



100 East Pine Street, Suite 605
Orlando, Florida 32801
Phone: 407 649-5475
Fax: 407 649-6582
www.hsagolden.com

October 28, 2009

VIA UPS

Mr. Tom Lubozynski, P.E.
Administrator, Waste Management Program
Florida Department of Environmental Protection
Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803

RECEIVED
OCT 30 2009
DEP Central Dist.

Re: **Waste Tire Processing Facility Permit Application**
Taft Transfer Station and Material Recovery Facility
375 West 7th Street, Orlando, Florida
FDEP Permit No. SO48-0173968-007/OCEPD No. SW-022429-MRF/TS-06/0605
HSA Golden Project Number 06-404.010

Dear Mr. Lubozynski:

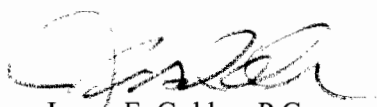
On behalf of Taft Recycling, Inc, HSA Golden has enclosed four copies of a Waste Tire Processing Facility permit application, pursuant to Rule 62-711, for your approval. This application includes a request to allow waste tire storage and processing at the existing facility. The application fee in the amount of \$1,250.00 required by Rule 62-701.315 F.A.C. is enclosed. The application includes the following sections:

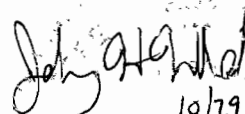
1. Completed DEP Form #62-701.900(23) "Waste Tire Processing Facility Permit Application" and DEP Form #62-701.900(20) "Waste Tire Site Notification", Authorization Letter, and Compliance History;
2. Revised Operation Plan - Taft Transfer Station and Material Recovery Facility dated October 2009 (revisions highlighted);
3. Fire Fighting Agreement; and
4. Revised Closure Cost Estimate.

Please contact either of the below individuals at (407) 649-5475 or Mike Kaiser of Waste Services, Inc. at (904) 673-0446 if you, or your staff, have any questions or require additional information.

Sincerely,

HSA GOLDEN


James E. Golden, P.G.
Vice President, Principal Hydrogeologist


10/29/09
Jeff Wild, P.E. FID# 67503
Principal Engineer

Attachments

cc: Mike Kaiser, WSI
David Bromfield, OCEPD



Environmental and Engineering Consultants



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Orlando, Florida 32801
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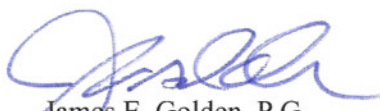
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James E. Golden, P.G.
Vice President, Principal Hydrogeologist


10/29/09
Jeff Wild, P.E. FLPE67503
Principal Engineer

Attachments

cc: Mike Kaiser, WSI
David Bromfield, OCEPD



RED ___ YELLOW___ GREEN___ NO PERMIT REQ___

HISTORY SHEET

SITE/WAFR/AIR#: 48-0173968-008 TYPE: WT SUBTYPE: 03

SITE/WAFR/AIR

NAME: South Okaloosa Material Recovery Inc

PROJECT

NAME: _____

[illegible]

PERMIT DATA FORM

CHECK IF NEW: _____

MOD ☒ NEW ☐ RENEWAL _____

SITE WAFR # AIR # 48-0173968

SITE/WAFER/FACILITY NAME: South Orlando Materials Recovery Fac

PROJECT NAME: _____

DESC: _____

TYPE CODE: WT SUBCODE: 02

CHECK IF GP ☐ EXEMPT ☐ NPDES ☐

CORRECT FEE: \$ 1250-

PROCESSOR: 86

AMOUNT RCV'D: 1250-

AMOUNT REFUND: _____

MONIES DUE: _____

Waste Services, Inc.
1122 International Blvd
Suite 601
Burlington, Ont L7L 6Z8

Bank of America, N.A.
Controlled Disbursement
Transit # 70-2328/719 IL
Northbrook, IL

151377

DATE
October 14, 2009

One Thousand Two Hundred Fifty Dollars and 00 Cents

Pay to the Order of:

AMOUNT
\$1,250.00

U.S. FUNDS

FLORIDA DEPT OF ENVIRONMENTAL PROTECTION



Wayne Bishop

WASTE TIRE PROCESSING FACILITY PERMIT APPLICATION

**TAFT TRANSFER STATION AND
MATERIAL RECOVERY FACILITY
375 WEST 7TH STREET, ORLANDO, FLORIDA**

**FDEP PERMIT NO. SO48-0173968-007
OCEPD NO. SW-022429-MRF/TS-06/0605**

Prepared For:

**Taft Recycling, Inc.
375 West 7th Street
Orlando, FL 32824**

Prepared By:



**100 East Pine Street, Suite 605
Orlando, FL 32801
FBPE No. 9915**

HSA Golden Project No.: 06-404.010

October 2009

SECTION 1
DEP FORMS



Department of Environmental Protection

DEP Form # 62-701.900(23)
Waste Tire Processing Facility
Form Title <u>Permit Application</u>
Effective Date <u>3/22/00</u>
DEP Application No. _____ (Filled in by DEP)

Waste Tire Processing Facility Permit Application

Permit No. _____

Renewal ☐ Modification ☐ Existing unpermitted facility ☐ Proposed new facility ☐

Part I-General Information:

A. Applicant Information:

1. Applicant Name: _____
2. Applicant Street Address: _____
3. City: _____ County: _____ Zip: _____
4. Applicant Mailing Address: _____
5. City: _____ County: _____ Zip: _____
6. Contact person: _____ Phone: () _____ FEID No: _____
7. Have any enforcement actions been taken by the Department against the applicant relating to the operation of any solid waste management facility in this state? This includes any Complaint, Notice of Violation, or revocation of a permit or registration, as well as any Consent Order in which a violation of Department rules is admitted. It does not include a Warning Letter, Warning Notice, Notice of Noncompliance, or other similar document which does not constitute agency action.
Yes _____ No _____ If yes, attach a history and description of the enforcement actions.

B. Facility Information:

1. Facility Name: _____
2. Facility Street Address (Main Entrance): _____
3. City: _____ County: _____ Zip: _____
4. Facility Mailing Address: _____
5. City: _____ State: _____ Zip: _____
6. Contact Person: _____ Phone: () _____
7. Facility Location Coordinates:
Section: _____ Township: _____ Range: _____
Latitude: _____ Longitude: _____
8. Anticipated date for starting construction _____ and for completion of construction _____
9. Anticipated date for receipt of tires _____ and for start of processing _____

Mail completed form to
appropriate district office listed below

Northwest District
160 Governmental Center
Pensacola, FL 32501-5794
850-595-8360

Northeast District
7825 Baymeadows Way, Ste. 200 B
Jacksonville, FL 32256-7590
904-448-4300

Central District
3319 Maguire Blvd., Ste. 232
Orlando, FL 32803-3767
407-894-7555

Southwest District
3804 Coconut Palm Dr.
Tampa, FL 33619
813-744-6100

South District
2295 Victoria Ave., Ste. 364
Fort Myers, FL 33902-2549
941-332-6975

Southeast District
400 North Congress Ave.
West Palm Beach, FL 33401
561-681-6600

DEP Form # 62-701.900(23)
Waste Tire Processing Facility
Form Title <u>Permit Application</u>
Effective Date <u>3/22/00</u>
DEP Application No. _____ (Filled in by DEP)

C. Land Owner Information (if different from applicant):

- Owner's name: _____
- Land owner's mailing address: _____
- City: _____ State: _____ Zip: _____
- Authorized Agent: _____ Agent's phone () _____
- Current lease expires: _____

D. Facility Operator Information (if different from applicant):

- Operator's name: _____
- Operator's mailing address: _____
- City: _____ State: _____ Zip: _____
- Contact person: _____ Phone: () _____

E. Preparer of Application:

- Name of person preparing application: _____
- Mailing address: _____
- City: _____ State: _____ Zip: _____
- Phone: () _____
- Affiliation with facility: _____

Part II-Operations:

A. Facility type (check appropriate box):

- ☐ Waste tire processing facility.
- ☐ Waste tire processing facility with on-site disposal of processed tires or processing residuals.
See Attachment _____
- ☐ Waste tire processing facility with on-site consumption of waste tires or processing residuals.
See Attachment F
- ☒ Permitted solid waste management facility modification to allow waste tire site and processing.

B. Type of processing facility (check as many as apply):

- ☐ Shredder ☐ Cutter ☐ Chopper ☐ Incinerator only ☐ Incinerator with energy recovery
- ☐ Pyrolysis ☐ Supplemental fuel user ☐ Other, explain _____

C. Storage: Indicate the maximum quantities of whole waste tires, processed waste tires, and processing residuals, expressed in tons, to be stored at the facility, in accordance with Rule 62-711.530(2), F.A.C.

	Outdoor Storage(tons)	Outdoor Storage (sq.ft)	Indoor Storage (tons)	Indoor Storage (sq.ft)	Total Storage (tons)
Whole waste tires:	_____	_____	_____	_____	_____
Processed tires:	_____	_____	_____	_____	_____
Processing residuals:	_____	_____	_____	_____	_____
TOTALS:	_____	_____	_____	_____	_____

DEP Form # 62-701.900(23)
Waste Tire Processing Facility
Form Title <u>Permit Application</u>
Effective Date <u>3/22/00</u>
DEP Application No. _____ (Filled in by DEP)

- D. For reporting quantity of tires in tons, tires will be: weighed on site ☒ weighed off site ☐ weights will be calculated
- E. Facilities that will not be disposing of processed tires or processing residual on the facility site must indicate the permitted solid waste management facility where processed tires or residuals will be disposed.

1. Name of facility JED Solid Waste Management Facility

2. Street address: 1501 Omni Way

3. City: St. Cloud County: Osceola Zip: 34773

- F. Facilities that will be delivering processed tires to consuming facilities must describe the existing or proposed markets for those processed tires.
Processed tires will be transported to a Class I Solid Waste Facility where they will be used as initial/
daily cover.

Part III-Attachments:

A. Facility design

NOTE: All maps, plan sheets, drawings, isometrics, cross sections, or aerial photographs shall be legible; be signed and sealed by a registered professional engineer responsible for their preparation; be of appropriate scale to show clearly all required details; be numbered, referenced to narrative, titled, have a legend of symbols used, contain horizontal and vertical scales (where applicable), and specify drafting or origination dates; and use uniform scales as much as possible, contain a north arrow and use NGVD for all elevations.

1. A topographic or section map of the facility, including the surrounding area for one mile, no more than one year old, showing land use and zoning within one mile of the facility See Section 2, Figure 2
2. A plot plan of the facility on a scale of not less than one inch equals 200 feet. At a minimum, the plot plan shall include
 - a. The facility design, including the location and size of all storage and processing areas for used tires, unprocessed waste tires, processed waste tires, and waste tire processing residuals; See Section 2, Attachment H, Sheet 1
 - b. All wetlands and water bodies within the facility or within 200 feet of any storage area;
 - c. Stormwater control measures, including ditches, dikes, and other structures; No Change
 - d. Boundaries of the facility, legal boundaries of the land containing the facility, and any easements or rights of way that are within the facility or within 200 feet of any storage area; No Change
 - e. Location, size, and depth of all wells within the facility or within 200 feet of any storage area; No Change
 - f. All structures and buildings that are, or will be, constructed at the facility; include those used in storage and processing operations; No Change
 - g. All areas used for loading and unloading; See Section 2, Attachment H, Sheet 1
 - h. All access roads and internal roads, including fire lanes;
 - i. Location of all fences, gates, and other access control measures; and No Change
 - j. Location of all disposal areas within the facility. Not Applicable

B. Facility operation.

1. A description of the facility's operation, process and products including how waste tires will be received and stored. See Section 2
2. A description of the equipment used for processing tires. This description shall include the make, model, and hourly capacity of each piece of equipment. See Section 2
3. Description of the waste from the process, the amount of waste expected and how and where this waste will be disposed of. See Section 2
4. Statement of the maximum daily throughput and the planned daily and annual throughput. See Section 2
5. A description of how the operator will maintain compliance with each of the storage requirements of Rule 62-711.540, F.A.C. See Section 2
6. A copy of the emergency preparedness manual for the facility with a statement of the on site and off site locations where that manual will be maintained. See Section 2
7. A copy of the fire safety survey See Section 3
8. A description of how 75% of the annual accumulation of waste tires will be removed for disposal or recycling. See Section 2

- C. Completed closing plan for the facility as required by Rule 62-711.700(2) and (3), F.A.C.

DEP Form # 62-701.900(23)
Waste Tire Processing Facility
Form Title <u>Permit Application</u>
Effective Date <u>3/22/00</u>
DEP Application No. _____ (Filled in by DEP)

- D. Attach proof of financial responsibility as requirement by Rule 62-711.500(3) OR a calculation showing that financial assurance documents, currently on file with the Department, are sufficient to assure closing of the waste tire site as well as any other solid waste management facility at that location. See Section 4
- E. A letter from the land owner (if different from applicant) authorizing use of the land as a waste tire processing facility. Not Applicable
- F. If waste tires will be consumed at the facility, attach a description of the other environmental permits that the applicant has for this use, including, permit number, date of issue, and name of issuing agency Not Applicable
- G. The permit fee as required in Rule 62-4, F.A.C. Enclosed

Part IV-Certification:

A. Applicant:

The undersigned applicant or authorized representative of Taft Recycling, Inc.
Is aware that statements made in this form and attached information are an application for a
Permit from the Florida Department of Environmental Protection and certifies that
The information in this application is true, correct and complete to the best of his knowledge and belief.
Further, the undersigned agrees to comply with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department. It is understood that the Department will be notified prior to the sale or legal transfer of the facility.

[Signature]
Signature of Applicant or Authorized Agent

Mike Kaiser, VP Engineering
Name and Title

10/25/09
Date

B. Professional Engineer registered in Florida.

This is to certify that the engineering features of this waste tire processing facility have been
Designed/Examined by me and found to conform to engineering principals applicable to such facilities. In my
professional judgment, this facility, when properly maintained and operated will comply with all applicable
statutes of the State of Florida and rules of the Department. It is agreed that the undersigned will provide the
applicant with a set of instructions for proper maintenance and operation of the facility.

[Signature]
Signature

Jeff Wild, P.E.

Name and Title

67903

Florida Registration Number

FBPE 9915

HSA Golden, 100 East Pine Street, Suite 605

Mailing Address

Orlando, FL 32801

City, State, Zip

407-649-5475

Telephone number

(please affix seal)

10/29/09
Date



Department of Environmental Protection

DEP Form # 62-701.900(20)
Form Title <u>Waste Tire Site Notification</u>
Effective Date <u>3/22/00</u>
DEP Application No. _____ (Filled in by DEP)

Waste Tire Site Notification

Pursuant to Rule 62-711.500, Florida Administrative Code, the owner or operator of any waste tire site shall submit the following information on this form to the Department.

1. Site name: Taft Transfer Station and Material Recovery Facility
2. Site location:
Street address (main entrance): 375 West 7th Street
City: Orlando County: Orange Zip: 32824
Section: 2, Township: 24S, Range: 29E
Latitude: 28 25' 33", Longitude: 81 22' 59"
3. Name of site operator: Taft Recycling, Inc.
4. Mailing address of site operator: 2893 Executive Park Drive, Suite 305
City: Weston State: Florida Zip: 33331
5. Telephone number of site operator: (904) 673-0446
6. Name of property owner (if different): _____
7. Mailing address of property owner: _____
City: _____ State: _____ Zip: _____
8. Telephone number of property owner: ()
9. Size of the site property (dimensions): 834' x 644' - Approximately 12.3 acres
10. Dimensions of the waste tire pile: Length 22 feet, Width 8 feet, Height 6 feet (10 Total)
11. Number of waste tires accumulated at the site (assume that there are 100 tires per ton, or 10 tires per cubic yard):
Number of tires 6,000
12. Certification:

To the best of my knowledge and belief, I certify the information provided in this notification is true, accurate, and complete.

Mike Kaiser

Name of Authorized Agent

Signature of Authorized Agent

10/25/2009

Date

Mail Completed form to
the appropriate district office
listed below

Northwest District
160 Governmental Center
Pensacola, FL 32501-5794
850-595-8360

Northeast District
7825 Baymeadows Way, Ste. 200 B
Jacksonville, FL 32256-7590
904-448-4300

Central District
3319 Maguire Blvd., Ste. 232
Orlando, FL 32803-3767
407-894-7555

Southwest District
3804 Coconut Palm Dr.
Tampa, FL 33619
813-744-8100

South District
2295 Victoria Ave., Ste. 364
Fort Myers, FL 33902-2549
941-332-6975

Southeast District
400 North Congress Ave.
West Palm Beach, FL 33401
561-681-6600



2893 Executive Park Drive, Suite 305, Weston, Florida 33331

February 6, 2009

RE: Waste Services of Florida, Inc.

To Whom It May Concern:

This is to confirm that Mike Kaiser is an authorized signatory of Waste Services of Florida, Inc. (the "Corporation"), with authority to execute and deliver all documents and instruments required in connection with environmental matters for the Corporation, including without limitation, permit applications, modifications and financial assurances for permits issued to the Corporation.

Waste Services, Inc.

A handwritten signature in black ink, appearing to read "Edwin D. Johnson", is written over a horizontal line.

Edwin D. Johnson
Executive Vice President & Chief Financial Officer

Waste Services of Florida, Inc.

A handwritten signature in black ink, appearing to read "Edwin D. Johnson", is written over a horizontal line.

Edwin D. Johnson
Vice President & Director

Waste Services Inc. - U.S. (Florida) Compliance History

Date	Facility	Location	Permit Number	Issuing Agency	Type of Action	Nature of Violation	Disposition	Fine or Penalty
11/29/05	Sarasota Transfer Station	Sarasota, FL	126776-003-SO	FDEP	NOV / Consent Order	Tipping floor not adequately draining and modified from permitted design.	Consent Order. Closed - Settlement fee was paid, permit modification submitted and constructed.	\$9,500
02/27/07	Pro Disposal - Alico (WSI - Alico)	Fort Myers, FL	0199986-001-SO	FDEP	NOV / Consent Order	Storage of materials, Records, Ventilation, Yard Trash Registration	Consent Order. Closed - Settlement fee was paid, permit modification submitted and approved. Note that the FDEP acknowledged in the closure letter that the violations causing the issuance occurred prior to our ownership	\$2,250
06/29/07	Sarasota Transfer Station	Sarasota, FL	126776-002-SO	FDEP	NOV / Consent Order	Leachate Ponding on Floor, Ventilation, Tarping of Loads, Records	Consent Order. Closed - Settlement fee was paid.	\$12,000
10/31/07	Clearwater Material Transfer Station	Clearwater, FL	142414-004-SO	FDEP	NOV / Consent Order	Sediment in leachate drain, sweeping of floor, unacceptable waste in C&D waste, barrier wall missing	Consent Order. Closed - Settlement fee was paid.	\$8,500
10/31/07	Tampa Material Transfer Station	Tampa, FL	34481-004-SO	FDEP	NOV / Consent Order	Tipping floor in need of maintenance, unpermitted modification of leachate collection system, unacceptable waste in Class III waste, unlabeled oil containers	Consent Order. Closed - Repairs made to floor & leachate collection system. Settlement fee was paid.	\$10,000
07/30/08	SCMM Landfill	Balm, FL	35438-004-SO	FDEP	NOV / Consent Order	Unacceptable waste in C&D landfill, inadequate number of spotters, insufficient select waste layer, slopes steeper than 3 to 1, fill sequencing and phased closure of old fill.	Consent Order. Closed - Settlement fee was paid.	\$18,097
08/27/08	JED Landfill	St. Cloud, FL	SC49-0199726-004 & 005	FDEP	NOV / Consent Order	Installation of Gas Collection System and reporting.	Consent Order. Open - \$1,000 administrative fee paid, working with FDEP evaluating Pollution Prevention (P2) program in-lieu of \$60,200 fine.	\$1,000 + P2 Program
07/17/09	Sarasota Transfer Station	Sarasota, FL	126776-005-SO	FDEP	NOV / Consent Order	Leachate drain clogged, bulking paint, litter in tarping area.	Proposed fine of \$5,000 is likely to be reduced.	TBD
07/23/09	SCMM Landfill	Balm, FL	35438-004-SO	FDEP	Warning Letter / NOV	Unacceptable items in the working face of the facility.	Consent Order. Closed - Settlement fee was paid.	\$5,000
07/23/09	Clearwater Material Transfer Station	Clearwater, FL	142414-004-SO	FDEP	Warning Letter / NOV	Unacceptable items in the accumulated waste in the C&D & Class III tipping areas.	Proposed fine of \$5,000 is likely to be reduced.	TBD

Note:

As of 10/15/2009 and subsequent to all facilities permit transfer to Waste Services.

List includes only those violations which have been issued fines or consent orders for facilities in Florida.

SECTION 2
OPERATION PLAN

OPERATION PLAN

**TAFT RECYCLING, INC.
CLASS I AND CLASS III
WASTE PROCESSING FACILITY AND
TRANSFER STATION
PERMITS TO OPERATE
#SO48-0173968; SW-022429-MRF/TS**

Prepared for:

**Taft Recycling, Inc.
375 W. 7th Street
Orlando, FL 32824**

Prepared by:

**HSA Golden
100 East Pine Street, Suite 605
Orlando, Florida 32801**

Project No. 06-404.001

**~~September 2008~~
Revised October 2009**

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Figure 1	Site Location Map
Figure 2	Aerial/Zoning Map

LIST OF APPENDICES

Appendix A	Authorized/Unauthorized Materials (No Change)
Appendix B	Material Disposition - Revised
Appendix C	Facility Operations Flow Chart (No Change)
Appendix D	Training Log, Schedule of Courses, Certificates (No Change)
Appendix E	Hurricane Preparedness Plan (No Change)
Appendix F	Unauthorized Waste Log and Reporting Forms (No Change)
Appendix G	Equipment Cut Sheets
Appendix H	Site and Building Construction Plans (Site Plan and Aerial only)
Appendix I	Waste Tire Background Information

SECTION 1 INTRODUCTION

1.1 Site Description and Background

The Taft Recycling, Inc. (TRI) waste processing facility (Facility) property currently consists of approximately 12 acres in a roughly rectangular shape with an existing office building, vehicle maintenance building, 18,600 s.f. waste processing building, and sorting areas. Topography at the southern limits of the site generally slopes toward a drainage ditch along the southern property boundary that flows west to the Boggy Creek Canal. Topography of the northern limits slopes towards a sediment pond that discharges to Boggy Creek Canal. The property is relatively flat with an elevation of approximately 95 feet NGVD. Access is off of 7th Street along the southern portion of the property. A site location map is provided as Figure 1.

The western ± 4 acres of the site is zoned I-2/I-3 and the eastern ± 8 acres of the site is zoned I-4 based on Orange County records. All adjacent properties within 1000 feet of the site are also zoned industrial. An aerial photograph/zoning map showing a one mile radius surrounding the facility is provided as Figure 2, and in Appendix H.

The TRI Facility was initially permitted as a material recovery facility by the Florida Department of Environmental Protection (FDEP) in January 2001, under Rule 62-701.700 Florida Administrative Code (F.A.C.). This permit authorized the processing of Class III and Construction and Demolition (C&D) debris solid wastes in a 12,000 s.f. building with sorting, ancillary screening and recycling facilities. In January 2005, TRI received a modified permit from the FDEP to accept Class I wastes within a proposed 6,600 s.f. building expansion. Then, in March 2005, TRI received an additional permit modification from the FDEP to accept Class I wastes within areas of the 12,000 s.f. existing MRF building. An Orange County Solid Waste facility permit was issued in May 2006. Construction of the 6,600 s.f. building expansion was completed in August 2007 along with several other Facility improvements.

SECTION 2 OPERATION PLAN

2.1 Purpose

The purpose of this manual is to describe the operation and maintenance procedures for the TRI Facility located at 375 7th Street in Taft, Florida. The Facility currently includes processing and storage areas for Class I and III materials. Materials accepted at the site include municipal solid waste, yard trash, concrete, asphaltic concrete, wood wastes, building debris, cardboard, carpet, cloth, paper, glass, metal, plastic, waste tires, and furniture as described in Chapter 62-701, FAC. A building expansion to process and transfer Class I municipal solid waste (MSW), was completed in August 2007.

2.2 Process Overview

All waste entering the Facility will follow a process at the scalehouse of identification and sorting immediately upon arrival at the site. If the material is unauthorized, the driver will be directed to a solid waste management facility which is permitted to handle the type of material rejected. Appendix A contains a list of typical authorized and unauthorized materials for the Facility [No change to Appendix A made - not included in this revision].

Upon acceptance, the truck will be weighed and directed to the appropriate area where the waste will be placed on an indoor tipping floor. Class I waste will be placed by collection trucks in the Class I area located in the building, and loaded onto transfer trailers for Class I Landfill disposal. The Class III waste and C&D materials will also be placed in the building to undergo sorting operations in the form of placing the waste into a sorter with a conveyor belt where the material will be downsized and hand sorted. Unsuitable materials (i.e. paint containers, oil containers, etc.) will be temporarily stored inside the building and transported off-site for proper disposal. Recoverable (paper, plastic, cardboard, metal, etc.) and recyclable (wood and concrete) materials will be removed for recycling. The cardboard will be placed into a baler, and the wood will be placed into a chipper. Recovered screen materials (RSM) are stored in a covered concrete bin for transport to a Class I landfill for use as daily cover material or disposal.

The Class I waste tipping floor will be enclosed within bays 3, 4 and 5 of the Facility building. Class III / C&D tipping floors (bays 1 and 2) will be separated by an 8 ft. concrete bin block wall, see Figure 3 (Not Included). Ventilation, lighting and leachate control upgrades have been added to the existing and expansion building to allow Class I waste acceptance, see following details in Sections 2.10, 3.3.1, and 3.4.1, and Appendix H [Only Sheet 1 has been revised and included in Appendix H].

Once the waste has been sorted, unacceptable waste or rejected wastes will be transported to the appropriate disposal facilities.

Facility Operations Flow Charts are included in Appendix C, and site plans in Appendix H. [No change made to Appendix C - not included. Only Sheet 1 included in Appendix H.]

2.2.1 Waste Quantity Projections

The future demand for recycled and properly disposed Class I and Class III waste material is expected to increase. This is based on the 4 to 5 percent population growth rates for Orange, Osceola, and Seminole Counties per the Florida Statistical Abstract. Material types will be limited to the processing capabilities of this site. Solid waste quantities are projected to also grow at a rate of four to five percent per year. The three primary operations will be sorting, compacting, and chipping. Estimated demands may require managing approximately 3,000 cyds (1,000 tons) per average operating day of Class I and Class III waste, with a maximum of 4,242 (1,500 tons) per day. This production rate of 77 to 108 tons per hour is well within the stated equipment capacities. All equipment specified for this site exceeds this initial anticipated average production rate. The equipment production capacities are 50 tons per hour for the sorter, 20 tons per hour for the cardboard compactor, and a minimum of 32 to 45 tons per hour for the wood chipper, depending on the type of material.

2.3 Management and Operations Personnel

Personnel trained for handling and processing of Class I, Class III and C&D material will be designated to operate the Facility. TRI will have certified operators on staff. The certifications for the current Facility Employees are provided in Appendix D [No change made to Appendix D - not included in this revision]. The Regional Manager is responsible for overseeing operators of TRI facilities within the region. Overall management of the Facility and general direction of the Facility operations will be the responsibility of the Facility Manager, whose office will be located on-site. The Facility Manager's responsibilities include:

- Managing environmental compliance for the Facility;
- Managing personnel requirements for the Facility, including hiring of supervisory and operating personnel, and providing for their training and orientation;
- Ascertaining the operation and maintenance needs for the Facility;
- Implementation of the Operation Plan for the Facility; and
- Implementation of Equipment Maintenance Plans.

In the absence of the Facility Manager, duties and responsibilities of the Facility will be performed by the Yard Supervisor. The Yard Supervisor's additional responsibilities include:

- Supervising the tipping floor;
- Supervising the placement of materials;
- Supervising heavy equipment operations; and
- Spotting loads.

Spotters will be employed on the tipping floor and as loader operators to pre-check each incoming load for concealed drums and other suspect waste and to handle sorting operations.

Support staff, such as sorters, gate attendant and equipment operators will be employed to facilitate operations at the Facility.

2.4 Hiring and Training Program

In-house and publicly available training will be obtained to ensure that operators and spotters are properly trained to operate the Facility and to identify and manage unacceptable materials entering the Facility. This plan is designed to fulfill the requirements of F.A.C. 62-701.320(15).

In-house training will be provided on an as-needed basis, generally when new operators and spotters are hired until the required publicly available training is feasible. Any in-house operator training, which includes an examination required by Section 403.716 F.S., will be administered by an independent third party. Publicly available training will be provided on a schedule, which complies with F.A.C. 62-701.320(15). This will include 16 hours of initial operator training and 8 hours of spotter training in the proper operation of the Facility and to provide instruction in identifying unacceptable materials, especially materials that qualify as a hazardous waste.

Once every three years, each operator will complete 8 hours of additional course work as a refresher to the initial training and to learn new operation procedures and information related to waste identification. Spotters will receive 4 hours of course work every three years as a refresher. The course work will be selected from courses available through the University of Florida TREEO Center that meet the needs of the Facility. Records documenting the above training will be made available for inspection by the Department Staff at the Facility and the office of the Facility Manager. A copy of the training log, training schedule, and a list of approved classes are provided in Appendix D. [No change made to Appendix D - not included in this revision].

2.5 Emergency Telephone Numbers

Emergency telephone numbers are included in Appendix E, the Hurricane Preparedness Plan. [No change made to Appendix E - not included in this revision].

2.6 Emergency and Contingency Plan

In the event of inclement weather, accidents, fires, and equipment breakdowns, the appropriate provision of the contingency plan will be implemented immediately. Amendments will be made to this plan if the Facility design, operations or maintenance procedures change.

Incidents, which might require the assistance of outside emergency response agencies, will be handled by conventional means. In the event of a natural disaster, all waste will be transferred off-site, operations at the Facility shall cease, and the Facility shall be evacuated until the Facility Manager has deemed the area safe for contingency operations. The evacuation plan includes gathering all personnel on the site at the main office to account for everyone's whereabouts before dismissing the employees and directing them to leave the property. If time allows, operations will be maintained on a limited basis (no incoming waste), dependent upon the Facility Manager's determination, to allow continued removal of waste and materials off the property. Appendix E presents the Hurricane Preparedness Plan for the Taft Facility prepared by TRI. [No change made to Appendix E - not included in this revision].

2.6.1 Inclement Weather Operations

Litter control at the Facility will occur on a continuous basis during operating hours as a component of the site maintenance program. Loose, stock piled materials will be secured to prevent litter during windy events. Litter fences will be installed around material storage areas and processing points, see Section 2.12, Litter, for further details.

2.6.2 Personal Injury Accidents

In the event of a personal injury at the Facility, the nature and extent of the injury will be assessed to the extent possible by the on-site personnel and emergency first aid techniques administered by appropriately trained personnel as necessary. If the injury appears to require professional medical attention, emergency assistance will be obtained. If the injury requires non-emergency medical attention, the injured party will be transported by conventional means to a place of professional medical care, i.e., hospital, emergency room, doctor's office, or clinic. In all cases, the Facility Manager will be notified.

2.6.3 Vehicular Accidents

In the event of a vehicular accident at the site, a determination will be made regarding the feasibility of safely moving the vehicle(s) under their own power. If possible, the vehicles will be moved out of the way of normal traffic flow. If the vehicles cannot move under their own power and the vehicles are interrupting traffic flow, the vehicles will be pushed out of the way using on-site equipment. The Facility Manager will be notified and arrangements to have the disabled vehicles removed will be made in accordance with the directions of the Facility Manager.

2.6.4 Fire

In case of a fire, fire hydrants are located near the processing area (as shown on the Site Plan, Sheet 1, Appendix H) and fire hose bibs are within the building. [No change to C-5, Appendix H - not included in this revision]. Water service on the site is supplied by the City of Taft. Fire extinguishers will also be located within the processing area and on all equipment. Fire security will be approved by the Orange County Fire and Rescue Division (see attached Fire Fighting Agreement).

Larger fires located anywhere on the site will be sprayed with water. The primary emergency phone number (911) and the Fire Department will be called immediately to respond to all fires.

During a fire, all placement of combustible waste in the immediate area of the fire will be suspended. Placement of combustible waste in the area of the fire can only resume after a thorough inspection by the Facility Manager.

In the event of a fire in or on Facility equipment, the following procedures will be followed by the equipment operator or other nearby Facility personnel:

- Activate the on-board fire suppression equipment;

- If possible, safely move the equipment away from the fire immediately, shut off the engine, and drop blade;
- Signal other operators in the immediate area of the fire via radio or by hand signals;
- Evacuate the vehicle; and,
- Extinguish any reoccurring fires with the fire suppression equipment on the Facility vehicles.

Charged and tested fire extinguishers will be located throughout the Facility, including the tipping floor, maintenance building, office and in some cases, the equipment (i.e., sorter, loaders and trucks) carry them.

There will be no open burning at the Facility. Any accidental fires that take more than one hour to extinguish shall be promptly reported to the County and FDEP.

2.6.5 Hot Loads

Any hot load (of authorized material) identified will be dumped in an area away from the active processing area, east side of the building on the concrete pad, see Site Plan. The load will immediately be covered with soil or sprayed with water if a fire is imminent. All run off from hot loads will be directed to the leachate collection trenches. The waste will not be processed until it has cooled completely, and the fire hazard has been mitigated.

2.6.6 Hazardous Waste and Spills

No hazardous wastes are to be accepted at the Facility. The Yard Supervisor, spotters, and equipment operator will be responsible for spotting concealed drums or other suspect wastes. In the event waste materials of questionable nature are unloaded before they are spotted by Facility personnel, the source of the waste will be recorded, and the Facility Manager shall be immediately notified to determine the appropriate action. Typical actions will include: 1) isolation of the waste; 2) temporary storage of small containers in 55-gallon FDOT drums; and 3) uncontainerized wastes shall be isolated in the building and the Department and a contractor, such as Safety Kleen, will be called to manage proper waste disposal. All suspect hazardous wastes will be removed from the Facility within 5 days.

Despite these precautions, if hazardous waste, fuel, or oil is spilled at the site, absorbent material will be placed to contain the spill. The Facility Manager will be notified immediately in the event a spill occurs. During the operational hours of the Facility, at least one person who is trained in the spill plan procedures will be on-site. In case of a spill, the following spill contingency plan will be implemented.

1. In case of, or as soon as any spill is observed, the source of the spill will be located and actions taken to prevent further spillage, if possible;

2. Valves, pumps, and electrical equipment will be shut off as appropriate;
3. Potential ignition sources will be removed from and restricted from entering the area of the spill;
4. Existing floor drains, sumps, and storm drains will be covered or a temporary dike constructed;
5. Absorbent socks/booms will be used where appropriate. A spill response firm will be contacted, if necessary, to assist in these activities. The spill response firm will provide sampling and analysis for spill cleanup materials;
6. All absorbed material or contained liquid will be removed and packaged in Florida Department of Transportation (FDOT) approved containers (55-gallon drums). Used absorbent materials should be packaged separately from liquids; and,
7. All containers used for the disposal of petroleum spill response debris will be labeled with type of waste determined by visual inspection and laboratory testing, and the start date of accumulation, and disposed in accordance with Federal and State environmental regulations. Debris from large spills will be removed immediately by the spill response firm. Debris from small spills will be kept in one 55-gallon drum, in the processing area, for no longer than 30 days.

The following spill clean up equipment will be maintained at the Facility:

- Spill response kit capable of containing a spill of at least 25 gallons will be located in the processing area. This kit includes absorbent spill pads, socks, and/or booms;
- An adequate amount of nitrile gloves, nitrile or rubber boots and other personal protective equipment;
- First aid kit and eye wash; and,
- Fire extinguishers.

2.6.7 Equipment Failure

Sufficient backup equipment will be available for equipment breakdowns and downtime for normal routine equipment maintenance. In case of major equipment failure (both primary and backup equipment fail) the following procedures will be followed:

1. Arrangements with contractors and rental equipment dealers will be made to furnish equipment on a short-term basis. Equipment will be available within one to two hours; and,
2. Applicable Facility operations will cease until equipment capacity is retained by renting the necessary equipment.

3. Electrical power loss will require the use of on-site 8000 kw generators to operate lighting and leachate pump systems.

2.7 Waste-Type Control Plan

Emphasis will be placed on controlling the types of waste unloaded within the Facility. Each load will be visually screened, to the maximum extent practical, by the Yard Supervisor for unauthorized wastes (batteries, drums, gas cans, oil cans, paint cans, etc.) before unloading.

A 4-foot by 8-foot painted sign is constructed at the entrance to the Facility, which indicates the types of waste allowed. The sign includes a notice that attempting to unload unauthorized waste will result in the delivery personnel having to reload the waste and remove the waste from the site.

TRI will have two full-time spotters/equipment operators, one on each tipping floor, when waste is received and processed, who will be trained in identifying hazardous waste and wastes unsuitable for acceptance at the Facility.

In the event waste not suitable for processing within the Facility is observed by any spotter, sorter, or equipment operator, the spotter, sorter, or equipment operator will be responsible for isolating the suspect waste. The rejected waste will be loaded into the proper transport vehicle for disposal off-site and recorded in a log, see Log Form in Appendix F [No change made to Appendix F - not included in this revision].

Reasonable effort will be made to prevent the delivery of unauthorized waste to the Facility. In the event unauthorized waste is delivered to the Facility, it will be handled in accordance with applicable laws. Unauthorized waste will not be processed at the Facility.

Pressure-treated lumber (i.e. treated with chromated copper arsenate (CCA)) will be recovered from the waste stream but not for chipping or mulching; it will instead be transported for proper disposal. The CCA treated wood will be either identified by waste type (fencing or decking) or by the distinctive greenish color.

2.8 Weighing and Measuring Incoming Waste

All incoming and outgoing waste will be weighed on a calibrated scale prior to processing at the Facility. TRI will retain all records at the Regional Facility's administrative office for a minimum of three (3) years.

The records will be available to the County and FDEP personnel upon request. Report outputs can include daily, month-to-date and year-to-date totals of waste received.

2.9 Signs and Vehicles Traffic Control

Ingress and egress to the Facility will be limited to 7th Street. A sign will be located at the entrance gate stating Facility name, hours of operation, acceptable/unacceptable wastes, and emergency phone numbers. Additional interior signs will be used to direct traffic to the appropriate tipping areas. The entrance road exists from the Facility entrance gate located near the southeast property corner and extends through the scale to the building and around to the exit located at the southeast corner. Transfer trailers will enter near the southeast corner, load at the building and exit at the southeast corner of the site, crossing the scale and picking up bills of lading. The entrance and exit roads will be accessible in all weather conditions. Lockable gates will control access to the site. Vehicle traffic flow is depicted on Figure 3 [No change made to Figure 3 - not included in this revision].

TRI personnel will direct incoming truck traffic to expedite safe movement of vehicles within the Facility. Traffic will be directed as necessary to prevent dangerous traffic conditions and to assure that any back up of in-bound vehicles is kept off of the public right-of-way.

2.10 Odor and Ventilation

Action shall be taken to prevent fugitive odors and particulates from creating off-site nuisance conditions in compliance with Orange County Code 38-1452. These steps include the following:

1. Rejection of unacceptable waste that would create odors;
2. Removal from the site of putrescible or other rejected waste that could cause odor problems within 48 hours;
3. Cleaning of the MSW tipping floor daily;
4. Active management of recycled materials;
5. Use of odor masking agents will be applied by misters at all Facility building openings and roof line (see Appendix G) [No change - not included in this revision].
6. Wall mounted 3 hp ventilation fans are to be installed in the existing Facility building to insure interior ventilation, see Appendix G for fan specifications and drawings M-1 and M-2, Appendix H [No change - not included in this revision].

2.11 Dust

The following steps will be taken to minimize fugitive dust emissions at the Facility:

- The Taft Facility will comply with Orange County Code Section 38-1452 that prohibits dust levels in excess of code limits. Fugitive dust emission will not be allowed off-site from transport, loading, unloading, or processing operations. All primary roadways and loading areas are to be paved.

- Sprinkling unpaved roadways, stockpile areas, and processing areas with water as necessary.

2.12 Litter

The site will be inspected daily for litter. Litter will not be allowed to accumulate and will be picked up daily (or as often as necessary) and put into appropriate containers for proper disposal. Litter fencing will be constructed to control blowing litter around the material storage areas and building, wherever feasible. TRI will collect litter weekly along 7th Street access road. Screen cages are proposed to be added to conveyor transfer points. The wood mulch storage area will be inspected daily to ensure that mulch product is maintained within designated areas of the property.

2.13 Vector Control

The following steps will be taken to minimize vectors at the site:

- Unacceptable wastes will not be accepted at the recycling Facility;
- Rejected wastes will be promptly removed and disposed of at an appropriate disposal facility. Rejected waste will be removed within one week;
- Class I waste will be disposed off-site within 48 hours;
- Non-active portions of the site will be kept mowed and free from debris accumulation; and,
- If needed, pesticides will be used in accordance with Florida Department of Agriculture rules and standards.
- Waste tire storage and processing area will be monitored for the presence of vectors including mosquito control and eradication as necessary.

2.14 Hours of Operation

The Facility is presently open for operation 24 hours per day (Monday-Friday), midnight - 7:00 p.m. (Saturday), and 7:00 a.m. to 7:00 p.m. and 9:00 p.m. to midnight (Sunday). Receipt or shipment of waste, and waste processing, are limited to within the Hours of Operation. Activities such as maintenance and cleaning are not considered operation and may be scheduled at the facility's discretion. Hours of operation may be extended by special order to address storm debris processing. During non-day light hours, lighting will be provided by 400-watt building and yard lights in the processing area, see Plan Sheet E-1 to E-3, Appendix H [No change - not included in this revision].

2.15 Access Control and Site Security

Access to the Facility will be controlled by a (5-foot to 7-foot) chain link fence and concrete block wall. Security will be maintained by locking the entrance and exit gates during any times

the Facility is not operating. Semi-annual inspections of the wall and fence will be conducted to identify locations in need of repair.

2.16 Equipment and Operation Procedures

The Facility tipping floor operation is expected to operate with the following equipment:

- Front-End Loader (2)

The recycling operation is expected to operate with the following equipment:

- Fork Lift - Primary (1);
- Front-End Loader - Primary (1);
- Front-End Loader - Back-up (2);
- Excavator - Primary (1);
- Tromell Screen - Primary (1);
- Sorting Line - Primary (1);
- Compactor - Primary (1);
- Horizontal Portable Grinder - Primary (1);
- Transfer Trucks - Primary (1);
- Misc. Roll-Off Containers/Bins (32);
- Portable Waste Tire Shredder (1).

All of the equipment on the site will be owned by TRI. Details on the loaders, excavator, compactor, tub grinder (chipper), and tire shredder are provided in Appendix G [Only details provided for the portable waste tire shredder, no change to other equipment].

Where appropriate, equipment will be fitted with safety cabs, fire extinguishers, and radio communication equipment. The radio equipment will also be stationed in the administrative offices located on-site, along with telephone service.

The on-site administrative offices will include potable water, sanitary facilities, emergency first aid supplies, telephone, fax, and electricity. The building also will provide shelter for employees during inclement weather conditions.

Maintenance to the equipment will be performed by an off-site mobile contractor.

2.17 Notice of Violation

The Facility Manager will provide immediate notice to the Regional Manager, in the event TRI is notified by Federal, State or local governmental agencies or officials regarding violations of any permits or approvals held by TRI relating to the operation and use of this Facility. The Regional Manager will respond appropriately to the various agencies, and immediately correct the non-compliance item.

SECTION 3

CLASS I AND III OPERATIONS

3.1 Purpose

The Facility processes the incoming material to remove that portion of the waste that has an end-use market. Residuals from the recycling Facility are disposed of at appropriate disposal facilities.

3.2 Start Up and Shut Down Procedures

Start-up procedures will consist of the Facilities Manager inspecting the processing and storage areas for safety purposes. Equipment will be turned on and allowed to warm up if necessary. Storage bins will be inspected to verify ample storage capacity for the day's activities. In the event that the storage capacity is inadequate, additional sorting will cease until the existing stored materials have been removed for resale.

The Facility plans to clear the tipping floor of Class I wastes each day, to the extent possible. However, the Facility anticipates receipt of Class I waste from evening pick-up routes and therefore may have Class I waste on the tipping floor at any given time. Under no circumstances will any Class I wastes remain on the tipping floor for more than 48 hours. Odor control, such as odor masking agents will be used if deemed necessary. Any unprocessed Class III material will be left on the tipping floor for next day's processing. The processed material will be contained within the confines of the designated storage bins.

3.3 Sorting Operations

Class I waste will only be accepted in the tipping area designated for Class I wastes. Class III and C&D wastes will be accepted only in the designated bays in the Facility building, see Figure 3 [No change made to Figure 3 - not included in this revision]. Care will be taken not to commingle wastes. If wastes are mixed, the waste must be disposed of as the highest category of wastes, i.e., Class III mixed with Class I, will be disposed of at a Class I landfill.

Within the Class III processing area, an excavator and front-end loaders equipped with buckets or clamps will place the material into a sorting machine. Personnel will be available to hand sort the materials once the machine has removed the fines and reduced the material size. Sorted material will be placed in appropriate bins for recycling or transport vehicles for disposal off-site. Bins will be used in the sorting process (glass, paper, plastic, metal, wood, concrete, cardboard, and RSM (fines)). RSM will be sampled in accordance with the FDEP's guidelines for reuse, or disposed of at a Class I landfill. It will be kept in a covered bin, as shown on the Site Plan.

Personnel will operate on an 8 to 10 hour shift with a lunch break in between and will be on the tipping floor at all times when waste is received or processed.

3.4 Leachate Collection and Disposal

The Class I tipping floor of the building has a minimum 6-inch impervious concrete floor and leachate collection system and will be washed daily, or as necessary. The leachate collection clean-out covers will be opened during washing. Water shall be directed into the building from the open wall area (east side) to ensure that none of the water leaves the building. Leachate will be collected from this area and the transfer truck scale tunnel through drains and will be discharged to a lift station and storage tank. The trench drains or catch basins will be cleaned daily to prevent clogging. The Class III concrete tipping floor is enclosed within a 150-foot by 75-foot portion of the building. No water will be involved in the processing of the material. Leachate collection is proposed in this area to collect any stormwater that may enter due to the open door on the east side and liquids that may leak from the vehicles. To keep this area clean and free of excess debris, all open floor areas in this portion of the building will be swept weekly. The leachate storage tank will have a high level alarm and will be pumped out by a permitted industrial waste hauler, as needed. Leachate disposal will be at a State permitted wastewater disposal facility, such as IWS, Jacksonville, FL. Leachate generation rate estimate is in Appendix G [No change made - not included in this revision], and see Clyde Earls & Associates sheets for details, Appendix H [No change made - not included in this revision].

3.4.1 Class I Upgrades

The Class I tipping floor area (bays 3, 4 and 5) was upgraded with leachate controls by the addition of a catch basin with pump to the leachate storage tank on the west of the building. Concrete curbs will also be added to the bay door floors to contain any liquids. The Class I and III/C&D concrete tipping floors will be separated by an 8-foot concrete block wall within the existing Facility. Bays 1 and 2 will be designated for Class III and C&D wastes only.

Manifests of all waste leachate removals will be maintained by TRI.

3.5 Processed/Unprocessed Material Disposal Plan

The processed (recycled/recovered) material is sold to a variety of different companies for many different uses. The most common uses are described below. After processing, wood waste will be chipped and sold for fill or mulch. Concrete will be crushed offsite and sold. Cardboard and paper will generally be sold to a paper mill. Metal will be sold to scrap metal dealers, and glass will be crushed offsite and sold for fill material. Plastic will be sold to companies capable of recycling mixed plastic and the recovered screened material will be sold for daily cover material. The quantity and maximum storage time for each material is listed in the table in Appendix B.

Rejected Class I waste will be placed into larger transport trailers for disposal at a Class I landfill. Unprocessed Class III materials will be placed in a waiting transport vehicle for later disposal at a Class III landfill. Each type of reject waste will be stored in separated bin areas at the north end of the Facility building/loading area, see Figure 3 [No change made to Figure 3 - not included in this revision].

3.6 Equipment Operations and Maintenance Manual

Operations and maintenance for each piece of equipment will be in accordance to manufacturer's recommendations and manuals.

3.7 Safety Procedures for Vehicles

TRI personnel will direct incoming truck traffic to expedite safe movement of vehicles within the Facility. Traffic will be directed as necessary to prevent dangerous traffic conditions and to assure that any back up of in-bound vehicles is kept off of the public right-of-way.

3.8 Stormwater Management

The site has a stormwater management system that controls the 25-year, 24-hour storm event prior to any discharge to Boggy Creek Canal.

The Facility Manager will perform weekly inspections of the stormwater management system. Any required maintenance or repairs will be made within seven days. The current FDEP stormwater permit number is ERP48-0179138-003.

3.8.1 Stormwater Monitoring

The TRI Facility also has a Multi-Sector Generic Permit under the FDEP NPDES stormwater program under permit number FLR05F457. This permit requires the implementation of a stormwater pollution prevention plan, stormwater pond inspections and records, annual submittal of discharge monitoring reports (DMR) by March 31st to the FDEP for the previous year, and routine stormwater monitoring at two year intervals.

3.9 Record Keeping/Submittals

Record submittal requirements for the Recycling Facility will be in compliance with the County and the FDEP requirements for these facilities.

Operational records shall include a daily log of: 1) quantities and types of solid waste received; 2) quantity of solid waste processed; 3) quantity of solid waste stored; and 4) quantity of solid waste removed from site for recycling or disposal. These records/logs will be compiled monthly and made available for County and Department inspection at the Facility.

The reporting requirements include submitting a report annually (by April 1) which summarizes the amounts and types of waste received and the amounts and types of wastes disposed of or recycled. The annual report will be submitted on the FDEP Form 62-701.900(7), per F.A.C. 62-701.710(9), see Appendix F. In addition, recovered materials reporting shall be done on Form 62-701.900(27) and submitted to the FDEP by April 1st each year. A quarterly report will be submitted to the County to record the solid waste type and quantity managed at the Facility, including recycled, recovered and disposed materials. The NPDES permit requires an annual DMR to be submitted to the FDEP, see Appendix F [No change made to Appendix F - not included in this revision].

SECTION 4

WASTE TIRE PROCESSING FACILITY OPERATIONS

4.0 Waste Tire Site and Processing Facility Operations

In October 2009 TRI submitted an application to accept, store, and process waste tires at the Facility, as authorized by under Chapter 62-711, Waste Tire Rule, F.A.C. Waste tires accepted, stored, and processed at the Facility will be transported to Waste Service, Inc.'s (WSI's) JED Solid Waste Management Facility, St. Cloud, Florida, for disposal and/or use as initial cover. Rule 62-711.400(3), F.A.C allows waste tires that have been cut into sufficiently small parts, to be disposed of or used as initial cover in a permitted Class I landfill. For use as initial cover, a sufficiently small part means 70 percent of the waste tire material is cut into pieces of four square inches or less and 100 percent of the waste tire material is 32 square inches or less. For purposes of disposal, a sufficiently small part means that the tire has been cut into at least eight substantially equal pieces. Based on market conditions, TRI may transport the processed tires to other authorized end users for alternative recycling uses or disposal at other permitted solid waste management facilities.

4.1 Maximum Storage limits

Based on the data presented in Appendix I, the maximum storage limits of whole waste tires, processed tires, and residuals are established for the Facility in the following summary:

Summary of Maximum Storage Volumes and Weights

10 - 40 cy Roll-off Containers for Whole Waste Tire Storage

Whole Waste Passenger Tires	6,000 Tires	400 cy	67.5 tons
Whole Waste Heavy Truck Tires	1,225 Tires	400 cy	67.5 tons

6 - 40 cy Roll-off Containers for Processed Tire Storage

Processed Tires	N/A	225 cy	67.5 tons
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1 - 40 cy Roll-off Container for Tire Residual Storage

Residuals	N/A	40 cy	10 tons
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TRI plans to store whole waste tires in 40-cubic yard (cy) roll-off containers stationed north of the wood recycling area as shown on the attached Site Plan (Sheet 1, Appendix H). The number of whole waste tires stored at the Facility at any one time will depend on the type of tire (passenger or heavy truck) and the number of 40 cy roll-off containers that are stationed in the designated storage locations. The dimensions of a 40 cy roll-off container are approximately 20'L x 8'W x 6'T. As shown on Sheet 1, approximately 17 containers can be neatly stationed in

the area shown, while maintaining a minimum 25-foot fire lane. This will allow for 10 containers to store whole tires, 6 containers for processed tires and 1 container for residuals. Waste Tire Processing Calculations and background information is provided in Appendix I.

The waste tire processing equipment used by TRI will be a portable Saturn Model 72-44BGHT-300HP Shredder or similar equipment. Information for this shredder is provided in Attachment G. The shredder's reported single pass through-put capacity is 20 tons per hour. TRI plans to process the waste tires in the general location shown on Sheet 1. The shredder equipment is equipped with conveyors that will allow the processed materials to be loaded directly into the designated containers or a transfer truck trailer. Processed tires and any residuals produced during processing will be directly loaded into 110 cy transfer truck trailers or 40 cy roll-off containers. Processed tires shall meet the minimum size requirements of Rule Section 62-711.400(3)(b), F.A.C. Once a container is fully loaded it will be immediately transported to the designated end use location or will be removed from the Facility within 48 hours. It is anticipated that shredder mobilization, processing, cleanup, and demobilization can be completed in one day for the maximum storage volume of whole tires. Site equipment will be used to load any processed or residual materials that may fall onto the asphalt during processing operations.

At least 75 percent of the whole tires, used tires, and processed tires that are delivered to, or are contained on, the TRI waste tire processing facility at the beginning of each calendar year shall be processed and removed for disposal or recycling from the facility during the year.

4.2 Storage Requirements

As shown on the Site Plan (Sheet 1, Appendix H), TRI will store whole waste tires and processed tires in roll-off containers on the asphalt area located north of the wood recycling area. TRI will mobilize the portable shredding equipment when a sufficient supply of whole tires is collected and perform shredding operations in that location. The TRI on-site stormwater retention pond is located along the northwestern boundary of the Facility which discharges in the design 25-year storm to Boggy Creek Canal. To satisfy the outdoor storage requirements of Rule 62-711.540(3), TRI proposes to store whole waste tires in 40 cy roll-off containers. Storage in roll-off containers will ensure water quality standards are maintained at the Facility. The roll-off containers will be staged as shown on Sheet 1 to allow unobstructed access for emergency vehicles. Additionally, the Facility will implement Best Management Practices (BMPs) at the waste tire storage and process area in accordance with the Facility's Stormwater Pollution Prevention Plan and described in the following section.

4.3 Best Management Practices

Typical BMPs will include the following:

- Cleanup and sweeping of the asphalt pavement after processing is completed;
- Installing silt infiltration devices and oil absorbent socks around nearby stormwater inlets;

- Monitoring the surrounding asphalt surface area and the stormwater retention pond for the presence of oil sheens that could be attributable to the tire storage and processing operations; and
- Monitoring stormwater discharge at the retention pond outfall for evidence of non-authorized discharges.

In addition to the above-referenced storage and BMPs, additional monitoring and inspections required by the Facility's NPDES permit will ensure water quality standards are maintained at the Facility.

4.4 Mosquito Control Plan

The waste tire storage and processing area will be monitored for the presence of vectors including mosquito control and eradication as necessary. TRI will monitor the tire storage area on a daily basis for mosquito development. Insecticide applications will be performed by a local pest control company as necessary. In accordance with Orange County Code, any storage of waste tires for longer than 15 days will require implementation of a mosquito control program if there is the possibility that standing water will accumulate inside the tires.

4.5 Transportation of Waste and Processed Tires

Rule 62-711.520 requires any waste tire collector engaged in collecting or transporting waste tires for the purpose of storage, sale, recycling, reuse, disposal, or processing to be properly registered with FDEP. Additionally, Rule 62-711.400(5) requires anyone that contracts the services of a waste tire collector for the transportation, disposal, or processing of waste tires to ensure that the collector is registered with the FDEP or exempt from registration requirements. TRI plans to contract the services of a registered waste tire collector to transport processed tires to the designated recycling or disposal entity. TRI will maintain records of waste tire collectors and volumes as described below.

4.6 Record Keeping and Reporting

In accordance with Rule 62-711.530(4) F.A.C., TRI will record and maintain for three years the following information regarding waste tire acceptance, storage, and processing. Records will be made available at the Facility for inspection by the FDEP during normal business hours.

- a) For all waste tires shipped from the Facility:
 - the name and waste tire collection registration number of the waste tire collector who accepted the waste tires for transport
 - the quantity of waste tires shipped with that collector
- if the waste tires were shipped with a person who is not a waste tire collector:
 - the number of tires shipped
 - the person's name, address, and telephone number
 - the place where the waste tires were deposited;

- b) For all waste tires received at the Facility:
 - the name and waste tire collector registration number of the collector who delivered the waste tires to the Facility
 - and the quantity of waste tires received from that collectorif more than five waste tires were delivered by a person who is not a waste tire collector
 - the number of tires delivered
 - the person's name, address, and telephone number; and,
- c) For all waste tires removed from recapping:
 - the quantity and type removed
 - the name and location of the recapping facility receiving the tires.

In accordance with Rule 62-711.530(5) TRI will submit quarterly reports to the FDEP and Orange County that summarize the information above. The reports will be submitted by the 20th of the month following the close of each calendar quarter. The reports will be submitted on Form 62-701.900(21) and will also include the information listed below:

- a) The facility name, address, and permit number;
- b) The quarter covered by the report;
- c) The total quantity , by category, of waste tires received at the Facility during the quarter covered by the report;
- d) The total quantity, by category, of waste tires shipped from the facility during the quarter covered by the report;
- e) The total quantity of waste tires processed during the quarter;
- f) The total quantity, by category, of waste tires located at the facility on the last day of the quarter; and
- g) A list of all dates on which one or more category of waste tires exceeded the storage limit, which category was in excess, and how this condition was relieved or will be relieved.

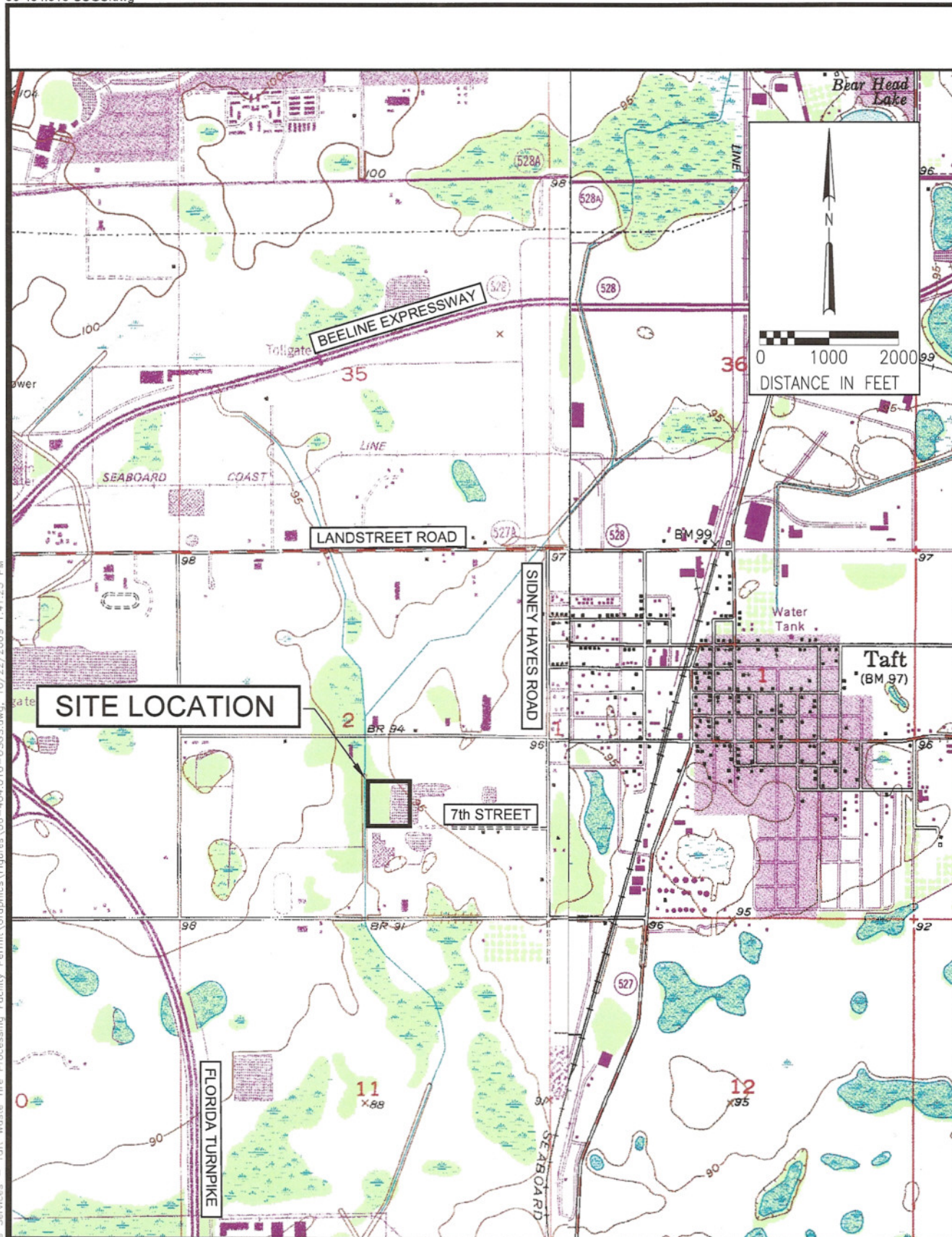
SECTION 5

CLOSURE PLAN

The closure of the Facility will include removal of the operational equipment, which is completely mobile by design. Any remaining waste or recovered materials will be removed and hauled to an appropriate processing site or landfill. To protect the County and State from bearing the cost of potential cleanup activities, a surety bond, or similar financial assurance mechanism, will be posted at the time of permitting, and updated annually, by March 1st. The purpose of the bond is to provide for closure of the site, if the permittee does not perform.

The approved closure steps include notifying the County and the Florida Department of Environmental Protection (FDEP) at least 180 days prior to closure. The cleanup is to be completed within 30 days of the final closure date. Closure will be completed within 180 days after the final waste load is received. At that time, a closure report is to be issued to the County and FDEP to allow time for a site inspection and closure certification.

FIGURES



SOURCE: USGS LAKE JESSAMINE AND PINE CASTLE, FLORIDA, 7.5 MINUTE QUADRANGLE MAP, 1980

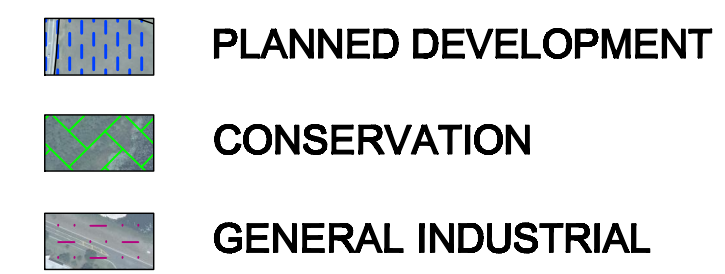
TAFT RECYCLING, INC.
ORANGE COUNTY, FLORIDA

PROJECT NO. 06-404.010

SITE LOCATION MAP

FIGURE

1



AERIAL PHOTOGRAPH / ZONING MAP

APPENDIX A
AUTHORIZED/UNAUTHORIZED
MATERIALS
(no change, not included)

APPENDIX B
MATERIAL DISPOSITION

APPENDIX B

MATERIAL DISPOSITION TAFT TRANSFER STATION AND MATERIAL RECOVERY FACILITY TAFT RECYCLING, INC. ORLANDO, FLORIDA

Recovered Material or Unprocessed Waste Type	Maximum Storage Volume	Density (lbs/cy)	Covered or Uncovered	Method of Storage	Disposal / Recycling Location	Maximum Hold Time
Unprocessed Class III	1,500 cy	500	Covered	Tipping Floor	Class III Landfill	1 Week
Unprocessed Class I Putrescible	2,750 cy	450	Covered	Tipping Floor	Class I Landfill	48 Hours
Recovered Asphalt/Concrete	40 cy	4,000	Uncovered	Outside Roll-off Container	Re-Sale Public	6 Months
Recovered Roofing Tiles	20 cy	2,000	Uncovered	Outside Roll-off Container	Re-Sale Public	6 Months
Recovered Cardboard (Baled)	1,000 cy	650	Uncovered	Outside Storage Yard	Re-Sale Public	6 Months
Recovered Paper (Baled)	100 cy	750	Uncovered	Outside Storage Yard	Re-Sale Public	6 Months
Recovered Metal (Ferrous, Steel, Pipe & Misc.)	80 cy	1,000	Uncovered	Outside Roll-off Container	Re-Sale Public	6 Months
Recovered Metal (Aluminum Cans)	40 cy	75	Uncovered	Outside Roll-off/Sorting Bay	Re-Sale Public	6 Months
Glass (Whole Bottles)	60 cy	600	Uncovered	Outside Roll-off/Sorting Bay	Re-Sale Public	6 Months
Plastic (Mixed Loose)	80 cy	35	Uncovered	Outside Roll-off/Sorting Bay	Re-Sale Public	6 Months
Wood	1,000 cy	365	Uncovered	Outside Storage Yard	Re-Sale Public	6 Months
Whole Tires	400 cy	337	Uncovered	Outside Roll-off Container	Processing Facility	1 Year
Processed/Shredded Tires	225 cy	600	Uncovered	Outside Roll-off Container	Class I Landfill	48 Hours
Processed Tire Residuals	20 cy	500	Uncovered	Outside Roll-off Container	Class I Landfill	48 Hours
Recycling Residuals (RSM)	100 cy	1,000	Covered	Outside Roll-off Container	Class I Landfill	6 Months
Waste Oil/House Hold Haz. Waste - Rejected	55 gallons	8 lbs/gal	Covered	Inside Building	Safety Kleen or Other Haz. Waste Recycler	30 Days

Notes: Maximum storage volumes for Unprocessed Class I, III and C&D are based on estimated peak daily projection as noted in Section 2.2.1 of Operation Plan. Total of all equal approximately 4,250 cy (converted 1,125 tons). Unprocessed cardboard and paper included in Class I and III volumes. Volume-to-weight factors for recyclables are provided as an attachment. Revised information shaded.

Volume-to-weight factors: recycling's manifest density

by Steve Apotheker
Resource Recycling

Proper use of material density factors allows for a more complete understanding of collection and processing operations.

How close is a state to meeting its recycling goal? How much space is needed to stage collected curbside recyclables for processing? How much space is required to store the baled, compacted and crushed materials before shipment to markets? How much material is collected each month from residences, businesses and institutions? These questions (and many others) are asked by recycling collectors, processors and coordinators in the private and public sectors.

Many of these questions can be answered more thoroughly by understanding the densities of recyclable materials that are realized under different operating conditions (see Table 1). In some cases, individual units are converted to weights (see Table 2).

An attempt has been made to select the more accurate conversion factors published in the current literature and to evaluate them. While these tables provide a sample of the approximations used by other sources, it is always better to attempt to derive conversion factors that reflect the geometry of specific storage containers and individual operating conditions, such as a dry climate versus a wet one (see Table 3).

Determining material density factors

An experiment done by Browning-Ferris Industries in 1987 at the Newby Island landfill in San Jose, California looked at the effect on material densities of a compaction process similar to that achieved during landfilling. Corrugated containers, white goods, wood and yard waste were delivered loose in separate bins. A weight was obtained and the material was dumped into separate 40-cubic-yard pits. Residential solid waste followed the same pattern except it was delivered in a 37-cubic-yard side-loader compactor truck.

A landfill compactor went over the materials in the five pits until each pit space was completely full. In general, the compacted material densities increased by a

factor of three to five over the original delivered densities. Corrugated containers and white goods showed the greatest proportional increase in density, and wood the least.

A study by Franklin Associates, Ltd. for the U.S. Environmental Protection Agency developed densities for a wide range of materials as compacted in landfills (see Table 4).

Aiding state planning

To aid local governments in preparing annual reports on collected volumes, both New Jersey and Minnesota have developed their own sets of material conversion numbers. The conversion figures are usually obtained from trade associations and processors that handle the specific material, as opposed to actual measurements made by state staff. A designated set of conversion numbers promotes consistency in reporting. To minimize confusion by the participating agencies, a specific conversion number for each scrap material is given rather than providing a range of densities.

The information accumulated from these reports assists the states in assessing progress toward legislated recycling goals. The recovered tonnage reports provide valuable information on available supply for companies trying to make market development decisions. In the case of New Jersey, the recovered tonnages derived from the conversion factors are used to calculate state rebates to local governments.

One drawback of using conversion numbers to measure material recovery is the risk of misrepresenting the actual amount of material diversion that is achieved if the density factors are simply increased from one year to the next.

Helping the local collector

In Champaign, Illinois, the Community Recycling Center uses volume conversion numbers to keep track of 10 materials that

■ Table 1 — Material density factors

Material	Density (pounds per cubic yard)	Source	METAL			Food		
PAPER			Aluminum cans			Kitchen waste		
Newspaper			Whole	74	1, 4	Solid fats & liquid	800-900	2
Drum	415	8	Whole	90	6, 7, 14	fats drum	1,485	1, 4
Loose, bin	360-500	4	Flattened	250	1, 4, 5	Grass clippings		
Loose, bin	475	6	Flattened	175	6	Loose	400	1
Loose, stacked	600	1	Flattened	135-215	14	Loose	665-740	4, 9
Baled, downstroke	650	8	Baled	350-540	14, 16	Compacted	1,050-1,110	4, 9
Baled, downstroke	775	15	Densified	1,080	14	Leaves		
Baled, horizontal,			Shreds	400	16	Loose	250	1
single ram	700	15	Ferrous cans			Loose	400	4, 9
Baled, horizontal,			Whole	150	1, 4, 6	Vacuumed	350	1
double ram	800	5, 15	Drum, one-third			Vacuumed	500	9
Corrugated			are flattened	235	8	Vacuumed	700	4
containers			Flattened	350-400	8	Compacted	450	1
Loose	100	3, 11	Baled	850	1, 4, 5, 6	Compacted	665	9
Compacted,			Densified	1,600	14	Yard waste		
packer truck	200-300	11	Household batteries			Loose (2)	296	3
Compacted,			Drum	2,150	13	Loose	600	2
landfill (1)	508	3, 4	White goods			Compacted	1,037	3
Baled,			Uncompacted	199	3	CONSTRUCTION & DEMOLITION		
downstroke	450-520	5, 8, 15	Compacted,	994	3	Asphalt, milled,		
Baled, horizontal,			PLASTICS			ripped, crushed	1,380	4
single ram	650	15	PET soda bottles			Concrete, brick		
Baled, horizontal,			Whole	34	6, 7	& block	4,000	4
double ram	750	5, 15	Whole, some			Wood waste		
High grade			flattened	30-45	10	Pallets	286	4
Ledger, loose, bin	300-400	6	Flattened	75	6	Other than		
Mixed ledger and			Baled	400	10	pallets	364	4
computer			Baled and			Loose dimensional		
printout, drum	290	8	perforated	600-700	14	lumber	244	3
Ledger, baled	700-750	5, 8, 15	Granulated	500-600	8	Compacted dimensional		
Mixed paper, loose	150	2	HDPE			lumber	695	3
GLASS CONTAINERS			Natural, whole	25-30	6, 10	OTHER MATERIALS		
Whole			Natural,			TEXTILES		
Bin	500-600	1, 4, 6, 8	flattened	65	6	Loose	240	13
Drum	500-550	8	Colored, whole	45	6, 10	Baled	480	13
Flint bottles	500-515	6, 8	Colored,			COMMINGLED RESIDENTIAL		
Green bottles	550-650	6, 8	flattened	90	6	RECYCLABLE CONTAINERS		
Amber bottles	540-550	6, 8	Baled	400	10	Glass, plastic and		
Semi-crushed			Granulated	500-600	8	metal containers	140-220	6
(manually broken)			ORGANICS			RESIDENTIAL		
Bin	1,000	6	Brush			SOLID WASTE		
Drum	1,080	1, 4	Loose	250	4	Compacted,		
Crushed, maximum			Loose	350	9	sideloader	456	3
size 1½"			Chipped,			Compacted,		
(mechanically broken)			3" screen	550-650	9	landfill density	1,264	3
Bin	1,800	6	Chips	500	1	(1) A standard landfill compactor was used to		
Drum	1,980	1, 4	Compost			compress the material to a density repre-		
Furnace ready,			Raw	350	13	sentative of a landfill.		
maximum size			20 percent			(2) Primarily non-woody material with pre-		
¼"	2,700	6	moisture	1,000	9	ponderance of weeds and dried vegeta-		
			70 percent			ble matter. Grass clippings were not a		
			moisture	1,900	9	major contributor. This density could be		
			Finished	1,400	13	considered light for a normal composition		
						of yard waste.		

Sources:

1. Indiana Institute on Recycling, Indiana State University, Terre Haute, Indiana, 1990.
2. Compost Management Associates, *A Field Examination of the Cost-Effectiveness, Waste Diversion Potential, and Homeowner Acceptance of Three Different Backyard Composting Units*, Regional Municipality of Durham, Ontario, Canada, April 1990.
3. Browning-Ferris Industries, *Waste Compaction Study for the Recyclery at Newby Island*, San Jose, California, October 1989.
4. Office of Recycling, Department of Environmental Protection, Trenton, New Jersey, 1990.
5. Garten Foundation, Salem, Oregon, 1991.
6. "Post-consumer material densities," Resource Recycling Technologies, Inc., Vestal, New York, March 1991.
7. Esther R. Bowring, "A comparison of commingled collection containers," *Resource Recycling*, April 1990.
8. Community Recycling Center, Champaign, Illinois, 1991.
9. Organic Recycling, Valley Cottage, New York, 1991.
10. Council for Solid Waste Solutions, *How to Implement a Plastics Recycling Program*, 1991.
11. Steve Apotheker, "Small generators boost old corrugated recycling rate," *Resource Recycling*, April 1990.
12. Jeffrey Morris, "Mixed paper recycling practices in North America," *Resource Recycling*, January 1991.
13. Minnesota Office of Waste Management, St. Paul, Minnesota, 1991.
14. CP Manufacturing, National City, California, 1991.
15. Cotton Equipment, West Linn, Oregon, 1991.

■ Table 2 — Weight conversion numbers

Material	Unit	Weight (pounds)	Source
Battery, motor vehicle	One	33	1
		36	3
Used motor oil	Gallon	7	1
Pallet	One	7.5	2
		40 (range is 30 to 100)	1
Tires			
Passenger	One	20	1, 3
Truck	One	60	3
	One	90	1

Sources:

1. Office of Recycling, Department of Environmental Protection, Trenton, New Jersey, 1990.
2. Community Recycling Center, Champaign, Illinois, 1991.
3. Minnesota Office of Waste Management, St. Paul, Minnesota, 1991.

are collected from over 100 buildings at the University of Illinois and over 200 businesses. This minimizes the labor and capital expense of keeping the loads separate and weighing them back at the site.

Instead, average weights are determined for a given location by applying the density factors to the volume of the drum,

bin or other designated containers holding the materials. Drivers keep records on how much volume (e.g., half a drum of glass bottles) of a material is collected at a given location. A computer program converts the volumes to weights.

Every six or 12 months, the calculated weights derived from collected volumes are matched up to the actual marketed

weights (less net inventory). Any discrepancy between the collected and marketed weights allows CRC to fine-tune a volume conversion number. Uniform, bulk materials, such as glass bottles and old newspapers, are rarely off more than 1 or 2

percent. Office paper collection figures require more detail, since a preponderance of denser computer printout paper can skew the results at a given location.

Using a volume-based collection approach and conversion numbers, CRC has been able to provide each business and University building with an estimate of how much material has been collected from its location. Since CRC is a charitable organization, each business is able to take a tax deduction for the amount of recyclable materials "donated."

In some areas of the country, trucks are being developed with built-in scales that allow the weight from each location along a given route to be recorded. Industrial Waste Service, a subsidiary of Attwoods, Inc., uses such a truck to pick up recyclables from over 300 schools in the fourth largest school system in the U.S., in Dade County, Florida.

Continues

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Volume-to-Weight Conversions for Recyclable Materials for use with the Municipal Recycling Data Sheet

Material	Density	Sources
Paper		
<i>Newspaper</i>		
Loose, unbaled	445 pounds / cubic yard	1,2,3
Compacted	800 pounds / cubic yard	2,3
Hand stacked	35 pounds / 12 inch stack	2,3
<i>Corrugated Cardboard</i>		
Loose, unbaled	200 pounds / cubic yard	1,2,3
Compacted	460 pounds / cubic yard	2,3
<i>Other Paper</i>		
Telephone Books	250 pounds / cubic yard	4
Mixed Paper	490 pounds / cubic yard	1,3
Containers		
<i>Commingled</i>		
Cans, Glass & Plastic	180 pounds / cubic yard	1,2,3
Cans & Glass	270 pounds / cubic yard	1,2,3
<i>Glass</i>		
Whole Bottles	620 pounds / cubic yard	1,2,3
Crushed-semi (manually)	1,175 pounds / cubic yard	2,3
Mechanically Crushed	1,840 pounds / cubic yard	2,3
<i>Steel/ Tin Cans</i>		
Whole	150 pounds / cubic yard	2,3
Flattened	850 pounds / cubic yard	2,3
<i>Aluminum Cans</i>		
Whole	60 pounds / cubic yard	1,2,3
Flattened	225 pounds / cubic yard	2,3
<i>Plastics</i>		
PET #1 - whole	35 pounds / cubic yard	1,2,3
HDPE #2 - whole	25 pounds / cubic yard	3
Plastics #3 - #7 - whole	50 pounds / cubic yard	3
All Plastics: #1 - #7 - whole	38 pounds / cubic yard	2
Miscellaneous materials		
White goods (appliances)	300 lb / cy or 170 each on average	4
Textiles	175 pounds / cubic yard	4
CRTs/Computers	50 lbs each (whole on average)	4
Organics - Weight Conversions		
Grass Clippings	667 pounds / cubic yard	4
Leaves	400 pounds / cubic yard	4
Brush	500 pounds / cubic yard	4
Unfinished compost	1,500 pounds / cubic yard	4
Finished compost	1,350 pounds / cubic yard	4
Organics - Volumetric Conversions		
Grass Clippings	3 cubic yards/ton	4
Leaves	5 cubic yards/ton	4
Brush	4 cubic yards/ton	4
Hazardous Household Products (HHP)		
Auto batteries	39 lbs each	5
Batteries (household)	40 pounds / 5 gallon pail	4
Oil filters	250 pounds / 55 gallon drum	4
Paint (boxed)	690 pounds / cy box	4
Paint (bulk packed)	450 pounds / 55 gallon drum	4
Mercury Containing Products (MCP)		
Fluorescent lamps	0.5 pounds / four foot lamp	4
U-Tube	report as 4 linear feet each	
Circular Bulb	report as 4 linear feet each	
Compact Fluorescent Light Bulb	report as 4 linear feet each	
HID Bulbs	report as 8 linear feet each	

Sources

1. California Integrated Waste Management Board, data from CalRecovery report (w/Tellus) of 1991
2. National Recycling Coalition, data from 1996
3. Information from other government sources includes OR & VA Departments of Environmental Quality, NJ Department of Environmental Protection, HI documentation as well as US Navy facility guidance documents and the United States Environmental Protection Agency
4. DEP conversion rate from previous research
5. From EPA and Waste Age

APPENDIX C
FACILITY OPERATIONS
FLOW CHART
(no change, not included)

APPENDIX D
TRAINING LOG, SCHEDULE OF
COURSES, CERTIFICATES
(no change, not included)

APPENDIX E
HURRICANE PREPAREDNESS PLAN
(no change, not included)

APPENDIX F
UNAUTHORIZED WASTE LOG AND
REPORTING FORMS
(no change, not included)

APPENDIX G
EQUIPMENT CUT SHEETS
(new addition only)



GRANUTECH-SATURN SYSTEMS CORPORATION

201 East Shady Grove Road

Grand Prairie, Texas 75050

PHONE: 972/790-7800

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e-mail: sales@granutech.com

SATURN Model 72-44BGHT-300HP SHREDDER

Data Sheet

The Saturn shredder features twin counter-rotating shafts operating at slow speed and very high torque to reduce material by means of shearing and tearing. Slight shaft speed differential contributes to the cutting action while reducing particle sizing. The Saturn shredder is driven by a high displacement hydraulic motor, which in turn is powered by Saturn's proprietary open loop hydraulic drive system. Automatic overload detection initiates cutter shaft reversal to eliminate damage to the shredder components.

SPECIFICATIONS:

- | | |
|-------------------------------|-------------------|
| • Shredder Inlet Opening | 72" x 44" |
| • Shredder Outside Dimensions | 152" x 73" x 43" |
| • Power Unit Dimensions | 144" x 90" x 69" |
| • Shredder Weight | 28,000 pounds |
| • Power Unit Weight | 11,000 lbs. (dry) |

DETAILS:

Shredder

- | | |
|-------------------|--|
| • Cutter Shaft | Torque: Fast – 48,915 ft./lb.
Torque: Slow – 48,915 ft./lb. |
| • Cutter Speed | Fast Shaft – 24 RPM
Slow Shaft – 21.4 RPM |
| • Cutter Force | Fast: 52,176 lbs.
Slow: 52,176 lbs. |
| • Shaft Diameter | 8" hexagon (across flats) |
| • Cutter Diameter | 22.50" @ hooks |

Power Unit – Open Loop, Skid Mounted

- | | |
|--------------------|------------------|
| • Electrical Power | 300 HP (3 x 100) |
| • Hydraulic Flow | 238.5 GPM |
| • Rated Pressure | 3000 PSI |

GRANUTECH CORPORATION SYSTEMS

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ELECTRICAL:

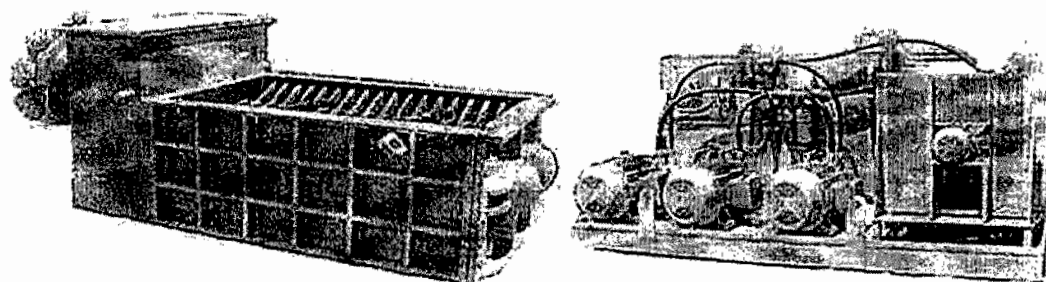
Operator initiated pushbutton controls, featuring Allen Bradley PLC. Motor controls include primary disconnect with short circuit protection, full load contactors, and electronic overload detection. Control power derived from a single-phase transformer. All components assembled and wired in a NEMA enclosure.

OPTIONAL:

- Mounting and wiring of control and motor starter panels on hydraulic power unit
- Shredder infeed hopper
- Shredder support stand
- Infeed and discharge conveyors

APPLICATIONS:

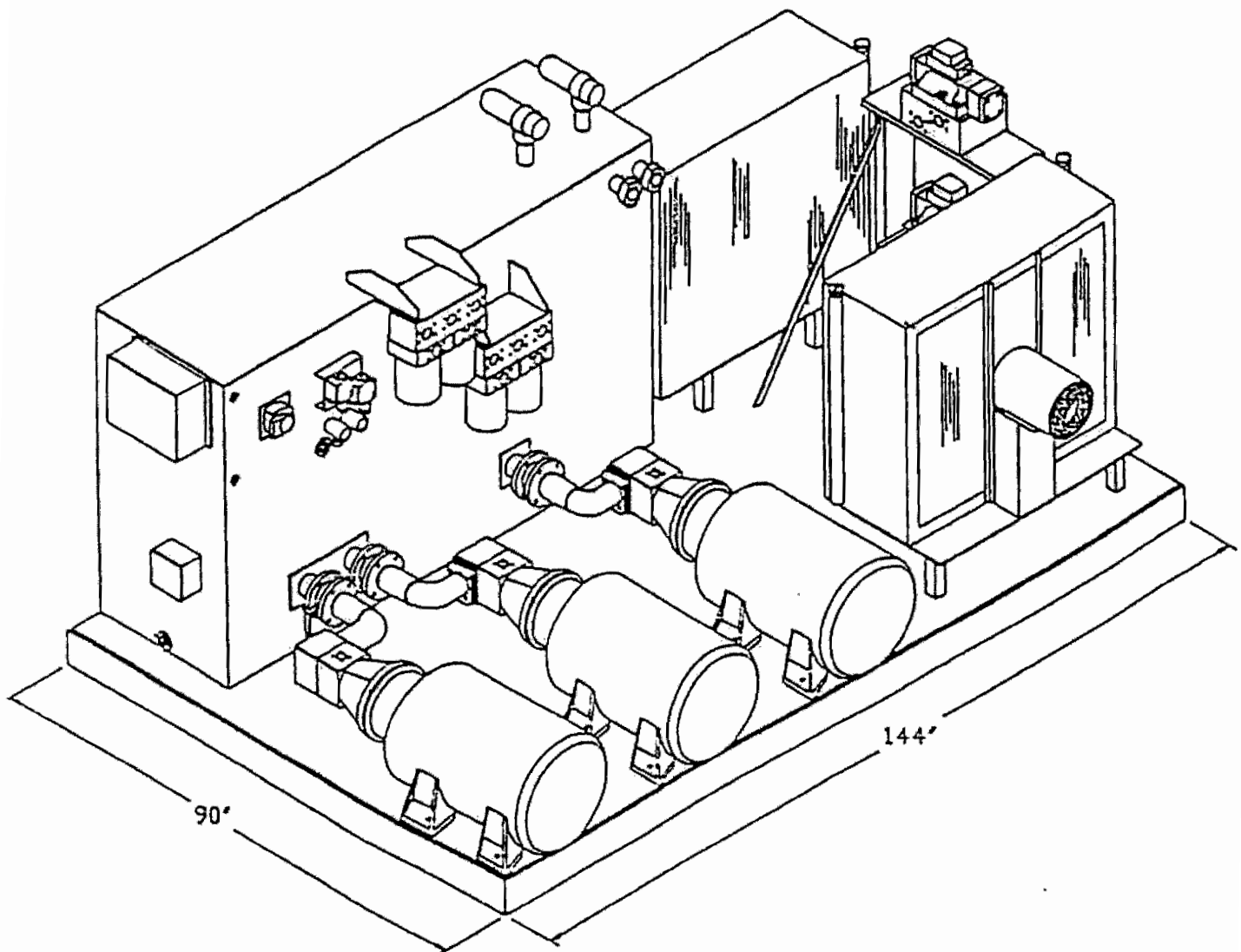
- Tires – up to 20 T/HR
- MSW - up to 30 T/HR
- Non-Ferrous Metals – up to 12 T/HR
- Plastic – up to 12 T/HR





Granutech-Saturn Systems Corporation
201 East Shady Grove Road ♦ Grand Prairie, Texas 75050
Phone: (972) 790-7800 ♦ Fax: (972) 790-8733
email: sales@granutech.com

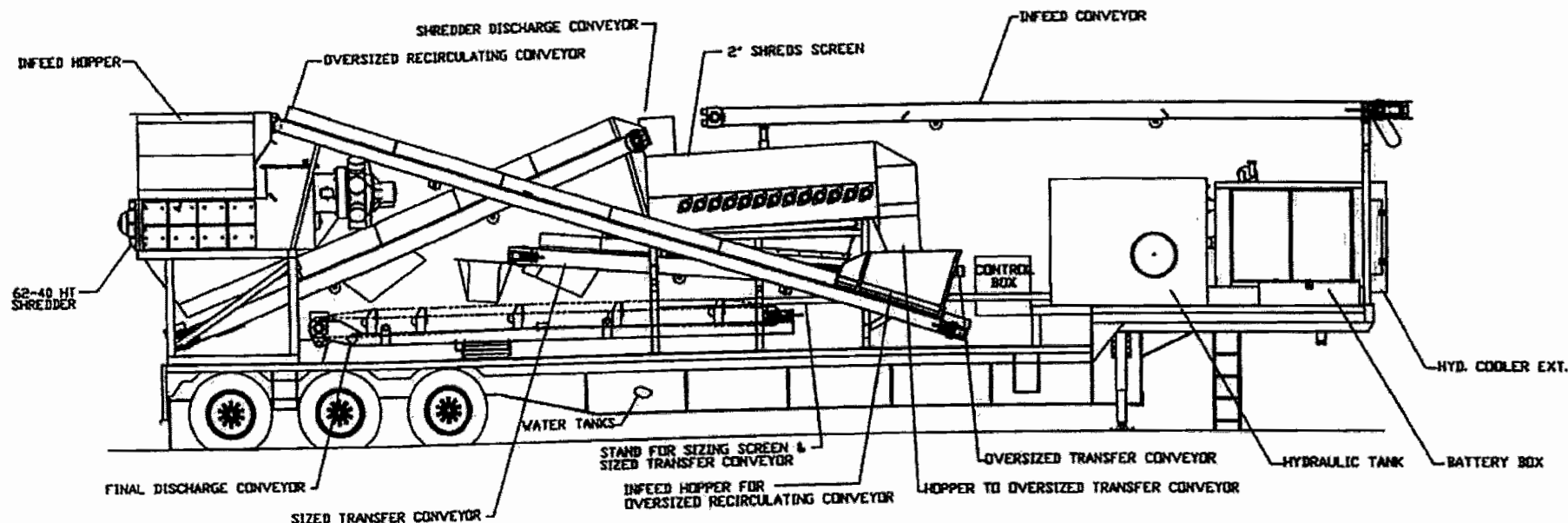
300 H.P. HYDRAULIC POWER UNIT



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REVISIONS

REV	DESCRIPTION	DATE	BY	APPROVED
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ITEM NO.	QTY.	REF. ITEM	PART NO.	DESCRIPTION
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BILL OF MATERIAL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS IN [] ARE MILLIMETERS. DOWNS AND REMOVE SHARP EDGES. TOLERANCES ARE: FRACTIONS: DECIMALS: $\pm 1/16$.X ± 0.1 ANGLES .XX ± 0.01 $\pm 1/2^\circ$.XXX ± 0.005 .XXXX ± 0.0005		APPROVALS		DATE	GRANUTECH SATURN SYSTEMS CORP.		
		DRAWN	J. FRANK	7/20/92	GRAND PRAIRIE, TEXAS		
			CHECKED			MOBILE TIRE SIZING UNIT- RH DISCHARGE 62-40HT SHREDDER	
			ENGINEER			SIZE	DWG NO.
SURFACE ROUGHNESS		SIMILAR TO:		A		D-1753	A
125		WEIGHT:		A		SCALE: DO NOT SCALE DRAWING SHEET 1 OF 1	
NEXT ASSY		LBS		THIRD ANGLE PROJECTION		ENG. PROJECT NO.	
				PRODUCT		62-40HT SHREDDER	

FORM NO: EF-A-1000-H

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SATURN MOBILE TIRE SHREDDERS

Saturn has designed and built mobile shredders in the past. We are now manufacturing a new completely self-contained portable tire shredding system.

Saturn's new design features:

- ♦ Self-stowing discharge conveyor
- ♦ Infeed conveyor that will attach and feed from either side of mobile unit
- ♦ Infeed conveyor that rests atop shredder when in travel mode
- ♦ Easy dismantling and reassembly as stationary system

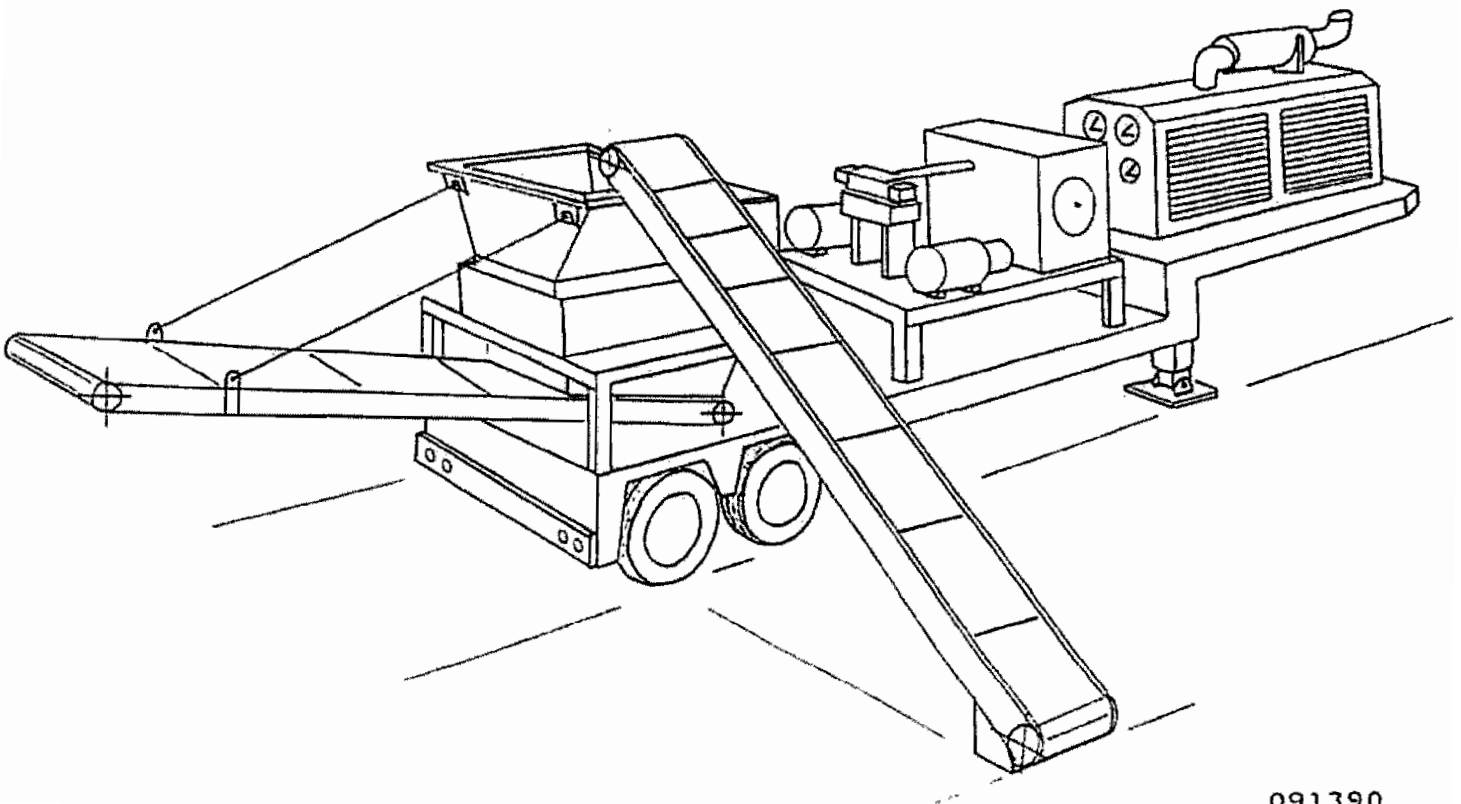
This state-of-the-art system can be the answer to your needs if legislation has closed your landfill to the burial of whole tires. Several states have set their policies, others are sure to follow. Take the time to look at the new Saturn Mobile System.

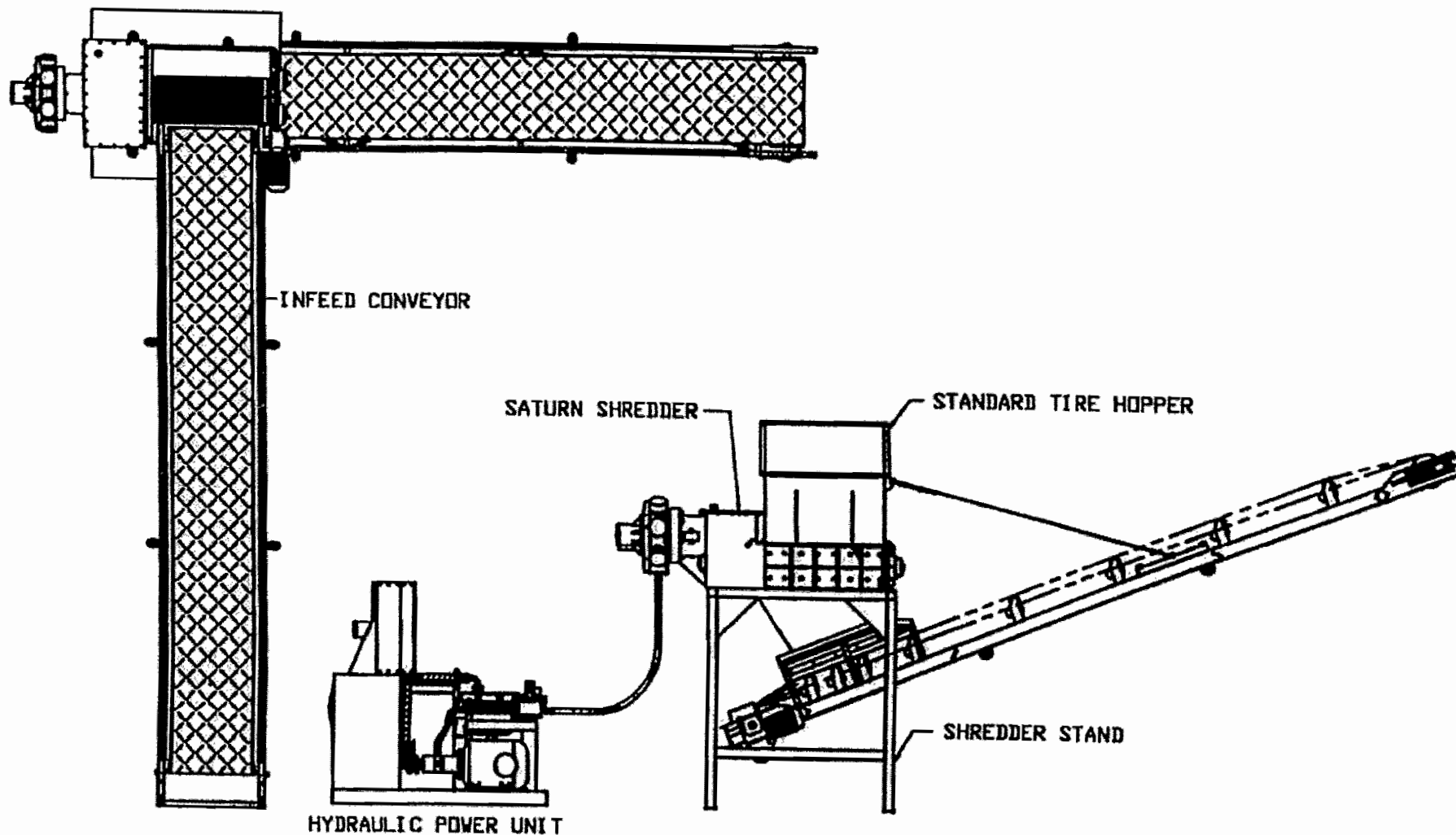
SATURN SHREDDERS, Division of MAC CORPORATION

201 East Shady Grove Road

Grand Prairie, Texas 75050

(972) 790-7800





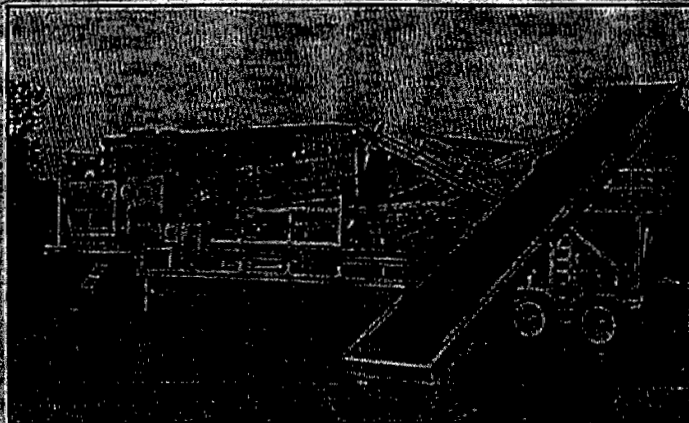
ITEM NO	QTY REQD	PART NUMBER OR DRAWING NUMBER	DESCRIPTION
LIST OF MATERIALS			
MAC CORPORATION GRAND PRAIRIE, TEXAS			DATE
DESCRIPTION PRODUCT			SCALE
			DRAWN
			CHECK
			ENGR
			MT
			SHT
			REV
			DWG. NO.

TOLERANCES
 (UNLESS NOTED OTHERWISE)
 .X ± .02
 .XX ± .010
 .XXX ± .005
 FRACTIONAL ± 1/16
 ANGULAR ± 1/2°
 SURFACE FINISH
 DECIMAL & REMOVE SHARP EDGES

NEXT ASSEMBLY DO NOT SCALE

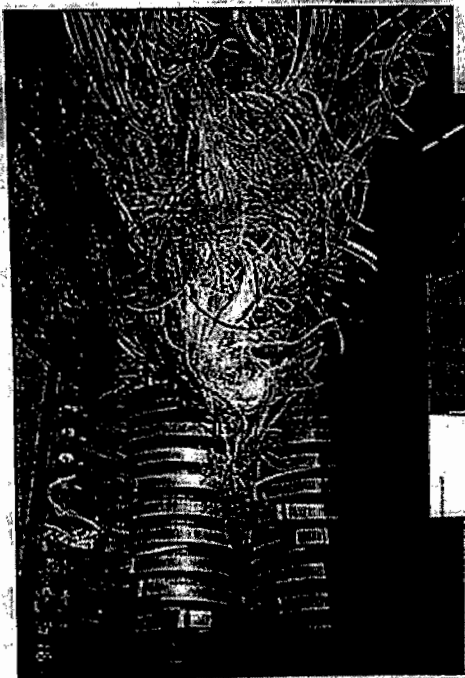
SATURN SOLID We've got

Someone else may have coined the phrase "nobody does it better," introduction more than three decades ago. Saturn Shredders have application possible. Their durability and versatility, coupled with applications ranging from shredding of paper to processing nuclear processing design and installation can also benefit from Granulect from concept through installation and beyond.



MOBILE TIRE SHREDDING

DRUM SHREDDING



CABLE & WIRE PROCESSING

LOW RAD WASTE PROCESSING

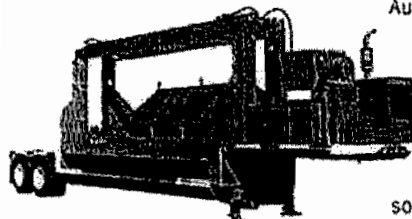
GRANUTECH-SATURN SYSTEMS The Whole Story

Granutech-Saturn Systems Corporation, offering equipment and peripherals under the Granutech, Saturn Shredders and MAC names, is one of the world's largest manufacturers of equipment and systems for size reduction and material recycling. Since 1965, the Grand Prairie, Texas-based company has demonstrated an unwavering commitment to quality equipment and world-class service for the various industries it serves, both in the U.S. and abroad. Shown here are Granutech-Saturn Systems' primary product lines.

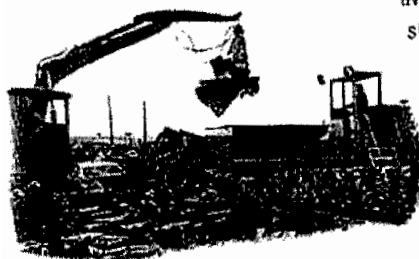
MAC
CRUSHERS & BALERS

GRANUTECH
SATURN
SYSTEMS

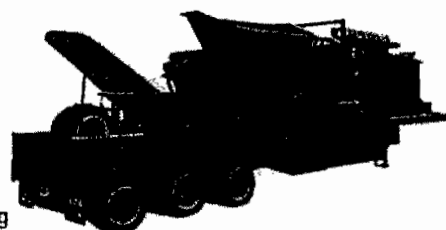
SATURN
SHREDDERS



Automobile recyclers and other ferrous/non-ferrous recycling operations have long relied upon MAC flatteners and balers for solid performance and minimal downtime. A full range of product offerings is available from the industry standard "Big MAC" flattener, to modified flattener designs for specialized processing demands.

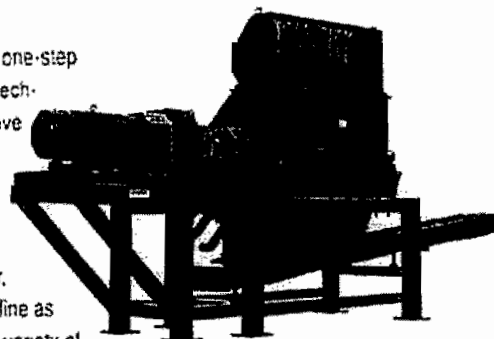
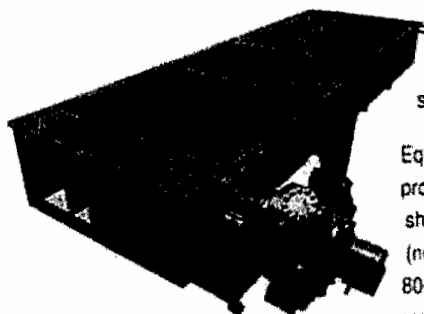


As shown in the previous pages, Saturn Shredders have been providing quality solutions to shredding problems for more than two decades. Today shredders bearing the Saturn name offer the broadest range of choices possible for use in a wide range of applications and industries.



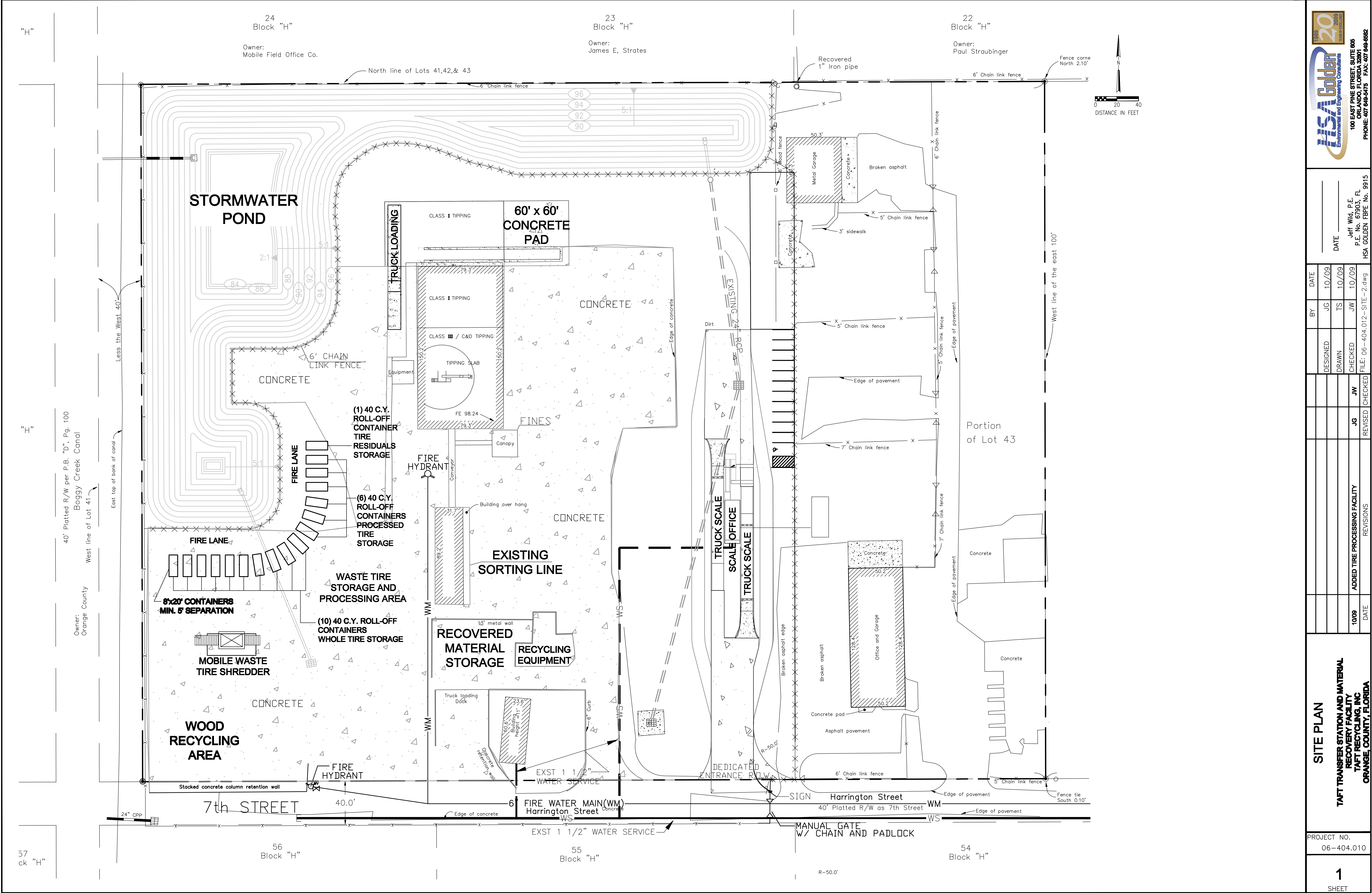
When size reduction needs call for secondary processing, one-step reduction and sizing or granulation and powderization, Granutech-Saturn Systems Corporation leads the way with solid, effective solutions.

Equipment offered by Granutech-Saturn Systems includes: the Grizzly processor (shown at right); Roto-Grind single rotor shred/sizing units (shown at left); and the Granutech G-3 granulator, (not shown) which, with available options, can produce material as fine as 80-mesh. All Granutech-Saturn Systems equipment is offered in a variety of models and sizes to suit your processing needs.



The bottom line? We do size reduction and we do it very, very well. If one-stop shopping is too trite a concept, then think of it as the most comprehensive source available for solutions to your recycling needs. No matter how you choose to look at it, we can provide the equipment — and the answers — you need.

APPENDIX H
SITE AND BUILDING
CONSTRUCTION PLANS



DESIGNED	BY	DATE
JG	JG	10/09
DRAWN	TS	10/09
JW	JW	10/09
CHECKED	JW	10/09
JG	JG	10/09
FILE	06-404-012-SITE-2.dwg	

REVISIONS	DATE
ADDED TIRE PROCESSING FACILITY	10/09

SITE PLAN
TAFT TRANSFER STATION AND MATERIAL RECOVERY FACILITY
TAFT RECYCLING, INC.
ORANGE COUNTY, FLORIDA

PROJECT NO.
06-404.010

APPENDIX I
WASTE TIRE BACKGROUND
INFORMATION

APPENDIX I
WASTE TIRE PROCESSING CALCULATIONS AND
BACKGROUND INFORMATION
Taft Transfer Station & Material Recovery Facility
Taft, Florida

Assuming TRI operates the waste tire shredding equipment 12 hours a day, approximately 240 tons of tires could be shredded in one day based on the reported throughput capacity of the equipment. TRI does not intend to collect and store used tires separately from waste tires; therefore, the additional storage limit of 10,000 used tires noted in Rule 62-711.530(2), F.A.C. would not apply.

Density information for stored waste and processed tires was obtained from the Rubber Manufacturers Association (RMA) and the United States Environmental Protection Agency's (USEPA's) Scrap Tire Cleanup Guidebook (see attached). As provided on pages 14 through 26 of said Guidebook, approximately 100 passenger car tires can be loosely stacked, 150 tires if densely packed, in a 10 cy area. The RMA also reported approximately 100 passenger car tires can be loosely stored in a 10 cy area. However, RMA reported a densely packed number of 500 tires per cubic yards. This likely represents like sized tires neatly stacked and tightly laced together. Based on TRI's experience in handling incidental waste tires at other solid waste facilities operated throughout Florida, the USEPA's estimate for densely stacked tires is generally consistent their handling experience. Therefore, the USEPA's density estimate was used. Based on the density information provided above, the number of whole waste passenger tires that could be stored in a 40 cy roll-off container ranges from 400 tires if loosely stacked and 600 tires if densely stacked. This represents a weight of 4.5 to 6.75 tons per container. Assuming 10 roll-off containers (for whole tires) and using data for densely stacked passenger tires, the maximum number and weight of whole passenger waste tires that would be stored at the Facility is 6,000 tires and 67.5 tons, respectively. A lesser number of tires, yet equivalent weight, would be stored if the stored waste tires consist of a mixture of passenger and heavy truck tires.

Weight of 6,000 Passenger Tires:

$(22.5 \text{ lbs/passenger tire} \times 6,000 \text{ tires}) / 2,000 \text{ lbs/ton} = 67.5 \text{ tons}$

Weight of 1,000 Heavy Truck Tires (4,900 PTE) and 1,100 Passenger Tires:

$(110 \text{ lbs/heavy truck tire} \times 1,000 \text{ tires}) / 2,000 \text{ lbs/ton} + (22.5 \text{ lbs/passenger tire} \times 1,100 \text{ tires}) / 2,000 \text{ lbs/ton} = 55 \text{ tons} + 12.4 \text{ tons} = 67.4 \text{ tons}$

Based on data reported by the USEPA and RMA, the density of loosely packed single pass shredded tires is approximately 600 pounds/cy. The corresponding ratio of maximum storage volume of shredded tires versus stored whole waste tires is 225 cy (67.5 tons at 600 pounds/cy). This will require six 40 cy roll-off containers. This maximum volume of processed tires will require six 40 cy roll-off containers. TRI estimated that one 40 cy roll-off container will be sufficient to handle any residuals produced during processing.



1. Typical Materials Composition of a Tire
2. Typical Composition by Weight
3. Densities of Shredded and Whole Tires
4. Rubber weight by tire component.
5. Steel Tire Cord Analysis

100y

1. Typical Materials Composition of a Tire

This table lists the typical types of materials used to manufacture tires.	
Typical Composition of a Tire	
Synthetic Rubber	
Natural Rubber	
Sulfur and sulfur compounds	
Silica	
Phenolic resin	
Oil: aromatic, naphthenic, paraffinic	
Fabric: Polyester, Nylon, Etc.	
Petroleum waxes	
Pigments: zinc oxide, titanium dioxide, etc.	
Carbon black	
Fatty acids	
Inert materials	
Steel Wire	

2. Typical Composition by Weight

This lists the major classes of materials used to manufacture tires by the percentage of the total weight of the finished tire that each material class represents.

Passenger Tire

Natural rubber	14 %
Synthetic rubber	27%
Carbon black	28%
Steel	14 - 15%
Fabric, fillers, accelerators, antiozonants, etc.	16 - 17%
Average weight:	New 25 lbs, Scrap 22.5 lbs.

Truck Tire

Natural rubber	27 %
Synthetic rubber	14%
Carbon black	28%
Steel	14 - 15%
Fabric, fillers, accelerators, antiozonants, etc.	16 - 17%
Average weight:	New 120 lbs., Scrap 110 lbs.

3. Densities of Shredded and Whole Tires

LOOSELY PACKED	APPROXIMATE DENSITIES	DENSELY PACKED
550-600 lbs/yd ³	single pass	1220-1,300 lbs/yd ³
850-950 lbs/yd ³	1/2" shred	1,350-1,450 lbs/yd ³
1,000-1,100 lbs/yd ³	1 1/2" shred	1,500-1,600 lbs/yd ³
100/10Yd ³	WHOLE TIRES (PASSENGER/LIGHT TRUCK)	500/10Yd ³
	10 MESH- 29 lbs/ft ³	
	20 MESH- 28 lbs/ft ³	
	30 MESH- 28 lbs/ft ³	
	40 MESH- 27 lbs/ft ³	
	80 MESH- 25-26 lbs/ft ³	

4. Rubber weight by tire component.

A tire is manufactured from several separate components, such as tread, innerliner, beads, belts, etc. This table shows which components account for the rubber used to make the tire.

RUBBER PERCENT BY WEIGHT IN A NEW RADIAL PASSENGER TIRE

TREAD	32.6%
BASE	1.7%
SIDEWALL	21.9%
BEAD APEX	5.0%
BEAD INSULATION	1.2%
FABRIC INSULATION	11.8%
INSULATION OF STEEL CORD	9.5%
INNERLINER	12.4%
UNDERCUSHION	3.9%
	100.0%

5. Steel Tire Cord Analysis

The tire industry uses ASTM 1070 and above tire cord quality wire rod in the manufacture of new tires. There are approximately 2.5 pounds of steel belts and bead wire in a passenger car tire.



Scrap Tire Cleanup Guidebook

**A Resource for
Solid Waste Managers
Across the United States**

EPA-905-B-06-001



Scrap Tire Cleanup Guidebook

A Resource for
Solid Waste Managers
Across the United States

January 2006



U.S. EPA Region 5
Waste, Pesticides and Toxics Division
77 West Jackson Boulevard (DW-8J)
Chicago, Illinois 60604-3590
www.epa.gov/region5



Illinois EPA
Bureau of Land
1021 N. Grand Ave. East
P.O. Box 19276
Springfield, Illinois 62794-9276
www.epa.state.il.us

EPA-905-B-06-001

SECTION 3 Planning

Scrap tire stockpile abatement is a technical, economic, and political challenge. Cleanups involve elusive factors such as weather, stockpile contents, and underlying topography. Proper planning can limit adjustments that consume resources, thereby minimizing impacts on overall program performance and cost. This section presents critical planning considerations for both an overall cleanup program and individual abatement projects.



STOCKPILE IDENTIFICATION AND MAPPING

Stockpile identification is the first step in defining the magnitude of the scrap tire stockpile problem in any jurisdiction. The most effective identification methods have involved all levels of government and enforcement as well as industry groups and citizen reports.

State Government. State solid waste and public health agencies play a focal role in scrap tire stockpile identification efforts. These agencies have a broad range of organizational structures. Centralized agencies deploy personnel to each region of the state to work with county, city, and local officials in identifying and characterizing sites. Other agencies either designate one person in each regional office to identify stockpiles or distribute the responsibility to all staff based on their geographic or industry area of expertise. Smaller identification groups are easier to train and gain greater knowledge through in-depth experience. However, these advantages can be offset by greater travel time, cost, and difficulty in making regular visits to examine changing site conditions.

One effective compromise is to use a broad base of individuals to identify stockpiles in their service areas and then task a smaller group to characterize and prioritize stockpiles. Contractors or consultants may be useful for supplementing agency resources in the early stages of program implementation. Finally, other state or local authorities can be leveraged, such as forestry, park, wildlife, natural resource, and police agencies. Such authorities have field personnel with extensive knowledge of rural areas that often harbor stockpiles.

County and Local Governments. Most effective programs have drawn heavily upon county, city, and local governments to identify stockpiles. Police, code enforcement, mosquito control, solid waste management, public health, park, firefighting, forestry, and game and fish personnel have all helped to identify stockpiles encountered during their normal activities.

One state sent surveys to all county and local governments (including those for municipalities with over 1,000 people) during initial scoping activities. The survey asked for stockpile sites to be identified by location, street address, and owner. Cooperation in such efforts can be enhanced by the survey objectives and methodology and by explaining the ability of the program to help local governments abate identified sites without consuming local resources.

Additional Identification Methods. Other creative methods can be used to support identification efforts, including the following approaches:

- A toll-free telephone number can be established to encourage residents to report stockpiles and illegal dumping activities. Local governments and industry organizations can be leveraged to disseminate information about the program. Many large stockpiles are found based on information provided in citizen complaints.

- Both public service announcements and promotion of initial abatement activities encourage reporting of additional stockpiles.
- Committees consisting of representatives of tire dealers, salvage yards, and haulers can reach out within their respective industries to encourage stockpile identification.

Required Information. Once a stockpile is identified, characterization is conducted to gather information required for prioritization, stabilization, and abatement activities. The following information should be considered, especially for larger sites:

- Location, including street address, city, county, and global positioning system (GPS) coordinates
- Owner or operator, including name, address, telephone number, and involvement
- Stockpile characteristics such as dimensions, tire sizes, age, the presence of rims, possible compaction, existence of lacing (see photo at right) or stacking, the percentage of whole tires and shreds, and the presence of other wastes
- Site characteristics such as stockpile spacing, soil characteristics, topography, access, and drainage channels as well as nearby surface water, residences, businesses, and population densities. (Nearby schools, airports, and other large public facilities should also be identified to help define environmental impacts.)
- Site conditions impacting fire control, such as access roadways, water resources, perimeter and internal fire lanes, trees, and brush

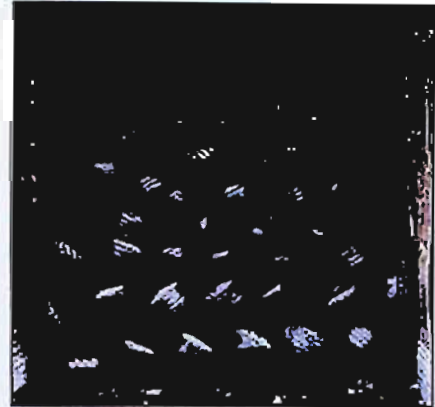


Photo courtesy of Todd Marvel, Illinois EPA

The information on site characteristics and conditions is useful for site stabilization and fire control planning for larger sites. An example site characterization form is provided in the Appendix of this guidebook. For smaller sites, only the location, owner or operator, and stockpile characteristic information is needed.

Mapping. Stockpile mapping offers political, technical, and economic benefits. It allows public officials and citizens to understand the extent of the problem, as it graphically illustrates the broad distribution of scrap tire sites in the state. From a technical and economic standpoint, mapping enhances efficiency by supporting coordination of site-related activities such as inspections. In addition, contractor efficiency can be maximized by addressing several nearby sites under a single abatement contract if site access can be achieved concurrently. The combined volume encourages contractor interest, and the approach decreases mobilization and demobilization costs. Example stockpile maps prepared using GIS are shown on the following page.

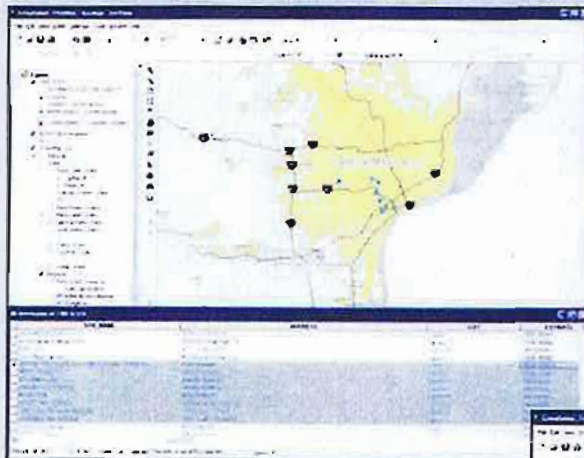
Mapping Tip

Review of site background information, such as aerial photographs, topographic maps, or tax maps, before the scrap tire quantity is estimated can reduce the effort needed for field mapping. This information is often available in government or other Internet-accessible databases.

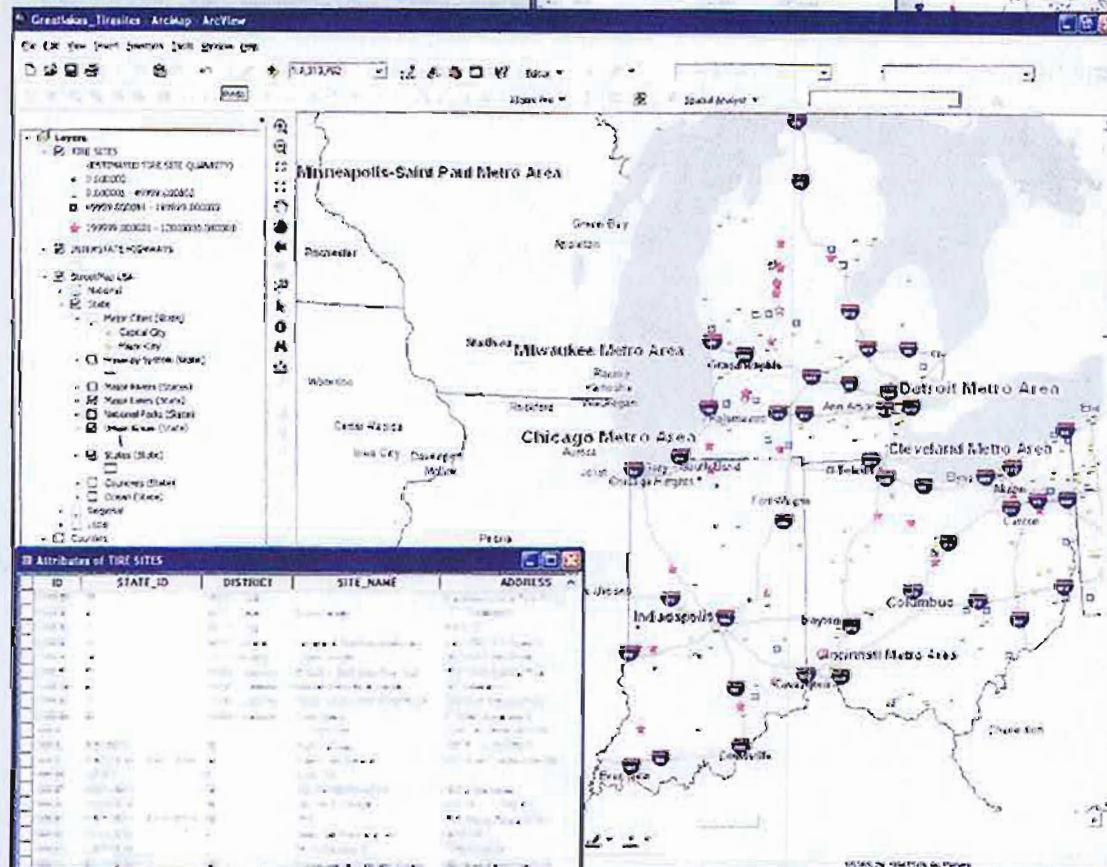
QUANTITY ESTIMATION TECHNIQUES

Following stockpile identification, the scrap tire quantity is estimated for prioritization, program planning, budgeting, and contract management purposes. Stockpile estimating is relatively simple in principle, but can be impacted by many variables. Many early estimates were performed using the "gazer" technique. For example, a person would stare at a stockpile and state that it "looked like

Using GIS to Map Stockpile Sites



U.S. EPA Region 5 initiated a cooperative effort to map all the remaining stockpiles in several states. Stockpile sites are being identified based on GPS coordinates and other site features in cooperation with state and local authorities. The information collected was entered into a database that was used to develop GIS maps with color-coded pile size delineations. Such maps have been created for Alabama, Connecticut, Indiana, Michigan, New York, Ohio, and Pennsylvania.



about a million tires” when in reality it could have contained between 20,000 and 20 million tires. Some people still use this technique, resulting in estimates with extremely large margins of error.

Some basic science has been added to the “gazer” technique, resulting in significant improvements in estimate accuracy. During initial site identification and examination, the dimensions of each stockpile segment should be measured using one of several techniques, including a long tape, a measuring wheel, or a calibrated pace. A 100-foot, fiberglass tape requires two people for efficient use and is preferable for uneven terrain or in cases likely to require court testimony. A large-diameter measuring wheel can be used on firm, level terrain but is unusable on rough or muddy ground. A calibrated pace can be used efficiently on most terrain, but its accuracy depends on the ability of the measurer to maintain a uniform pace. Taking measurements from the midpoint of the pile slope simplifies subsequent calculations. In addition, photographs should be taken during field inspections to document site conditions, to monitor changes in site conditions between inspections, and to serve as legal evidence. An example stockpile characterization form that can be used to collect data is provided in the Appendix of this guidebook.

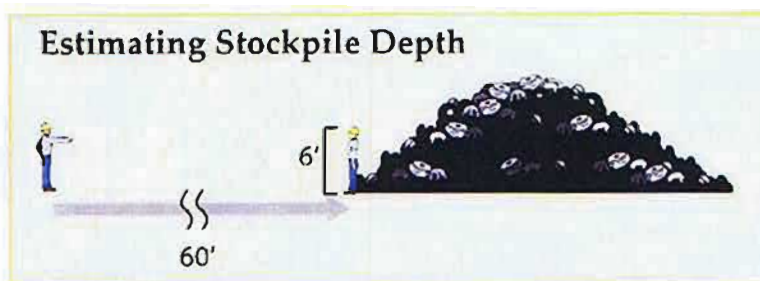
Estimating stockpile depth is often a challenge because the sides are sloped and not easily measured. One technique (see figure at right) is to have a person of known height stand as close to the pile as possible while an observer stands back and measures the pile depth in multiples of the first person’s height. The observer should be at least 10 times

the estimated pile depth away to minimize angle distortion. A spotter’s scope or compact measuring device can also be used. A large pile should be climbed, and the top of major pile segments should be walked to observe top contours, pile characteristics, dimensions, and firmness (which reflects density variations associated with compaction, aging, and lacing). Tires in stockpiles are irregularly shaped, flexible, and unstable, so extreme care should be taken when climbing a tire pile.

Stockpiles pose other health risks that should be considered while estimators are on site. Scrap tires can support breeding of mosquito species that are capable of serving as vectors for potentially fatal diseases such as eastern equine encephalitis, West Nile virus, and dengue fever. While estimators are on site, protective clothing and mosquito spray should be used to minimize exposure. In addition, stockpiles typically harbor rodents and snakes, so estimators should be observant and move cautiously.

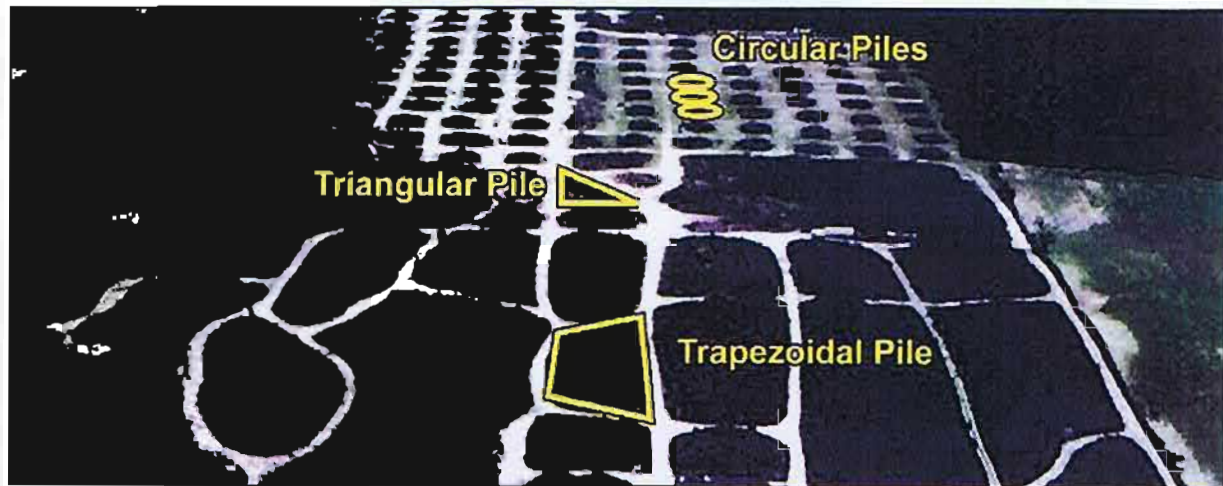
For a large stockpile, aerial photographs can be used to define its horizontal dimensions, but a scale must be established based on nearby objects. To be effective, aerial photographs must be taken vertically to avoid dimensional distortion. Depth and density estimation requires ground observation. Detailed aerial surveys can be conducted, but the ground topography under the pile must be known or assumed. Aerial surveys are expensive, and their accuracy is questionable unless a pile is deep enough to reduce the margin of error associated with surface depth irregularities. Ground surveys have also been performed with volume-integrating software, but they can be expensive and may not offer greater accuracy than manual measurements.

As a first step, the stockpile volume is estimated using calculations based on the dimensions. In some cases, irregular shapes can be converted into rectangles, circles, or other simple geometric shapes to simplify calculations without impairing accuracy. In other cases, a single irregularly shaped pile can be measured as two or more connected rectangular segments with different dimensions. If dimensions have been measured from the midpoint of the slope, the volume of a rectangular pile is simply the product of the length, width, and depth. Although this method is not geometrically perfect, the simplification does not significantly impact the total volume estimate.



The volume of other common stockpile shapes can be calculated using the following formulas:

- Circle: $\pi r^2 d$ or
3.14 x circle radius x circle radius x depth
- Triangle: $\frac{1}{2} lwd$ or
 $\frac{1}{2} \times \text{length} \times \text{width at base} \times \text{depth (from base to peak of pile)}$
- Trapezoid: $\frac{1}{2} l (w_1 + w_2) d$ or
 $\frac{1}{2} \text{length} \times (\text{width at base} + \text{width at top}) \times \text{depth}$



The second step in estimating the tire quantity in a stockpile is determining the pile density, or the quantity of scrap tires contained in each cubic yard of the pile. Volume is translated into quantity or weight through assignment of a density. Because most tire stockpiles contain mixtures of various tire sizes, density is normally expressed in terms of the passenger tire equivalent (PTE), which is equal to 20 pounds by definition. Most scrap tires have roughly equivalent densities when expressed in terms of PTE/cubic yard. For instance, a medium truck tire weighs approximately 100 pounds (5 PTE) and occupies a volume equivalent to four to five passenger tires in a given stockpile. Because most abatement activities and other considerations are based on weight, the equivalency more accurately reflects future tire use, processing, and disposal.

The density of loose, shallow, whole-tire stockpiles is normally about 10 PTE /cubic yard but can range from 8 to 27 PTE/cubic yard. Densities below 10 PTE/cubic yard reflect rimmed tires that do not collapse but account for only the rubber weight under the assumption that rims will be removed before tire transport. Stacking or lacing increases the effective density to 12 to 15 PTE/cubic yard for passenger tires, and 13 to 18 PTE/cubic yard for medium truck tires. The highest density range rarely occurs but was encountered in a 40-year-old stockpile in a canyon that was over 100 feet deep near Modesto, California; the very hot climate caused the tires to be more flexible and easily compacted. Other factors that impact the density of whole-tire stockpiles are shown in the table on page 15.

The density of shredded-tire stockpiles can range from 30 to 90 PTE/cubic yard (600 to 1,800 pounds/cubic yard). The lower density range represents shallow, uncompacted piles of uniformly large particles such as single-pass shreds. The higher range represents deep stockpiles of finer tire-derived fuel (TDF) that has been heavily compacted by repeated movement of heavy equipment during stacking. The highest range represents compacted shreds with extensive dirt contamination. Major factors that impact shredded-tire stockpile density are shown in the table on page 15.

Once the stockpile volume and density have been estimated, the tire quantity (or weight) is calculated by multiplying the volume (cubic yards) by the density (PTE/cubic yard). The result is a tire quantity expressed as PTE. The tire quantity can also be expressed as a weight (tons) by dividing by

Factors Affecting Tire Density

Whole Tire Stockpile	Shredded Tire Stockpile
<ul style="list-style-type: none"> • Depth: Increases the compaction of tires in a pile and therefore increases density • Age: Allows additional compaction over time and therefore increases density • Heat: Increases the flexibility of tire rubber, thereby increasing compaction and density 	<ul style="list-style-type: none"> • Shred size: Smaller shred size generally increases density. • Wire content: Wire removal decreases density. • Depth: Depth increases overburden compaction and density. • Equipment movement: Equipment movement on ramps or top surfaces during stacking significantly increases density as well as the probability of auto-ignition within a pile.

100 IPT/ton. A schematic of a simple stockpile site is shown in Exhibit 1 and the quantity calculation logic is summarized in Exhibit 2.

Although the estimating methodology described above has been successfully applied to hundreds of scrap tire stockpiles, the following factors may affect its accuracy:

- **Topography:** The underlying topography can significantly affect pile volume and tire quantity but may not be apparent from surface observations. Larger tire piles are more difficult to estimate because they may conceal ravines or pits filled with tires. Piles located on hillsides are also difficult to estimate because the hillsides may curve or become steeper beneath the piles.
- **Nonuniformity:** A pile may appear to consist of loose tires on the surface, but laced tires or shreds may be present in the pile, significantly increasing pile density and tire quantity.
- **Contamination:** Piles can be contaminated with water, soil, automobile parts, or other waste that may not be visible from the surface. Water and dirt can significantly increase pile density and abatement costs. Also, the presence of whole vehicles or chemical-filled drums can complicate tire retrieval, especially if the vehicles are loaded with tires or the drums contain hazardous wastes.



Photo courtesy of Allan Lavender, Virginia DEQ

STOCKPILE PRIORITIZATION

With the understanding that resources are limited, stockpile stabilization, abatement, or both should be initiated following a prioritized sequence based on the comparative hazards posed by various sites (see Section 1). A prioritization system should reflect current and potential impacts on citizens and the environment, particularly impacts on sensitive receptors such as schools, hospitals, daycare centers, and nursing homes.

One prioritization method uses stockpile size as a multiplier because it typically magnifies the impacts of a fire fire. The multiplier ranges should reflect the quantities of tires in the piles being prioritized. For example, the following size factors could be used for stockpiles with the numbers of tires indicated:

- Less than 100,000 tires = 1
- 100,000 to 250,000 tires = 2
- 250,000 to 1,000,000 tires = 3
- More than 1,000,000 tires = 4

Exhibit 1. Example Stockpile Site

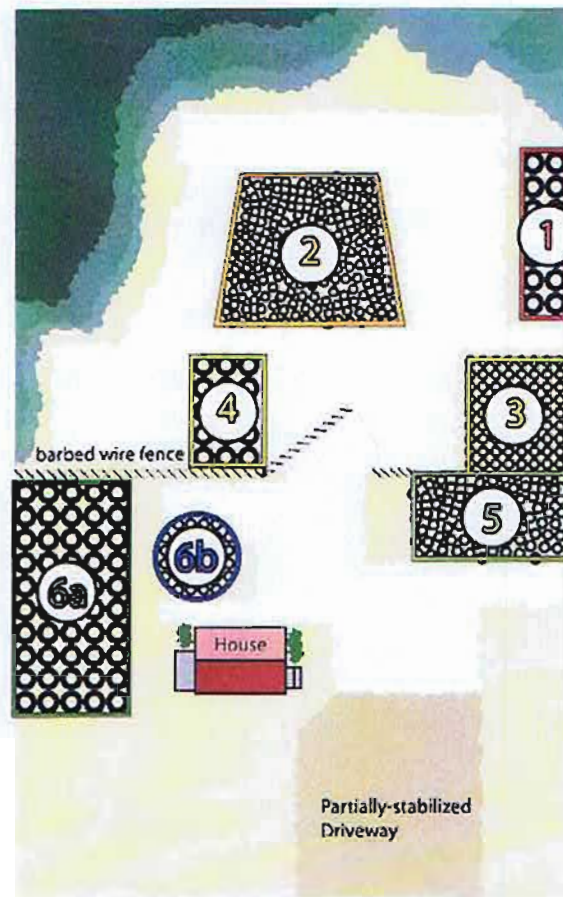


Exhibit 2. Example Tire Quantity Calculation

Pile No.	Description		Dimensions (yard)			Volume (CY) or No. of Tires	Density ³ (PTE/CY)	Quantity	
	Tire ¹	Pile ²	Length	Width	Height			PTE or No. of Tires	Tons ⁴
1	T	Horiz. Stacked	31	6	1	186	15.0	2,790	28
2	P	Loose	30	30/20	3	3,700	10.0	27,000	270
3	P	Stacked	20	15	1	300	13.0	3,900	39
4	T	Horiz. Stacked	10	15	1	150	15.0	2,250	23
5	P	Loose	25	15	1	375	10.0	3,750	38
6a	T	Horiz. Stacked	35	15	1	2,100	15.0	31,500	31.5
6b	P	Horiz. Stacked	10		2	200	10.0	2,000	20
TOTAL								73,190	449.5

CY = Cubic yards
PTE = Passenger tire equivalent

¹ Truck (T), passenger (P), off-the-road (OTR), shredded - coarse (SC), or shredded - fine (SF)

² Loose, stacked, horizontal stacked, or laced

³ Density ranges from 8 to 27 PTE/CY; normally about 10 PTE/CY for loose, shallow, whole-tire stockpiles

⁴ To calculate weight, use 100 PTE per ton.

Factors to Consider When Evaluating Impacts of Scrap Tire Stockpiles

IMPACT	Air	Water	Population
ISSUE	Impact of fire plume on residents, businesses, and regional air quality	Impact of contaminants in oil and residual ash on surface water or groundwater	Impact of existing stockpile on area residents
FACTORS TO CONSIDER	<ul style="list-style-type: none"> • Prevailing wind direction • Stockpile characteristics such as height, trees and brush, and fire lanes • Surrounding land use • Sensitive receptors such as schools, airports, and large public facilities (within 0.5- and 5-mile perimeter) 	<ul style="list-style-type: none"> • Soil characteristics such as permeability • Aquifer characteristics such as water table depth and drinking water use • Site drainage • Surface water proximity • Sensitive receptors such as wetlands, fisheries, or endangered species • Stockpile characteristics 	<ul style="list-style-type: none"> • Population proximity • Mosquito species • Identified local/regional mosquito-borne diseases • Rodent/snake infestation • Stockpile characteristics

The potential impact on the general categories of air, water, and population are evaluated independently (based on data from the initial site evaluation) using a scale of 1 to 10 with 10 indicating the greatest potential impact. These three ratings are added and multiplied by the size factor. Factors to consider when evaluating the impact of a stockpile to air, water, and population density are shown in the figure above. Stockpile size is an important consideration, but impact is the controlling issue.

Stockpile sites are then prioritized based on the resulting rating totals, with the highest rating representing the highest priority. Sites generally fall into rating groups with numerical separations between the groups. Within groups, rating differences are generally small, and the abatement sequence can be based on site access, contractor availability, markets, or location. The figure below shows an example of the prioritization method.

Consistency is an extremely important component of any stockpile prioritization system, so the smallest possible number of evaluators should be used. Nevertheless, it can be beneficial to have two or three evaluators compare their ratings so that subjective inconsistencies can be identified and corrected. Ratings generated by a variety of people can be reviewed by a small, central staff to increase the consistency of the ratings.

Example Stockpile Prioritization

Site	Air Impact	Water Impact	Population Impact	Size	Site Score	Prioritization
A	9	10	9	4	112	High Priority
B	10	9	10	3	87	
C	5	9	5	2	38	Medium Priority
D	8	2	9	2	38	
E	4	4	4	3	36	
F	4	8	4	2	32	
G	8	2	7	1	17	Low Priority
H	1	2	1	4	16	
I	2	2	10	1	14	
J	1	2	2	2	10	

$$\text{Stockpile Score} = (\text{Air Impact} + \text{Water Impact} + \text{Population Impact}) * \text{Stockpile Size}$$

Coordinating Scrap Tire Abatement with Landfill Remediation in Illinois

Illinois EPA recently directed an abatement of its largest scrap tire site that was coordinated with a nearby state-funded landfill remediation project. The Coultas Recycling site in Danville, Illinois, contained about 1 million scrap tires. The inactive H&L landfill about 3 miles away posed environmental problems for the City of Danville and was being properly closed and capped by the Illinois EPA. A gas transmission system was required below the impermeable cap to maintain its integrity. The stockpiled tires were shredded on the Coultas Recycling site, transported to the landfill site, and spread over the top of the landfill (within geotextile encapsulation) to serve as a gas transmission medium under the impermeable cap. The shred layer was tapped to allow gas removal. One million tires were processed and removed from the stockpile site in 9 months with no impact on existing markets and at a lower cost than that of alternatives.

Some states use independent contractors or consultants to manage or perform stockpile prioritization in order to limit political influences. Using a technically sound prioritization process performed by unbiased evaluators also improves program effectiveness and efficiency.

MARKETS

Something has to be done with the scrap tires that are removed from stockpiles. Many states have constructively used scrap tires removed during remediation projects in civil engineering or other applications. Done properly, stockpile abatement can help to develop new markets or add supply volumes to existing markets. Done improperly, it can negatively impact existing markets and processors, even driving current-generation tires into stockpiles or landfills. Markets require various levels of processing ranging from shredding to metal and fiber removal, thus adding expense. Although it is not the preferred option, scrap tires may also be landfilled if their condition is not suitable for available markets.

Stockpiled tires are often contaminated with water, dirt, or other foreign materials that limit potential markets and increase processing costs. Some cement kilns that use whole tires and that can accept limited water and dirt contamination represent a market, but kiln capacity and fuel weighing can be negatively impacted by substantial contamination.

Because contamination can damage processing equipment and increase maintenance expenses, contractors try to minimize damage by producing large tire shreds (for example, 4 inches or larger without steel belts removed) for civil engineering applications. Examples include large highway embankment or lightweight fill projects that can consume 500,000 to 1,500,000 tires per project. In use of tire shreds for aggregate replacement during landfill construction, a range of tire shred sizes may be used, depending on the construction details of the liner and drainage system. Examples of landfill applications include use of tire shreds for daily cover, leachate collection layers, surface water drainage layers, and gas collection channels. Large chips with minimal processing requirements minimize abatement costs if they are technically acceptable.

Proper retrieval of tires from uncontaminated stockpiles can yield clean tires that can be processed into TDF or drain field products. In some cases, contractors choose to accept higher equipment maintenance costs and downtime to process dirty tires under abatement contracts. However, most crumb rubber producers generally do not accept abatement tires because of their impact on equipment and product quality.



Some legislative or regulatory measures require that all abatement tires be constructively used. Such a requirement can have the following impacts:

- **Damage of processing equipment:** Processing heavily contaminated or partially burned tires can cause equipment problems that delay stockpile abatement.
- **Market distortion:** Driving abatement tires to existing markets can displace products made from current-generation tires. This displacement can create market instability, cause processor attrition, and force current-generation tires into landfills or stockpiles.



Photo courtesy of Todd Thalbaner, California RWIR

Creating new markets for abatement tires or rewarding contractors for creation of such markets is a critical component of an effective scrap tire program. Examples might include working with the state Department of Transportation (DOT), landfill owners and operators, and state agencies conducting landfill closures to identify scrap tire projects. Creating and specifying a new market can decrease abatement costs. At a minimum, the maximum percentage of existing markets displaced by abatement activities should be controlled even if it means extending cleanup schedules or allowing product storage under monitored conditions.

PROPERTY ISSUES

Scrap tire stockpiles are generally located on property that is owned and controlled by one or more individuals. Before a scrap tire remediation project begins, it is essential to obtain either a written property access agreement from the landowner or a court order granting property access for the purpose of tire removal. At many sites, a property boundary survey is also necessary to ensure that remediation work does not inadvertently extend over onto adjacent properties. If additional properties are involved, additional property access agreements or court orders will be needed.



Photo courtesy of Gavin Adams, Alabama DEM

The following issues should be considered in dealing with properties :

- **Utilization:** A property can contain buildings, other structures, and utilities that would be useful to a contractor during on-site activities. If any of these items are to be used, a written agreement establishing the usage conditions, obligations, and compensation can prevent subsequent misunderstandings.
- **Damage:** States have been sued for damage done by contractors acting as their agents. In some cases, the damage has been done by others prior to initiation of cleanup activities. As a preventive measure, complete and dated sets of photographs before, during, and after site abatement is useful for documenting site conditions.

- **Restoration:** Water in tires and rain create muddy conditions in unstable soil under a stockpile. Heavy equipment can create deep ruts, and water runoff can erode surface soil. After tire retrieval, contractors are generally required to level heavily rutted land. In most cases, re-establishing vegetation will control erosion.

Recognizing a property's value while obtaining and maintaining the landowner's cooperation facilitates abatement operations. If the property owner will not cooperate, a court order must be obtained to enter the property and remove the scrap tires. State legislation can aid this process if laws are passed to create an administrative process for ordering scrap tire cleanups. One example is Ohio Revised Code 3734.85, which can be found at <http://www.ohio.gov/government.htm>.

COMMUNICATIONS

Stockpile abatement involves many groups, including contractors, local governments, politicians, and the press. Informing and coordinating these groups are critical components of successful scrap tire programs and abatement projects.

Contractors. Any special abatement project requirements should be clearly defined in detailed plans and specifications provided to prospective contractors prior to the bidding process. Examples of items that should be addressed in such plans include the following:

- Site description
- Tire quantity estimate
- Tire pile length, width, and height
- Operating procedures
- Fencing
- Lighting
- Security
- Fire lanes
- Pile removal sequence
- Stabilized access and perimeter roadways
- Control of vegetation, mosquitoes, and run-off
- Water source and distribution
- Fire plan
- Utilities
- Progress reporting

Many contractors have developed their own abatement methods to optimize the efficiency of cleanup operations based on years of experience. Experienced contractors should be invited to suggest alternative approaches. An initial description of the project should be developed to provide a sound foundation for project communications and to minimize the need for discussion of pre-planned activities. Example pre-bid documents prepared by the States of Iowa and Illinois are available at <http://www.epa.gov/reg5rcra/wptdiv/solidwaste/tires/guidance/index.htm>.

Elected Officials. Local and state elected officials are instrumental in creating and maintaining abatement programs. Providing updates on program implementation and abatement projects is important. Digital photographs, videotapes, or aerial photographs of sites before, during, and after abatement can be sent to state legislators in the district to maintain communications



Photo courtesy of Bob Lange, Ohio EPA

and build support. Inviting elected officials to see stockpile sites before and after cleanup also creates a good public relations opportunity.

Local Governments. Local administrators and police and fire departments can provide critical support services at little or no cost if they are included in project communications. Informing these groups about project plans and associated benefits to the community enhances cooperation. Discussing security and fire control measures with local departments before the project starts increases the probability of a successful response if needed. A contact list that includes emergency response contacts and procedures should be provided to all project participants.

Press. Publicity allows citizens to understand an abatement program and the value received for public fees. In addition, publicity allows politicians and program participants to be recognized for accomplishing removal objectives. However, drawing attention to stockpile abatement projects can have undesired effects. Many fires are actually started by site operators or local residents in the wake of publicity over cleanup activities. One of the largest tire fires in Canada, which involved an estimated 10 million tires, was started by teenagers attracted to the site by local publicity. One approach is to issue a press release highlighting the last scrap tire being thrown onto a truck by a local community leader; the release can include site photographs taken before and during abatement.

SECTION 3
FIRE FIGHTING AGREEMENT



69138

04-297.013

225 East Robinson Street, Suite 100

Orlando, Florida 32801

Phone: 407 649-5471

Fax: 407 649-6581

Web: www.hsagolden.com

01878/-000

August 17, 2005

Lt. Debbie Marshall
Office of Fire Marshall, Orange County Fire Rescue Division
109 E. Church Street, Lower Level
Orlando, Florida 32801-3319

COPY

Subject: Fire Fighting Agreement
Taft Recycling, Inc..
Waste Processing Facility and Transfer Station
375 W. 7th Street, Taft, Florida
Project No. 04-297.013

Dear Lt. Marshall:

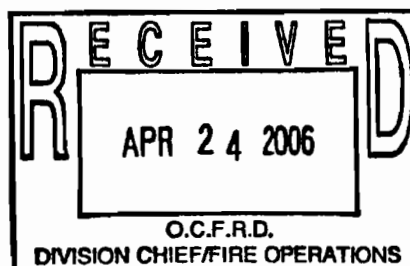
On behalf of Taft Recycling, Inc. (TRI), HSA Golden submits this Fire Fighting Agreement to comply with Orange County's Solid Waste Management ordinance Section 32-215(a)(23). This agreement for fire fighting procedures is based on the final approved document from your Division by Lt. Frank Raiké dated January 2004. However, since this facility is not a landfill and a commercial development, all references to landfill fire fighting, such as soil suppression, have been deleted. In addition, the Fire Marshall has previously approved a commercial plan review of this facility under Orange County Building Department No. B05900371. We agree to follow the emergency and fire fighting procedures outlined in the attached Emergency and Fire Preparedness Guidelines document. We also agree to update this document at least annually, or when significant facility changes occur, such as personnel, equipment and access. The updated document will be submitted to your office, and to the Orange County Environmental Protection Division (OCEPD), Solid Waste Department.

If the attached document is acceptable, please have Chief Plaughter execute the last page and return a copy to us and to Mr. Arnaldo Mercado, OCEPD.

Sincerely,

HSA GOLDEN

James E. Golden, P.G.
Vice President, Principal Hydrogeologist



*Reviewed + approved
Lt Marshall 8-25-05*

Attachments
Addressee (2)

Copy to: Mr. Mike Massaro, TRI

Environmental and Engineering Consultants

**EMERGENCY AND FIRE PREPAREDNESS
GUIDELINES**

Taft Recycling, Inc.
Waste Processing Facility and Transfer Station
375 W. 7th Street, Taft, Florida

Prepared for:

TAFT RECYCLING, INC.
148 Baywood Avenue
Longwood, Florida 32750

Prepared by:

HSA GOLDEN
225 East Robinson Street, Suite 100
Orlando, Florida 32801

August 2005

Project No. 04-297.013

EMERGENCY AND FIRE PREPAREDNESS GUIDELINES
Taft Recycling, Inc.

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FIGURES

- Figure 1 Site Location Map
- Figure C 2 Existing Conditions/Utilities
- Figure C-5 Proposed Fire Service Plan

Note: The majority of the procedures and text herein are supplied by the Orange County Fire Rescue Division

1.0 Purpose

This document is to be used as a guideline for procedures and preparedness in the event of a major fire and/or emergency was to take place within the Taft Recycling, Inc. (TRI) waste processing facility.

1.1 Site Location and Access

The TRI waste processing facility and transfer station is authorized to accept construction and demolition debris; Class III; and Class I (municipal solid waste). TRI currently processes the wastes for recoverable materials such as clean wood, concrete, paper, cardboard, metals, and glass. TRI is located at 375 W. 7th Street, one-half mile west of Sidney Hayes Road, Taft, Florida, see Figure 1. Primary access to the site is from U.S. 441, or Orange Avenue, to Lord Street to Sidney Hayes Road, south to 7th Street, Taft-Vineland Road, to Recycle Center Road, to 7th Street accesses the site from the south.

LAND STREET

The site gate is open 24-hours, Monday through Saturday. The site's access gate is locked at all other times. The names and 24-hour contact numbers of facility personnel, who can respond and operate equipment within 30 minutes will be posted on the facility's sign.

1.2 Notification in Case of an Emergency or Fire

Orange County Fire and Rescue Division (OCFRD) Communications Center must be contacted immediately upon all fires on the property. The Florida Fire Prevention Code requires that in the event of fire occurs on any property the owner or occupant shall immediately report such fire to the Fire Department (911).

Orange County Fire/Rescue

911

Taft Recycling, Inc. Corporate Office

(407) 834-6540

TRI Scalehouse

(407) 851-0074

Mike Massaro, Operations Manager – Mobile (407) 509-2196

The Operator of the site will first and immediately notify the **Orange County Fire Department (911)**, Florida Department of Environmental Protection (FDEP) (407-894-7555) and Orange County Environmental Protection Department (OCEPD) (407-836-1400) in case of a fire or other emergency that poses an unanticipated threat to the public health or the environment. Within two weeks of any emergency, the Operator of the site will submit to the FDEP and OCEPD a written report on the emergency. This report will describe the origins of the emergency, the actions taken to control the emergency, the results of the action taken, and an evaluation of the success or failure of the actions.

1.3 Fire Protection and Fire Fighting Facilities

The TRI WPF/TS has sufficient fire protection and fighting facilities. Two (2) fire hydrants exist to serve the 12,000 sf. building and outside material storage areas, see Figure C-2. A third fire

hydrant is planned to be installed to service the 6,600 sf. expansion and scalchouse area, see Figure C-5. Fire flow calculations are also noted on Figure C-5.

Supplemental fire protection is to be furnished by the Orange County Fire Department. Further details of fire fighting procedures (containment and extinguishment) follow. Methods of fire suppression will ultimately be determined by OCFRD command for the different types of fires that may be encountered (structure, vehicle, solid waste). The various methods of suppression are as follows:

- Separation
- Soil Suppression
- Foam
- Copious amounts of water

*Specialized fire fighting equipment and materials, required by OCFRD Command will be provided solely at the owner's expense to protect the public health and environmental issues.

1.4 Equipment Inventory

Figure C-2 depicts the location of existing fire hydrants and hose reels on the TRI facility. One hydrant is on the south side of 7th Street, and the other is at the center of the site. Five (5) hose reels, with 50 to 100 feet of fire hose are strategically located throughout the facility. A proposed additional water line and fire hydrant are depicted on Figure C-5.

The equipment planned to be used at the TRI site includes the following, or its' equivalent:

- Four (4) Front End Loaders
- Three (3) Track Loaders
- Two (2) Fork Lifts

*Fire Extinguishers in accordance with NFPA 10 shall be provided on each piece of equipment operating at the property.

1.5 Safety Devices

All operating equipment at the TRI site will be fitted with protective structures and fire extinguishers. Personnel safety gear, such as hard hats, safety glasses, and steel toed shoes, are required for operational personnel. **The above safety devices will be provided solely at the owner's expense.**

1.6 Emergency Access

In the event of a fire, debris originally destined for the TRI facility will be rerouted to another permitted site. The site access roads are currently constructed to allow passage of vehicles under all expected weather conditions. The entrance has been paved to 7th Street, providing suitable access

for all emergency vehicles. Access roadway shall be all weather surfaces, 20'0" wide and 13'-6" vertical clearance shall accommodate fire apparatus with a minimum weight of 32 tons.

1.7 Communication Facilities

Telephone service will be present at the scalehouse and the field office (operator). In addition, all vehicles and equipment located on-site will be equipped with two-way radios or mobile phones. All emergency numbers (i.e., 911, fire department, police department, etc.) will be posted at the scalehouse. One (1) additional two-way radio, or mobile phone, will be available on site for emergency fire department command officer.

2.0 Fire Suppression Methods and Procedures

The following sections describe some suppression methods, but do not supersede the methods used by the responding fire department. TRI personnel must work together with the Fire/Rescue personnel by providing heavy equipment, soil, water and logistical support during a fire or emergency. OCFRD command officers will be in charge of the scene upon arrival and work closely with the TRI personnel to mitigate any emergency situation. Emergency operations will adhere to OCFRD Standard Operating Procedures. Structural and vehicle fires will be suppressed in accordance with Emergency Operation Guidelines.

Operational Fire Prevention NFPA 23011.2.2*

11.2.2.1* Combustible waste materials such as bark, sawdust, chips, and other debris shall not be permitted to accumulate in a quantity or location that constitutes an undue fire hazard.

11.2.2.2 Smoking shall be prohibited except in specified safe locations approved by the authority having jurisdiction. Signs that read "No Smoking" shall be posted in those areas where smoking is prohibited, and signs indicating areas designated as safe for smoking shall be posted in those locations.

(A) Smoking areas shall be provided with approved, noncombustible ash receptacles.

11.2.2.3 Access into yard areas by unauthorized persons shall be prohibited.

11.2.2.4 Storage areas shall be enclosed with a suitable fence equipped with proper gates located as necessary to allow the entry of fire department apparatus.

11.2.2.5 Miscellaneous occupancy hazards such as vehicle storage and repair shops, cutting and welding operations, flammable liquid storage, liquefied petroleum gas storage, and similar operations shall be safeguarded in accordance with recognized good practice.

11.2.2.6 Reference shall be made to NFPA standards that apply to specific occupancy hazards.

11.2.2.7 Vehicles and other power devices shall be of an approved type and shall be safely maintained and operated.

(A) Vehicle fueling operations shall be conducted in specified safe locations, isolated from storage areas and principal operating buildings.

(B) Diesel- or gasoline-fueled vehicles that operate on hogged material or chip piles, in log storage areas, or in lumber storage areas shall be equipped with fixed fire-extinguishing systems of a type approved for off-road vehicles.

11.2.2.8 All electrical equipment and installations shall conform to the provisions of NFPA 70, *National Electrical Code*[®].

11.2.2.9 Salamanders, braziers, open fires, and similar dangerous heating arrangements shall be prohibited.

11.2.2.10 Heating devices shall be limited to approved-type equipment installed in an approved manner.

11.2.2.11 Suitable safeguards shall be provided to minimize the hazard of sparks caused by equipment such as refuse burners, boiler stacks, vehicle exhausts, and locomotives.

11.2.2.13 Cutting, welding, or other use of open flames or spark-producing equipment shall not be permitted in the storage area unless by an approved permit system.

11.2.3 Exposure Protection. Exposure to the yard shall be protected in accordance with the requirements of 11.2.3.1 through 11.2.3.2.

11.2.3.1 Yard areas shall be separated from plant operations and other structures so that fire exposure into the yard is minimized.

(A) Minimum separation shall be by means of a clear space permanently available for fire-fighting operations.

(B) The width of the clear space shall be based on the severity of exposure, which varies with the area, height, occupancy, construction, and protection of the exposing structure and the type of stacking and height of adjacent stacks.

11.2.3.2 Forest, brush, and grass fire exposure shall be minimized by providing adequate clear space that is carefully kept free of combustible vegetation.

(A) Clear space of a width at least equivalent to the driveway shall be provided for grass exposures, and clear space of a width not less than 30 m (100 ft) shall be provided for light brush exposures.

(B) In forested areas, a wider clear space shall be provided.

11.4.1.1* The intent of the provisions of Section 11.4 shall be to provide minimum fire protection requirements to minimize the fire hazard in large yard storage areas containing

lumber, wood panels, and other similar wood products not intended for retail or wholesale distribution at the site.

11.4.1.2 In addition to the provisions contained in Section 11.4, the provisions outlined in Section 11.2 shall apply to all large yard storage areas for lumber and wood panel products at other than retail or wholesale yards.

11.4.2* General. The fire hazard potential inherent in forest product storage operations with large quantities of combustible material shall be controlled by a positive fire prevention program under the direct supervision of upper level management that shall include the following:

- (1) Selection, design, and arrangement of storage yard areas and materials-handling equipment based on sound fire prevention and protection principles
- (2) Means for early fire detection, transmission of alarm, and fire extinguishment
- (3) Driveways to separate large stacks and provide access for effective fire-fighting operations
- (4) Separation of yard storage from mill or other plant operations and other exposing properties
- (5) Effective fire prevention maintenance program, including regular yard inspections by trained personnel

2.1 Fire and Emergency Response

TRI personnel are expected to immediately respond to a fire or emergency, since response time could be the difference between a controlled or out of control situation. Next, Orange County Fire/Rescue will respond to insure adequate fire control. Orange County Fire Rescue is to be notified immediately of any fire at the TRI property.

Practice Emergency Plan

Effective fire prevention maintenance program, including regular yard inspections by trained personnel and suppression operations shall be practiced periodically. OCFRD review is limited solely to ensuring compliance with the minimum criteria as set forth in the applicable section of Florida Administrative Code, and is not intended to guarantee the effectiveness of the plan. To enhance your plan's effectiveness, the Florida Fire Prevention Code requires that it be exercised periodically and that your staff be briefed and trained on your procedures so that the plan can be implemented at a moment's notice.

Extinguisher Training

Designated employees of business occupancies shall be periodically instructed in the use of portable fire extinguishers.

2.2 Construction of a Fire Lane

The function of a fire line is to provide a barrier to contain the fire boundaries. The following procedures should be followed during line construction to contain a fire:

- Remove all ground cover and debris along the fire line;
- Use natural barriers such as working faces, trenches, etc.;
- Separate burned and unburned materials; and
- Construct a fire line to bare soil, free of leaves, twigs, roots, disposed debris, etc.

A site perimeter road is available within the buffer areas to allow truck access, see attached site plan.

2.3 Use of Heavy Earth Moving Equipment

The use of heavy earth moving equipment to suppress fires is effective because fire line construction can be completed at a faster rate. Orange County Fire Rescue will support and protect heavy equipment operators by way of exposure lines and oversight. Caution must be taken to prevent earthmoving equipment from working alone out in front of a fire. Because they have no fire extinguishing capability other than removal of fire fuel, they can easily be overrun by a fast-moving fire. TRI personnel will be expected to operate the on-site heavy equipment to assist in fire suppression and separate materials immediately and suppress burning materials with soil. Fire/Rescue will maintain control and have oversight of all emergency operations.

2.4 Water Supply and Use

Two (2) fire hydrants are located at the corner of 7th Street and one at the center, see attached figure C-2 for the location of the nearest hydrant. Five hose reels are located at strategic locations across the site.

2.5 Personnel Safety and Fire Control

Fighting fires is a dangerous activity and could cause serious injury or fatality if hurried or incorrect decisions are rendered. Remember: The safety of personnel and equipment always comes first. The following standards are adopted from the U.S. Forest Service and is a good rule to follow when encountering a fire:

1. **Keep informed of fire weather conditions and forecasts.** Be aware of the weather conditions, particularly to direction and velocity of the wind.
2. **Know what your fire is doing at all times.** Many small fires become large if not kept under constant observation.

3. **Base all actions on the current and expected behavior of the fire.** The action taken should be determined by everything that is happening and everything that might happen. Every fire has to be approached differently because of the changing conditions encountered.
4. **Have escape routes for everyone and make them known.** Identify escape routes and notify personnel where they are and what to do when they get to the safety zone. Use natural barriers as much as possible.
5. **Post a lookout when there is a possible danger.** A lookout observer, with communications capability, can view the "large picture" of the fire containment process and can see if any potential danger may exist for those fighting the fire directly.
6. **Be alert, keep calm, think clearly, act decisively.** When faced with a situation, think, know, understand what is happening and keep calm. Panic can injure personnel.
7. **Maintain prompt communication with personnel, supervisor and adjoining forces.** Adequate communication is essential to good fire control safety.
8. **Give clear instructions and be sure they are understood.** Issue concise instructions and make sure the personnel understand the directions precisely.
9. **Maintain control of personnel at all times.** When issuing assignments, one consideration should be the reliability of the personnel. Other considerations will include inspection of tools and coordination of available equipment.
10. **Fight fire aggressively, but provide for safety first.** Aggressive action is the key to fire suppression, but it must neither shortcut nor violate any safety rule covering a particular situation.

2.6 Protective Clothing

One of the best ways to prevent injury during a fire is to wear gloves, goggles and protective clothing, including proper footwear. Gloves should be comfortable and the right size to prevent abrasions and blisters. Goggles should have vents in the side and should be designed for the greatest possible field of vision. Lace-up boots are preferred, especially for uneven terrain. Heavy socks should be worn with boots.

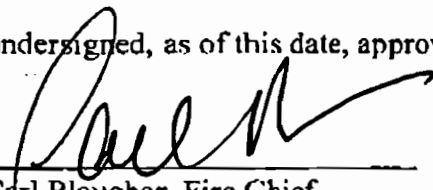
3.0 Fire Investigation

When determined by the Orange County Fire Rescue Department, fire investigation will be referred to the State Fire Marshall's Office and/or the Division of Forestry for further investigation. Safety of the fire department and TRI personnel will be the primary concern.

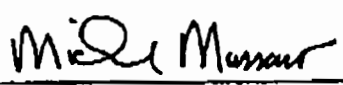
4.0 Disposal of Burned Debris

The burned debris will be isolated as much as practicable from the rest of TRI facility using various means, such as earthen berms, pits, transport bins, etc. Once all hot spots have cooled and the fire fully suppressed, the remains of burned debris will be transported off-site to the appropriate. Oily residuals from burned tires will be stored in roll-off containers to be transported to a Class I facility for disposal.

The undersigned, as of this date, approve this agreement.

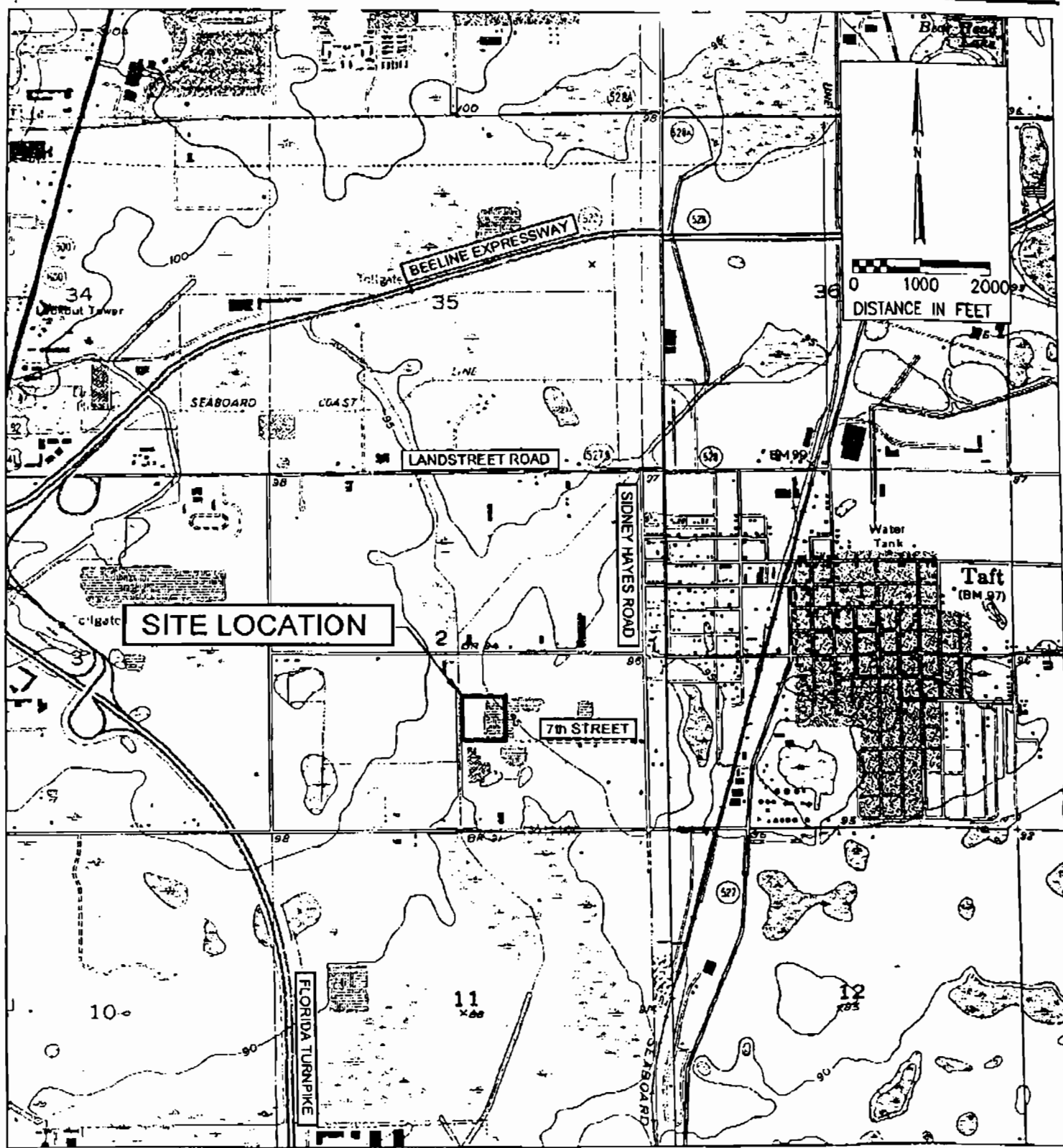

Mr. Carl Plaugher, Fire Chief
Orange County Fire Rescue Department

Date: April 26/2006

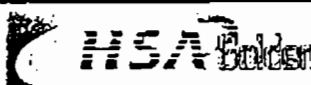

Mr. Mike Massaro, Operations Manager
Taft Recycling, Inc.

Date: 8-17-05

FIGURES



SOURCE: USGS LAKE JESSAMINE AND PINE CASTLE, FLORIDA, 7.5 MINUTE QUADRANGLE MAP, 1980



HSA Golden
 225 East Robinson Street
 Suite 100
 Orlando, Florida
 32801

Environmental & Engineering Consultants

Tel: 407 649-5475
 Fax: 407 649-8582

PROJECT NO.: 03-297.013

MAY

SITE LOCATION MAP

TAFT RECYCLING, INC
ORANGE COUNTY, FLORIDA

FIGURE 1

WASTE PROCESSING FACILITY EXPANSION EXISTING CONDITIONS / UTILITIES

Santa L. Lopez, P.E. P.E. No. 00001 R. Engineering Station No. 000	BY DATE PROJECT NO. 14-737613
DESCRIPTION DRAWING CHECKED DATE 3/03	DUE DATE 3/03
DATE APPROVAL 1/03	AS NOTED C-2
CASE FILE 0418010301 P100	14077 10

SECTION 4
REVISED CLOSURE
ESTIMATE

**TAFT TRANSFER STATION AND MATERIAL RECOVERY FACILITY
CALCULATIONS, ASSUMPTIONS AND SUPPORTING INFORMATION
CLOSURE COST ESTIMATE FOR FINANCIAL ASSURANCE**

October 21, 2009

The closure cost estimate shown on Table 1 (attached) is based on the table of Material Disposition, Appendix B, Operation Plan. The closure cost estimate includes the cost of loading, transporting, and disposal of the maximum on-site storage of recyclable materials which may be at the Facility at any time. The estimate considers a third party performing the work and is signed and sealed by a registered professional engineer. The assumptions and supporting documentation used to prepare the closure cost estimate in Table 1 are summarized below.

- Loading of Class I, III, C&D and non-processed/non-baled recyclable materials provided by ERC General Contracting Services, Inc.
- Transport of Class I, III, C&D and non-processed/non-baled recyclable materials provided by C&W Hauling
- Loading, transport and end disposal of processed/baled cardboard, aluminum, glass, plastic, metal and paper was assumed at the Orange County Landfill. Although these materials would likely have commodity value, a worst case assumption was made in the closure cost estimate to allow for disposal.
- Disposal rates for Class I, III, C&D and non-processed/non-baled recyclable materials provided by Orange County Landfill. The Orange County Landfill is the closest facility that could accept these types of wastes.
- Transport and recycling of whole tires quoted by RMD Americas of Florida, LLC, RMD will transport and recycling whole tires at the rate provided. Loading of whole tires from roll-off containers to RMD's trucks will be completed by ERC General Contracting Services, Inc. at the rate provided.
- Processed tires and residuals will be directly transported to Orange County Landfill for use as daily cover or direct disposal in the Class I landfill. Assumed disposal rate for Class I refuse would apply.
- Costs for final cleaning/washdown, removal of household hazardous waste, and any final sampling and analysis are based on general estimating experience.

Upon approval of this closure cost estimate, Taft Recycling, Inc. will renew the financial assurance instrument for the Facility.

Prepared by: _____

Jeff Wild, P.E.
Florida P.E. No. 67903
HSA Golden, Inc.; FBPE #9915

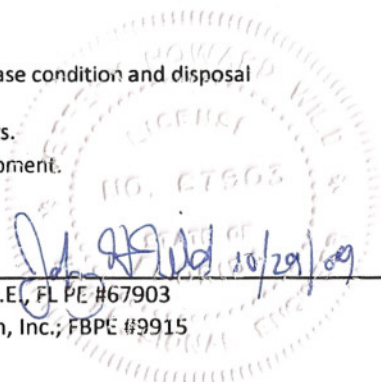
Date: 10/29/09

TABLE 1
OPINION OF PROBABLE CLOSURE COSTS
TAFT TRANSFER STATION AND MATERIAL RECOVERY FACILITY
TAFT RECYCLING, INC.
ORLANDO, FLORIDA

Recovered Material and Unprocessed Material Stored	Maximum Storage (tons)	Handling and Loading Costs (\$/ton)	Transportation Costs (\$/ton)	Disposal Costs (\$/ton)	Total Loading, Transportation and Disposal (\$/ton)	Total All Costs (\$)
Unprocessed Class III	376	\$2.50 (5)	\$6.00	\$24.00	\$32.50	\$12,220.00
Unprocessed Class I Putrescible	619	\$2.50 (5)	\$6.00	\$35.10	\$43.60	\$26,988.40
Recovered Asphalt/Concrete	80	\$0.00 (2)	\$6.00	\$24.00 (3)	\$30.00	\$2,400.00
Recovered Roofing Tiles	20	\$0.00 (2)	\$6.00	\$24.00 (3)	\$30.00	\$600.00
Recovered Cardboard (Baled)	325	\$2.50 (5)	\$6.00	\$24.00 (3)	\$32.50	\$10,562.50
Recovered Paper (Baled)	37.5	\$2.50 (5)	\$6.00	\$24.00 (3)	\$32.50	\$1,218.75
Recovered Metal (Ferrous, Steel, Pipe)	40	\$0.00 (2)	\$6.00	\$24.00 (3)	\$30.00	\$1,200.00
Metal (Aluminum Cans)	1.5	\$2.50 (5)	\$6.00	\$24.00 (3)	\$32.50	\$48.75
Glass (Whole Bottles)	18	\$2.50 (5)	\$6.00	\$24.00 (3)	\$32.50	\$585.00
Plastic (Mixed Loose)	1.4	\$2.50 (5)	\$6.00	\$24.00 (3)	\$32.50	\$45.50
Wood	183	\$2.50 (5)	\$6.00	\$24.00	\$32.50	\$5,947.50
Whole Tires	67.5	\$2.50 (4)	\$0.00(4)	\$50.00 (4)	\$52.50	\$3,543.75
Processed Shredded Tires	67.5	\$0.00 (2)	\$6.00	\$35.10	\$41.10	\$2,774.25
Processed Tire Residuals	5	\$0.00 (2)	\$6.00	\$35.10	\$41.10	\$205.50
Recycling Residuals	15	\$0.00 (2)	\$6.00	\$35.10	\$41.10	\$616.50
Washdown/Cleanup					LS	\$1,500.00
Waste Oil/House Hold Haz. Waste	55 Gallon Drum	\$100.00	\$100.00	\$300.00	\$500.00	\$500.00
Misc. Sampling and Analysis					LS	\$1,000.00
Sub Total						\$71,956.40
Contingency (15%)						\$10,793.46
Total						\$82,749.86

Notes:

1. Maximum storage volumes taken from table of Material Disposition, Appendix B, Operation Plan.
2. There are no loading costs for these materials. Materials are stored in roll-off containers and would not require loading.
3. Although processed/baled cardboard, paper, steel, aluminum cans, glass, plastic and concrete have commodity value, assumed worst case condition and disposal at Class III rates.
4. Whole waste tire disposal rate includes transportation by RMD Americas of Florida, LLC. Loading costs to transfer/load onto their trailers.
5. Unprocessed Class I, III, and C&D materials, and loose glass, plastic and wood loaded onto transfer trailers using rubber tire loader equipment.
6. Class III wastes include C&D debris.


 Jeff Wild, P.E., FL PE #67903
 HSA Golden, Inc.; FBPE #9915

CONTRACTOR QUOTES



ERC GENERAL CONTRACTING SERVICES, INC.

**Carter CommerCenter • 890 Carter Road, Suite 170
Winter Garden, Florida 34787
(407) 656-3900 • Fax (407) 656-2128**

October 19, 2009

Mr. William Jacobs
HSA Golden.
100 East Pine Street, Suite 605
Orlando, FL 32801

Re: Taft Transfer Station and Material Recovery Facility
375 W. 7th Street
Orlando, FL 32824

Dear Mr. Jacobs:

The below rate is an estimated cost to mobilize a rubber tire loader to the Taft Transfer Station located at the above address and load Class I, III, C&D and discarded recyclables onto a transfer trailer for transport to a permitted disposal facility. The rate only includes loading of the wastes, no transportation or disposal costs have been include.

Cost - \$2.50/ton

If there is anything else that you need, please give me a call.

Sincerely,

Jerry Pinder
ERC General Contracting Services, Inc.



October 6, 2009

Dennis Pantano
Waste Services, Inc.
1099 Miller Dr.
Altamonte Springs, FL 32701

Re: Taft Recycling and Transfer Facility
375 W. 7th Street, Orlando, FL
Transportation Costs – Class I and Class III Solid Waste

Dear Mr. Pantano,

This letter is to confirm our conversation regarding your Taft Recycling and Transfer Facility located at 375 W. 7th Street, Orlando, Florida. In the event of closure of the facility, C & W can haul remaining Class I and Class III wastes and discarded recyclable materials from the facility for disposal at the Orange County Landfill located at 5901 Young Pine Road, Orlando, Florida. The following rate per ton would apply to any type of material transported.

\$6.00 per ton

If there is anything else that you need, please give me a call.

Respectfully,

A handwritten signature in black ink, appearing to read 'Kris Creeden', is written over a faint, stylized graphic that resembles a signature or a set of initials.

Kris Creeden
President
C & W



ORANGE COUNTY SOLID WASTE DISPOSAL RATES
APPROVED BY THE BOARD OF COUNTY COMMISSIONERS
EFFECTIVE DECEMBER 1, 2008

The minimum charge is \$6.00

Fee Category	Description	Landfill	Porter Transfer Station	McLeod Road Transfer Station
Residential Solid Waste	Garbage, putrescible waste (Class I)	\$32.65/ton	\$32.65/ton	\$32.65/ton
Commercial Solid Waste	Garbage, putrescible waste (Class I)	\$35.10/ton	\$35.10/ton	\$35.10/ton
Construction & Demolition Debris (C&D)	Clean fill, asphalt, broken concrete, wood, nonputrescible or water soluble waste, furniture, etc. (Class III)	\$24.00/ton	N/A	N/A
Yard Waste	Vegetative landscape materials including tree and shrub clippings, etc.	\$29.00/ton	\$29.00/ton <i>accepted on Saturdays and Sundays only</i>	\$29.00/ton <i>accepted on Saturdays and Sundays only</i>
Asbestos	Must be packed according to FDEP and Orange County specifications	\$110.00/ton	N/A	N/A
Tires		\$148.00/ton	\$148.00/ton	\$148.00/ton

- If you fail to weigh out, your fee will be calculated to the amount of the deposit collected.
- Due to space constraints, the transfer stations are unable to accept trucks longer than 30 ft. (bumper to bumper) or trailers with more than 12 ft. in cargo space.
- Uncovered loads will be charged a double fee.
- Any mixed loads will be charged the higher tonnage rate.
- Bulk loads of tires accepted only at the Landfill, Monday through Friday, 8:00 a.m. to 4:00 p.m.
- Forms of payments accepted include check, cash and all major credit cards.

LANDFILL HOURS OF OPERATION

Non-Account Customers	Monday – Sunday	8:00 a.m. - 5:00 p.m.
Account Customers	Monday & Tuesday	4:00 a.m. - 7:00 p.m.
	Wednesday - Friday	4:00 a.m. - 6:00 p.m.
	Saturday	6:30 a.m. - 5:00 p.m.
	Sunday	8:00 a.m. - 5:00 p.m.
Holiday Schedule	Christmas Day	CLOSED

PORTER TRANSFER STATION – HOURS OF OPERATION

Non-Account Customers	Monday – Sunday	8:00 a.m. – 5:00 p.m.
Account Customers	Monday – Sunday	7:00 a.m. – 3:30 p.m.
Holiday Schedule	Orange County approved holidays	CLOSED

McLEOD ROAD TRANSFER STATION – HOURS OF OPERATION

Non-Account Customers	Monday – Sunday	8:00 a.m. – 5:00 p.m.
Account Customers	Monday – Friday	5:30 a.m. – 3:30 p.m.
	Saturday – Sunday	7:00 a.m. – 3:30 p.m.
Holiday Schedule	Orange County approved holidays	CLOSED

Locations

Orange County Landfill
5901 Young Pine Road
407-836-6600

Porter Transfer Station
8750 White Road (*Corner of
Good Homes & White Road*)
407-296-5198

McLeod Road Transfer Station
5000 L.B. McLeod Road
407-245-0931

Free Compost is offered to all Orange County residents, provided they bring their own container and shovel. Residents may take up to one pickup truckload of compost free of charge. Compost can be picked up from the Landfill and transfer stations, Sunday through Saturday, 8:00 a.m. to 5:00 p.m.

Household Hazardous Waste (HHW) – Residents of Orange County can safely dispose of household hazardous waste free of charge. Hazardous products have the following words on the label: POISON, DANGER, WARNING, FLAMMABLE, CAUSTIC, ACID OR PESTICIDE. Please bring these items to the Orange County Landfill at 5901 Young Pine Road, Sunday through Saturday, 8:00 a.m. to 5:00 p.m.; or to the McLeod Road Transfer Station at 5000 L.B. McLeod Road, Wednesdays and Saturdays, 8:00 a.m. to 5:00 p.m.

Household Electronic Equipment – Residents of Orange County can bring household electronic equipment such as: home computers, monitors and televisions to the permanent HHW location at the Orange County Landfill, 5901 Young Pine Road.

For information about the Orange County Utilities Solid Waste Division,
please call the **Solid Waste Hotline at 407-836-6601.**

Para más información, por favor llame al Departamento de Servicios Públicos del Condado de Orange y pida hablar con un representante en español. El número de teléfono es 407-836-6601.

Website: www.ocfl.net/utilities/

E-mail Address: Solid.Waste@ocfl.net