



## Waste Permits Division

### **2014 Scrap Tire Annual Report**

#### **Background**

The Texas Commission on Environmental Quality (TCEQ) regulates used and/or scrap tire management in Texas under the authority of Texas Health & Safety Code Section (§) 361.112. The TCEQ's Waste Permits Division administers the scrap tire management program. The tire regulations in 30 Texas Administrative Code Chapter 328, Subchapter F, outline regulatory requirements and standards related to used and scrap tire management activities. Regulated management activities include used and/or scrap tire transportation, processing, recycling, utilization, storage, beneficial use, and land reclamation activity using scrap tires. Owners and/or operators of regulated scrap tire management activities are required to obtain a registration from the TCEQ and comply with the rule requirements. Information regarding the regulatory standards including application requirements for the various scrap tire registrations are maintained on the TCEQ's website at the following address: <http://www.tceq.texas.gov/tires>.

In Texas, an estimated 26 million scrap tires are generated each year (approximately one tire per person per year). When used and/or scrap tires are improperly managed, stockpiled, or illegally dumped, they can trap rainwater and become breeding grounds for disease-carrying mosquitoes and other vectors. Tire piles can also pose a fire hazard. Tire fires release toxic gases into the air, are very difficult to extinguish, and they leave behind an oily residue that can pollute streams and groundwater. Used and/or scrap tires need to be transported, processed, stored, managed, and disposed of properly to prevent these problems. The TCEQ's scrap tire program and its regulatory requirements including its compliance and enforcement efforts are designed to ensure the safe management of scrap tires and protect human health and the environment.

#### **Regulated Scrap Tire Management Activities**

Waste Permits Division regulates the following used and/or scrap tire management activities by reviewing and authorizing the activities through a registration process:

- Used and/or scrap tire transportation
- Scrap tire facility (includes scrap tire processing and/or recycling facilities; energy recovery)
- Used and/or scrap tire storage including storage of tires by generators
- Land reclamation projects using tires (LRPUT)

Detailed administrative and technical reviews of registration applications are conducted by staff. A list of registered and active scrap tire management facilities including registered scrap tire transporters is available on the TCEQ website at <https://www.tceq.texas.gov/tires>. The TCEQ's regional offices monitor scrap tire management activities in the state, evaluate compliance with TCEQ's rules, and conduct enforcement action(s) against violators.

## Regulated scrap tire management data

As of January 1, 2015, TCEQ's scrap tire database contained 757 registered scrap tire transporters, 124 registered scrap tire facilities, 12,329 registered scrap tire generators, 16 registered scrap tire storage sites, and nine registered LRPUTs.

### Annual reports

Scrap tire transporters, scrap tire facilities (including processors, recyclers, facilities using tires for energy recovery), and scrap tire storage sites must submit an annual report to include information related to their scrap tire management activities conducted from January 1 through December 31 of each calendar year. The annual report for the preceding year must be submitted on or before March 1 in a form prescribed by the TCEQ.

Scrap tire transporters must submit an annual report to the TCEQ to summarize their annual activities for the calendar year showing the number and type of used and/or scrap tires collected listed by generator name and address, the disposition of the tires, and the number of whole used and/or scrap tires delivered to each facility.

The owner and/or operator of a scrap tire facility and/or scrap tire storage site must submit an annual report summarizing tire management activities including the number and type of scrap tires received, amount by weight of tires shredded, processed, burned for energy recovery or recycled, and the amount by weight of tire pieces removed from the facility. If the tire pieces were delivered to an end user, the annual report must include the name of the end user, type of end user and the date of delivery to the end user.

TCEQ staff compiles the data from these annual reports to obtain information on the scrap tire generation and disposition in the state including the end use market. The information gathered from these reports is available to all stakeholders including local governments, the general public, and the regulated community.

### Scrap tire generation and end-use/disposition

The annual reports submitted by registered scrap tire transporters, scrap tire facilities, and scrap tire storage sites are useful in obtaining information regarding the generation and end-use/disposition of scrap tires. The findings which are based on an analysis of the latest 2014 annual reports are tabulated below. Similar analysis from the previous two years are also included below for comparison purposes.

#### Annual Year 2014

End-use/Disposition	Approximate Scrap Tire Units* Utilized/Disposed	Utilization
LRPUT	3,118,310	12%
Crumb Rubber	4,586,370	17%
TDF (tire derived fuel)	13,612,918	51%
Landfill	3,412,607	13%
Other Beneficial Use	1,777,177	7%
<b>Total</b>	<b>26,507,382</b>	<b>100%</b>

\*One Scrap Tire Unit = One Scrap Tire, regardless of size

**Annual Year 2013**

<b>End-use/Disposition</b>	<b>Approximate Scrap Tire Units* Utilized/Disposed</b>	<b>Utilization</b>
LRPUT	1,727,924	8%
Crumb Rubber	4,828,999	22%
TDF (tire derived fuel)	11,239,837	50%
Landfill	3,463,489	15%
Beneficial Use	1,143,992	5%
<b>Total</b>	<b>22,404,241</b>	<b>100%</b>

**Annual Year 2012**

<b>End-use/Disposition</b>	<b>Approximate Scrap Tire Units* Utilized/Disposed</b>	<b>Utilization</b>
LRPUT	4,236,232	15%
Crumb Rubber	1,538,792	6%
TDF (tire derived fuel)	14,710,655	53%
Landfill	3,811,502	14%
Beneficial Use	3,353,986	12%
<b>Total</b>	<b>27,651,167</b>	<b>100%</b>

**2014 Annual Report Analysis**

Based on information received from the 2014 annual reports submitted by active registered scrap tire transporters, scrap tire facilities, and scrap tire storage sites, the main use or disposition avenues in Texas for used and/or scrap tires include the following broad categories: fuel source (tire-derived fuel), crumb rubber production, use in land reclamation projects, landfill disposal, and other beneficial use. A discussion on each of these end-uses is provided below.

***Tire-derived Fuel***

The highest use of used and/or scrap tires in Texas is for energy recovery and use as a fuel source. Tire-derived fuel accounted for approximately 51% of the total scrap tires used in calendar year 2014. Cement plants are the primary users of tire-derived fuel in Texas. Other potential users include pulp and paper mills, electric utilities, and steel mills. In many ways, cement kilns are ideally suited to use tire-derived fuel as their high operating temperatures and the oxygen-starved environment facilitate complete combustion. Also, no waste is generated since the residual ash is incorporated into the final product. Using whole or shredded tires as a fuel supplement to boilers and cement kilns reduces the demand for fossil fuels. Tires are an alternative to coal as a fuel source because tires are compact, have consistent composition, contain a low moisture content, produce high levels of heat, and can safely be used with appropriate emission controls. Facilities using tire-derived fuel are subject to stringent state and federal air emission standards and monitoring requirements. A review of annual reports for the calendar years 2012 and 2013 also indicates that tire-derived fuel was by far the predominant form of scrap tire use and disposition in Texas.

### ***Crumb Rubber***

Approximately 17% of used and/or scrap tires were recycled to produce crumb rubber. During the recycling process, steel and tire cord are removed and the tire shreds are ground to a granular consistency either with the aid of cryogenic or mechanical means to reduce the size of the particles. Rubberized asphalt is the biggest market for crumb rubber.

Crumb rubber can be blended into asphalt and used in several different highway applications. Per the Texas Department of Transportation (TxDOT), the Texas paving industry has traditionally used crumb rubber produced by grinding tire buffings, a byproduct of retreading tires. With increased demand for crumb rubber, tire processors are producing more crumb rubber from whole scrap tires as well. Paving applications that use crumb rubber include seal coats (or chip seals), hot mix asphalt pavement (or flexible pavement) and crack sealer. The TxDOT has published specifications for several requirements for tire rubber, crumb rubber-modified asphalt and asphalt-rubber.

### ***Disposal in Landfills***

Approximately 13% of the used and/or scrap tires generated and managed in Texas were disposed of in municipal solid waste (MSW) landfills. The TCEQ regulations specify that tires be split, quartered, or shredded before they are disposed of in a landfill. Scrap tire storage or processing activities at a landfill are authorized through the landfill's MSW permit.

### ***LRPUTs***

Approximately 12% of the used and/or scrap tires generated and managed in Texas during 2014 were used for land reclamation at locations authorized by the TCEQ. Approved projects restore land to its approximate natural grade to prepare or reclaim the land for reuse.

### ***Other Beneficial Uses***

Approximately 7% of the used and/or scrap tires generated and managed in Texas during 2014 were utilized for other beneficial purposes. There are many ways in which whole used and/or scrap tires can be reused in their original form, or with slight modifications. Tire shreds have a number of qualities that make them well suited for beneficial use including use in civil engineering projects. Tire shreds are good thermal insulators, lightweight, durable, free-draining, and are available at a relatively low cost. Tire shreds help reduce fill weight and can be used to address slope stability, erosion, landslide and embankment settlement issues. Shredded tire chips are suitable for use in septic systems and are very competitive with prices for clean, washed and graded gravel. Other beneficial uses for scrap tires include rubber or die-cut products, playground applications, mulch, silage cover, bales, and metal recovery. Planters, cattle water tanks, raised bed gardens, compost bins, bird baths, and tire swings are just a few examples of things that can be made from scrap tires.

### **Scrap Tire Management Program Funding**

From 1992 to 1997, the state of Texas managed scrap tires under the Waste Tire Recycling Fund (WTRF) program mandated by the Texas legislature and financed by a prescribed recycling fee charged to consumers for every tire purchased. During the program's tenure, tire generators were guaranteed free collection of scrap tires in exchange for collecting the recycling fee. The fund paid tire processors to collect and process the tires. After the WTRF program expired on December 31, 1997, the state dropped the mandatory fee, allowing tire dealers to set their own fees to cover their administrative and tire removal costs. Since the end of the WTRF, all scrap-tire management activities in Texas have operated under the free-market system.

Currently there is no dedicated funding for the scrap tire management program. There is no application fees for obtaining a scrap tire registration or maintaining the validity of the registration.

The cleanup of tire sites is addressed through the use of financial assurance funds posted by the registration holder (in case of tire storage sites) or through supplemental environmental projects, administered by the TCEQ's Office of Compliance and Enforcement and/or the Office of Legal Services.

### **Scrap Tire Management Challenges**

TCEQ has made significant efforts towards addressing scrap tire management issues and in reducing the number of unauthorized scrap tires stockpiles in Texas. Registration and regulatory requirements are designed to facilitate the safe management of tires in the state and minimize any adverse impacts to human health and the environment.

TCEQ's regional offices routinely monitor for compliance with applicable regulations and conduct periodic enforcement activities to address violations. Participation in outreach efforts and educational events to communicate with local governments, industry organizations, regulated entities, and other stakeholders is vital to safe management of scrap tires.

Ongoing challenges and opportunities that offer direction for future progress include:

- funding cleanup efforts for existing and newly created tire stockpiles
- expanding existing markets or developing new markets and end-users where needed including transportation-related uses
- minimizing the illegal dumping of scrap tires
- improving compliance with TCEQ scrap tire regulations

### **Unauthorized Scrap Tire Sites in Texas**

The TCEQ maintains a list of unauthorized scrap tire sites in the state with greater than 500 scrap tires (or equivalent in tire pieces/shreds). The list includes the name of the site, address, and estimated number of tires on-site. The attached illustration includes the location of such sites on a map of Texas along with information on the approximate quantity of abandoned tires.

# Unauthorized Scrap Tire Piles

in Texas



Texas Commission on Environmental Quality  
MSW GIS Group (MC 124)  
P.O. Box 13087  
Austin, Texas 78711-3087  
Date: 2/17/2015

## Scrap Tire Count

- 0 - 7,299
- 7,300 - 299,999
- 300,000 - 999,999
- 1,000,000 - 2,449,999
- 2,450,000 - 5,000,000

- Interstate
- City

0 50 100 Miles

Source: The location of the facilities was provided by the TCEQ Office of Compliance and Enforcement. Road and City data sourced from MNET.

This map was generated by the Municipal Solid Waste Permits Section of the Texas Commission on Environmental Quality. This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries. For more information concerning this map, contact the MSW Permits Section at (512) 239-2335.