

## What Happens to My Technotrash

### GreenDisk Recycling Philosophy

GreenDisk is committed to responsibly managing the disposition of your electronic waste. This commitment means that GreenDisk:

- ⇒ Securely destroys any information you have on your media no matter what form it is in.
- ⇒ Reuses any salvageable items whenever possible. Reuse is the highest form of recycling; if the items can not be reused due to age, wear, or economic reasons, we break down the material to its raw components and recycle them.
- ⇒ Ensures all recycling processes meet or exceed governmental regulations and minimizes the environmental impact as much as possible. No hazardous materials are sent outside the country. 99% of all material we receive is either reused or recycled.

GreenDisk regularly evaluates new technologies, procedures, and the processes of our partner organizations to ensure that we are utilizing the latest thinking in electronic waste disposal from a social, environmental, and compliance perspective.

### Introduction

For nearly 14 years, GreenDisk's primary focus has been on the secure, audited disposal of private or proprietary information stored on electronic media. When we first started GreenDisk, our clients were exclusively leaders from the software, music, and movie industries including Microsoft, IBM, BMG Music, and Disney. These companies relied on GreenDisk to take their obsolete consumer products, break down the materials into paper and media, securely destroy all information, and recycle the resulting material.

During the last few years, we have expanded our offering to serve consumers of electronics. Our services are used by individuals and organizations that want to securely destroy their electronic information and properly dispose of their technotrash in a safe, legally compliant, and environmentally responsible fashion. GreenDisk will safely recycle anything from a CD to a PC, including such items as print cartridges, cell phones, and peripherals.

*But what do “secure and environmentally responsible” mean?* Unfortunately, there is no recognized standard for responsible recycling. Some “recyclers” ship CPUs and monitors to China, not knowing whether Chinese workers will be exposed to hazardous materials or if the computers are just going to be dumped into landfill (in many cases they are). Some “recyclers” or manufacturers that claim to “recycle” actually incinerate inkjet cartridges (a very energy inefficient form of recycling), while others remanufacture the good ones and dump the bad ones into landfill. Still other recyclers do the right thing ensuring all components are broken down into raw materials so they can be used to manufacture new products.

This White Paper describes the GreenDisk process and what happens to the materials you entrust to GreenDisk.

### **The GreenDisk Process**

GreenDisk collects relatively small amounts of technotrash, sorts the items into like materials, consolidates them into large loads, destroys any information on the media, preps products for reuse when possible, and recycles the rest so that the raw materials can be used to manufacture products of value.

Our process is broken down into four stages:

- Collection and transport
- Sortation and consolidation
- Recycling
- Manufacturing

We have determined that the most effective way to carry out all these functions is to partner with organizations that accomplish these tasks as their primary course of business and have the same goals as GreenDisk – reuse if possible and responsibly recycle 100% of the remaining material. Partnering with certified organizations gives us the flexibility to adapt our offerings to the ever-changing needs of the marketplace while maintaining integrity throughout the process.

Each shipment (large or small) has a token number or authorization code which allows us to track the shipment throughout the process to ensure a fully audited transaction takes place for each transaction.

Collection and transport. As a result of GreenDisk's range of offerings, technotrash may be picked up and delivered to our processing facilities through a variety of carriers - the US Postal Service, FedEx, our own trucks, or through a client's preferred shipper. In all cases, the focus is on offering a convenient method of pickup for the client. Whether a client is sending in a Technotrash Can, getting a truckload of technotrash picked up, or simply sending GreenDisk a box, the technotrash is always delivered to one of our certified facilities located throughout the U.S. Each facility follows the standard procedures developed by GreenDisk that ensure technotrash is handled, tracked, and processed properly.

Sortation and consolidation. All technotrash received is logged in (recording the token number) and sorted. CDs and DVDs are separated into one container; video and audiotapes in another. Printer cartridges are placed in another container; cell phones in another; cords and cables into another container; and miscellaneous plastics in yet another. Monitors, CPUs, and other large components are placed in a separate area.

Recycling & Manufacturing. There is not one comprehensive way to properly dispose of all types of technotrash. Different materials require different processing. That is why GreenDisk sorts the technotrash it receives and consolidates it into large batches of like material. In every case we look first to recover items for reuse. For example, items such

as diskettes, jewel cases, cell phones, printer cartridges, and computers are often able to be refurbished and reused. Most other items are recycled for the commodity materials they yield. These commodity materials are sold into the open market and manufactured into products, sometimes using exclusively recycled materials and sometimes using a mix of recycled and new materials.

Because we accept most any media containing private or proprietary information, regardless of its recyclability, we occasionally encounter materials which we cannot recycle or reuse (less than 1%). In these cases we dispose of the materials in as benign a manner as possible.

### **Secure destruction of information on electronic media**

Identity theft, corporate espionage, and other crimes resulting from the theft of valuable information from media are on the rise. Destroying information properly is absolutely critical, and simply deleting files from a hard drive does not do the job. GreenDisk destroys information in the following ways:

- *Videotapes & audiotapes* are degaussed or shredded. The media goes through high-powered electro-magnets that wipe out all information without any chance of recovery.
- *CDs & DVDs* are ground or shredded. The resulting material is perfect for the subsequent recycling and remanufacturing process, and information is impossible to capture.
- *Hard drives* either go through a military wipe or are drilled. A military wipe follows the Department of Defense high-level security wiping procedures (5220.22M) which is an extensive process of writing over information on a byte-by-byte basis at the machine level and is far more secure than simply reformatting the drive. This is the accepted information wiping process by the military ... hence the name military wipe. If a military wipe is not feasible, the hard drive is mechanically drilled so it can not be used again. This destruction process is undertaken whether the hard drive is standalone, in a laptop, or in a desktop computer.

Once the media is destroyed, clients are sent a Certificate of Compliance confirming this action.

*Note:* GreenDisk provides reasonable security in the destruction of private and proprietary information. We effectively service healthcare facilities (under HIPAA regulations), law firms, banks, government agencies, and many other types of organizations that require secure destruction of their information. For highly-classified information or very proprietary information where an organization must eliminate any doubts of destruction, we recommend hiring a firm that goes onsite to destroy the media. If you choose to do this, we also recommend that you evaluate a vendor's material disposition policies, as some will effectively destroy media at your site, but not recycle the end product. We encourage you to discuss this with us, so we can refer you to vendors that can satisfy both your data security and your environmental responsibility needs.

The following section describes how we process and dispose of each type of material:

### **Material Disposition**

Media. In the case of CDs or DVDs, the shredded plastic is collected until we have a consolidated load of 40,000 pounds (approx. 1.2 million CDs or DVDs), the amount it takes to fill a shipping container. Videotapes and audiotapes are crushed. The Mylar is removed and the plastics are consolidated for shipping. Other media is dealt with in the same manner – the plastics and metals are separated and consolidated. For media cases, such as jewel cases, we keep those that are in pristine condition so they can be refurbished to reenter the marketplace.

Note that we deal with different types of plastics which can not be commingled. If commingled, the ability to turn the resulting material into valuable products is diminished.

These “loads of plastics” are shipped either to an EPA granted facility or are traded on the regrind plastics commodity market. The primary applications for the polycarbonate materials are automotive parts, appliance components, and as a compounding base to make other plastics.

In the future, our plan is to leverage GreenDisk’s manufacturing and retail experience (i.e. currently available GreenDisk recycled diskettes, softshell media cases, and jewel cases) to make new GreenDisk products out of these special plastics and have them widely available for the general public. *Yes, you could recycle your CDs and end up buying a set of plastic trays from your favorite office supply store from the same material you recycled.*

Cell Phones. Cell phones are collected, consolidated, packaged, and sent to a certified remanufacturer. *All information on the cell phones is destroyed by the remanufacturer;* the “workable” cell phones are identified and remanufactured. All other material is considered scrap and sent to qualified recyclers in a developed OECD country. All recyclers must pass an extensive evaluation process to ensure environmental compliance.

Printer Cartridges. Inkjet and toner cartridges are collected and consolidated. Good quality printer cartridges are sent to a remanufacturer. Poor quality inkjet cartridges and those that can not be remanufactured are sent to a certified recycling facility in the U.S. The recycling facility utilizes a proprietary process to separate the ink from the plastic in the cartridge enabling all plastics to be salvaged and recycled.

Computers & components. GreenDisk offers computer and component recycling as a convenience to our customers. We first recommend taking advantage of local options should they be available and convenient. If you send a computer or component to GreenDisk, they will be handled in the following manner:

All equipment is first tested and evaluated for re-usability. Functioning equipment is cleaned, hard drives are wiped, drives are checked for “left-behind” media, and

asset tags/property stickers are removed. The equipment is then sold to organizations or donated to local schools for reuse.

If the equipment can not be reused, it is broken down into its component parts, which are segregated and sold to reprocessors. These commodities, in turn, are sold to carefully screened buyers who use the base materials in the manufacture of new products.

Monitors are handled somewhat differently because they can contain hazardous material. Workers are protected according to OSHA regulations, and the glass from all CRT monitors is recycled in a glass-to-glass process. All materials are then recycled.

*The information contained in this white paper is accurate at the time of publication. As technology changes, new and better ways to recycle become available and are built into the GreenDisk process. As always, the short lifespan of technology also presents new challenges with respect to dealing with these new types of material and finding new markets for the reuse of such material. GreenDisk's goal is to continue to improve our ability to provide convenient recycling for the consumer and maximize the reuse and recyclability of the material collected so as to dramatically reduce the amount of technotrash that goes in landfill. If you would like additional information, please refer to the contact information below.*

### **Contact Information**

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