

FEASIBILITY ANALYSIS OF REGIONAL HOUSEHOLD HAZARDOUS WASTE (HHW) COLLECTION FACILITY

The Metropolitan Environmental Trust (The M.e.t.)
Williams Tower One,
One West Third Street, Suite 110
Tulsa, Oklahoma 74103

Report by:
Household Pollutant Program
Permanent Facility Committee

December 6, 2012





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Committee Members

Chair Tim Doyle, City of Owasso –Public Works
Paul Ator, City of Tulsa- Fire Department
Graham Brannin, City of Tulsa – Water and Sewer Department
Brett Fidler , City of Tulsa – Sustainability
Roy Foster, City of Tulsa – Water and Sewer Department
Andy Huggins, City of Tulsa – Solid Waste Department
Charlene Lawrence, City of Claremore – Stormwater Department
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Vernon Seaman, INCOG – Environmental and Engineering
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Scott VanLoo, City of Tulsa – Streets and Stormwater Department
Lee Zirk, City of Broken Arrow – General Services

Executive Summary

The M.e.t. and its member organizations have long sought a more efficient means of collection of Household Pollutants (HHPs) by having a permanent collection facility that operates daily or weekly for the increased access and convenience of citizens. The permanent facility can be centrally located among the region of all M.e.t. members, or there could be two or more decentralized facilities within the membership area. To begin investigating options for constructing and operating a permanent facility, The M.e.t. established a HHP Committee in early 2012. The Committee consists of representatives from INCOG, Broken Arrow, Claremore, Owasso and Tulsa's Water & Sewer, Sustainability, Streets & Stormwater and Fire Department. This paper presents the findings to date of the Committee, and it lists a number of options to consider for constructing, operating and funding a permanent HHP collection facility.

The Committee will continue to consider these options as the full M.e.t. membership begins to review and comment on the Committee's findings. This paper is the first outreach from the Committee to the full M.e.t. membership. Presented herein are the reasons for needing a permanent facility, a discussion of the data and information the Committee has collected so far about permanent facilities in other similarly sized metropolitan areas, and a presentation of many of the issues that will have to be addressed and agreed upon by The M.e.t. partners on site location, initial construction funding, and management and funding of facility operations.

This paper is being distributed to all M.e.t. members in early 2013. Comments from M.e.t. membership will be carefully considered, and the Committee will host one or more information meetings with M.e.t. membership concerning this initiative. Throughout 2013, the Committee and M.e.t. management will continue to investigate additional information and address M.e.t. membership comments. It is expected that additional information papers such as this first document will be prepared by the Committee.

If the M.e.t. membership and Committee find that the plan to establish a permanent facility has merit and can be accomplished, then The M.e.t. and its members will develop a schedule of tasks to pursue over the next few years to secure funding and begin design and construction.

Household Pollutant Problem

Household hazardous wastes (HHW) are wastes that exhibit hazardous characteristics, but are exempt from regulation under federal and state hazardous waste laws because they are derived from residential sources. Hazardous wastes are either listed by the U.S. Environmental Protection Agency (EPA) as being hazardous or they exhibit one or more hazardous characteristics and can be harmful to human health and the environment. Characteristic hazardous wastes are ignitable, reactive, corrosive or toxic. In general, household hazardous wastes fit into one of the following broad categories:

- Automobile related liquids
- Paints
- Other flammable materials
- Non-aerosol cleaners
- Pesticides
- Batteries

- Acids
- Bases
- Oxidizers
- Aerosols
- Other

Typical examples of HHW include old gasoline; used automobile fluids and motor oils; oil-based paints and stains; lacquer; varnish; turpentine, paint thinner; paint remover; lighter fluids; drain, oven, toilet and rug cleaners; furniture and nail polishes; bleach; disinfectants; pesticides, herbicides, insecticides and rat poisons; batteries; acids; mothballs; pool chemicals; aerosol containers; medications and ice packs.

Nationally, estimates of HHW generation rates tend to vary greatly. There is not a large quantity of data but the *MSW Magazine* estimates that the average American household has sixteen pounds of used oil (two gallons), three gallons of left over paint products, and at least two pounds of other HHW products. This is an average of about 10 lbs. per household, per year.

The Environmental Protection Agency (EPA) estimates that millions of pounds of household chemical wastes enter the nation's waterways each year due to illegal and indiscriminate disposal by homeowners. These wastes are often poured down stormdrain inlets or into stormwater ditches where rainfall carries the wastes to nearby streams and ponds. Because stormwater conveyance systems have no waste treatment processes, all chemicals discarded in them eventually contaminate the nation's water resources. The impacts of this wholesale dumping of household chemicals on the environment is substantial and costly. For example, one gallon of motor oil can contaminate one million gallons of water and affect aquatic life including fish, frogs and fowl. See Attachment A regarding the impact of medications in our sewer system.

While EPA has implemented stormwater pollution permit programs in all states, the fact is that without options for homeowners to dispose of their chemical wastes responsibly, this major source of urban pollution will continue. Household pollutant collection events such as those sponsored by The M.e.t. provides an important service to urban communities by reducing pollution from households that would otherwise end up in local streams and ponds. Another potential environmental contamination problem is averted with a permanent facility by diverting household wastes from landfills where they might otherwise contaminate groundwater from landfill leachate.

There are also safety issues of improper handling of household wastes after a disaster such as a fire or flood. Household pollutants in a burning home create toxic smoke for the fire fighters and area residents. Chemicals released in the environment after a flood or tornado can have devastating effects on the environment. Even simple storage of unwanted chemicals can lead to serious community problems such as pediatric poisonings.

Present HHP Program and Efforts

The fairgrounds pollutant collection event program began as a quarterly collection of used motor oil, batteries and antifreeze in 1989. These quarterly events proved very successful and showed a real need to offer this service to local residents. The M.e.t., a regional trust of member governments, was a logical choice to lead this program. In 1993, the City of Tulsa combined surplus revenue from

the trash to energy plant's steam sales with permit violation fine money from the Oklahoma Department of Environmental Quality (ODEQ) to do a one-time household hazardous waste event. The turnout, media coverage, and operations proved so successful that a commitment was made by M.e.t. member governments to do ongoing bi-annual events named the Fairgrounds Household Pollutant Program.

Since 1994, northeast Oklahoma communities have funded bi-annual household hazardous waste collection events held at the Tulsa County fairgrounds at Expo Square. The events' funding is based on a formula of participation from each M.e.t. beneficiary. The M.e.t.'s beneficiaries include the following governments: cities of Bixby, Broken Arrow, Claremore, Coweta, Collinsville, Glenpool, Jenks, Owasso, Sand Springs, Tulsa and Tulsa County.

The events are successful with between 700 to 1,800 cars per day on a spring and fall weekend. Funding for the program ranges from \$300,000 to \$400,000 per year. A breakdown of costs to host the Spring 2012 event is presented in Attachment B. The Spring 2012 event total of nearly \$34,000 does not include costs of transport or disposal of any waste materials. Included in this amount is year-round education, disposal from illegal dumping at The M.e.t.'s recycling centers, and staff who answer calls and questions from the public during business hours. Currently, questions about hazardous waste total more each week than questions about recycling, litter, composting etc. combined.

The M.e.t.'s semi-annual collection events collect about 15 lbs. of material per car, per event. About ten percent of the cars that come to these events are actually collecting for more than one household. From the nearly 40 M.e.t. events, trends can now be discerned about what an event-based program collects. For example, at the Spring 2012 event, there were approximately 1,400 cars and the following quantities were collected (see Attachment C for a zip code map of the origins of the cars for this event):

- 388 pounds of mercury containing devices
- 1,047 pounds of fluorescent bulbs
- 4,823 cans/containers of paint
- 1,200 pounds of medication with mineral oil
- 14,082 pounds of flammables
- 9,295 pounds of pesticides
- 2,197 gallons of oil
- 2,096 pounds of corrosives
- 3,773 pounds of aerosols
- 447 pounds of oxidizers
- 1,200 pounds of household batteries
- 2,560 pounds of car batteries
- 5,733 pounds of other hazardous substances

There is an estimated 175,000 households in the M.e.t.'s region, which means that there is only a 3% annual participation rate. One of the reasons for low participation is that the events are poorly timed. The majority of people try to dispose of chemicals when they move out of their homes or when a loved one passes away and they need to clean out the home. Trends show that a higher rate of people move during the summer months, but due to extreme weather conditions, the collection events are held in April and November. Outdoor events in the summer in the Oklahoma heat create

unsafe working conditions since the workers are required to wear protective clothing in the middle of a parking lot in the sun.

This schedule means that there is a tremendous amount of hazardous materials sent to the landfills with household trash and illegal dumping both at M.e.t. recycling centers and in area storm drains and ditches. Tulsa's stormwater quality permit mandates the collection of household generated hazardous waste. The mandate has resulted in the biannual collection of this material. A permanent facility would be more efficient and would lessen a citizen's inclination to dispose of pollutants inappropriately thus benefiting the community and the environment.

Problems with Present HHP Efforts

There are many costs of an event-based program that could be recouped or eliminated by having a household hazardous waste permanent facility. The set up for an event program is expensive. Before the first car enters the fairgrounds, the event has already cost between \$12,000 to \$15,000 dollars just for mobilization and set up. Another problem with event-based programs is that citizens must wait six months between events when they are anxious to recycle and dispose of the chemicals other days of the year. Also, the events, while successful, have begun to overwhelm the Expo Square parking lot, M.e.t. staff and M.e.t. volunteers. Issues include overtime pay for municipal workers, horse and gun shows competing for space at the Expo, public and worker safety, and struggles to find volunteers with hazardous waste handling expertise.

Most HHP collection programs in the country are funded through municipal enterprise funds (i.e. water, stormwater or solid waste operations). The majority of the money from M.e.t. efforts has come from solid waste fees. Solid waste collections are clearly impacted by hazardous waste. Annually, there are fires due to strong chemical reactions when incompatible materials mix in the trash such as oxidizers (e.g., pool chemicals) and organics like hydraulic fluids or oil. The truck and/or landfill can then catch on fire. Caustic and toxic chemicals can endanger collection workers and corrode or harm collection vehicles.

Local stormwater programs are considered elsewhere in the country to be one of the most appropriate funding sources for a permanent facility since the impact of illegal dumping of chemicals into stormwater systems (i.e. storm sewers, ponds, creeks and rivers) is critical. However, most of the funds collected by Oklahoma cities for "stormwater" are used for flood control, not water quality, even in those cities that have a stormwater permit for water quality. Tapping into this source of potential funding may be difficult.

Benefits of a Permanent HHP Facility

It has long been recognized that collection events of only a few times a year do not reach nearly the number of households or quantities of pollutants from homes that could be reached with an alternative of having a permanent facility open weekly or daily.

The overwhelming benefit of the permanent facility is convenience, increased participation and collection of more materials. Constructing a permanent facility will not only capture more than 3% of the hazardous waste, but also save money in the long run. After the initial capital cost of a facility, there should be a dramatic decrease in the cost of handling the chemicals. Currently in the

event-based program, if a barrel is half-full, it has to be treated and shipped before it is full. These half-full barrels have increased the disposal costs per pound. Other costs in an event-based program that are not necessary with a permanent facility would include the rental of tents, carts, portable toilets and the costs to feed volunteers. Finally, a permanent facility could become a focal point for education including tours for schools and community groups, and provide education on the proper handling and storage of HHW.

Regarding re-use, if items collected are determined to be in good, reusable condition, residents could have access to stored products. This offer should be available to participants who drop off chemicals, and there should be a limit on the number of items taken from the Re-Use Room. Each item found in the Re-Use Room should be inspected and cataloged before making it available to the public. Re-use will allow for utilization of the products as manufacturers intended.

Issues to Be Worked Out

Before facility plans can be finalized, there are many technical, management and funding issues that must be decided. The following is an overview of these issues:

1. **Ownership and Management Options:** Several options for ownership and daily management have been discussed by the Committee. These include: 1) facility wholly owned by City of Tulsa, managed and staffed with Tulsa employees; 2) Tulsa County owned and managed / staffed; 3) joint venture between City of Tulsa and Tulsa County; 4) owned and managed by a coalition of cities; and 5) owned by one entity or jointly by several entities and managed / staffed by M.e.t. employees.
2. **Days of Operation:** The facility can be open variously from a single day weekly, or several days each week, or weekends only, or 5-6 days each week. Operational costs are obviously greater for more days open per week, and management level is increased.
3. **Hours of Operations:** For each day of operation, the facility could be open for as little as a few hours to as many as 12 hours each day. The customers' schedules are of concern because it is assumed that many will want to visit the facility before or after a daytime work period and over lunch break. There may be a preference for keeping the facility open past 5:00 PM, and perhaps not opening until just before noon on work week days, with longer weekend hours.
4. **How to Charge Customers:** This will depend upon the ownership configuration and agreements between multiple owners if any. Should a single entity own and manage the facility, then charges per car drop-off will have to include a prescribed billing process for those customers that reside outside of the owning entity's territory, and a per car fee assessed for non-entity cars. Monthly invoices for all non-owner customers could be sent to each partnering community, or individual invoices could be sent to each customer directly, or payment could be due at time of drop-off per car.
5. **Charge by Quantity:** Another billing factor will be possibly parsing costs based upon types of materials or quantities of materials rather than simply a per car charge. It seems appropriate that someone dropping off a few quarts of used motor oil should not be charged the same as someone dropping off large quantities of many types of pollutants. Without quantity equalization, citizens may be inclined to not participate thus increasing the chances of harmful disposal.

6. Re-Use Options: Re-use of dropped off materials works by setting aside certain types of materials that have the potential to be given to citizens safely for their personal use. Items such as lawn chemicals, auto fluids and paints can be safely re-used. However, the re-distribution of collected materials requires facility space for temporary storage, display, and some form of accounting of what is being re-used. Also, dates and times for re-distribution must be convenient for the facility as well as the customers.
7. Types of Waste: The Committee has considered several options: 1) household pollutants only, no commercial or industrial wastes; 2) include Small Quantity Generator wastes from small commercial and small industrial businesses; 3) wastes from small businesses without consideration of waste designation under state or federal rules. Accepting wastes from any entity other than households opens up the possibility that such wastes could be illegal, and that accepting them could bring liability to the facility. In addition, this may place the HHP facility in competition with existing waste management businesses that specifically deal with such wastes.
8. Facility Size and Location: The Committee has considered several options: 1) one facility with one building centrally located within the partnership service area; 2) several buildings on one centrally located parcel, each building dedicated to a particular waste type; or 3) two or more facilities spread out within the regional partnership service area. The benefits of having one facility centrally located within the partnership area seem most desirable. The Committee recognizes that the initial size and configuration of the facility may need to be modularized for future expansion. Also, the amount of land for the facility must accommodate all aspects of customer traffic, processing of materials, employee parking, and any future expansion of facility operations.
9. Land Ownership and Possible Multi-Use: The land upon which the facility will be located could be wholly dedicated to just the facility, or the facility could be added to a parcel that has a different but related use, such as next to fire department or public works facilities. Complimentary uses of the property will have to be weighed by how the HHP facility customer traffic and operations affects the existing users of the property.
10. Construction Costs and Funding Options: There will be initial construction costs of the facility, purchase of land, consulting services for facility design and permit acquisitions, and purchase and installation of all infrastructure and appurtenances. The Committee is examining options for funding of facility construction, including: 1) bond issues; 2) ad valorem or sales taxes; 3) special assessment districts; 4) tapping stormwater utility fees from partners; 5) federal or state grants; 6) private charitable donations; or 7) a combination of several of these sources.
11. Operational Costs and Funding Options: Operations costs will include manpower salaries and benefits, management, advertising, permit fees, taxes, insurance, periodic legal and consulting fees, utility fees, replacement of equipment, supplies, vehicles and fuel, transport and disposal of collected materials, spill cleanups, safety equipment, employee training, and other expenses for operating an industrial activity. The coalition of partner governments will have to establish formal inter-local agreements for sharing all costs of facility operations. Equity among the partners will depend upon how the other concerns stated above are decided.
12. Liability: There are several types of legal liabilities inherent in operating the HHP collection facility. These include employee safety, citizen safety, transport and disposal of

all materials, property damage, and lawsuits. Adequate insurance coverage will be needed to protect the facility from these types of claims.

13. Facility Siting Issues: There are a variety of issues relating to location of the facility that must be addressed. These include: 1) compliance with zoning and building codes of the host city and county; 2) proximity to adequate and safe transportation routes for customers and transporting materials for disposal; 3) safe location from sensitive community areas such as schools, hospitals, and residential neighborhoods; 4) ensuring that the facility will not contribute to a decline of property values or neighborhood aesthetics.

Research

The Committee began meeting in 2012 to discuss the feasibility and opinions on constructing a permanent HHW facility. M.e.t. staff provided research including pictures and summaries of dozens of types of facilities around the country. The M.e.t. also arranged for the committee to tour the HHW facility in Oklahoma City. There were many design issues discussed with the committee including a large all-purpose building versus a series of out buildings for each chemical type. Siting issues were discussed, including suitable locations in the metro area. The Committee began investigating the types of environmental permits that may be required (see Attachment D) for one example). Potential partners in the private and public sectors were also discussed. The consensus was to try to build a facility similar to the one in Oklahoma City. The Oklahoma City building was built in 2005 at a cost of fewer than three million dollars. It was built as part of a complex of environmental operations for the City of Oklahoma City.

The zoning designation of the site is an important factor in site selection. Typically, each city and county will have their own zoning code and map, which dictate the uses allowed on properties in their jurisdiction. For example, in the Tulsa metropolitan area, the City of Tulsa has its own zoning code and map, as does Tulsa County for the unincorporated portions of the county.

Any changes to a property's zoning designation must be presented to the jurisdiction's planning commission for consideration, who in turn, provide a recommendation to the elected governing body, typically the City Council or County Commission. The City of Tulsa and Tulsa County have a combined planning commission called the Tulsa Metropolitan Area Planning Commission (TMAPC), who refers to both zoning codes and maps in applying regulations. However, all major suburban cities around Tulsa have their own planning commission, and each county bordering Tulsa County has some form of planning commission. Each city's planning commission recommends zoning changes to their city council or county commission; they are not governing boards themselves. When making decisions regarding the change of zoning on a property, the planning commission must consider conformance with their comprehensive plan. In the State of Oklahoma, a comprehensive plan is not a legally binding document, but is a policy guide that lays the framework for future growth and development. Most cities and counties have their own version of a comprehensive plan.

An initial step in the site selection process will be to find out the zoning designation for the property and refer to the zoning code to see if the desired use is allowed in that designation. If a zoning change is required, an applicant typically hires a consultant or lawyer to help with the application process. If the zoning request is denied, there is an appeals process.

Attachment E is a summary of collected materials for the past seven events. Attachment F is the FY 11/12 Household Pollutant Program's budget. Attachment G is a synopsis of potential City of Tulsa Wastewater cost avoidance, overtime, and materials costs related to the current pollutant collection events. The city of Tulsa used 333.3 hours of overtime at the spring 2012 event. Costs for City of Tulsa overtime are about \$10,000 per year. In addition, there are further costs for overtime employees from stormwater, solid waste, police and fire departments.

Attachment H lists the utilization of HHP permanent facilities for 28 large cities within Oklahoma, Texas, Missouri, Kansas, Arkansas and Louisiana. Of these, 22 (79%) have permanent facilities. Facility costs of permanent collection facilities vary widely by design and function. A full function four-hour rated standard modular steel building would cost \$125 per square foot and up. An open roof canopy for unloading would be less than \$50 per foot. Both examples would need on site grading, paving and utilities, which will add \$50 per foot, as well as, another \$30-\$50 per foot for design and permitting (see Attachment I). Attachment J shows design considerations for a facility from a report to the California Integrated Waste Management Board. This plan has features similar to what the Committee is considering for the M.e.t. facility.

Research shows that similar facilities' construction and design costs average \$185 per foot. Sioux Falls, South Dakota built a 5,400 square foot building for one million dollars. San Joaquin County, California built a 5,300 square foot facility for \$1.3 million. Oklahoma City reports that their annual operating costs for 2011 were \$530,000, which averages to \$44,000 monthly (see Attachment K).

Recommendations

At this early stage, the Committee cannot reach conclusions about costs, funding, management or facility location. The intent of this first Committee paper is to inform all members of The M.e.t. on what the Committee has discovered so far, and to identify the major issues that must be finalized in order that a permanent facility can be pursued. However, the Committee members do have some consensus on what might best work for The M.e.t. members and Tulsa metropolitan citizens.

Having a single facility centrally located is preferable to having several smaller facilities. Operation days and hours should be based upon maximizing customer convenience and achieving the greatest utilization of the facility. The facility should serve only residential household wastes. Adding limited processing of low quantities of certain commercial wastes may be feasible in the future. The facility location should not interfere with other land uses, such as schools, hospitals and transportation uses, and it should conform to all local zoning and planning codes.

There should be a dedicated funding source for initial construction as well as ongoing funds for operation. There should be sufficient space for the building and land to expand in the future as needed. There should be transparent management and accountability of all expenditures and revenues. Professional services will be needed for facility design, permit acquisitions, legal issues and development of effective operational practices. Facility safety must be a high priority, not only for workers but also for the general public.

The Committee must pursue additional information and data. Partnerships with funding sources and facility users will need formalizing. The Committee will prepare additional reports for The M.e.t. members and others as needed in the near future.



Don't flush your unused medication down the toilet, or the frog gets it.

and all his little friends too.

Q:

What happens when you flush old or unused medication down the toilet or sink?

A:

When you flush medication it enters our sewer system and travels to a treatment plant or septic tank. Treatment plants are not engineered to remove pharmaceuticals from the waste stream. Elements of these flushed drugs are eventually discharged with wastewater into local rivers and streams.

Q:

How does this harm our water and wildlife?

A:

Drugs, including hormones, acetaminophen, steroids, and other chemicals harm bacteria that live in local freshwater. These bacteria are responsible for the breakdown of waste. Without them, streams become unhealthy living environments for other animals.

Long-term exposure to these chemicals disrupts the endocrine and reproductive systems of aquatic animals. Due to this disruption, scientists have found the feminization of male frogs and fish in streams. Male frogs spontaneously turning into female frogs is not a characteristic of a healthy environment. The detriment of sex organs in aquatic animals is directly related to the increased levels of chemicals from drugs found in our freshwater.



So don't be a pill,

keep  from turning into  by disposing of your unused medication safely.

Here's what you can do:

#1: Take your medications to the Met's Household Pollutant Collection Event at the fairgrounds in November, and April (visit www.metrecycle.com for dates).

#2: Take your medications to one of the region's many police department drop-offs and toss them in the box.

These options allow for medication to be disposed of in an environmentally-friendly fashion, minimizing the chemical impact on aquatic ecosystems.

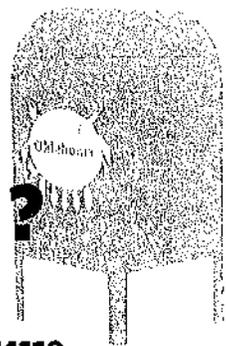
#3: Mix the pills with a contaminant before placing in the trash. In their original container, dissolve the pills in water, and add a contaminant like coffee grounds or kitty litter. After marking out your name and information with permanent ink, seal the container, and wrap in duct-tape. Mixing your pills in this manner prevents them from being salvageable by an unwanted second party.

Most of the trash in the Tulsa area is taken to the Trash-to-Energy plant and burned. By throwing your pills in the trash, you keep them from contaminating local freshwater.

This option is designed to minimize the risk of accidental poisoning, as well as lessen the impact on the environment.

After dropping off your pills, continue your environmental stewardship and drop off your recyclables at one of our centers. Remember, the Met is your green authority, so contact us with any of your recycling questions or concerns.

Where you can drop your drugs?



Tulsa Police Gilcrease Division
3436 N Delaware Ave. Tulsa, OK 74110
(918) 591-4100 8 a.m. - 6 p.m. M - F

Tulsa Police Mingo Valley Division
10122 E 11th St. Tulsa, OK 74128
(918) 669-6000 8 a.m. - 4 p.m. M - F

Tulsa Police Riverside Division
7515 S Riverside Dr, Tulsa, Ok 74136
(918) 596-1100 8 a.m. - 4 p.m. M - F

Tulsa County Sheriff's Office, Faulkner Building
303 W 1st St., Tulsa, OK 74103
(918) 596-5701 8 a.m. - 4:15 p.m. M - F

Tulsa County Jail, David L Moss Criminal Justice Center
300 N Denver Ave, Tulsa, OK 74103
(918) 596-8900

Broken Arrow Police Department
2302 1st Pl, Broken Arrow, OK 74012
(918) 451-8213 8 a.m. - 5 p.m. M - F

Sand Springs Police Department
100 E Broadway, Sand Springs, OK 74063
(918) 245-8777 8 a.m. - 6 p.m. M - F

Sapulpa Police Department
20 N Walnut, Sapulpa, OK 74066
(918) 227-5100 24 hrs/day



11/27/2012

Attachment -B-

THE METROPLITAN ENVIRONMENTAL TRUST
ITEMS PURCHASED FOR ONE HOUSEHOLD POLLUTANT EVENT
 USING EXPENSES FROM APRIL 2012 AS AN EXAMPLE*

City Workers on Overtime

From Attachment C - 1/2 yr Staff Overtime	\$ 5,000.00	est.
From Attachment C - 1/2 yr Materials	\$ 1,700.00	est.
From Attachment C - 1/2 yr Equipment	\$ 1,500.00	est.
Total Cost for this Category = \$ 8,200.00		

Temp Agency Workers

<u>Company</u>	<u>Purpose</u>	<u>Total Bill</u>
American Staff Corp	Event Worker LH	\$ 197.34
	Independent Contract - Contract Oversight (during and after)	\$ 424.71
Ande Golden Reed	Workers Set up on Fri. \$116.67/unit x 6.5 hr.	\$ 758.36
CEO	Field Workers (JS)	\$ 1,103.23
Key Personnel	Field Workers (DW)	\$ 129.76
Manpower	Cart Pusher - 2 days	\$ 257.92
Stacie Lewis	Food Handler/Server/Clean	\$ 150.00
Standby	Paint Workers	\$ 1,185.94
Total Cost for this Category = \$ 4,207.26		

Rental and Hauling Items

<u>Company</u>	<u>Purpose</u>	<u>Total Bill</u>
A-1 Tent Rental	Tents	\$ 2,312.50
Classic Golf Carts	Carts for Event	\$ 200.00
Porta John Co	Portajons	\$ 195.00
Tulsa Co Expo Square	Security	\$ 608.60
Tulsa Ash Haulers	Dumpster/Roll off Service	\$ 750.00
Tulsa Co Expo Square	Tables/Chairs	\$ 639.05
Total Cost for this Category = \$ 4,705.15		

Worker-Volunteer Support

<u>Company</u>	<u>Purpose</u>	<u>Total Bill</u>
Arbys, Hbake, Ikes	Lunch for Sat & Sun Wrkr Giveaway to Workers (150 chairs)	\$ 2,230.13
Eskimo Joes	Breakfast	\$ 2,499.00
Krispy Kreme/Merritt's	Lunch for Friday Wrks for set up	\$ 322.38
Mazzios	Misc. Items - containers, tablecloths	\$ 96.95
Petty Cash		\$ 138.41

Quick Trip	Ice	\$ 45.03
Reasors	Drinks, Water, Fruit, etc.	\$ 363.17
Total Cost for this Category =		\$ 5,695.07

Misc. Items Specific to Event

<u>Company</u>	<u>Purpose</u>	<u>Total Bill</u>
Aurthur Gallagher Bryce	Insurance for Events	\$ 4,215.62
Envirozone	Liners	\$ 338.86
Neighbor Newspaper, This Land, etc.	Advertising	\$ 2,714.85
International Safety	Supplies (safety items)	\$ 829.82
Oriellys, Home		
Depot,acmeetc	Supplies (oil pads, diapers)	\$ 1,603.86
Signs Now	Signs/Banners	\$ 200.00
Tulsa County Admin	Educational Fliers & Litterbags (est. for 2,000)	\$ 750.00
Tulsa County Admin	Printing Fliers HHP Event Fliers & Latex Paint	\$ 497.02
Total Cost for this Category =		\$ 11,150.03

Total Event Type Cost = \$ 33,957.51

**Note: If multiply these number by 2 to get one year's worth of cost.*

\$ 67,915.01 1 yr.

TRANSFER STATION PERMIT SUMMARY
ISSUED BY
OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
LAND PROTECTION DIVISION SOLID WASTE PROGRAM

The following is a summary of the Application review for Transfer Station and Processing Facilities checklist. These are the steps necessary to complete an application for a Transfer Station permit.

- Public Participation and Notice or County Commissioners Approval Process (CLAP)
- Application – Preliminary site evaluation; meet with DEQ staff
- Certification – Signed permit application; legal right to property
- Engineer of Record – Professional seal
- General Information – Who, what, when, where, how, etc.
- Maps and Drawings – Site maps; specific location
- Water Management – Discharges; OPDES permit; minimize or prevent all discharges from site
- Location Standards – Flood plains; scenic river basins; recreation/preservation areas; endangered species and threatened species, etc.
- Closure and Post Closure Care – Financial Assurances

Using Oklahoma City as an example: The permit and permit summary total six pages. The application was submitted in December 2002. The application went through three revisions. The permit was granted in May of 2003. The process took six months.

The ODEQ engineer responsible for review is Wes Squyres, 405-702-5197 or wes.squyres@deq.ok.gov.



STEVEN A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

BRAD HENRY
Governor

Solid Waste Permit

PERMIT NUMBER: 3555054
 PERMITTEE: City of Oklahoma City
 SITE: The City of Oklahoma City Household Hazardous Waste Collection Facility
 LOCATION: Oklahoma City, Oklahoma
 EXPIRATION DATE: Upon Department approval of final closure.

The City of Oklahoma City, having complied with the requirements of the law, is hereby granted permission to construct, operate and maintain a transfer station located in Oklahoma County, Oklahoma, more particularly described as:

The Northeast Quarter (NE/4) of Section 11, Township 11 North, Range 4 West of the Indian Meridian, Oklahoma County, Oklahoma. Beginning at a point 969.00 feet South and 50.00 feet West of the Northeast corner of said NE/4; thence West and parallel to North line of said NE/4 a distance of 330.00 feet; thence South and parallel to East line of said NE/4 a distance of 184.90 feet; thence East and parallel to North line of said NE/4 a distance of 330.00 feet; thence North and parallel to the East line of said NE/4 a distance of 184.90 feet to the point or place of beginning, said parcel contains 1.4 acres or 61,017.00 square feet, more or less.

This Permit has been prepared by the Oklahoma Department of Environmental Quality (Department), pursuant to its authority under the Oklahoma Solid Waste Management Act, 27A O.S., §2-10-101 *et seq.*, and the Solid Waste Management Rules promulgated thereunder at Oklahoma Administrative Code (OAC) 252:520-13; and other applicable rules promulgated under the Oklahoma Environmental Quality Code. It sets forth conditions and requirements for the construction, operation, and maintenance of the above named Solid Waste Transfer Station Facility. Commencing operations under this permit constitutes acceptance of, and consent to, the conditions contained herein.

Saba Tahmassebi, Ph. D., P.E.
Chief Engineer
Land Protection Division

5/16/03
Date

Scott A. Thompson, Director
Land Protection Division

5-16-03
Date



THIS PERMIT IS BASED ON DATA, DESIGN CRITERIA, PLANS, AND SPECIFICATIONS PRESENTED IN THE CITY OF OKLAHOMA CITY HOUSEHOLD HAZARDOUS WASTE COLLECTION FACILITY PERMIT APPLICATION, WHICH IS HEREBY APPROVED BY THE DEPARTMENT AND INCORPORATED BY REFERENCE HEREIN. ANY INACCURACIES FOUND IN THE APPLICATION OR SUPPORTING DOCUMENTATION MAY PROVIDE CAUSE FOR POTENTIAL ENFORCEMENT ACTION AGAINST CITY OF OKLAHOMA CITY HOUSEHOLD HAZARDOUS WASTE COLLECTION FACILITY AND THE MODIFICATION OR REVOCATION OF THIS PERMIT.

A. PERMIT SUMMARY

- (1) Name of Site: City of Oklahoma City Household Hazardous Waste Collection Facility.
- (2) Type of Site: Household Hazardous Waste Transfer Station Facility.
- (3) Name of Applicant, Applicant Representative and Applicant Address:
 City of Oklahoma City
 Mr. Gary Shockley
 420 West Main 7th Floor
 Oklahoma City, Oklahoma 73102
- (4) Map and Street Location of Site: 1621 S. Portland, Oklahoma City, Oklahoma
- (5) Type of Waste(s) to be transferred: Household hazardous waste.
- (6) Source(s) of Waste: private citizens from The City of Oklahoma City and other participating municipalities.
- (7) Estimated Tons or Cubic Yards of Waste to be Received Daily: less than 10 tons/day.
- (8) Population or Population Equivalent to be served: 506,132 persons.
- (9) Number of Acres in Permitted Boundary: 1.4 acres more or less.
- (10) 100-year flood plain: The proposed site is not located within the 100-year flood plain.
- (11) Estimated Active Life of Site Prior to Final Closure: This permit shall continue in effect until the Department approves the final closure.

B. GENERAL CONDITIONS

- (1) Duty to Comply: The City of Oklahoma City shall comply with the Environmental Quality Code (Code), Oklahoma Solid Waste Management Act (Act), and Rules promulgated thereunder (Rules), and all conditions of this permit. Any permit noncompliance constitutes a violation of this Permit and is grounds for enforcement action, including permit modification, administrative civil penalties, summary suspension or revocation, and denial of a pending permit application.

- (2) **Duty to Apply:** The City of Oklahoma City shall apply for a permit modification when such application is required by the Rules of the Department.
- (3) **Need to Halt or Reduce Activity Not a Defense:** It shall not be a defense in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- (4) **Duty to Mitigate:** The City of Oklahoma City shall take all reasonable steps to minimize or correct any adverse impact on the environment and the public health resulting from noncompliance with this permit or site operation.
- (5) **Proper Operation and Maintenance:** The City of Oklahoma City shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the City of Oklahoma City. Proper operation and maintenance includes effective performance of operations and adequate funding, operator staffing and training, and the provision of appropriate waste-handling equipment.
- (6) **Duty to Provide Information:** The City of Oklahoma City shall furnish to the Department, within a time specified, any information that the Department may request to determine:
 - (a) Whether cause exists for modifying, amending, suspending, or revoking this permit;
 - (b) Compliance with this permit;
 - (c) Whether a new or modified permit should be issued.

The City of Oklahoma City shall also furnish to the Department, upon its request, copies of records required to be kept by the Rules.

- (7) **Inspection and Entry:** The City of Oklahoma City shall allow authorized representatives of the Department, upon the presentation of credentials as may be required by law, to:
 - (a) Enter upon the permitted site or where records required by this permit are kept;
 - (b) Inspect at reasonable times any site construction, waste management or disposal operation; and
 - (c) Sample or monitor, for the purpose of assuring compliance with this permit, any substances or parameters at any location.
- (8) **Records:** The City of Oklahoma City shall keep on file at its central office this permit and permit application and copies of all:
 - (a) As-built facility construction plans, drawings and specifications;
 - (b) Repair and maintenance records;
 - (c) All monitoring data when monitoring is required;
 - (d) A daily log to record operational information, including the quantity of refuse received;
 - (e) Reports filed with the Department; and
 - (f) Closure records.

- (9) **Reporting Requirements:** The City of Oklahoma City shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility and of any planned changes in the permit or activity that may result in noncompliance with permit requirements. In the event that the City of Oklahoma City becomes aware that it failed to submit any relevant facts or submitted incorrect information in the permit application or in any report to the Department, it shall promptly submit correct facts or information. Failure to make a prompt submission is grounds for an enforcement action and for the modification or revocation of this permit.
- (10) **Transfer of Permit:** This permit may not be transferred to any other person except after notice to and approval of the Department. No transfer will be approved until the applicant complies with all transfer requirements in the Rules.
- (11) **Corrective Action Requirement:** The City of Oklahoma City shall conduct corrective action if inspection of the site or any monitoring results indicate the potential for or actual release of contaminants into the environment.
- (12) **Consent to Conditions:** Commencing work under this permit will constitute consent to all permit conditions.

C. CONSTRUCTION CONDITIONS

- (1) **Construction Authorization:** The Transfer Station shall be constructed in accordance with the data, design criteria, plans, and specifications in the permit application, the Act and Rules, and the specific conditions set forth in this permit for individual components of construction.
- (2) **Construction of Surface Water and Runoff Controls:** The City of Oklahoma City shall construct and maintain the site as specified in the permit application to control surface water drainage and runoff at the site.
- (3) **Certification of Construction:** The City of Oklahoma City shall submit to the Department, by certified mail or hand delivery, a letter signed and sealed by an independent professional engineer registered in Oklahoma, certifying that the facility is constructed in accordance with the approved plans and specifications.
- (4) **Review of Certification of Construction:** The Department shall review all completion reports and certifications and may conduct an on-site inspection to verify that the construction of the facility complies with all regulatory and permit requirements.
- (5) **Operation of Transfer Station:** The City of Oklahoma City shall not commence operation of the transfer station until the Department provides written confirmation of an acceptance of the certificate of construction.

D. OPERATING CONDITIONS

- (1) **Liquid Waste:** Shall be accepted only in small containers similar in size to that normally found in household waste.
- (2) **Hours of Operation:** The City of Oklahoma City shall post a sign at the site listing the hours of operation.

- (3) Disposal Facility: The City of Oklahoma City shall dispose of all transferred waste at a site permitted to accept such wastes. OAC 252:520-13-2(12)
- (4) Preservation of Aesthetics: The City of Oklahoma City shall plant and maintain various types of trees, shrubs and flowers throughout the site to enhance the aesthetic quality of the site in accordance with the approved plan. OAC 252:520-5-5(8)

E. CLOSURE CONDITIONS

- (1) Notice: The City of Oklahoma City shall give notification to the Department fifteen (15) days prior to closure of the facility. OAC 252:520-13-2(13)
- (2) Certification of final closure: Within 60 days after the completion of final closure for the entire site, the City of Oklahoma City shall submit to the Department a notarized statement signed by the City of Oklahoma City, and a certification, signed and sealed by an independent professional engineer registered in the State of Oklahoma, that the site was closed in accordance with the approved closure plan, the permit, and applicable Rules.
- (3) Closure approval: Final closure of the site must be in accordance with this permit, the approved Closure Plan, and regulatory requirements and must be approved in writing by the Department.

F. INCORPORATION BY REFERENCE

The following documents are hereby incorporated by reference and constitute the complete application:

Formal application submitted 12/11/2002
Resubmittal 3/3/2003
Resubmittal 3/21/2003
Resubmittal 3/28/2003

<p style="text-align: center;"> APPLICATION REVIEW TRANSFER STATION & PROCESSING FACILITIES CHECKLIST </p> <p style="text-align: center;"> LAND PROTECTION DIVISION SOLID WASTE PROGRAM </p> <p style="text-align: center;"> OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY </p>	<p> Facility Name: _____ County: _____ Facility ID No: <u>NA</u> ODEQ Permit No: <u>NA</u> Reference No: <u>NA</u> Application Type: <u>NA</u> Date: _____ Administrative Reviewer: _____ Start Date: _____ Completion Date: _____ Technical Reviewer: _____ Start Date: _____ Completion Date: _____ Issuance Deadline: _____ </p>	<p style="text-align: center;"> OAC 252:515 PROCESSING G FACILITIES </p>	<p style="text-align: center;"> DEQ Form Number 515-101 </p>	<p style="text-align: center;"> Shaded areas for DEQ use only </p>
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ITEM #	STATE REGULATIONS OAC 252:510 OR GUIDELINES	GENERAL DESCRIPTION
FILING OF APPLICATION		
<p>PUBLIC PARTICIPATION AND NOTICE</p> <p>Information regarding the pending application shall be made available to the public as required in O.S. 27A Sec. 2-14-301, et. Seq., OAC 252:4-7-13. This notice is to allow concerned individuals an opportunity to voice opposition or support.</p> <p>Under certain conditions, public participation may be satisfied through the County Commissioner Approval Process (CCAP) in accordance with 27A O.S. Sec. 2-10-307. For applications, using the CCAP, only the public participation and notice information specified by ITEM #2 in column one, is to be submitted with the application.</p>		
1	27A O.S. 2-14-301,302,303 252:4-7-13(d)	Public Notice: Shall be made with proof submitted to the Department within twenty (20) days of publication, consisting of a copy of the publication in one (1) newspaper, in addition to an affidavit from the publishers showing the date of publication.
2	27A O.S. 2-10-307	<p>For applications using the CCAP, the following items are to be submitted:</p> <p>A copy of the Board of County Commissioner's (BOCC) meeting agenda containing initial notice of consideration of the permit application.</p> <p>Proof of publication in the local newspaper of the minutes from the BOCC meeting in which the application was initially considered. This public notice will state that the next meeting will provide an opportunity for public input on the permit application.</p> <p>Copies of the agenda(s) for any subsequent</p>
		<p>BOCC meeting(s) at which the permit application is considered. The agenda(s) for such BOCC meeting(s) shall include an item for receipt of written & oral comment.</p> <p>(Solid waste transfer station or yard waste composting site).</p>
<p>APPLICATION</p> <p>Prior to filing a formal application, it is recommended that a <u>Preliminary Site Evaluation</u> be completed to determine if the proposed site meets the basic standards as outlined in the introduction of the Transfer Station Guidelines. In addition, it is recommended that applicant request a meeting with Departmental staff. Two (2) copies of a Tier I application shall be filed with the Dept. 252:4-7-4(a). Three (3) copies of a Tier II or III application shall be filed. 252:4-7-4(b).</p>		

CERTIFICATION		
3	<p>252:515-3-33 & 252:4-7-13(b)</p> <p>252:515-3-34(a),(b),(c)</p>	<p>Oath Required. Applicant shall sign the permit application under oath on forms provided by the DEQ.</p> <p>Legal right to property.</p> <p>(a) Right of access. The permit application for a new solid waste disposal facility, or expansion of the permit boundaries of an existing solid waste disposal facility, must contain:</p> <p>(1) A true and correct copy of a legal document filed in the county in which the facility is located, possesses a legal right to access and use the property including any on- or off-site soil borrow areas, throughout the life of the site and the required post-closure monitoring period; and</p> <p>(2) A certification, by affidavit, that the applicant owns the real property, has current lease or easement to accomplish the permitted purpose, or has provided legal notice to the landowner.</p>
		<p>(b) Option for use.</p> <p>If an option for right of access is predicated upon the issuance of a permit prior to the exercise of that option, then the applicant must submit a copy of the option with the permit application. Once the permit has been issued, the applicant must comply with (a) of this Section prior to beginning construction. (c) Easement to the DEQ. Unless the property owner is a unit of government, a temporary easement shall be executed allowing the DEQ and/or its contractors the right to access the property to perform closure, post-closure monitoring, or corrective action in event of default.</p>
4	<p>252:515-3-35(a),(b),(c)</p> <p>27A O.S. 2-10-301(e)</p>	<p>Engineer of Record.</p> <p>(a) Professional engineer seal required. Permit applications for new solid waste disposal facilities, or for Tier II or Tier III modifications of existing permits, must be prepared and stamped or sealed by a professional engineer licensed in the State of Oklahoma if the facility serves a population equivalent of 5,000 persons or more.</p> <p>(b) Seal placement. The engineer's stamp or seal shall be placed on the application page. Each map and drawing included in the application shall be stamped or sealed in accordance with the requirements of the State Board of Registration for Professional Engineers and Land Surveyors. (c) Failure to seal. Documents that are not stamped or sealed in accordance with this Section will be returned to the applicant.</p>

GENERAL INFORMATION		
General information must be provided for all applications for permit or permit modifications as outlined in 252:515-3-36 & 3-38 and the Transfer Station Guidelines Part 9.		
5	252:515-3-36	Permit applications.
	252:515-3-36(1)	(a) New applications. A permit application for a new solid waste disposal facility shall include all information required by the Oklahoma Uniform Environmental Permitting act, including: The owner/operator's name, mailing address and phone number;
6	252:515-3-36(2)	The name by which the facility will be known, the mailing address, the street address (if different from the mailing address, and the facility phone number;
7	252:515-3-36(3)	A disclosure statement completed in accordance with OAC 252:515-3-31(g).
8	252:515-3-36(4)	A legal description, by metes & bounds, parts of sec., township & range, or book & page number of plat records, of: (A) the proposed permit boundary; (B) the proposed waste processing and/or disposal areas; and (C) both on- and off-site soil borrow areas, when applicable;
9	252:515-3-36 (5),(6),(7),(8)	(5) Latitude and longitude of all corners of the permit boundary and facility entrance; (6) The location of the site from the nearest town or city (7) A description of all processing, storage and disposal operations and units; (8) A description of the anticipated waste streams and amount received per day;
10	252:515-3-36 (9),(10)	(9) The names of municipalities and/or counties included in the service area; (10) The estimated population served, to be determined as follows: (a) the population of each town or city served by the disposal facility, by census or (B) the population equivalent, calculated by dividing the anticipated amount of waste received per day by 4.4 pounds per person per day;
11	252:515-3-36 (11)	(11) The types of road construction and materials to be used to ensure that all access roads within the site are passable during inclement weather by normal vehicular traffic;

12	252:515-3-36(a),(14),(15)	<p>(14) Data, plans and specifications for the following: (a) a demonstration the proposed facility meets the location restrictions of Subchapter 5 of this Chapter; (B) an operational plan describing how compliance with the operational requirements of Subchapter 19 of the Chapter, will be achieved; (C) a plan describing how compliance with the storm water management requirements of Subchapter 17 of this Chapter will be achieved; (D) plans for closure of the facility in accordance with Subchapter 25 of this Chapter; and (E) a plan for achieving compliance with the aesthetic enhancement requirements of OAC 252:515-3-37 and</p> <p>(15) Establishment of financial assurance in accordance with Subchapter 27 of this Chapter.</p>	
13	252:515-3-36(b),(c)	<p>(b) Information not identified. The DEQ may require the applicant to submit additional data, revise design specifications or propose environmental safeguards as necessary to meet DEQ rules for the protection of human health and the environment.</p> <p>(c) Permit modification applications to an existing permit shall submit information identified in the Part related to the proposed modification.</p>	
14	252:515-3-37	<p>Aesthetic enhancement. Applications for new permits or expansions of an existing permit boundary, shall include plans to enhance the visual harmony of the new disposal facility or the expansion area with the surrounding area, and reduce the transmission of dust and noise from the facility, including placement of berms, fences, shrubbery, trees, or other such</p>	
		materials to achieve the desired result.	
15	252:515-3-39(1), (2), (3), (4), (5),(6)&(7),	<p>Additional information for waste tire facilities: (1) In addition to the requirements of OAC 252:515-3-36, permit applications for waste tire facilities shall include:</p> <p>(1) the intended development, tire processing equipment specifications, and detailed operational plans for the facility;</p> <p>(2) how the facility will be visually screened, including the planting of trees and other vegetations;</p> <p>(3) the protection of human health and the environment by controlling on-site populations of rodents, flies, mosquitoes, or other animals or insects capable of transmitting disease to humans;</p> <p>(4) mosquito monitoring devices to determine the mosquito population, a determination of whether or not control action is warranted, and plans to implement control measures as necessary;</p> <p>(5) the intended use for the processed tire material and accessible for recycling, reuse or energy recovery;</p>	Skip 38

		<p>(6) a description of how the processed tire material will be disposed, if the intended use ceases to be a viable option;</p> <p>(7) a fire protection plan that includes: (A) how the facility will respond to a fire and with what equipment; (B) the criteria for calling the fire department; (C) accessibility to a fire hydrant with sufficient water pressure to meet the facility's fire protection needs; (D) how to control surface water run-off from fire extinguishing efforts; and (E) other relevant information;</p>
16	252:515-3-39 (8), (9), (10),	<p>(8) documentation from the local governmental entity responsible for supplying fire protection for the waste tire facility's fire protection plan:</p> <p>(9) plans for surface water run-off controls around tire piles and processed tire piles to prevent surface water runoff. Engineering plans shall also address discharge of run-off under an OPDES permit or diversion of collected runoff into a POTW or an evaporation pond;</p> <p>(10) plans for a storage area that shall not contain more than 250,000 whole tires;</p> <p>(11) plans to ensure all 77 counties of Oklahoma are serviced at least once each calendar quarter; and</p> <p>(12) a description of how compliance with the requirements of Parts 3 and 5 of OAC:515-21 (relating to waste tire facilities and transportation) will be achieved and maintained.</p>
<p>MAPS & DRAWINGS:</p> <p>Complete maps, plans, specifications, and narrative demonstrating the proposed site as designed & constructed, are required as outlined in 252:515-3-51 through 57. The narrative should provide design specifications for receiving & processing areas, surface water protection measures, & any other site item requiring explanation.</p>		
17	252:515-19-38(b),(c)	<p>(b) Buffer Zones: Unless otherwise specified in this Subsection, all disposal facilities shall be designed and maintained with a waste-free buffer zone at least 50 feet in width between all waste disposal an/or handling areas and adjacent property. The buffer zone shall be contained within the permit boundary described in the permit application. (3) Waste tire facilities. Waste tire facilities shall maintain restricted areas in accordance with OAC 252:515-21-32(g). (4) Smaller buffer zones may be authorized by DEQ</p> <p>(c) Use of buffer zone. Buffer zones and</p>
		<p>other restricted areas may be used for the temporary collection and storage of source-separated recyclable materials, if such use is described in an approved recycling plan.</p>

18	252:515-3-51(a)	<p>Maps and Drawings - General Requirements:</p> <p>(a) Applicability. The maps and designs identified in this Part shall be submitted with permit applications for: (1) all new solid waste disposal facilities; (2) expansions of permit boundaries of existing solid waste disposal facilities; (3) expansions of waste handling or disposal boundaries of existing solid waste disposal facilities; and (4) any other modification to an existing permit where the data originally submitted would be made ambiguous, inaccurate, or out of date by the proposed modification.</p>
19	252:515-3-51(c), (d), (e) & (f)	<p>(c) Illegible. The permit application will be considered administratively incomplete if any maps or drawings submitted are not legible.</p> <p>(d) Map sequence. All maps and designs shall be submitted in the permit application in the sequence identified.</p> <p>(e) Map scale. Unless otherwise identified, all maps submitted as part of a permit application shall be prepared at a scale of one-inch equals one hundred feet (1" = 100'). An alternative scale may be used with approval of the DEQ.</p> <p>(f) Map details (1) All maps shall show as a minimum, legend, title, north arrow, permit boundary, buffer zone, and boundaries of waste disposal or processing areas. (2) If applicable, the locations of groundwater monitoring wells and gas monitoring probes shall be identified.</p>
20	252:515-3-52	<p>General Location Map: The permit shall include a county highway map published by the Oklahoma Department of Transportation showing the facility location and any airports</p>

		<p>within six miles of the facility. If the facility is located within a municipality and a municipal map with better information is available, then it may be used.</p>
21	252:515-3-53	<p>Flood Plain Map: The permit application shall include a flood plain map from one of the following sources on or within one mile of the permit boundary of the proposed facility or expansion area: (1) Flood Insurance Rate maps, or maps prepared by the U.S. Army Corps of Engineers; (2) Maps of Flood Prone Areas published by the U.S. Geological Survey; or (3) site specific determinations by the U.S. Army Corps of Engineers at the request of the applicant</p>
22	252:515-3-54(a),(b)	<p>Quadrangle Topographic Map:</p> <p>(a) Required map. The permit application shall include an original U.S. Geological Survey 7.5 minute series topographic quadrangle map. (1) If 7.5-minute series maps have not been printed, then 15-minute series may be used. (2) If the disposal facility is located on the edge of the quadrangle, then adjoining maps shall be provided</p>

22	252:515-3-54(a),(b)	<p>Quadrangle Topographic Map:</p> <p>(a) Required map. The permit application shall include an original U.S. Geological Survey 7.5 minute series topographic quadrangle map. (1) If 7.5-minute series maps have not been printed, then 15-minute series may be used. (2) If the disposal facility is located on the edge of the quadrangle, then adjoining maps shall be provided.</p> <p>(b) Required Details. The quadrangle topographic map shall clearly depict: (1) the location of the facility permit boundaries; (2) access routes within one mile of the facility (3) homes and buildings within one mile of the facility; (4) public water and wastewater collection, treatment, and distribution facilities within one mile of the facility; (5) receiving waters and surface variations within one mile of the facility; and (6) water wells, including private and municipal, potable and irrigation water within one mile of the facility.</p>
23	252:515-3-55(a),(b),(c)	<p>Existing Contour Map:</p>
		<p>(a) Required map. The permit application shall include a constructed map showing the topographic contours prior to any operations at the facility.</p> <p>(b) Contour intervals. The contour interval on the map shall not be greater than two feet.</p> <p>(c) Required details. The existing contour map shall show the location and quantities of surface drainage entering and exiting the facility, and the locations of all boreholes with their surface elevations.</p>
24	252:515-3-56(a),(b)	<p>Site Map:</p> <p>(a) Required map. The permit application shall include a site map, which may be the existing contour map.</p> <p>(b) Required details. The site map shall show the following, as applicable to the facility: (1) the dimensions of the permit boundary as indicated by legal description; (2) the receiving processing, storage or disposal areas; (3) Buffer zones; (4) the locations and surface elevations of each borehole, monitor well, test well, monitoring site, test pit sampling site and permanent benchmarks; (5) the surface and top of casing elevations for each monitoring well or gas probe; (6) the surface drainage, including location of diversion ditches, dikes, dams, pits, ponds, lagoons, berms, terraces and other relevant information; (7) the location of fencing and gates, utility lines, pipelines and easements; (8) the access roads into and on the site; (9) employee and equipment shelters.</p>

25	252:515-3-57	Design drawings. The permit application shall include, as necessary, design drawings and specifications for: (1) receiving, processing, storage or disposal areas; (2) liner construction; (3) leachate collection
		systems; (4) typical well installation; (5) dike sections; (6) drainage channels; (7) groundwater monitoring wells, gas monitoring; probes, and piezometers; (8) retention structures or other groundwater and surface water protection measures; and (9) any other design drawings or specifications necessary to describe the proposed activities for the facility.
<p>WATER MANAGEMENT:</p> <p>The entire processing facility site shall be constructed so as to minimize runoff. Any water used in the operation or maintenance of the processing facility or other pollutants shall be treated or processed in a manner approved for the intended disposal or reuse of such water. Plans and specifications regarding the design, construction & maintenance of run-on/run-off control systems, & handling of leachate as outlined in 252: 515-17-3. In addition, facilities shall be designed, constructed, and operated in a manner that will prevent and avoid contamination of ground waters.</p>		
26	252: 515-17-3 (a)(1)(2)(3)4	<p>Discharges</p> <p>(a) All disposal facilities shall be operated to:</p> <p>(1) prevent the discharge of contaminated stormwater, unless the proper permit is obtained from the DEQ's Water Quality Division;</p> <p>(2) prevent discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the federal Clean Water Act, including, but not limited to, the Oklahoma Pollutant Discharge Elimination System (OPDES) requirements;</p> <p>(3) prevent the discharge of a not-point source of pollution to waters of the United States including wetlands, that violates any requirements of an area-wide or state-wide water quality management plan that has been approved in accordance with the federal Clean Water Act; and</p> <p>(4) comply with all requirements of their</p>
		OPDES permit, if applicable. A copy of the OPDES permit shall be maintained in the operation record.
<p>LOCATION STANDARDS:</p> <p>The following location restrictions are to be addressed:</p>		
27	27 A.O.S. 2-10-304 252: 515-5-32(a) 252-3-53 27 A.O.S. 2-10-304	100 Year Flood Plain: Not to be located in 100 Year Flood Plain. Variance available for transfer station with requirement that no waste retained during non-operating hours. 100 year flood level & boundaries to be furnished in application.

28	252: 515-5-31(a)	Scenic Rivers: Not to be located within the drainage basin of any river designated under Oklahoma Scenic Rivers Commission (OSRC) Act unless statement is obtained from OSRC or Oklahoma Tourism & Recreation Department.
29	252: 515-5-31(b)	Recreation/Preservation Areas: Not to be located within one-half (1/2) mile of area dedicated & managed for public recreation or natural preservation by any governmental agency. Exceptions granted if application includes statement from appropriate agency that proposed site not expected to adversely affect recreation or natural area.
30	252: 515-5-31(c)	Endangered & Threatened Species: Statement required from Oklahoma Department of Wildlife Conservation (ODWC) and Oklahoma Biological Survey (OBS) concerning endangered or threatened wildlife or plant species within one (1) mile of proposed site. If exist, impact statement required.
31	252: 515-5-32(c)	Wetlands: Not to be located in wetlands. Letter required from Oklahoma Conservation Commission (OCC) stating proposed site not located in wetlands.
32	252: 515-5-52(a)	Utility Separation: A minimum horizontal separation of twenty-five (25) feet shall be maintained between a landfill disposal site and any above-ground or underground pipeline; or transmission line.
33	252:515-19-31(a),(b),(c),(d)	(a) Hazardous, radioactive, regulated PCB waste. The disposal of any quantity of hazardous, radioactive, or regulated polychlorinated biphenyl (PCB) waste at a solid waste disposal facility is prohibited. (b) Regulated medical waste. The disposal of regulated medical waste at a solid waste disposal facility is prohibited, unless the facility is a permitted regulated medical waste processing facility. (c) Asbestos. The disposal of friable asbestos waste at a solid waste disposal facility is prohibited unless the facility is a MSWLF or NHIW landfill specifically authorized by the permit to accept such waste. (d) NHIW. The disposal of NHIW at a solid waste disposal facility is prohibited, unless specifically authorized by the permit.
34	252: 515-19-32	Public Access Control: Control public access and prevent unauthorized traffic and uncontrolled dumping by using artificial and/or natural barriers.
35	252: 515-19-33(c)	Measuring Procedure: All waste to be measured by either weight or volume (cubic yards).

36	252:515-19-35(a),(b), (c)	Litter: Blowing litter to be controlled so as not to leave the site. All facility users shall adequately cover loads to prevent blowing litter. Entire site to be policed daily.
37	252:515-19-36(c)	Dust Control: Measures to be taken to control dust. Narrative of control measures to be included. See 252:520-9-11(10)
38	252:515-19-37(a),(b)	Vector Control: Disease vectors to be controlled. Narrative of control measures to be included.
39	252:515-19-39(a)(b)	Salvage: No scavenging to be permitted at disposal site. Salvage & recycling operations permitted with prior approved operational plan and shall be located in a separate area.
40	252:515-19-40(a)(c)	Record keeping & Reporting: In review pending new rule.
41	252:515-19-91(a)	Processing: All putrescible waste delivered to a processing facility shall be processed within 24 hours.
42	252:515-92	Large or Bulky Items: Provisions to be made for large or bulky items not suitable for facility operations. Narrative of handling procedure shall be included.
43	252:515-19-93	Residue Management: All processed waste and residues produced by facility to be disposed properly.
44	252:515-25-2(a)	Closure Plan: (as outlined below) to be included in the operational plan.
45	252:515-25-2(b)	Post Closure Plan: if required as defined below shall be included in the operational plan.

FINANCIAL ASSURANCES OF CLOSURE POST-CLOSURE CARE:

Closure, post closure and financial assurance for non-municipal solid waste transfer stations and solid waste processing facilities is described in OAC 252:520-23. All solid waste disposal sites other than municipal solid waste transfer stations are required to provide financial assurance for closure and post-closure and financial assurance of the facility.

46	252:515-25-1	Closure and post closure in general.
47	252:515-25-33	Commencement of Closure
48	252:515-25-31	Closure and post-closure performance standard
49	252:515-25-4	Corrective Action requirement
50	252:515-25-3	Record keeping
51	252:515-25-32	Closure and Post-closure plans (a) Requirement. (b) Content. (c) Amendment of Plan.

52	252:515-25-32	Closure plan (a) Plan scenario. (b) Final closure activities applicable to all sites. (c) Closure Activities applicable to processing facilities.
53	252:515-25-34	Certification of final closure.
54	252:515-25-36	County land records recording.
55	252:515-25-35	Closure approval.
56	252:515-27-3	Release of financial assurance for final closure
57	252:515-25-51 252:515-21-53 252:515-23-54	Post-closure care and plan. (a) Applicability (b) Post-closure period (c) Monitoring (d) Plan (e) Post-closure activities.
58	252:515-25-54(a)	Post-closure security and access control.
59	252:515-25-54(a)	Annual post-closure report
60	252:515-25-56	Certification of post-closure performance.
61	252:515-25-52	Extension of post-closure period.
62	252:515-27-3	Release of post-closure financial assurance.
63	252:515-27-1	Applicability
64	252:515-27-31 thru 252:515-27-33	Final and post-closure cost estimates.
66	252:515-27-31 thru 252:515-27-33	Itemized estimate.
TYPES OF FINANCIAL ASSURANCES:		
67	252:515-27-71 & 252:515-23-72	Financial assurances of closure and post-closure care. (a) General requirements for financial assurance instruments. (b) Multiple assurances. (c) Reductions.

68	252:515-27-73 252:515-27-76 252:515-27-78 252:515-27-79 252:515-27-80 252:515-27-75 252:515-27-74 252:515-27-85 252:515-27-2	Types of financial assurances. (1) Trust Fund. (2) Surety Bond guaranteeing payment of performance. (3) Letter of credit. (4) Insurance (5) Certificate of deposit (6) Cash.
		(7) State approved mechanism. (8) Criteria
69	252:515-27-6	Effect of change of owner or operator on financial assurance.
70	252:515-27-6	Effect of non-renewal of or failure to provide substitute financial assurance.
71	252:515-27-7	Substitute financial assurances

HISTORY OF THE LAST SEVEN - HOUSEHOLD POLLUTANT COLLECTION EVENTS					ATTACHMENT E-	
April 2009	Nov. 2009	April 2010	Nov. 2010 & Illegal Dump Sept 2010	April 2011	Nov. 2011 & Illegal Dump June/July and Oct 2011	April 2012 & Illegal Dump on Mar. 2012
Mercury Debris 1,072 lbs.	Mercury Debris 876 lbs.	Mercury Debris 882 lbs.	Mercury Debris 772 lbs.	Mercury Debris 625 lbs.	Mercury Debris 158 lbs. <i>854 lbs. fluorescents</i>	Mercury Debris 388 lbs. <i>1,047 lbs. fluorescents</i>
Paint - Disposable 4,210 Containers	Paint - Disposable 4,200 Containers	Paint - Disposable 2,560 Containers	Paint - Disposable 3,368 Containers	Paint - Disposable 4,341 Containers	Paint - Disposable 4,368 Containers	Paint - Disposable 4,823 Containers
Medication w/m.oil 577 "pounds"	Medication w/m.oil 880 "pounds"	Medication w/m.oil 851 "pounds"	Medication w/m.oil 959 "pounds"	Medication w/m.oil 1,362 lbs. (3 drums)	Medication w/m.oil 864 lbs.	Medication w/m.oil 1,200 lbs.
Flammables 13,959 lbs.	Flammables 8,777 lbs.	Flammables 10,740 lbs.	Flammables 9,302 lbs.	Flammables 11,083 lbs.	Flammables 7,706 lbs.	Flammables 14,082 lbs.
Pest/Poisons 9,488 lbs.	Pest/Poisons 9,018 lbs.	Pest/Poisons 7,437 lbs.	Pest/Poisons 6,892 lbs.	Pest/Poisons 6,534 lbs.	Pest/Poisons 15,051 lbs.	Pest/Poisons 9,295 lbs.
***Used Motor Oil & Antifreeze Mix 3,067 gallons (8125 gallons of grease)	***Used Motor Oil & Antifreeze Mix 3,400 gallons (8275 gallons of grease)	Used Motor Oil 1,500 gallons (8130 gallons of grease)	Used Motor Oil 1,000 gallons (150 gallons of grease)	Used Motor Oil 1,600 gallons (110 gallons of grease)	***Used Motor Oil & Antifreeze Mix 940 gallons (278 gallons of grease)	Used Motor Oil 1,400 gallons (110 gallons of grease)
Corrosives 3,646 lbs.	Corrosives 2,290 lbs.	Corrosives 1,515 lbs.	Corrosives 2,370 lbs.	Corrosives 1,369 lbs.	Corrosives 1,456 lbs.	Corrosives 2,096 lbs.
Aerosols 4,236 lbs.	Aerosols 3,814 lbs.	Aerosols 4,675 lbs.	Aerosols 3,412 lbs.	Aerosols 3,659 lbs.	Aerosols 5,353 lbs.	Aerosols 3,773 lbs.
Oxidizers 1,190 lbs.	Oxidizers 1,354 lbs.	Oxidizers 710 lbs.	Oxidizers 314 lbs.	Oxidizers 744 lbs.	Oxidizers 1,003 lbs.	Oxidizers 447 lbs.
Batteries (hh & car) 13,440 lbs. (420 car) 2,880 lbs. hhold***	Batteries (hh & car) 8,480 lbs. (265 car) 1,995 lbs. hhold***	Batteries (hh & car) 6,720 lbs. (210 car) 1,440 lbs. hhold***	Batteries (hh & car) 6,560 lbs. (205 car) 1,560 lbs. hhold***	Batteries (hh & car) 6,237 lbs. 1,140 lbs. hhold***	Batteries (hh & car) 6,895 lbs. 1,020 lbs. hhold***	Batteries (hh & car) 2,560 lbs. 1,200 lbs. hhold***
Antifreeze see Oil	Antifreeze see Oil	Antifreeze 510 gallons	Antifreeze 110 gallons	Antifreeze 300 gallons	Antifreeze see Oil	Antifreeze 204 gallons
Other Hazardous Subst. ^ 7,708 lbs.	Other Hazardous Subst. ^ 5,884 lbs.	Other Hazardous Subst. ^ 9,806 lbs.	Other Hazardous Subst. ^ 5,749 lbs.	Other Hazardous Subst. ^ 5,983 lbs.	Other Hazardous Subst. ^ 8,917 lbs.	Other Hazardous Subst. ^ 5,733 lbs.
Households Participation 2,227 hh	Households Participation 1,894 hh	Households Participation 2,249 hh	Households Participation 1,985 hh	Households Participation 1,800 hh	Households Participation 2,228 hh	Households Participation 1,490 hh
Note for Paint Categories: The M.e.C. accepts all size containers. The average container is one gallon size and approximately 1/2 full of paint.						
***Assumes that car batteries now weigh 32 lbs. per battery and a 5-gallon bucket of household batteries weighs 60 lbs. (12 lb. per gallon)						PRINTED 6/6/12

HOUSEHOLD POLLUTANT PROGRAM

ATTACHMENT -F-

FY
11/12
Budget

REVENUE TYPES

FY11/12 BUDGET			FY11/12 BUDGET
APPRVD 3/3/11			YEAR TO DATE
REVSD 7/7/11		transfer	RECEIVED

Category: HHP - Government Assessments Total \$350,000 \$350,000

Member Assessments, Supplemental Member Assessments, Retained Income, Transfer In (out)

Category: HHP - Grants and Donation Revenue Total \$0 \$520

State Grants (fine money), Federal Grants, Compost Bins Sold (Income), Interest Income, Private Donations

Category: HHP - Misc. Revenue Total \$0 \$0

Sale of Literature, Misc. Income, Operating Income

Total Resources \$350,000 \$350,520

HOUSEHOLD POLLUTANT PROGRAM

EXPENSE TYPES

FY11/12 BUDGET			FY11/12 BUDGET
APPRVD 3/3/11			YEAR TO DATE
REVSD 7/7/11		transfer	EXPENSE

Category: HHP - Administration & Professional Services Total \$283,600 \$116,917

Operation Expenses, Workers' Compensation, Consultants, Compost Bin Sales (Exp. Out), Audit Services, INCOG Administrative Services, Hauling Services, Processing Services, Security Services, Professional Service, Legal Service, Insurance, M.e.t. Administrative Expense, Misc. Contingency

Category: HHP - Ongoing Utility Expenses Total \$45,100 \$2,000 \$45,157

Vehicle Expense, Equipment Maintenance, Replacement Expense, Supplies, Site Maintenance and Improvement Water Storage Utility, Storage Building Electricity, Dumpster Service, Telephone, Postage and Freight, Porta-John Rental, Roll-off Rental, Generator Rental, Non-Capital Equipment, Worker Support, Tent Rental, Storage Rental

Category: HHP - Community Outreach Expenses Total \$5,300 \$1,000 \$6,219

Public Relations, Travel and Meeting Expense, Fuel, Printing and Reproduction, Advertising, Dues and Subscriptions

Total Operations Expenses \$334,000 \$168,293

Category: HHP - Capital Improvements Expenses Total \$16,000 (\$3,000) \$2,475

Capital Improvements Expense, Office Equipment, HHP Roll-Off, Vehicular Equipment, Site and Building Improvements, Processing Equipment

Total Expense \$350,000 \$0 \$170,768

5/18/2012

Attachment -G-

Permanent HHW Facility - Wastewater Cost Avoidance & Benefits

I. Wastewater Treatment Cost Reduction

- a. Sources of household hazardous waste to POTW
 - i. Products used – drain cleaners, caustics/corrosive all-purpose cleaners (unavoidable)
 - ii. Disposal/flushing – pharmaceuticals, old household cleaners, pesticides, fertilizers, paints, flammables (reduction target)
 - iii. Landfill leachate – above products plus batteries, Hg thermostats/thermometers/fluorescents, auto fluids (reduction target)
- b. Volume Estimate of HHW Targets
 - i. Organics loading (BOD) from unregulated sources
 - SSWWTP- avg. BOD 78,344 lbs./day * \$0.3771/lb.= \$29,543.52/day = \$10,783,384.80/year
 - NSWWTP- avg. BOD 33,417 lbs./day * \$0.3771/lb.= \$12,601.55/day = \$4,599,565.75/year
 - ii. Waste Management Landfill Leachate discharge to NSWWTP – 10 MG/year at 795 mg/L BOD
- c. Potential Treatment Savings
 - i. SSWWTP + NSWWTP BOD Savings (0.5%) – \$50,000/year
 - ii. Landfill Leachate BOD Savings – included in number above

II. City of Tulsa HHP Event Costs (potential savings)

- a. HHP Event City of Tulsa staffing overtime - \$10,000/year
- b. HHP Event COT Materials - \$3,400/year
- c. HHP Event COT Equipment - \$3,000/year

III. Less Tangible/Quantifiable Savings and/or Risk Reduction

- a. OPDES Violations – up to \$10,000 per violation per day
 - i. Past violations - 2 Hg, 1 Zn, 6 Cu
- b. Loosening of Local Limits – attractive to industry
- c. Reduction of treatment plant upset risk
- d. Damage and/or maintenance costs to sanitary sewer
- e. Tables show the significance of unregulated flow's contribution to pollutants, domestic sewage is a large portion of that flow.

**Domestic/Unregulated WW loadings
Loadings from Unregulated Sources (from 2009 TBLs)**

	Northside lbs./year	% Unregulated Loading	Southside lbs./year	% Unregulated Loading
Arsenic	146	95%	77	64%
Cadmium	226	75%	332	88%
Chromium	927	60%	361	48%
Copper	5829	92%	5654	93%
Cyanide	920	97%	1226	95%
Lead	1179	95%	993	95%
Mercury	8	96%	20	93%
Molybdenum	1226	90%	1314	99%
Nickel	4143	84%	449	65%
Silver	537	90%	365	85%
Zinc	23543	90%	8395	89%
Ammonia	1374590	88%	1100110	86%
Average %		85%	Average %	83%

**Projected Average Domestic Loadings
(2004 EPA Local Limits Guidance)**

Organics	Influent Concentration (mg/L)	Northside (lbs./year)	Southside (lbs./year)
Chloroform	0.009	852	716
1,1-Dichloroethene	0.007	663	557
1,1-Dichloroethane	0.026	2461	2070
Trans-1,2-Dichloroethene	0.013	1231	1035
Fluoranthene	0.001	95	80
Methylene Chloride	0.27	25561	21493
Phenols	0.000025	2	2
Bis(2 ethylhexyl) Phthalate	0.006	568	478
Pyrene	0.0002	19	16
Tetrachloroethene	0.014	1325	1114
1,2,4-Trichlorobenzene	0.013	1231	1035

Pesticides			
Total BHC	0.001	94.67	80
4,4-DDD	0.0003	28.40	24
Total Endosulfan	0.002	189.34	159

HHW Options for the Largest Cities In Each State Ranked By Population

Oklahoma		
City	Population	Has a Permanent HHW Facility
Oklahoma City	579,999	Yes (Free to OKC residents. Residents from surrounding cities can participate if their city will accept the fees.)
Tulsa	391,906	No (Has individual hazardous waste collection events.)
Norman	110,925	No (Has individual hazardous waste collection events.)

Population Source, U.S. Census Bureau, Census 2010, from togetherweteach.com on 10-18-12

Texas		
City	Population	Has a Permanent HHW Facility
Houston	2,099,451	Yes (Free to Houston residents.)
San Antonio	1,327,407	Yes (Free to San Antonio residents.)
Dallas	1,197,816	Yes (Free to Dallas residents and residents of other participating cities.)
Austin	790,390	Yes (Free to Austin residents.)
Fort Worth	741,206	Yes (Free to Fort Worth residents and residents of other participating cities.)
El Paso	649,121	Yes (Free to El Paso residents.)
Arlington	365,438	Yes (Uses Fort Worth collection centers)
Corpus Christi	305,215	Yes (Free to Corpus Christi residents.)
Plano	259,841	Yes, in effect. (Plano residents can call the city for free pickup of HHW, but they don't have a facility residents can go to drop HHW materials off. Leave the HHW in a box labeled "Chemicals) and the city will send a truck to get it.)
Laredo	236,091	Yes
Lubbock	229,573	Yes (Free to Lubbock residents.)
Garland	226,876	Yes (Uses Dallas collection centers)
Irving	216,290	Yes (Uses Dallas collection centers and Irving residents can call the city for special household pickups.)

Population Source, U.S. Census Bureau, Census 2010, from wikipedia.org on 10-18-12

Louisiana		
City	Population	Has a Permanent HHW Facility
New Orleans	343,829	No (Has individual hazardous waste collection events.)
Baton Rouge	229,493	No (Has individual hazardous waste collection events.)
Shreveport	199,311	No (Has individual hazardous waste collection events.)

Population Source, U.S. Census Bureau, Census 2010, from togetherweteach.com on 10-18-12

Arkansas		
City	Population	Has a Permanent HHW Facility
Little Rock	193,524	Yes
Fort Smith	86,209	Yes (Free to Fort Smith residents.)

Population Source, U.S. Census Bureau, Census 2010, from togetherweteach.com on 10-18-12

Missouri		
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City	Population	Has a Permanent HHW Facility
Kansas City	459,787	Yes (Has a permanent HHW Facility and conducts collection events.)
St. Louis	319,294	No, but is working on building a permanent facility. (Has individual hazardous waste collection events.)
Springfield	159,498	Yes
Independence	116,830	Yes, in effect. (Independence residents can use the Kansas City facility free of charge.)

Population Source, U.S. Census Bureau, Census 2010, from togetherweteach.com on 10-18-12

Kansas		
City	Population	Has a Permanent HHW Facility
Wichita	382,368	Yes, in effect. (The county operates a permanent facility that is free to Wichita residents.)
Overland Park	173,372	Yes, in effect. (The county operates a permanent facility that is free to Overland Park residents.)
Kansas City	145,786	Yes (Free to Kansas City residents.)

Population Source, U.S. Census Bureau, Census 2010, from togetherweteach.com on 10-18-12

Research was conducted via the internet during October, 2012.

HHW = Household Hazardous Waste

Note: Many of these collection facilities have quantity limits (pounds) restricting how much a resident can bring in during a year and limits on the types of materials the facilities will accept. Some of these facilities will also accept hazardous materials from residents of the county as well as certain cities. At many of these facilities the reusable materials are made available at no cost or a modest fee and redistributed. Receiving hours vary from facility to facility and some facilities require appointments to be made before delivering HHW materials.

7. Facility Costs and Operations Costs

7.1 Type I: Modular Buildings and Storage Locker Costs

The following is a table to provide an estimate of the capital costs of a typical modular building and storage unit (without transportation costs):

**Estimated Budgetary Cost for Modular HHW Facility Buildings
and Storage Modules**

No	Basic Modular HHW Building (with Sump)	Estimated Budgetary Cost (2008 dollars)
1	Non Fire Rated Standard Modular Steel Building	\$100-\$105 per square foot
2	Two-Hour Fire Rated Standard Modular Steel Building	\$110-\$115 per square foot
3	Four-Hour Fire Rated Standard Modular Steel Building	\$120-\$125 per square foot

No	Description of Options for Modular HHW Building	Estimated Budgetary Costs
1	Portable Self-Contained Eyewash Station	\$450-\$550
2	Hazardous Location Interior Light	\$800-\$1200
3	Hazardous Location Exhaust System	\$1000-\$1500
4	Dry Chemical Fire Suppression System - #70 System	\$3200-\$3500
5	Diamond Plate Steel Loading Ramp	\$500-\$800
6	Explosion Venting Skylight Panel - price per panel	\$700-\$850
7	Non Combustible Steel Chemical Separation Wall	\$800-\$1000
8	Two Hour Fire Rated Chemical Separation Wall	\$1400-\$1600
9	Additional Fire Rated Door Sets	\$1000-\$1500
10	Additional Single Door - Not Rated	\$500-\$750
11	Diamond Plate Steel Loading Ramp	\$650-\$850
12	Explosion Venting Skylight Panel - price per panel	\$700-\$850
13	Adjustable Shelving 16" Deep X 2" Lip - price per foot	\$18-\$25 per foot
14	Canopy, Price Per Square Foot	\$28-\$35 per square foot
15	Roll-Up Door, Non Fire Rated Buildings	\$1700-\$2200
16	Roll-Up Door, Fire Rated Buildings	\$3000-\$3500
17	Basic Solar Power Kit (600 watts, 120 Volt AC)	\$8500-\$10,000

Additional costs that have to be considered for modular buildings are taxes, transportation costs, unloading costs (e.g. crane rental--approximately \$1500 per day), and the cost of the concrete foundation/operational pad, as well as civil infrastructure costs (roadways, utilities, and hookups).

The roadway/paving costs range can range from \$5-\$7 per square foot, and the concrete pad with epoxy finish will range from \$20-\$25 per square foot. (These are average California costs provided by several engineers/architects. Prevailing wage requirements in government contract conditions may increase the costs an additional 20-40 percent. Regional/area cost differences for materials, labor and equipment should also be taken into consideration when using average costs.

7.2: Specialty Construction Building Costs:

Building cost estimators are provided for the following buildings:

- Type II: Simple Structure / Roof Coverage with Use of Modular Units
- Type III Specialty Buildings for HHW Collection / Processing
 - Type III: Pre-Engineered Steel Building
 - Type III: Masonry Building

Budgetary estimates are broken down into six cost categories

- 1) Costs for on-site grading, paving, utilities, landscaping
- 2) Building structure cost (with utilities, plumbing, etc.)
- 3) Design, permitting and administration fees
- 4) Contractor's overhead and profit
- 5) Regional/area modification factor cost adjustment
- 6) Prevailing wage factor cost adjustment
- 7) Contingency factor

The building cost estimator represents the average range of costs for construction in California. Certain areas of the state have higher materials, labor, and equipment costs, and the "Regional/Area Modification Factor" is a cost adjustment for those areas. Regional/Area Modification Factors" can be found in a number of published construction cost estimating guides.

The "Prevailing Wage Factor" represents the additional construction, and compliance reporting documentation costs that architects and engineering firms have to account for regarding government construction contracts. The 20-40 percent prevailing wage factor is based on actual government construction projects of several architectural and engineering construction firms.

The following cost estimating guide can be used to develop a budgetary estimate for a HHW collection facility. Cost estimators are in 2008 dollars.

Type II Building: Roof Coverage with Use of Modular Units Cost Estimator

Description	Type II Roof Cover Only (3500 Square Feet)
On Site Grading, Paving, Utilities, Landscaping	\$33-\$50 per square foot of building
Building Costs (includes utilities, plumbing, etc.)	\$34-\$41 per square foot of building
Design, Permitting and Administration Fees	\$30-\$50 per square foot of building
Contractors Overhead and Profit	10-15 percent
Regional/Area Modification Factor	Up to an additional 15 percent
Prevailing Wage Factor	20-40 percent
Contingency	25 percent

Notes: Cost estimators provided by Mainstreet Architects + Planners, Inc. Cost does not include special soil testing and/or hazardous waste abatement costs. Does not include off-site costs related to streets, traffic control and utility connections. Does not include any interior fixtures or furniture or equipment. Does not include special construction insurance bonds and land use condition.

Type III Building: Pre-Engineered Steel Building Cost Estimator

Description	Type III	
	Pre-Engineered Steel Building	(4000 Square Feet)
On Site Grading, Paving, Utilities, Landscaping	\$35-\$55 per square foot of building	
Building Costs (includes utilities, plumbing, etc.)	\$50-\$75 per square foot of building	
Design, Permitting and Administration Fees	\$30-\$50 per square foot of building	
Contractors Overhead and Profit	10-15 percent	
Regional/Area Modification Factor	Up to an additional 15 percent	
Prevailing Wage Factor	20-40 percent	
Contingency	25 percent	

Notes: Cost estimators provided by Mainstreet Architects + Planners, Inc. Cost does not include special soil testing and/or hazardous waste abatement costs. Does not include off-site costs related to streets, traffic control and utility connections. Does not include costs for interior fixtures or furniture or equipment. Does not include special construction insurance bonds and land use conditions.

Type III Building: Masonry Building Cost Estimator

Description	Type III	
	Masonry Building	(5000 Square Feet)
On Site Grading, Paving, Utilities, Landscaping	\$78-\$96 per square foot of building	
Building Costs (includes utilities, plumbing, etc.)	\$180-\$210 per square foot	
Design, Permitting and Administration Fees	\$72-\$90 per square foot of building	
Contractors Overhead and Profit	10-15 percent	
Regional/Area Modification Factor	Up to an additional 15 percent	
Prevailing Wage Factor	20-40 percent	
Contingency	25 percent	

Notes: Cost estimators provided by Mainstreet Architects + Planners, Inc. Cost does not include special soil testing and/or hazardous waste abatement costs. Does not include off-site costs related to streets, traffic control and utility connections. Does not include costs for interior fixtures or furniture or equipment. Does not include special construction insurance bonds and land use conditions.

7.3 Equipment / Supply Costs

The following Table is a list of basic equipment and supplies utilized at a Household Hazardous Waste (HHW) collection facility:

Basic Equipment and Supply Listing for HHW Collection Facility

No.	Description	Unit Price
HHW Facility Equipment/Tools		
1	Paint Can and Oil Filter Crusher	\$18,000-\$22,000
2	Paint Can and Oil Filter Crusher (with options)	\$26,000-\$31,000
3	Non Sparking Hand Tools (e.g. spike tool)	\$500-\$1000
4	Aerosol Can Recycling System	\$800-\$1000
5	Large Pail Opener	\$30-\$35

6	Small Pail Opener	\$10-\$15
7	Pallet Jack (standard)	\$300-\$500
8	Heavy Duty Pallet Jack	\$700-\$1200
9	Drum Dolly	\$300-\$500
10	Drum Funnels	\$60-\$80
11	Forklift (depending on options)	\$20,000-\$30,000
12	Tools (general shop/maintenance tools)	\$1500-\$2000
13	Hazmat Characterization Kit(s)	\$600-\$800
14	Transfer Carts	\$150-\$200
15	Tank Grill	\$150-\$175
Traffic Control Equipment/Supplies		
1	Traffic Cones/Looper Tubes	\$7-\$22
2	HHW Signs	\$500-\$1000
3	Direction Signs	\$500-\$1000
4	Entrance/Facility Signs	\$500-\$1000
Safety Equipment/Supplies		
1	Respirators (half face type)	\$20-\$25
2	Cartridges for Respirators (organic/particulate)	\$13-\$15
3	Chemical Protective Aprons	\$4-\$10
4	Face Shields	\$40-\$50
5	Hard Hats	\$10-\$15
6	Portable Eye Wash Kits	\$200-\$400
7	Portable Eye Wash Station	\$800-\$1300
8	Safety Glasses/Goggles	\$4-\$7
9	Protective Gloves (Nitrile) (per hundred)	\$12-\$15
10	Protective Gloves (heavy duty Nitrile) (per dozen)	\$65-\$75
11	Protective Gloves (coated) (per dozen)	\$35-\$45
12	Polyethylene Sheeting (per roll)	\$75-\$120
13	Tyvek (per 25)	\$80-\$120
14	Industrial First Aid Kit	\$50-\$100
15	High Visibility Safety Vests	\$15-\$17
16	Overpack Drums (85 gallon for HHW)	\$110-\$130
17	Absorbents (DriZorb or equivalent) (per pallet)	\$325-\$400
18	Heavyweight Absorbents Pads (per hundred)	\$90-\$125
19	Misc. Cleanup Equipment (broom, shovels, etc.)	\$50-\$75
20	Labels for Drums (8 types, cost per hundred labels)	\$8-\$10
21	Safety Hazard Tape	\$10-\$12
22	Safety Training/Refresher Courses (per person)	\$200-\$1000
23	Misc. Cleaning Equipment/Supplies	\$200-\$400

3.5 General Facility Layout Guidelines

The various functional areas of each HHW collection facility must have adequate space and operational flow for a safe operation. Clearly delineated functional areas prevent cross-traffic and congestion. Each permanent HHW collection facility has the following basic functions:

- Facility traffic management (facility ingress/egress)
- Receiving and unloading area
- HHW characterization
- Materials transfer
- Processing/packaging area
- HHW storage area
- Out-loading/shipping area
- Inventory/supplies storage area
- Emergency functional area (or "Special Attention" area)
- Administrative offices
- Restroom facilities
- Materials exchange/"reuse" area (highly recommended)
- Site parking

Layout of Basic Functional Areas

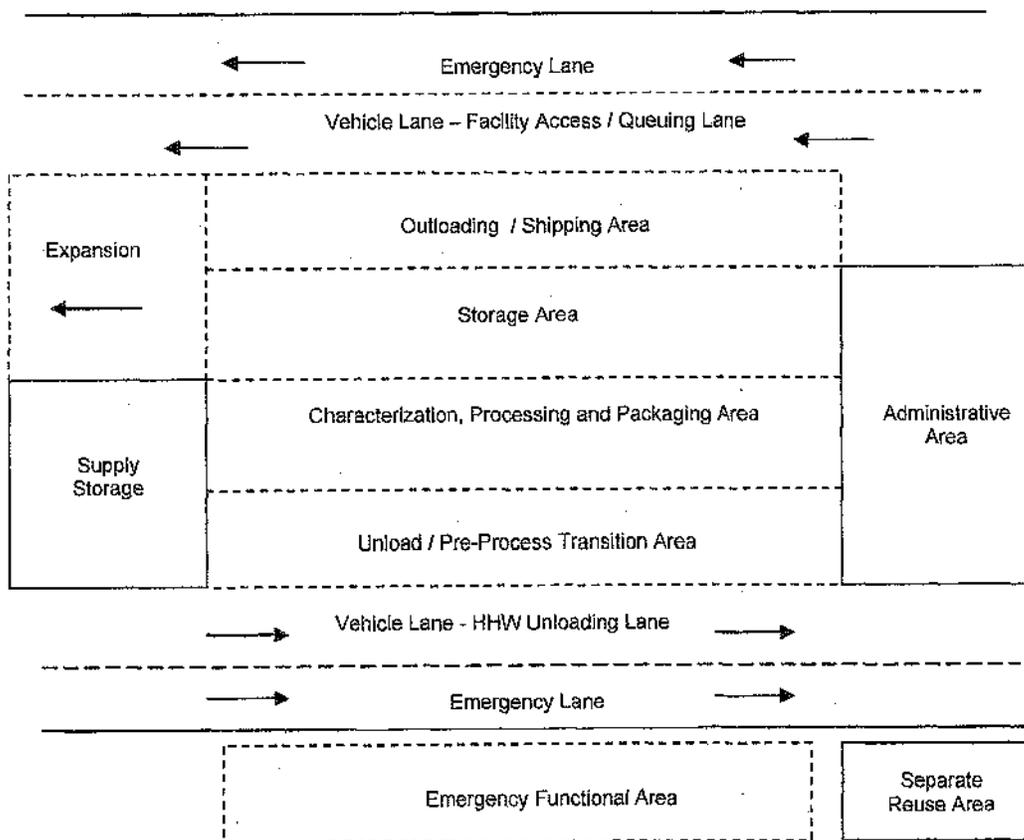
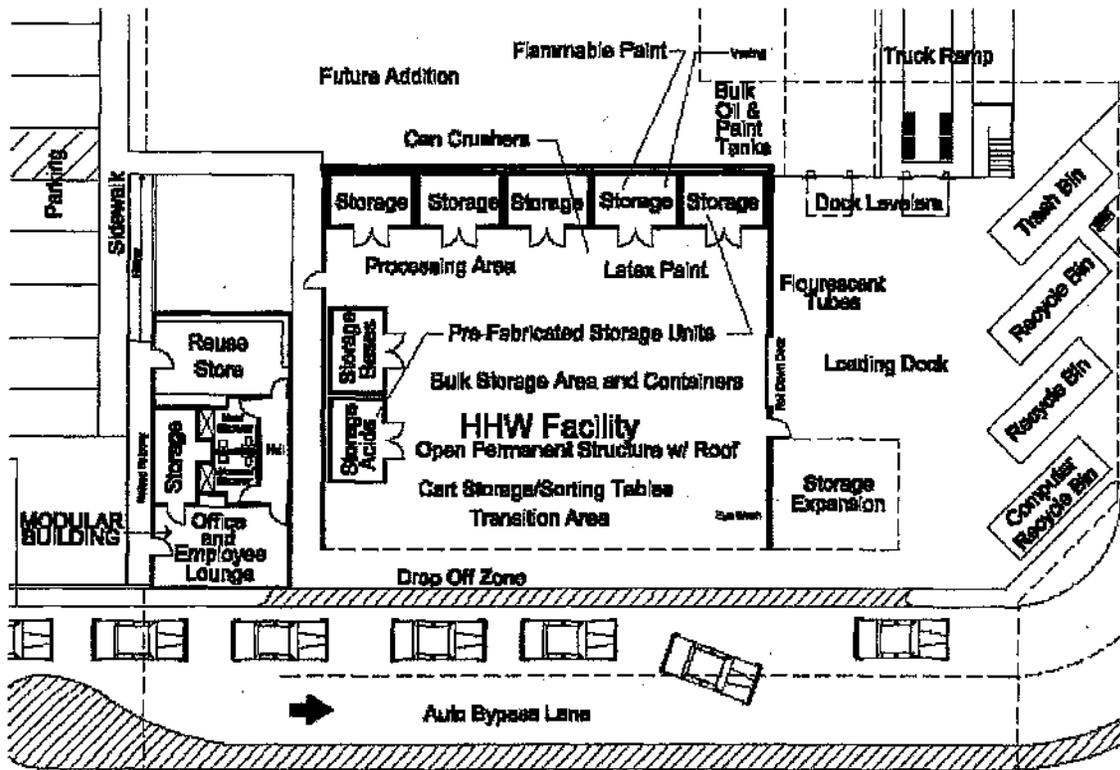


Figure 1 shows an ideal facility conceptual layout with room for expansion towards one side. In addition to the facility traffic flow and the emergency lanes, there should be a "buffer" area to allow for future expansion. A functional emergency area is used for dealing with vehicles that may have spilled materials inside the vehicle or for dealing with special circumstances where a vehicle poses a risk and needs to be isolated.

3.6 Model Facility Designs

The following floor plans illustrate how several architect/engineers have applied the functional area concept to a facility floor plan design:

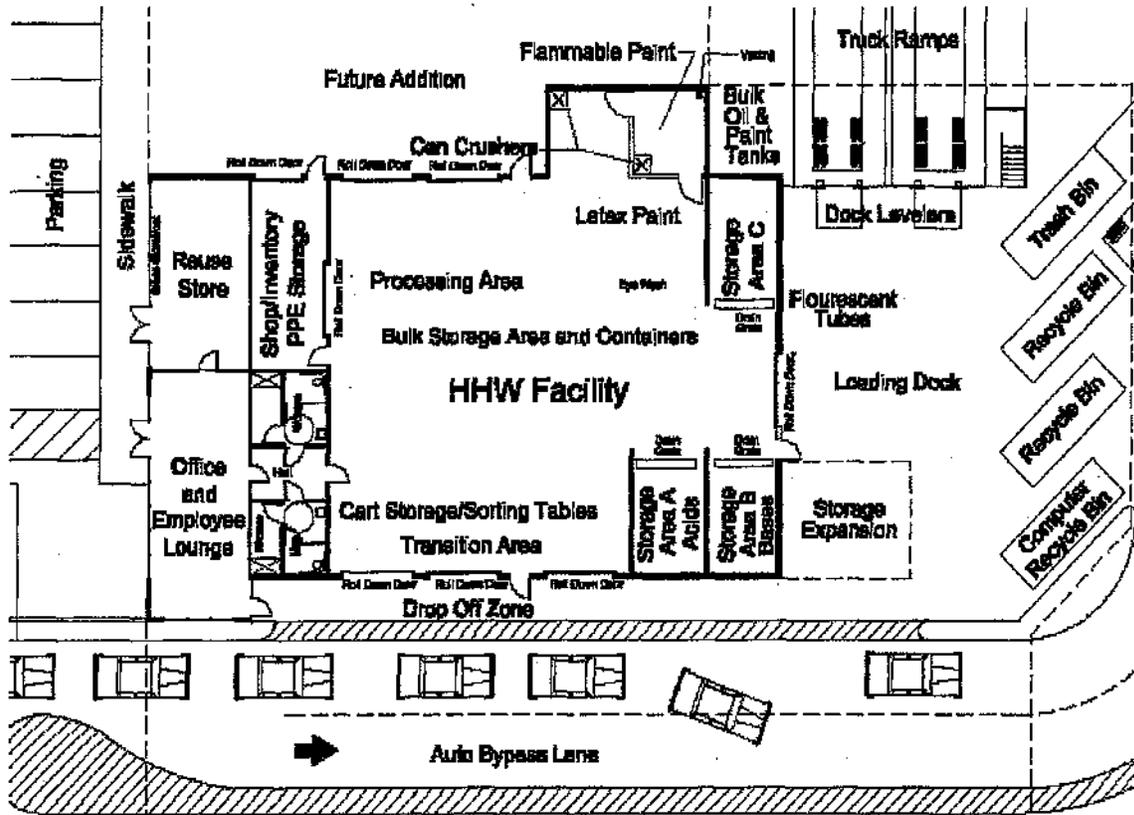


Heathcote & Associates Architects

FLOOR PLAN

Building Area Approximately 8,200 Square Feet Modular Building 1,200 Square Feet
Area does not include roof overhangs

Heathcote & Associates, Architects. Conceptual Floor Plan

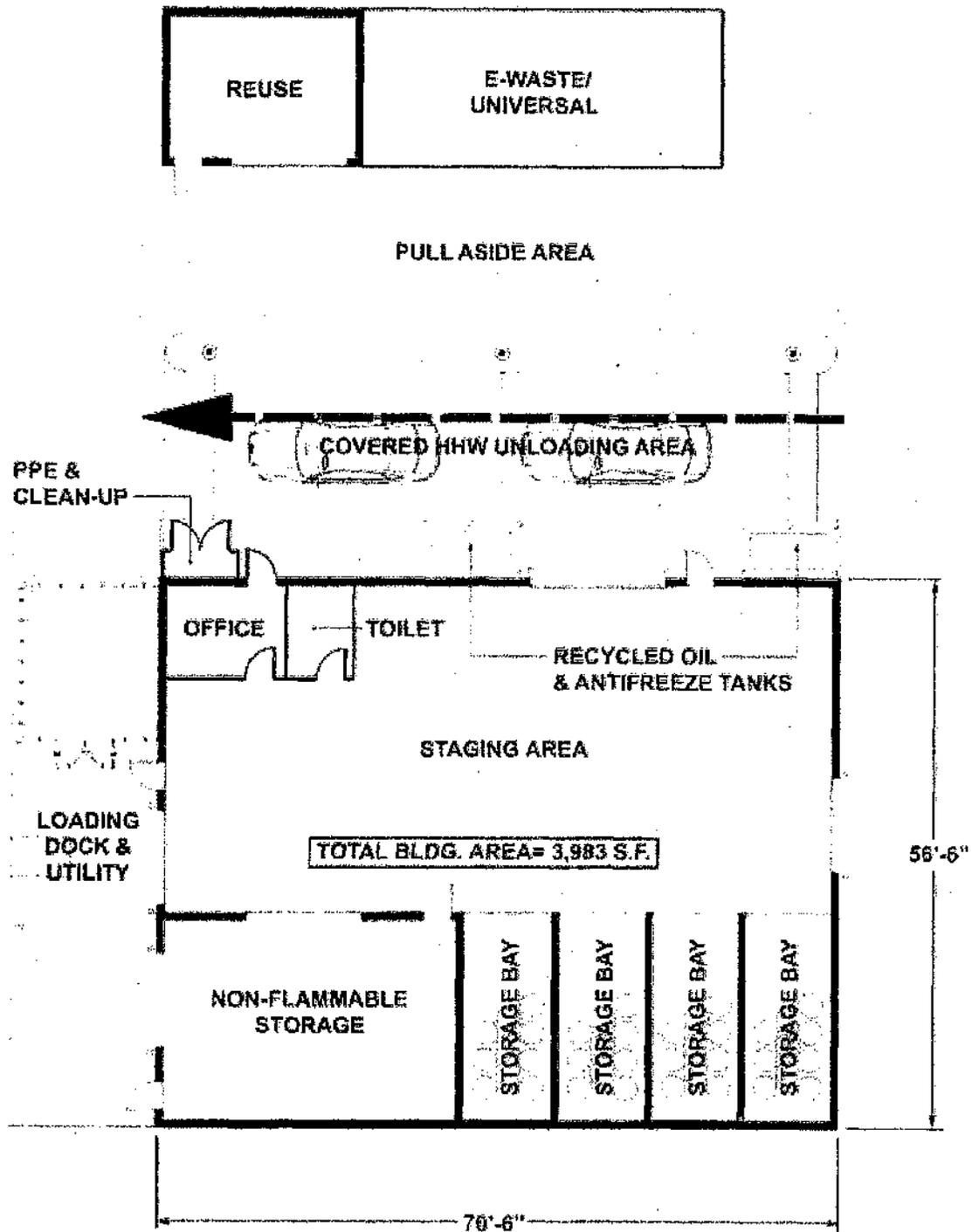


FLOOR PLAN

Building Area Approximately 8,000 Square Feet
Area does not include roof overhangs

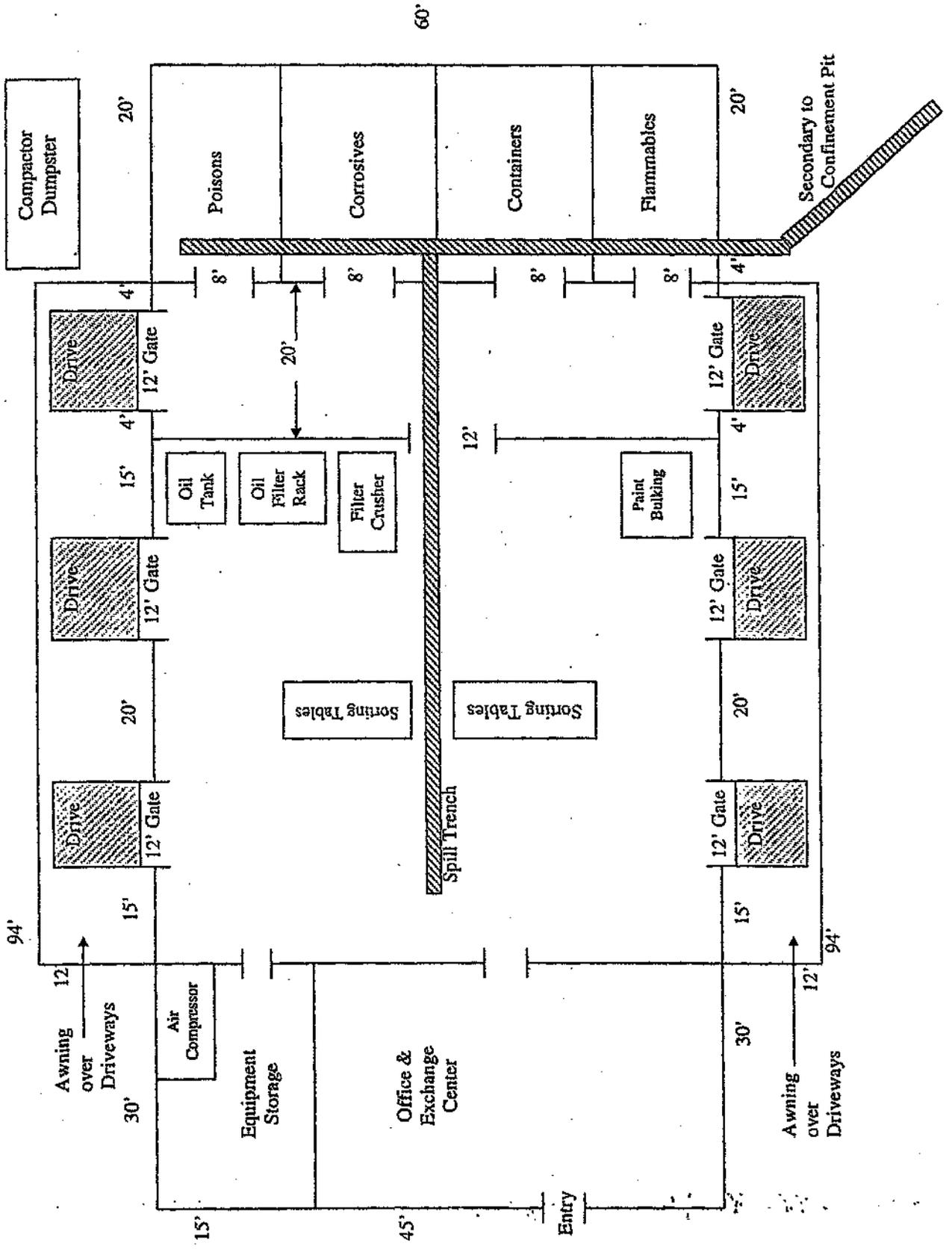
Heathcote & Associates Architects

Heathcote & Associates, Architects. Conceptual Floor Plan



Mainstreet Architects+ Planners, Inc. Conceptual Floor Plan

Oklahoma City Hazardous Household Waste Collection Facility



Hazardous Household Waste Collection Facility

	Cost	Sub Total	Total
Site Set-Up			
<u>Facility Site</u>			
Selected from existing municipal properties w/ intention of making the facility readily available to the public			
<u>Building & Office</u>			
Restroom Facilities			
Locker/Changing Rooms			
Utilities			
Break Area Away From Collection Area			
Air Conditioner			
<u>Containment System</u>			
Sump/Spill Trench			
Explosion & Vapor Proof Lighting & Wiring			
Fire Suppression System			
Explosion Proof Exhaust Fan			
Two-Hour Fire-Rated Walls			
Blast Relief Shaft			
Sprinkler System			
Concrete Confinement Pit			
<u>Operating Improvements</u>			
Oil Filter Rack			
Oil Collection Tanks			
Oil Filter Crusher			
Paint Bulking Equipment			
Equipment Storage Building			
Driveways (asphalt)			
Awnings Over Driveways			
Chainlink Fence w/ Barbed Wire			
Safety Showers/Eyewash Units			
Air Compressor			
Forklift			
Sorting Tables			
Compactor/Dumpster			
Misc. Equipment			
	\$561,600	\$80,000 - \$100,000	\$641,600 - \$661,000
	Building Itself	Safety Features & Equipment	Complete Facility

Hazardous Household Waste Collection Facility

	Cost	Sub Total
Operating Costs		
<u>Supplies & Equipment-purchase & upkeep</u>		
Drums		
Protective Wear		
Oil Tests, Hydrosept.		
Neoprene Boots		
Absorbent Pads		
Plastic		
Antiseptic Wipes		
Inspection/Repair of Fire Suppression System		
Respirators/Cartridges		
Safety Signs		
Laminated First Aid Poster		
Towels, Keys, Plastic Bags and Misc. Supplies		
Mobile Phone		
Hazardous Waste Box Kits		
Forklift		
Carts		
Cones		
Misc. Parts and Equipment		
		\$7,000-\$10,000
<u>Personnel</u>		
2 Full Time	at \$12/hr	\$40,920
4 Part Time	at \$9/hr	\$36,000
Benefits	\$6,800	\$13,800
Advertisements for personnel		\$1,300
Physicals		\$1,250-\$2,500
		\$93,270-\$94,520
<u>Training</u>		
OSHA Training	\$80	
8 Hour DOT Training	\$80	
40 Hours Hazwoper	\$550	
8 Hour Annual Hazwoper Refresher	\$80	
8 Hours Haz-Cat Chemical ID Training	\$40	
8 Hours Lab-Pack Training	\$80	
8 Hours First-Aid/CPR	\$50	
8 Hours Forklift Training	\$40	
Operational Training	\$50/hr/8 hr day	\$400
Explosion Training		
Respirator Training		
	\$940/person	\$6,040

Hazardous Household Waste Collection Facility

	Cost	Sub Total	Total
<u>Public Education & Outreach</u>			
Publicity			
Bus Posters			
Radio Ads			
Newspaper Ads			
Educational/Informational Material	(\$1 per person)		
24 Hour Information Line			
Flyers			
Special Mailings			
School Classes			
Video			
Articles			
		\$10,000-\$50,000	\$116,310 - \$160,560
			Operating Costs

Hazardous Household Waste Collection Facility

	Cost	Sub Total	Total
Recycling/Disposal Costs			
<u>Recycling Costs</u>			
Oil Recycling		\$1,200	
Antifreeze Recycling			
Battery Recycling			
Refrigerated Appliances			
Paint Recycling - Latex	\$150/ 55 gallon drum		
Fluorescent Lights (mercury)	\$0.45 each, 4 ft length		
Incandescent Lights	\$0.45 each		
High Intensity Discharge Lamps (mercury)	\$1 each		
Recyclable Metals	\$30/ 55 gallon drum		
Tires		Charge Customers \$1	
		Recycling Costs	
		\$7,000 - \$10,000	

Hazardous Household Waste Collection Facility

	Cost	Sub Total	Total
<u>Disposal Costs</u>			
Paint & Related Materials	\$75/ 55 gallon drum		
Oxidizers	\$190/ 55 gallon drum		
Corrosives			
Waxes/Cleaners			
Aerosol Cans			
Photo Chemicals			
Poisons - Pesticides, Herbicides			
Flammables			
Other Liquid Products			
Mercury	\$5/ pound		
Acids/Bases	\$170/ 55 gallon drum		
Batteries	\$100/ 55 gallon drum		
Compressed Flammable Gas Cylinders			
Freon Cylinders			
Fire Extinguishers	\$50/ 5 pounds		
Aerosol Cans	\$70/ 55 gallon drum		
Lighting Ballasts	\$5 each		
Flammable Liquids	\$234/ 55 gallon drum		
RCRA incineration labpacks	\$270/ 55 gallon drum		
RCRA incineration liquids	\$250/ 55 gallon drum		
RCRA incineration solids	\$320/ 55 gallon drum		
Fuels blending solids	\$225/ 55 gallon drum		
Fuels blending liquids	\$90/ 55 gallon drum		
RCRA landfill	\$130/ 55 gallon drums		
Class 1 landfill	\$150/ 1 cubic yd		
Class 1 landfill	\$60/ 55 gallon drum		
Class 2 landfill	\$70/ 1cubic yd		
Class 2 landfill	\$40/ 55 gallon drum		
Asbestos			
Explosives			
Medical Waste			
PCB's			
Radioactives			
	\$50-\$65/person	\$350,000 Disposal Costs	\$357,000-\$360,000 Disposal/Recycling Costs

** Drop & Swap -potential savings- give away 6% & save 40% in disposal/recycling costs

Other Possible Future Enhancements to the Facility

** Conditionally Exempt Small Generator (CESQG) - fee based, charge disposal fee plus 30%
- therefore, the program pays for itself

** Battery Bags

** Other Cities in the Municipal area- charge fee for using the facility to cover costs for non-city residents

