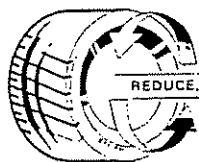

SCRAP TIRE MANAGEMENT COUNCIL

SCRAP TIRE USE/DISPOSAL STUDY
1994 UPDATE

FEBRUARY 1995

EXECUTIVE SUMMARY



Scrap Tire Management Council

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INTRODUCTION

While scrap tires have been with us as long as we have had new tires, low tipping fees made landfills the most popular disposal option. Within the last 10 years, the environmental movement and a proliferation of state regulations have focused national attention on the need to develop alternate methods of scrap tire disposal. From 1985 to 1990, management and market development efforts for scrap tires was minimal, at best. In 1990, some 25 million scrap tires, or approximately 11 percent of the annually generated number of scrap tires in the United States had markets. At the end of 1994, 138 million scrap tires, or 55 percent of the annually generated scrap tires in the United States have markets. The focus of this market study is to report on these markets.

This is the third in a series of market studies on scrap tires produced by the Scrap Tire Management Council. This report is not intended to repeat the basic information found in the previous market surveys, published in 1990 and 1992. These earlier surveys provide base information on scrap tire economics, technology assessments for the various market applications, and disposal options for scrap tires. These reports are both still available through the STMC. The present document follows the pattern set in the earlier studies; the 1994 update:

- Identifies and evaluates the level of progress made with the various market applications since the 1992 report.
- Identifies new methods which have emerged since the 1992 report
- Identifies market, technical, institutional, and other impediments to the expanded use of scrap tires.

There are several differences between this report and the 1992 market study. The 1994 market survey contains information on all the uses for size reduced (ground) rubber, not just rubber modified asphalt. This survey also includes information on the export of scrap tires, those tires used in agricultural applications, products which are punched or stamped from scrap tires and the other miscellaneous uses. The 1994 Market Survey is also the first public document that makes a comprehensive review of the issue of stockpiled scrap tires and scrap tire generation.

The intent of this study is three fold: First, the report is intended to help industry, government and the STMC evaluate and understand the progress that has been made in the development and implementation of large-scale markets for scrap tires. Second, the report cites the issues which need to be further addressed before additional markets can be developed. Third, the market survey gives an indication which technologies may, or may not, be able to create a significant market demand for scrap tires in the near and intermediate-term.

About the Scrap Tire Management Council

In 1990, the North American tire manufacturers created the Scrap Tire Management Council (STMC). The primary goal of the STMC is to assist in the development of market demand for 100 percent of the annually generated scrap tires in the United States. Over the past five years, the STMC has undertaken a strategic program to increase the environmentally sound and cost efficient reuse, recycling, energy recovery or disposal of scrap tires.

The STMC fully supports all efforts to properly maintain, repair or retread tires. However, the focus of this study is on markets, uses and disposal options for scrap tires. By definition, a scrap tire is that tire which can no longer be used for its original purpose. A repaired or retreaded tire is not a scrap tire. Conversely, a scrapped tire is not suitable for retreading.

Overview of Findings

The results of our market survey indicates an overall increase in the use of scrap tires in three general categories: fuel, size-reduced (ground or particulate) rubber and civil engineering applications. In general the use of tires as a fuel continues to be the most significant market for scrap tires. In addition to the markets cited in earlier studies, this survey has shown that there are at least two new uses of tire derived fuel (TDF). Other markets have also shown growth since 1992; although some did not meet the increases projected in the 1992 report. The increase in use of scrap tires in civil engineering applications exceeded our earlier projections. While the benefits will be set forth in greater detail in a later section, we have found that the use of scrap tires in the various applications can be both cost effective and provide equal or greater engineering benefits.

The market that did not meet earlier growth expectations was the use of rubber modified asphalt (RMA). Our 1992 projections were based on the full implementation of Section 1038(d) of the Intermodal Surface Transportation and Efficiency Act of 1991 (ISTEA). This did not occur due to prohibitions imposed on the Federal Highway Administration to restrict funds for the administration, implementation and enforcement of Section 1038(d). These issues will also be discussed in greater detail later in the report.

Land Disposal Issues

In addition to the markets which have been mentioned, several states have continued to allow scrap tires to be landfilled; in some cases, this has occurred where no economically viable market for scrap tires exist. There are many useful and beneficial applications for scrap tires, and they should be used accordingly. If, however, a jurisdiction that continues to allow scrap tires to be stockpiled or land disposed, they must do so with the understanding that this action will very likely have a direct negative impact on the development of any other scrap tire applications.

Generation Rates for Scrap Tires

For the purpose of this report, data concerning the weight of tires remains the same as described in the original report; that is one "scrap tire" is equal to 20 pounds of tire derived fuel or 12 pounds of size reduced rubber. This method of accounting for scrap tires maintains consistency with the STMC's previous two market surveys, as well as the vast majority of other reports on scrap tires, in particular the market analysis done by the USEPA.

The basic assumption in making a scrap tire estimate is that there is one scrap tire discarded for each replacement tire sold. In addition, it is assumed that tires are also discarded when the vehicle on which they are mounted is discarded. Thus national estimates can be made based on the total volume of replacement tire sales, and the total volume of vehicles scrapped each year.

Stock Pile Data

One of the major issues in dealing with tire stockpiles is the sheer size of the problem: how many scrap tires do we have stockpiled across the country? Frankly, no one knows **exactly** how many stockpiled tires there are in the country.

While many states have conducted detailed surveys of scrap tire piles within their borders, others have only done estimates. A few states do not have even estimates available. Nevertheless, the picture that emerges from the states' own estimates of scrap tire stockpiles does vary considerably from the earlier one as publicized by EPA. The results of the STMC survey are show that 41 states had counts or estimates available, the total volume of stockpile tires is 658,983,000. If a tires-to-population ratio of these states is calculated, it is 2.81 tires per person. Applying this rate to the states with estimates, and adding this figure to the figure for state without estimates, the total number of stockpiled tires would be 709,319,000. Even if a 25% factor were added to be conservative in the estimate, the total figure would be 886,650,000, quite a distance from 2 to 3 billion.

MARKETS FOR SCRAP TIRES

SCRAP TIRE FUEL IN CEMENT KILNS

The use of scrap tires as a supplemental fuel in cement kilns has increased dramatically over the past two years. Currently there are 28 cement kilns which are either using TDF or are permitted to do so. The outlook suggests that the use of TDF as a supplemental fuel will very likely continue to increase. Our survey indicates there are another 36 cement kilns that are either actively pursuing their permits to use TDF or are likely to begin their permitting process within the next 18 months.

The principle reasons for the use of TDF in cement kilns are:

- Improved emissions
- Increased production
- Decreased fuel costs.

The principal impediments to the further use of tires as a supplemental fuel in U.S. cement kilns are:

- Delays due to difficulty in obtaining a permit or modified permit from the state regulatory agency
- Kilns operating at full capacity
- Reliability of tire/TDF supply in isolated areas
- Local opposition to tire burning
- The use of competing supplemental fuels such as solvents and hazardous waste
- Variable quality of some processed TDF

Volume Characteristics

The following is an estimate of the potential usage of scrap tires by the U.S. cement industry:

- Current Usage: 37 million scrap tires per year
- Current Permitted Capacity: 40 million scrap tires per year
- Within Two Years: 80 million scrap tires per year
- Within Five Years: 100 million scrap tires per year

SCRAP TIRE FUEL IN PULP AND PAPER MILL BOILERS

The technology is proven and has been in continuous use in the U.S. since the early 1980s. Consumption of TDF in U.S. pulp and paper mills has almost doubled since the mid-1980s to approximately 27 million tires per year. There are currently 17 mills known to be using TDF on a continuous basis. Eight additional mills, with a combined potential capacity to consume approximately 16 million tires per year, could begin using TDF on a continuous basis within the next two years. There are an additional 10 mills that have tested the use of TDF, and for reasons of their own, have decided to not continue, or to delay, their start up programs.

The main reasons given for the use of TDF in pulp and paper mill boilers are:

- Decreasing the cost of fuel
- Improving emissions
- Improved combustion efficiency.

The principal impediments to the further use of TDF in the U.S. pulp and paper industry are:

- Marginal cost advantage of TDF over typical mill fuels (coal, purchased hog fuel).
- Environmental permit modification requirements; inconsistent regulatory guidance in some states.
- Remote location of many mills (higher transportation costs).
- Reluctance of state officials to accept out of state emission and TDF characterization data
- Reliability of TDF supply in remote locations.
- Variable quality in some fuel chips.
- Facilities with wet scrubbers have not had positive experiences

The following is an estimate of the potential usage of scrap tires by the U.S. pulp and paper industry:

- Current Usage: 27 million scrap tires per year.
- Within Two Years: 40 million scrap tires per year.
- Within Five Years: 60 million scrap tires per year.

SCRAP TIRE FUEL IN ELECTRICITY GENERATING FACILITIES

This section includes the use of TDF in large-scale utility boilers, industrial boilers, resource recovery facilities and cast iron foundry cupolas. In general, the only whole tire fuel application in this section would be in a wet bottom boiler. The use of TDF in this market segment, with the exception of wet bottom boilers, is typically as a supplemental fuel, not exceeding 10 percent of the total fuel mix. Wet bottom boilers have demonstrated the ability to derive up to 40 percent of their fuel mix from TDF.

Eight industrial power plants are currently using TDF. While TDF has not demonstrated any adverse effects on these facilities, we are only aware of three companies with industrial boilers that are considering the use of TDF.

Our survey indicated that three municipal resource recovery facilities (MRRFs) are currently using TDF on a continuous basis, although virtually every MRRF at one time has fed some number of scrap tires through their system.

The benefits derived from the use of TDF in coal fired-electricity generating facilities are:

- Decreased fuel costs
- Improved emissions
- Improved combustion efficiencies

The principle barriers to the further use of scrap tire material in electricity generating facilities are:

- Marginal cost advantage of scrap tire material over competing fuels;
- Environmental permit modification requirements; inconsistent regulatory guidance in some states.
- Reliability of TDF supply in remote locations.
- Conservative/risk averse nature of utility industry.
- Inability for blending fuel (TDF becomes uneconomical viable when pulverized coal is the main fuel source)
- Limits of ash handling systems
- Variable quality of some TDF

Volume Characteristics

The following is an estimate of the potential usage of scrap tires by U.S. electricity generating facilities:

- Current Usage: 22 million scrap tires per year.
- Within Two Years: 42 million scrap tires per year.
- Within Five Years: 75 million scrap tires per year.

SCRAP TIRE FUEL IN DEDICATED TIRES-TO-ENERGY FACILITIES

There have been several significant changes in this market sector since the 1992 market survey. Oxford Energy no longer exists. The Modesto Energy Limited Partnership is now owned by KOP, a Scandinavian bank and operated by United American Electric. The Exeter Energy Limited Partnership, located in Sterling Connecticut is now owned and operated by CMS Generation (Dearborn, MI). The two projects that Oxford Energy was developing, Midland, Michigan and Moapa (Nevada) Energy, are no longer being developed.

The principle impediments to the further use of scrap tire material in dedicated tire-to-energy facilities are:

- High capital cost of facilities;
- Length of environmental permitting
- Availability of fuel supply.

Volume Characteristics

The following is an estimate of the potential usage of scrap tires by U.S. dedicated tire-to-energy facilities:

- Current Usage: 15 million scrap tires per year.
- Within Two Years: 20 million scrap tires per year.
- Within Five Years: 25 million scrap tires per year.

USE OF SIZE-REDUCED RUBBER

The overall market demand for size-reduced (a.k.a. ground) rubber has been steadily increasing over the past several years. In 1992, some 160 million pounds of size-reduced scrap tire rubber were sold on the open market. In 1994, the total volume sold in the market place was approximate 240 million pounds. While the increase is substantial, this market segment is not without its impediments.

The need to rely on scrap tires as the main source of increased capacity in this market is due to the finite supply of tire buffings. Buffings are a by-product from the retreading industry, created when a used tire is being prepared to accept the new tread. The buffings, relatively long, tubular shaped particles, are collected, packed up and sold to the producers of size-reduced rubber.

For 1995, there is an expected overall increase of 25 to 33 percent in the sale of size-reduced rubber. A large percentage of this increase will be spurred by an increase in the use of rubber modified asphalt (RMA); the remainder will be sold into the athletic/recreation and molded/extruded product markets. This increase should bring the total size-reduced rubber market capacity to 300 - 360 million pound range

Market Applications for Particulate, Ground and Powdered Scrap Tire Rubber

There are six general categories of markets for ground or powdered rubber. Market availability is a function of cost, product availability, product characteristics and substitute material availability. While all these factors deserve explanation, this survey will only give a general description of the markets.

Bound Rubber Products: Ground or powdered scrap tire rubber is formed into a set shape, usually held together by an adhesive material (urethane or epoxy).

New Tire Manufacturing: Powdered scrap tire rubber can be used as a low volume filler material in two components of a tire; the tread and sidewall. In addition, powdered rubber produced from inner tubes is used in the inner liner. In general, scrap tire rubber is limited to a maximum of one and one half percent of the tire (by weight). Powered rubber can be used in off-road tires, intermodal tires, bias ply truck tires and solid tires.

Rubber Modified Asphalt (RMA): Ground or granulated rubber can be blended with asphalt to modify the properties of the asphalt in highway construction. Sized reduced scrap tire rubber can be used either as part of the asphalt rubber binder, seal coat, cape seal spray or joint and crack sealant (generally referred to as asphalt-rubber), or as an aggregate substitution (rubber modified asphalt concrete, or RUMAC).

Athletic and Recreational Applications: Particulate rubber can be used in several applications, such as in running track material, in grass surfaced playing areas or as a substitution for playground surfaces. Particulate rubber generally makes the playing surface and the running tracks more resilient, less rigid, while allowing the surface material to maintain traction and shape. Case in point is the running track at the White House which contains particulate rubber.

Friction Material: Friction brake material uses particulate rubber in brake pads and brake shoes. This is a mature industry with little to no growth expected.

Molded & Extruded Plastics/Rubber: Particulate rubber can be added to other polymers (rubber or plastic) to extend or modify properties of polymeric (thermoplastic) materials. Examples of this application are injection molded products and extruded goods such as shoes or carpet backing. There appears to be a significant market potential for this application due to the continuing research and development of products using a surface modified rubber. There has also been increasing interest by the automotive manufacturers in the purchase of products which contain recycled rubber.

Volume Characteristics

While the overall consumption of size reduced rubber in 1994 was 240 million pounds, the STMC is only tracking the use of size-reduced rubber from scrap tires.

- Current Usage: 4.5 million scrap tires per year.
- Within Two Years: 7.0 million scrap tires per year.
- Within Five Years: 18 million scrap tires per year.

The overall increase in the use of scrap tire rubber will be a function of the availability of tire buffings and increased market demand for RMA, athletic/recreational applications and molded/extruded products. In general, the factors which serve to benefit this increased demand are:

- Ability to enhance properties and characteristics of polymeric compounds (molded/extruded & RMA)
- Lower cost additive (molded/extruded)
- Provides enhanced safety and performance (athletic/recreational)

The factors which currently impede the increased use of size reduced rubber include:

- Concerns about performance, recyclability and worker safety (RMA)
- Lack of specifications for size reduced rubber
- Uncertainty about future of ISTEA
- Competition from other recycled materials (molded/extruded products)
- Budgetary limits (athletic/recreational applications)
- Environmental concerns (i.e., leachate)(athletic/recreational applications)

CUT, STAMPED & PUNCHED RUBBER PRODUCTS

One of the oldest markets for scrap tires is the cut and stamped products market. This market encompasses several dozen if not hundreds of products, all of which take advantage of the toughness and durability of the tire carcass material. The basic process uses the tire carcass as a raw material. Small parts are then die cut or stamped, or strips or other shapes are cut from the tires.

SCRAP TIRES IN CIVIL ENGINEERING APPLICATIONS

The civil engineering market encompasses a wide range of potential uses for scrap tires and scrap tire derived material. In virtually all applications, the scrap tire material will be used to replace some other material currently used in construction (i.e., dirt, clean fill, gravel, sand, etc.). In order to be considered a beneficial use, the performance of the scrap tire derived material should be equal to or superior to the material it replaces, and/or should provide some additional advantage to the project, such as lower cost.

Each potential civil engineering use brings with it a particular set of technical, environmental and economic constraints which must be fully evaluated before the application is readily acceptable. Civil engineering applications also encompass both small scale and larger scale uses, which make their consideration particularly useful to persons seeking a wide range of uses.

Volume Characteristics

While the use of scrap tires in this market segment have increased dramatically in the past two years, there are still impediments to the broader civil engineering use of scrap tires including:

- Unfavorable economics for some applications, such as artificial reefs
- Lack of standard engineering data
- Unclear long term environmental implications
- Experimental nature of most major projects to date.

Even with these limiting factors, it is expected that the acceptance and use of civil engineering applications will continue its increase steadily over the next two to five years.

- Current Usage: 9 million scrap tires per year
- Within Two Years: 12-15 million scrap tires per year
- Within Five Years: 15- 25 million scrap tires per year

PRODUCT RECOVERY VIA PYROLYSIS

There is a continuing interest in thermal distillation (pyrolysis) of scrap tires as a strategy to manage scrap tires, even though there has been no success in marketing of this technology's by-products. Pyrolysis is the use of heat in the absence of oxygen to decompose a material. As a basic chemical technology, it has existed since the time of the ancient Greeks. Broad interest in tire pyrolysis began when there were world-wide concerns for the availability of petroleum: pyrolysis was thought to be a method to liberate the liquid hydrocarbons in the tire. A return to easier world access to petroleum at reasonable cost led most investigators to abandon their research on pyrolysis.

The principal barriers to the use of tires in pyrolysis applications are

- Technology has yet to be proven over either short or long term basis
- Questionable process economics; high capital expenditures for plant construction and start up
- Virtually nonexistent demand for pyrolytic products, especially char.
- Poor perception of product quality.

Volume Characteristics

It is virtually impossible to estimate the current usage of scrap tires by U.S. pyrolysis facilities, since there are no commercially viable facilities in the United States. The majority of the activities associated with this technology has been focused around the sale of pyrolytic equipment or the acquisition of companies. This has given rise to the perception that progress has been made in this market segment.

Given the highly questionable economics and speculative nature of pyrolysis, it is difficult to estimate any future growth in the use of this technology as a means to address the scrap tire situation. Current usage is believed to be less than 500,000 scrap tires per year.

EXPORTS OF TIRES

Exports of sound used tires constitutes a major market for tires removed from initial service. As has been discussed earlier, many tires, when initially removed from a vehicle are still sound and have adequate tread depth to be used legally as tires. In addition, many tires without proper tread are usable as candidate casing for retreading. Both categories of tires have ready markets in many parts of the world and are regularly sold into those markets. These tire exports are assumed not to return to the United States for ultimate disposal. Tire exports are estimated at around 12.5 million annually.

AGRICULTURAL USES

Scrap tires are regularly used in agriculture in a variety of ways. Used tires not legally fit for highways may be used on low speed farm equipment. Tires are also used to weigh down covers on hay stacks or over silage, or for other purposes where an easily handled weight is needed. Tires can be used as feeding stations or can be used to construct stock feeders. Tires can be used to protect fence posts and other structures from wear and damage by stock rubbing against them. Tires also are used in erosion control and for other land retention purposes.

It is estimated that about 2.5 million tires are used in agricultural applications each year, or about one percent of the total volume of scrap tires in the United States.

MISCELLANEOUS USES

There are a wide variety of uses for scrap tires which do not fit neatly into any of the preceding categories, ranging from what has to be one of the most popular uses for scrap tires, the scrap tire swing, to more exotic uses such as the few artists who have used scrap tires as an artistic medium. Flower pots, fences, horse jumping barriers, shock absorbers for construction demolition cranes, boating dock bumpers, drive way markers, crash barriers on racing tracks-- the uses are limited only by imagination and necessity.

CONCLUSIONS

The results of the past four years have demonstrated very significant increases in the number of markets for scrap tires. In 1990, 11 percent of the annually generated scrap tires had markets. In 1992, 38 percent of the annually generated scrap tires had markets. By the end of 1994, 55 percent of the annually generated scrap tires had markets. The STMC is projecting continued increases in all the major markets for scrap tires, and consistent markets for all the others reported on. While the factors which impact the markets suggest that the number of scrap tires with markets should continue to increase, it is unlikely that the market will sustain the same rate of increase in the next four years as was accomplished in the past four years.

The rationale for this assessment is that the majority of the readily available market, i.e., potential fuel users, have already begun their use of TDF. While there are still a significant number of potential fuel users seriously considering ,or already in the permitting process, their numbers will not equal the new entrants to the TDF markets in the past four years. Furthermore, many of these potential fuel users are in states which have arduous permitting processes.

It is clear that TDF will continue to be the most significant market in the near and long-term. The use of TDF has proven to be both environmentally sound and cost effective. With the implementation of the Clean Air Act Amendment of 1991, and with utilities becoming more competitive, the indications are that TDF will be considered more positively than before.

The use of scrap tires in civil engineering applications is poised to become a very significant market, perhaps the second largest market for scrap tires. Once again, this application is proving to be both environmentally sound and cost efficient. The concerns over a lack of engineering specifications and field leachate data are being address. Once these reports are made available, most of the previous impediments should be removed.

The use of size reduced rubber from scrap tires remains on the verge of becoming a larger market segment. The reasoning is two fold. First, there is a finite limit to the quantity of tire buffings which are available, and that limit is rapidly being approached. Second, the markets for the various uses for size reduced rubber could increase dramatically over the next two to five years.

Perhaps the most closely watched market is that for RMA. While the fate of Section 1038(d) remains uncertain, field testing for potential health and safety impacts, air emission data, recyclability development of standard mix designs for RMA are being conducted. While this may not cause the geometric increase in demand that was once foretold, positive test results will certainly be one of the key elements in the drive to increase the use of RMA. Along these same lines, the development of standard definitions and mix design specifications by ASTM should also assist in the effort to increase the market demand for RMA.

The use of size reduced rubber in the other markets may also be expanding over this same period, depending upon the resolution of several issues. In general, these markets could be impacted by school budgets, technical limitations or competition form other secondary materials. Success in this market segment may be measured in smaller doses, and may take longer to develop than the other market segments for scrap tires.

Of the other markets for scrap tires, the indications are that export, cut/stamped and punched products, agricultural and other uses will not increase to any great extent over the next two years. The data evaluated also indicated that the thermal distillation (pyrolysis) of scrap tires does not appear to be a technology which will have any impact on the market for scrap tires.

There are several other technologies which this survey did not report on. Specifically we refer to the devulcanization, microwaving and gasification of scrap tires. All of these technologies have been in existence for many years, but to date, none are in or close to commercial operation. The outlook for these technologies becoming significant markets for scrap tires any time within the next two to five years, given current conditions, is highly unlikely. The limitations of these technologies, like the limitations for thermal distillation, is a combination of the manner in which tires are constructed and the nature of the by-products generated from each respective technology.

Overall it appears that given current data, the use of scrap tires as a fuel, in civil engineering application and in new products will be the major markets for the foreseeable future.

Reported and Estimated Market Demand for Scrap Tires by Market Segment

(millions of tires, except Totals)

MARKET SEGMENT	1994	1995	1996
Tire-Derived Fuel			
Cement Kilns	37	50	65
Pulp & Paper Mills	27	34	40
Utility Boilers	12	20	27
Dedicated Scrap Tire To Energy	15	20	25
Industrial Boilers	10	12	25
Total Fuel	101	136	182
Products			
Size-Reduced Rubber	4.5	6	7
C/S/P Products	8	8	8
Civil Engineering	9	12-15	15-25
Pyrolysis	0.1 - 0.4	Unknown	Unknown
Agricultural	2.5	2.5	2.5
Export	12.5	14	15
Miscellaneous Uses	1	1.3	1.5
TOTALS	138,600,000- 138,900,000	179,800,000- 182,800,000	231,000,000- 241,000,000
% OF TOTAL ANNUAL GENERATION	55.4%	71-72%	89-93%

ADDITIONAL SOURCES

For information on retreading and repairing of tires, contact any of the following organizations:
(*tell them we sent you*)

American Retreaders' Association:

P.O. Box 37203
Louisville, KY 40233-7203
Phone: 502-968-8900

National Tire Dealers & Retreaders Association:

1250 I Street, NW
Suite 400
Washington, DC 20005
Phone: 202-789-2300

Rubber Manufacturers Association:

1400 K Street, N.W.
Washington, DC 20005
Phone: 202-682-4800

Tire Industry Safety Council:

1400 K Street, N.W.
Washington, DC 20005
Phone: 202-783-1022

Tire Retread Information Bureau:

900 Weldon Grove
Pacific Grove, CA 93950
Phone: 408-372-1917

Tread Rubber & Repair Materials Manufacturers Group

1200 19th Street, NW
Washington, D.C. 20036

Recycling Research Institute (publishers of *Scrap Tire News* and *Scrap Tire Users Directory*)

133 Mountain Road
P.O. Box 714
Suffield, CT 06078
Phone: 203-668-5422