

IV. General Operations

A. Waste Handling Operations

Prior to accepting any waste product, TRADEBE reviews each waste stream profile to determine its chemical nature, content and optimal disposal method. Before materials can be processed on site, a representative sample of each waste stream is taken and remitted to TRADEBE's on-site labs for testing. The laboratory will complete all testing required by the permit, as well as any additional testing needed to ensure safe handling on-site. Any discrepancies found upon testing and/or paperwork review will be resolved before the waste will be accepted. Once a waste has been analyzed and accepted, it is entered into TRADEBE's computerized inventory system. TRADEBE assigns each container/unit with a bar code number and label identifying the waste type, generator, waste analysis and method of treatment/disposal. Using this bar code inventory tracking system, every container is tracked through the entire storage/treatment process to the final treatment/disposal off site. The system is also integrated into a manifesting computer program to assure the proper handling and disposal of a generator's waste. Additionally, this system assists management in scheduling and production requirements, as well as providing customers and regulatory agencies with instant information on the status of individual shipments. Depending on chemical composition and physical state, the waste stream is processed through either the liquid fuel blending system or the solid waste system.

Most hazardous wastes received by TRADEBE are either recycled through the distillation processes or blended into waste-derived fuels and shipped off-site to permitted cement kilns. Other hazardous wastes may be treated and/or shipped off-site for reclamation or incineration. Non-hazardous wastes are solidified and disposed of in approved Sub-Title "D" landfills. High BTU, non-hazardous waste may be recycled through SDS or shipped off-site to waste to energy facilities. TRADEBE also utilizes wastewater treatment facilities for hazardous and non-hazardous liquids that meet the criteria for these programs. TRADEBE continues to diversify by expanding its capabilities and processes to meet the waste management needs of its customer base.

B. Liquid Hazardous Waste Management Capabilities

TRADEBE manages waste generated by customers in a variety of industries. Wastes are collected and transported to our facilities in bulk form, fifty-five gallon drums or in other miscellaneous Department of Transportation (DOT) approved containers. Most of the hazardous waste TRADEBE accepts includes solvents, inks, paints, chlorinated compounds, rags, filters, other industrial waste and household items with high BTU content.

Most liquid-containing drums are pumped and the contents sent to off-site cement kilns for reuse as an alternate fuel. Sludges and more difficult to pump liquids are processed through TRADEBE's shredding tower operations in Memphis, Tennessee.

C. Solid Hazardous Waste Management Capabilities - Solid Distillation System

In July of 2004 TRADEBE added a significant capability to its range of services called SDS or Solid Distillation System. SDS is a positive step forward in waste recycling technology that offers customers an effective and cost-efficient method for recycling organic solid waste that might otherwise be incinerated or land-filled. TRADEBE's Solid Distillation System is a self contained, indirectly-heated, rotating processing chamber that uses an anaerobic atmosphere to extract volatile and semi-volatile organic compounds from solid waste. The SDS eliminates oxidation and the formation of hazardous compounds.

In addition to the environmentally friendly nature of the process, the SDS system offers many other advantages over typical direct-flame systems.

- SDS can effectively process any solid waste containing organic compounds.
- SDS helps generators meet Environmental Management Systems (EMS) objectives.
- SDS prevents pollution while promoting recycling and reuse.
- SDS partners with Generators to meet USEPA's RCRA Conservation Challenge.
- SDS eliminates the release of hazardous constituents into the atmosphere.
- SDS conserves energy and materials while keeping waste out of the environment.

SDS represents another innovative, environmentally friendly recycling technology from TRADEBE.

Other solid hazardous wastes not suitable for this technology will either be included in the company's other waste management programs and possibly be sent to off-site incinerators.

D. Liquid Distillation Units

In addition to Solid Distillation, TRADEBE can also offer Liquid Distillation capabilities. Distillation Technology consists of three units for solvent recovery.

- Distillation Column: This unit is designed for either batch or continuous feed, having the ability to fractionate solvent chemicals based on their boiling points.
- Thin Film Evaporator: The thin film evaporator can be used to concentrate, refine, or recover a product through a distillation or similar separation processes. Due to its inherent design features, it is ideal for thermal treatment of viscous media and heat sensitive products where reduced operating temperatures and vacuum operating pressures are desirable.
- 450 Distillation Unit: Designed for processing a high solid content material.

E. Stabilization and Chemical Fixation

Characteristic hazardous wastes that carry the D001 (for oxidizing wastes only), D002, D004-D011 codes and do not contain underlying hazardous constituents with concentrations above the universal treatment standards and those which are also exempt from 40 CFR Subpart CC regulations (<500ppm voc) are acceptable materials for TRADEBE's chemical stabilization process. Typical waste include heavy metal compounds, acids and acid sludges, electrical/electronic waste, inorganic chemical and petrochemical waste, incinerator, boiler and industrial furnace residues, multi-source leachates, general debris and inorganic waste containing <30% oil and grease.

The basic stabilization operation immobilizes the leachable metals by combining the waste with stabilization agents such as lime or cement kiln dust. The process produces a non-hazardous cement-like material. These chemical bonding agents form a solid structure around the waste that binds the contaminated material into a solid, non-leachable mass safe for landfill disposal. Acid and caustic wastes are neutralized and oxidizers will be reduced.

F. Automated Drum Processing Units Overview (Tower Operations)

The TRADEBE Memphis facility operates a computer controlled, automated and fully enclosed shredding tower. Atmospheric emissions are minimized as a result of the enclosed nature of the process. Emissions from the ventilation ports or vents are regulated under the Clean Air Act (CAA), Federal and State requirements and applicable RCRA standards. The system incorporates a slow speed rotary shear type shredder, which puncture and shear metal drums into small pieces. This system facilitates the removal of the contents from the container and reduces the material's particle size suitable to TRADEBE's blending programs. The speed and design of the shredders remove the potential for spark and heat generation. An inert gas (nitrogen) purging system further reduces potential for ignition or explosion. The system also contains a FIKE dry powder fire suppression system that activates at certain pressure levels thereby further reducing the potential for an ignition.

Containers are staged on a conveyor and transported to an elevator that raises the containers, two at a time, to the top of the tower. They are then placed in an air-locked, nitrogen-blanketed chamber. Once the nitrogen purge has lowered the oxygen level to safe operating levels, the containers begin their descent through the system. The shredder punctures and shreds the drums and is equipped with a hydraulic ram to ensure the proper feed of the drums into the shredder. High BTU liquids may be introduced into the shredder to provide a continuous movement of material through the unit. After shredding, a rotary magnet separates the metal drum fragments from the waste. These drum fragments then fall onto a shaker-grate to remove residual contaminants from the metal. The resulting metal is then washed and recycled as scrap metal. An auger system directs sludges, shredded processable solids and liquid waste to a 2,500-gallon hydropulper for further particle reduction and blending. The resulting material is reduced to 1/8th inch particle size and dispersed with other bulk liquid waste. The final product, a pumpable liquid fuel that is consistent in its BTU, halogen and metals content is then stored in a tank farm and then transferred out via tank truck to approved RCRA/BIF permitted cement kilns. At both facilities, TRADEBE processes on average 50,000 gallons of liquid material per day.

F. RCRA/BIF Cement Kiln Disposal

TRADEBE adheres to the Responsible Recycling Hierarchy. The Hierarchy is included in this document. TRADEBE sends a good portion of its processed waste products to permitted RCRA/BIF cement kilns located across the country. A list of TRADEBE's approved facilities is located in Attachment 2 (TRADEBE reserves the right to add and delete facilities from the list). All cement kilns serviced by TRADEBE either meet or will meet the Maximum Achievable Control Technology (MACT) combustion standards. The combustion of organic hazardous wastes at high temperatures in cement kilns is the Best Demonstrated Available Technology (BDAT) for treating high BTU liquid hazardous wastes. Cement kilns are designed to burn at high stable temperatures. With limestone as its primary ingredient, cement provides a natural dry scrubber inside the kiln to capture metals. Cement kilns easily achieve a Destruction and Removal Efficiency (DRE) of at least 99.99% as required by USEPA regulations. By utilizing hazardous waste as a fuel, cement kiln recycling, reduces the consumption of fossil fuels by the equivalent of 1 million tons of coal annually.

G. Liquid and Solid Non-Hazardous Waste Management Capabilities

In addition to TRADEBE's hazardous waste management programs, TRADEBE manages a wide variety of non-hazardous wastes including water-based inks, pastes and glues, latex paints, glycols and adhesives. These wastes tend to have a higher water composition and generally do not meet the criteria for our fuel blending process. TRADEBE has dedicated non-hazardous waste processing areas at the Indiana and Tennessee locations to handle these waste streams. Non-Hazardous processing includes the bulking of non-hazardous sludges and liquids for solidification and bulking of non-hazardous debris such as wood, plastics and rags for recycling or energy recovery. At the Indiana and

Tennessee locations, TRADEBE utilizes a shredder to accomplish particle size reduction of solids to comply with Subtitle "D" landfill standards. Given TRADEBE's management of these materials, we have seen a dramatic increase in the amount of non-hazardous waste sent to our facilities over the last several years. TRADEBE's facilities can manage both drummed and bulk non-hazardous waste.

H. OFF-PRIME REUSE

In 2005 TRADEBE introduced a new and innovative alternative to disposal for some waste streams called: Off-Prime Reuse. There are many manufacturing leftovers that have another opportunity to serve industry as Off Prime products. These Off Prime products are adequate for use in some applications where prime virgin products are not required. If a generator's waste stream includes:

Acetone	MEK & MIBK
Glycols	Aromatic Solvents
Xylene	Toluene
Alcohols	Ethanolamines
Aliphatic Solvents	Heptane
Hexane	V,M, & P Naptha
Lube Oils	Residual Fuel Oils
Crude Oil Feedstocks	Acids
Styrene	Polyethylbenzene Co-products
Resin Feedstocks	Vegetable and Animal Oil Materials
Gasoline Blendstocks	Surfactants

Or other similar wastes, we will analyze the stream and, if it qualifies, plug the waste into our Off-Prime network usually within a few days. If the material qualifies, the generator will no longer be hauling out a waste for disposal, he will be transporting a product to be reused.

I. Transportation

TRADEBE offers its customers transportation services that can accommodate all of their transportation waste management needs.

TRADEBE maintains a fleet of DOT approved vehicles for transporting hazardous waste. Our fleet of tractors, trailers, tankers and roll-off containers manage customer pick-ups and provide off-site recycling and disposal of waste material. Our professional drivers are trained in DOT regulations and have the experience needed to provide our customers with manifesting, placarding and loading assistance.

TRADEBE will ensure that your waste is transported and disposed of in the safest, most cost-effective manner possible. At each of our locations there is a Transportation Coordinator to answer any questions and TRADEBE Customer Service Representatives, at the East Chicago location, handle the scheduling of pick-ups and scheduling of drop offs for all three locations.

J. Training

TRADEBE maintains that the responsibility for a safe operation rests with all of its employees. Specific training is given to all responsible on-site supervisory personnel and to the individuals handling, storing and treating wastes. Off-site personnel participate in training programs to meet the requirements of 29 CFR 1910.120. Site design, operational procedures and planning affect the operations; therefore; individuals involved in these functions must be aware of the criteria for a safe and efficient operation. Emergency response training is conducted in accordance with 29 CFR 1910.120 and the Contingency Plan for each facility. This means that each employee, with a specific duty established in the Contingency Plan, will be fully trained as to the specifics of the duty or action required. This training includes drills or simulated emergency situations to provide practice for personnel and to determine the adequacy and effectiveness of the Contingency Plan. TRADEBE has a written health and safety program in place. Training for personnel also encompasses RCRA and DOT training. Each level of personnel is trained to meet or exceed federal, state and company requirements.