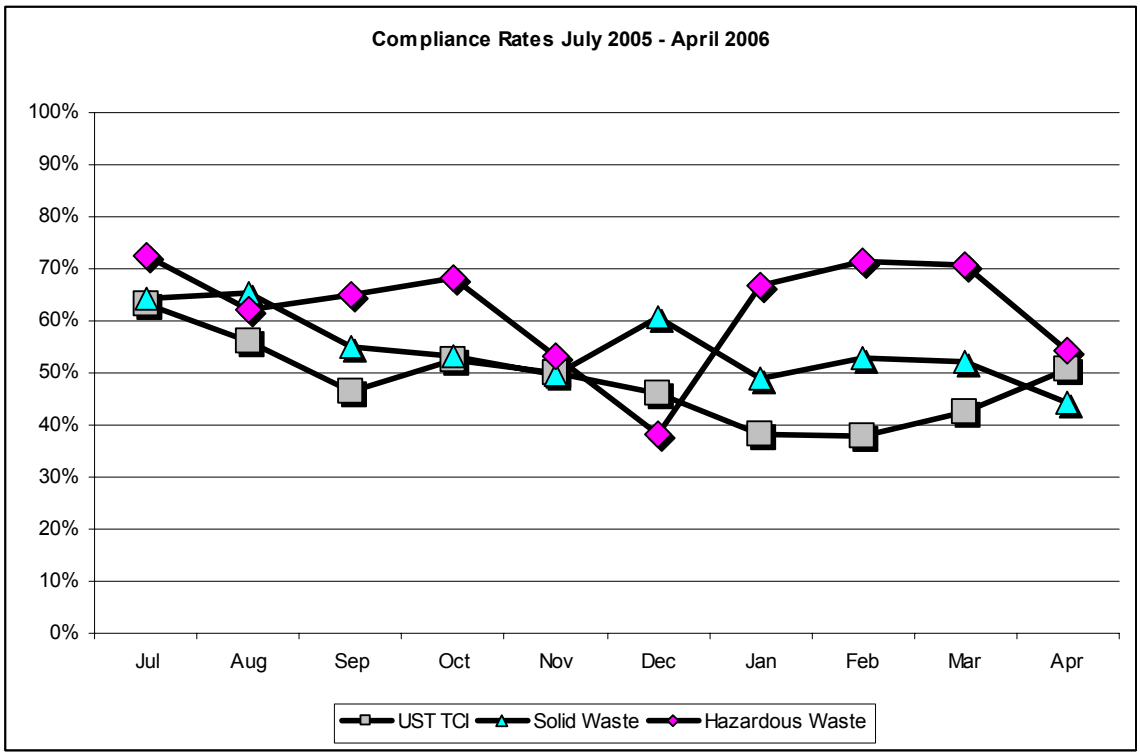
Compliance and Enforcement:

Note: SW=Solid Waste, HW=Hazardous Waste, UST=Underground Storage Tanks
Note: Inspection totals include "complaint investigations" in addition to typical inspections of regulated entities.





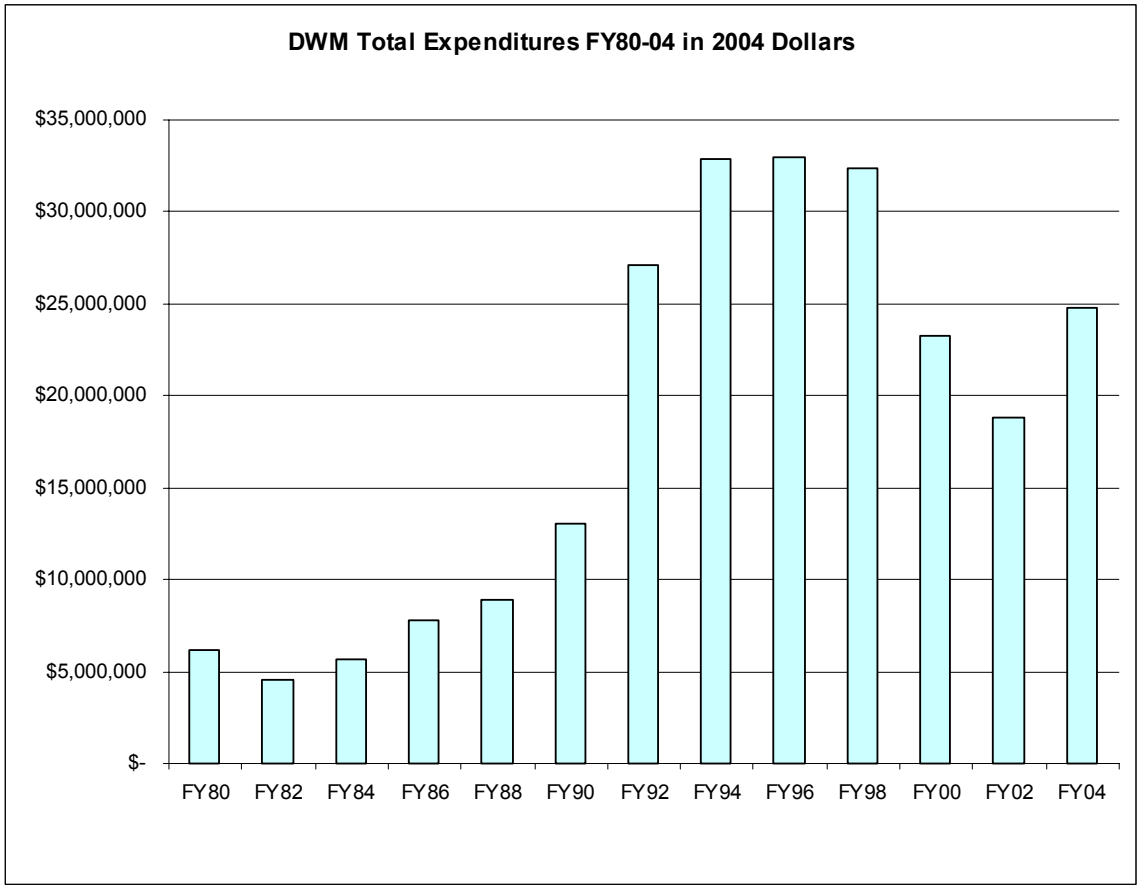




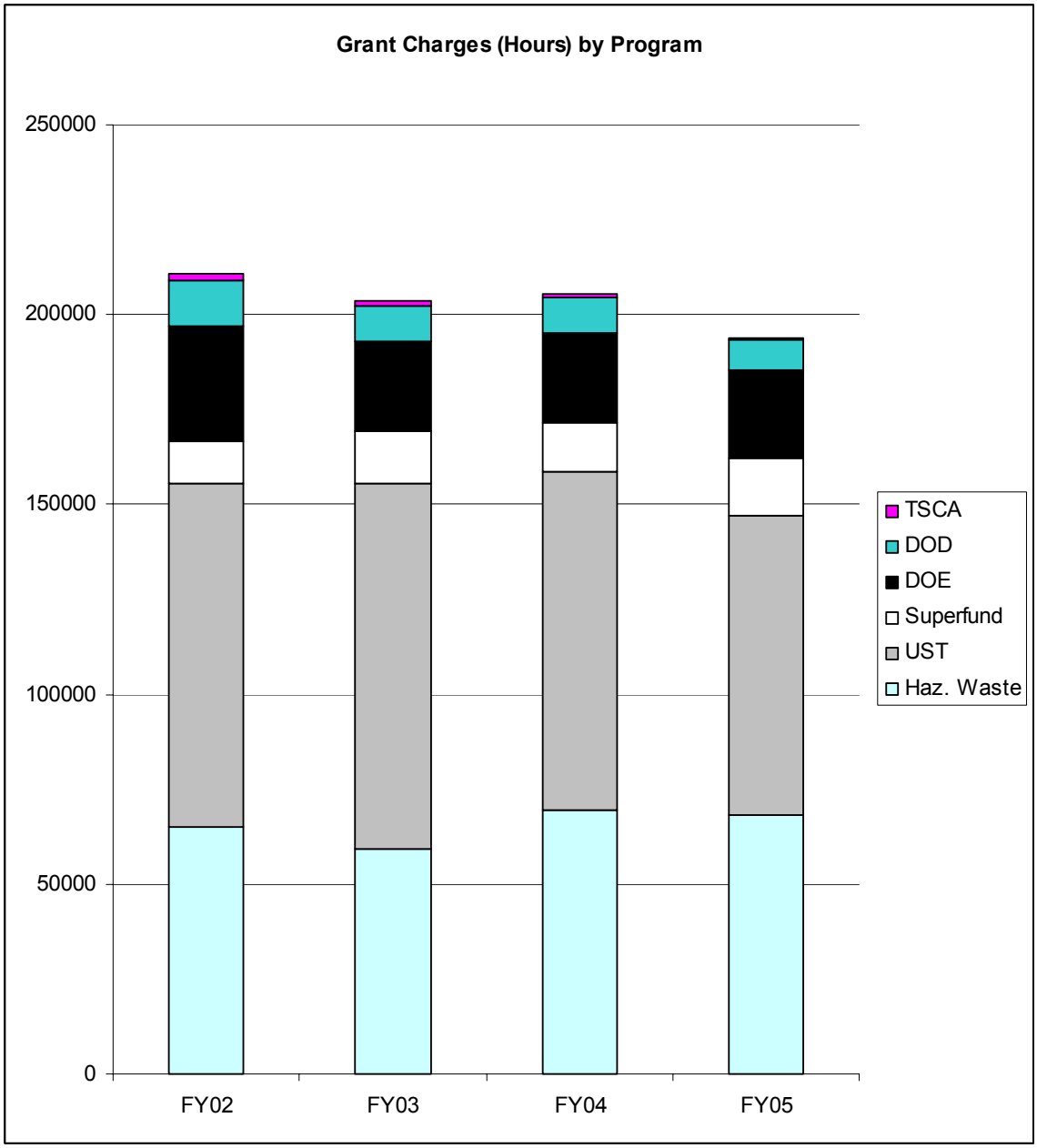
Note: "Compliance rate" mean the percent of total inspections where an inspector noted that no violation had occurred; does not include investigations triggered by citizen complaints.

Note: "UST TCI" means a technical compliance inspection for a facility's underground storage tanks.

Budget and Personnel:

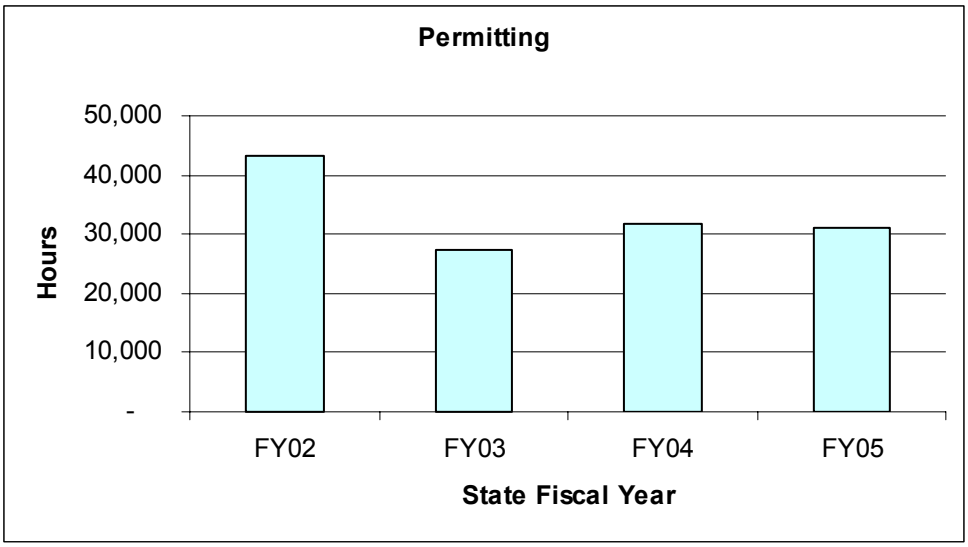


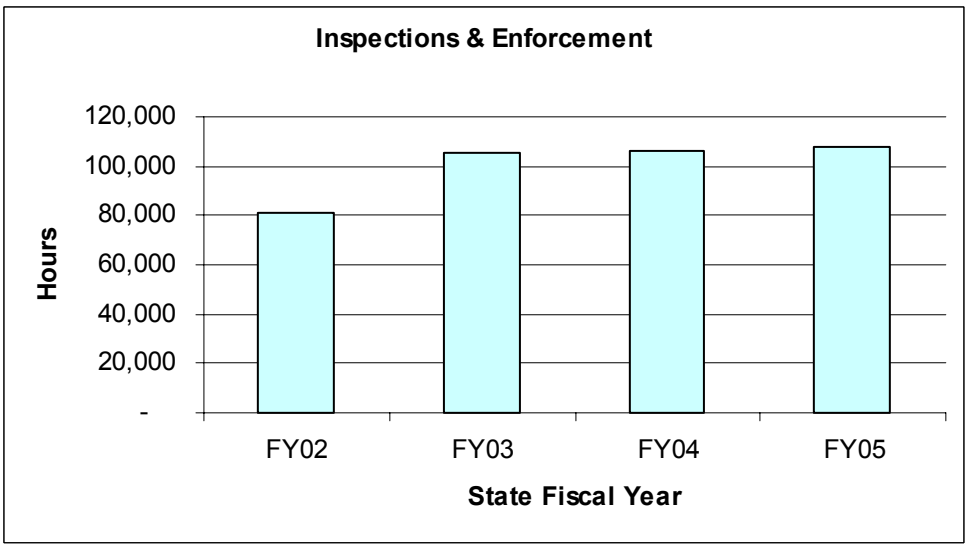
Note: These trends do not include the Petroleum Storage Tanks Environmental Assurance Fund, which became part of DWM during a reorganization of the agency which was ratified by the legislature in the 2005 session of the General Assembly [Senate Bill 41].

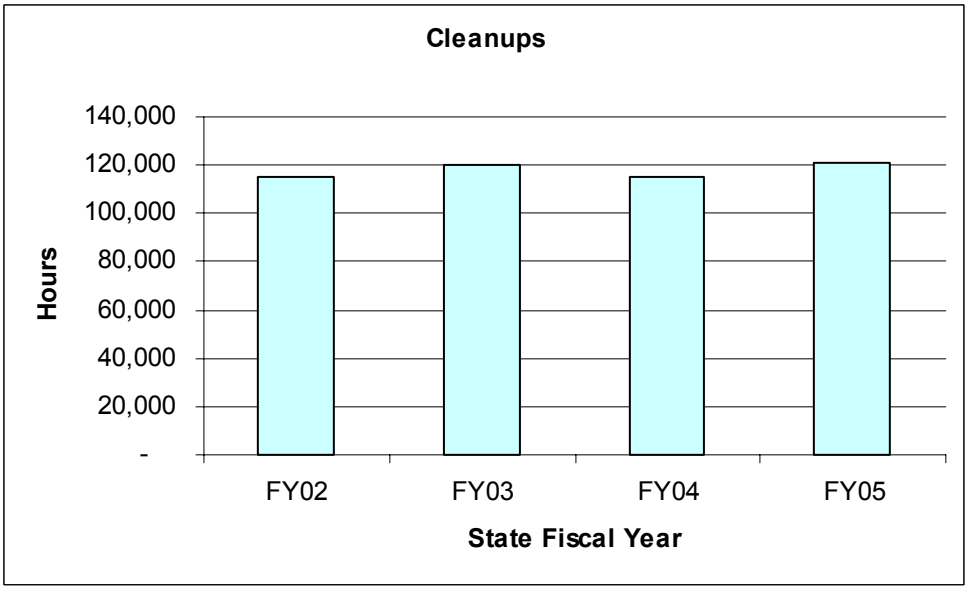


TSCA = Toxic Substances Control Act
DOD = U.S. Dept. of Defense
DOE = U.S. Dept. of Energy
Superfund = Core program, plus Voluntary Cleanup, and Brownfields
UST = Underground Storage Tanks
Haz. Waste = Resource Conservation and Recovery Act

The Time Expenditure Database records the time spent by employees on various activities. The following charts display trends in DWM for hours charged, in aggregate, for some of the core, mission-critical activities of the agency.


Permitting
50,000
40,000
30,000
20,000
10,000
-
Hours
FY02
FY03
FY04
FY05
State Fiscal Year


Inspections & Enforcement
120,000
100,000
80,000
60,000
40,000
20,000
-
Hours
FY02
FY03
FY04
FY05
State Fiscal Year


Cleanups
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
Hours
FY02
FY03
FY04
FY05
State Fiscal Year

Management Initiatives:

UST inspections:

In response to input from all of the field offices, it was clear that the UST inspection process, both in terms of work performed in the field and how that work was documented in the TEMPO database, was in need of a complete overhaul. DWM immediately established a working group to completely overhaul the UST inspection process and to blend it with the new procedures outlined in the proposed UST regulations. This included how inspectors interacted with the UST Branch and what the roles of each needed to be in order to streamline the process while still accomplishing our agency's mission.

DWM trained 54 of the agency's UST inspectors and other staff in April and May of 2006 on the new process and provided handbooks for everyone on how to conduct all facets of the UST inspection.

The Leadership Development Series:

Attrition of seasoned, knowledgeable staff is an issue facing nearly all organizations in our society. DWM is no exception. During the span of one's career, it is easy for information and knowledge to become compartmentalized in one or two employees' domain. When these key staff retire, that information and knowledge goes out the door with them.

To address this issue, DWM Director R. Bruce Scott instituted the Leadership Development Series, a one-time-per-month (minimum) brown-bag symposium to discuss issues germane to the agency, presented by the employees themselves, held during lunch time on a voluntary basis. The first presentations were held in January 2005. The sessions have become so popular that, though originally conceived as an internal activity, presenters from outside the agency have come aboard to contribute expertise. The intent is to enhance communication and spread knowledge to the agency's aspiring leaders so that institutional knowledge is retained and not lost when our good employees retire or otherwise depart from the division. The topics addressed are listed below.

2005

January 14	The Maxey Flats Site
February 11	Tales of Trash (the Kentucky Pride program)
March 11	Clean up of Naval Ordnance Station (Louisville)
April 8	Cleanups of Orphan Landfills
April 22	Introduction to the Division of Compliance Assistance
May 13	Environmental Indicators in the Hazardous Waste Program
June 10	Budgeting from a Division Level
June 24	Brownfields Redevelopment
July 8	Public Water Supply Wells in Mississippian Plateau Karst
July 22	Ky. Excellence in Environmental Leadership (KyExcel)
August 12	Crumb Rubber Application (Waste Tire Beneficial Reuse)
October 14	Investigating Groundwater Contamination Using Dye-Tracing Methods
October 28	Cathodic Protection Testing for Underground Storage Tanks
November 4	Open Burning Regulations
December 9	Brownfields

2006

January 27	Division of Water Ambient Groundwater Monitoring Program
February 10	Wastewater Treatment Sludge Management in Kentucky
March 3	Kentucky's Open Records Laws
April 28	Retirement Planning for Kentucky State Government Employees
May 26	Social Marketing for Environmental Improvement
June 9	Mine Permits Laws

Kentucky Recycling Interest Group

Through the leadership of cabinet Secretary LaJuana S. Wilcher, the division initiated a series of meetings with interested parties across the Commonwealth to promote a new emphasis on recycling.

Though still in its infancy, this group holds great promise as a forum for businesses, governmental officials, and environmental groups to share their expertise in waste minimization and recycling. Through these discussions, we hope to improve recycling across the state. Key to this effort is identifying a "critical mass" of recyclable materials sufficient to create markets for beneficial end uses of the material – so that materials that would normally find their way into a landfill are transformed into new products – to the benefit of manufacturers, consumers and the environment.

The entities participating in 2006 are listed below:

Business Groups:

Infiltrator Systems Inc. (Champion Polymer Recycling)
Signode
The David J. Joseph Co.
River Metals Recycling
Gallatin Steel
Temple-Inland
SECAT Inc.
Dalton Tire Recycling Inc.
Play Mart Inc.
North American Stainless
Weyerhaeuser Company
Toyota Motor Manufacturing
Beverage Industry Recycling Program (BIRP)
Green Metals Recycling
Aleris International
All Weather Insulation LLC
Kimberly Clark Advanced Concepts Facility
Soft Landing Rubber Re-Tek Inc.
AK Steel Corporation
Novelis Corporation (formerly Alcan)
Martin's Tire Company

Environmental/Government Recycling Groups:

Louisville Metro
Tri-County Recycling
Morehead State University
University of Louisville - Institute for the Environment and Sustainable Development
Lexington-Fayette Urban-County Government
Letcher County
Woodford County
Mason County
Bluegrass PRIDE
New West Agency
Kentucky Pollution Prevention Center
Sierra Club
Red River Gorge Cleanup Programs
Fort Knox Recycling Center
Solid Waste Coordinators of Kentucky
Kentucky League of Cities
Saving Appalachian Resources, Inc. (SAR)
Kentucky Infrastructure Authority (KIA)
Kentucky Economic Development Cabinet, Existing Business Development
Regional Recycling Corporation
Kentucky Commerce Cabinet

LEGISLATIVE MILESTONES

The division was successful on a number of fronts during the 2006 session of the Kentucky General Assembly. All four major bills being promoted by the agency were successfully passed and signed into law by Governor Ernie Fletcher.

SB50 [2006] This bill amends the Kentucky Pride program to create authority for the cabinet to redirect funds otherwise dedicated to open dump cleanups to deserving counties for recycling infrastructure and household hazardous waste collection.

SB75 [2006] The hazardous waste assessment, the primary funding mechanism for the state Superfund program, was reauthorized for another two years. The fee is slated to expire in June 2008; a new caveat was added to the statute as well. Persons owing less than $50 in a given year will have their payments waived. These generators must still file a return with the state to indicate the quantity and type of waste that was generated.

SB76 [2006] This bill amends the post-closure monitoring requirements for hazardous waste disposal facilities. Specifically, an applicant may petition the cabinet to terminate post-closure monitoring before the end of the normal 30-year period. This mirrors existing federal regulations. The bill also clarifies the rights of the cabinet to reimpose these monitoring requirements if need be.

HB145 [2006] This bill extends the cabinet's authority to collect a $1 fee assessed on each new passenger tire sold in Kentucky. This fee provides funding for county-level Tire Amnesty Days, tire-derived fuel market development projects, tire pile cleanups, and grants to counties for crumb rubber application at athletic fields and parks. This fee will be collected through July 2010.

With these legislative changes we see Kentucky moving forward in some important areas that will have a direct benefit to environmental conditions in the Commonwealth.

With the passage of SB50, we move beyond open dump cleanups to the next generation of solid waste management: statewide opportunities for recycling and household hazardous waste collection. With the passage of SB75, the funding is secured for the hazardous waste management fund. This fund is the "last resort" to pay for cleanup costs at contaminated sites for which there is no viable responsible party. This fund aids directly in the cabinet's response to environmental emergencies that threaten the public health and the environment.

SB 76 adds regulatory flexibility to match federal rules without harming the environment. HB145 will move toward that future state when used tires are no longer considered "waste" but rather valued commodities to be directed toward beneficial end uses.

For Future Legislative Sessions:

The division is considering promoting legislation to address the following areas:

- Increasing the bonding (financial assurance) requirement for waste tire accumulators, transporters and processors. Presently, the $1 per tire bonding requirement outlined in KRS 224.50-862 is insufficient to address remediation costs for tire facilities that improperly disposed of waste tires. Kentucky recently completed a multi-million dollar cleanup to address a landfill that was ablaze due to improper management of waste tires.

- Creating an allowance in the statute (KRS 224.01-400) for the cabinet to seek a windfall lien to recoup costs incurred in remediating releases to the environment. This would provide a cost recovery mechanism (similar to the federal government's authority) to assure the state is compensated when taxpayers' funds are used to conduct cleanups on private property.

- Making revisions to the waste tire statutes (KRS 224.50-850 through -880) to provide for reporting by registered waste accumulators/transporters/processors of the number of waste tires accepted and final disposition (recycled or landfilled), increasing the number of waste tires a tire retailer may accumulate without having to register to be in line with usual transportation methods, providing that certain state and local government recycling facilities may accumulate the same number of waste tires as a tire retailer without having to register and eliminating the exemption from registration for salvage/junkyards.

ACKNOWLEDGMENTS

Governor Ernie Fletcher **Secretary LaJuana S. Wilcher**

This *Annual Report* is intended to provide a concise set of facts and measurements to support environmental decision-making. We welcome your questions and comments to the contacts below:

Kentucky Division of Waste Management

14 Reilly Road
Frankfort, KY 40601
Phone: (502) 564-6716
Fax: (502) 564-3492

www.waste.ky.gov
www.recycle.ky.gov

Director: R. Bruce Scott, P.E.
Assistant Director: Anthony R. Hatton, P.G.

Kentucky Department for Environmental Protection

Commissioner: Lloyd R. Cress
Deputy Commissioner: Valerie Hudson

www.dep.ky.gov

We acknowledge the contributions of the staff and management of the Division of Waste Management.

Resource Conservation and Local Assistance:	Sara D. Evans
Solid Waste:	Ronald D. Gruzesky, P.E.
Field Operations:	William C. Burger II
Hazardous Waste:	April J. Webb, P.E.
Superfund:	Fazllolah Sherkat, P.E.
Program Planning and Administration:	D. Brad Stone
Underground Storage Tanks:	Robert H. Daniell

The Kentucky Division of Waste Management does not discriminate on the basis of race, color, religion, sex, national origin, ancestry, age, disability or veteran status. The division provides, on request, reasonable accommodations necessary to afford an individual with a disability an equal opportunity to participate in all services, programs and activities. To request materials in an alternate format, contact the division.

Printed with state funds on recycled paper / June 2006

Division of Waste Management
14 Reilly Road
Frankfort, KY 40601

Report an Environmental Emergency, 24-hour: (502) 564-2380 or (800) 928-2380