

## Summary of comments received on draft guidance on Requirements for Landfill Disposal of Processed CRT Glass and E-Cycle Wisconsin Eligibility, June 2014

Full text of comments is included following the table.

Name/organization	Brief summary of comments	Change
<p>Lauren Roman/ Transparent Planet</p>	<p>Supports idea that landfilled glass cannot count toward manufacturer targets.</p> <p>Asked about this statement in the draft guidance: “If you are sending funnel glass to another recycler that extracts or stabilizes the lead, the glass has to be manifested as a hazardous waste.” Believes that, since lead extraction is considered recycling, glass going to those facilities would not need to be manifested.</p> <p>Also: “Another consideration might be for recovery options that utilize the silica and/or oxides in CRT glass. Lead smelters, for example, use the silica as a fluxing agent and are not permitted TSDFs under RCRA. Other technologies for utilizing silica and oxides are also under development. As long as they are truly ‘recycling’ and not simply stabilizing and disposing, I would think that RCRA rules would not apply.”</p>	<p>Clarified that manifesting not required if glass is going to a recycler.</p>
<p>Doug Smith/Sony</p>	<p>Supports not allowing landfilled glass to count toward manufacturer targets.</p> <p>Technically, EPA allows the consumption of glass as a flux substitute in any metal smelting process when it can be shown to be a direct feedstock and a replacement for virgin resources. It is not limited to lead and copper.</p> <p>Separate lead recovery technology from lead stabilization (same statement Lauren asked about). Offers alternative wording for that sentence.</p> <p>Source and destination influences what type of shipping paper is required. If business and residential CRT waste comingled, the shipment would require hazardous waste manifesting unless destination is processing per the CRT Glass Rule or the process meets the definition of “excluded recyclable material.” Separated and cleaned leaded glass destined for lead recovery by a smelter meets excluded recyclable definition.</p>	<p>Clarified that manifesting not required if glass is going to a recycler. Also clarified smelter options (in footnote) after checking EPA regulations.</p> <p>Added reference to bill of lading. Wisconsin doesn’t distinguish between household- and business-generated CRTs once they have been collected.</p>

<p>Robin Ingenthron/ American Retroworks Inc. dba Good Point Recycling</p>	<p>Thanks for creating a guidance document. Strongly agree that ADC and hazardous waste landfilling should not count as “recycling,” both for the program and for following CRT/hazardous waste management guidelines. Lead stabilization is not recycling.</p> <p>For CRT reuse, should look at:</p> <ul style="list-style-type: none"> <li>• Is the CRT intact?</li> <li>• Is the CRT intended for direct reuse (as a display)?</li> <li>• If yes, is the CRT intended for international sale?</li> <li>• If yes, does owner keep 3 years of records of the reuse?</li> </ul>	<p>None</p>
<p>Miles Harter/ Dynamic Recycling</p>	<p>Supports not counting landfilled glass toward manufacturer targets.</p> <p>They approve of clean panel glass being used as a replacement aggregate to virgin aggregate or recycled concrete/blacktop even on landfill roads. They feel this is still recycling.</p>	<p>Clarified that panel glass used for road bed, etc. in landfills does not count toward manufacturer targets.</p>
<p>Jade Lee/Supply Chain Services</p>	<p>Support not allowing landfilled glass to count toward manufacturer targets.</p>	<p>None</p>
<p>Larry King/Sims Recycling Solutions</p>	<p>Sims is investing in R&amp;D, including related to CRT glass.</p> <p>Changes in the CRT glass market have been more financial than operational—lead smelters and glass-to-glass are still available. The cost of doing the right thing has gone up. In the e-cycling law, the cost of doing the right thing is not an issue.</p> <p>They agree that recycling does not include landfill disposal.</p> <p>Allowing recyclers to landfill some glass as long as enough is being recycled creates a loophole for recyclers and does not offer guidance to recyclers on how to demonstrate the weight sent to approved and non-approved downstream vendors. It is also a problem that many recyclers operate in multiple state programs. The DNR should continue to work closely with other Great Lakes states to compare numbers and help prevent double-counting and consider what additional documentation it should request from recyclers.</p>	<p>Clarified that recyclers cannot count recycled CRT pounds in Wisconsin if the same pounds have already been used to meet another state’s requirements (i.e., can’t use the same 1,000 recycled pounds to show WI and MN they have recycled enough weight to count pounds toward manufacturer targets).</p>
<p>Jeff DeGarmo/ Kuusakoski US, LLC</p>	<p>Changes in the CRT glass markets and other economic factors have made recycling less profitable and led to improper handling of CRTs by many small collectors and recyclers. Kuusakoski disassembles TVs and monitors,</p>	<p>None</p>

	<p>crushes the CRT glass, and then sends it to its partner to stabilize the lead and reuse the glass (their terminology) as ADC. Full documentation is provided to customers. They are saving customers 50 to 85 percent on costs for responsible disposal.</p> <p>Questions:</p> <p>1) What are the approved recommended processes/markets for CRT glass to be included in WI program?</p> <p>2) Where are the viable markets advised, when these markets capacities can't accommodate the CRTs generated?</p>	
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*Via e-mail*

Date: April 23, 2014

From: Lauren Roman [lroman@transparentplanetllc.com](mailto:lroman@transparentplanetllc.com)

To: Murray, Sarah C - DNR [Sarah.Murray@wisconsin.gov](mailto:Sarah.Murray@wisconsin.gov)

Subject: WI Draft Guidance on CRT Glass

Dear Sarah,

Kudos to the State of WI for recognizing that landfilling of CRT glass, whether stabilized or not, does not constitute recycling and can not be considered an option for credit in manufacturer take back programs.

I am, however, curious about this following statement:

If you are sending funnel glass to another recycler that extracts or stabilizes the lead, the glass has to be manifested as a hazardous waste.

I can understand that if the 'recycler' or facility is chemically stabilizing the lead rather than recovering it, that manifesting might be required since those facilities are 'treating' the lead, not recovering it. But for technologies that actually extract the lead and fully recover the silica and the lead, those are true recycling technologies and should be exempt from hazardous waste transport and treatment rules under RCRA.

Another consideration might be for recovery options that utilize the silica and/or oxides in CRT glass. Lead smelters, for example, use the silica as a fluxing agent and are not permitted TSDFs under RCRA. Other technologies for utilizing silica and oxides are also under development. As long as they are truly 'recycling' and not simply stabilizing and disposing, I would think that RCRA rules would not apply.

Can you comment on this? I welcome further dialog.

I also encourage you to visit the [CRT Central](#) pages on my website where you can find information on all the facilities in the US that are currently processing (not just receiving) CRT glass.

Thank you Sarah. I look forward to your response.

Lauren

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*Via e-mail*

Date: April 23, 2014

From: Smith, Douglas [Douglas.Smith@am.sony.com](mailto:Douglas.Smith@am.sony.com)

To: Murray, Sarah C - DNR [Sarah.Murray@wisconsin.gov](mailto:Sarah.Murray@wisconsin.gov)

Subject: RE: New Wisconsin draft guidance on CRT glass available for public comment

Hi Sarah,

Thank you for the CRT guidance and clarification. As I've mentioned earlier, Sony supports recycling and is opposed to the landfill options.

I only have a few comments:

- Technically, EPA allows the consumption of glass as a flux substitute in any metal smelting process when it can be shown to be a direct feedstock and a replacement for virgin resources. It is not limited to lead and copper.
- Please separate lead recovery technology from lead stabilization. The processes are in no way linked. By combining in the same sentences I believe it furthers confusion around what is a beneficial resource conservation and what is land application.
- One other consideration is the shipping requirements. As I recall, the source and the destination influences what type of shipping paper is required. If business and residential CRT waste are comingled then the shipment would require hazardous waste manifesting unless destination is processing per the CRT Glass Rule or the process meets the definition of "excluded recyclable material". Separated and cleaned leaded glass that is destined for lead recovery by a smelter meets excluded recyclable definition.

I would clarify as follows: "If you are sending funnel glass to another recycler that ~~extracts or~~ stabilizes the lead, the glass has to be manifested as a hazardous waste." If you are sending

funnel glass to be managed under the CRT Glass Rule or meets definition of an excluded recyclable material, then use straight bill of lading but check state specific guidance.

Please don't hesitate to contact me if you have any questions,

Thank you very much,  
Doug

*Via e-mail*

Date: April 23, 2014

From: [ingenthron@gmail.com](mailto:ingenthron@gmail.com)

To: Murray, Sarah C - DNR [Sarah.Murray@wisconsin.gov](mailto:Sarah.Murray@wisconsin.gov)

Subject: Comments on Wisconsin draft Guidance on CRT glass

Dear Sarah,

As a former state environmental official and now private sector electronics recycling company owner, I appreciate the opportunity to comment on the new Guidance Document.

First, thank you for taking the trouble to create a Guidance Document! The lack of these has been very frustrating. [Here is one I attempted to draft in 2010](#) (see blue lettering at bottom), based on the CRT Rule (rules for exemption from hazardous waste treatment).

We would advise you as much as possible to follow a decision tree model.

Is the CRT intact?

Is the CRT intended for direct reuse (as a display)?

If yes, is the CRT intended for international sale?

If yes, does owner keep 3 years of records of the reuse?

If no...

Here is where we really compliment Wisconsin on following the EPA CRT Rule. The exemption attached in the CRT Rule is limited to

- speculative accumulation
- processed to industry feedstock specification
- for glass to glass, or metal recovery, or use to replace fluxing agent in metal smelting (remanded mining waste / slag recycling, e.g., exemption).

We strongly agree that "daily cover" or "hazardous waste landfill application" are not recycling and have no bearing under the CRT Rule. They are outside of the CRT Rule and should follow the original intended management guidelines if they are not being recycled, including hazardous material manifests, tracking documents, and certified HW CDL licenses. This is not a "punishment", it just recognizing that a recycling exemption is created not for convenience but in order to promote recycling, recognizing the avoided mining, carbon, and pollution that result from raw material extraction.

Lead "stabilization" is not recycling, by the way. Haz Mat landfills stabilize the lead, but not a gram of lead mining is avoided in the process.

Requiring recyclers and OEMs which use land applications to subtract out the "recycled" weight is an honest and transparent requirement. It does not require collectors and recyclers to recycle if there is no market, but requires them to follow the RCRA rules without exemption, which rewards recyclers who are making the investment to actually recycle.

Robin Ingenthron, president  
American Retroworks Inc, dba Good Point Recycling  
**Founder** [fairtraderecycling.org](http://fairtraderecycling.org)

*Via e-mail*

Date: April 23, 2014

From: Jade Lee [jadelee@supply-chainservices.com](mailto:jadelee@supply-chainservices.com)

To: Murray, Sarah C - DNR [Sarah.Murray@wisconsin.gov](mailto:Sarah.Murray@wisconsin.gov)

Subject: New Wisconsin draft guidance on CRT glass available for public comment

Sarah:

I applaud for DNR's decision on not allowing CRT landfilling weight to be counted as manufacturer's obligation. We believe if CRT landfilling weight is allowed for counted as manufacturers' obligation, it will have great negative impacts to the good glass recyclers who are making significant investment to develop viable CRT glass recycling technologies. Also, OEMs will have more reason to pay lower fee to recyclers as the ADC fee is lower. This will not help to correct the OEM's low payment issue as well as recyclers' ghost weight reporting issue.

Thank you for making the right decision!!!

Best Regards,  
Jade Lee, MBA  
President & CEO



Supply-Chain Services, Inc. (SSI)

**9 Key Industry Certifications:**

**ISO 14001, ISO 9001, OHSAS 18001, R2, RIOS,**

**NAID (Computer Hard Drive Sanitization)**

**NAID (Computer Hard Drive Destruction)**

**NAID (Solid State Storage Device Destruction)**

**NAID (DVD/CD Media Destruction)**

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*Via e-mail*

Date: April 28, 2014

From: Miles Harter [MHarter@DynamicRecycling.com](mailto:MHarter@DynamicRecycling.com)

To: Murray, Sarah C - DNR [Sarah.Murray@wisconsin.gov](mailto:Sarah.Murray@wisconsin.gov)

Subject: RE: New Wisconsin draft guidance on CRT glass available for public comment

Hello Sarah,

I want to say thank you for the state taking a stance against recyclers receiving recycling credits for landfilling CRT glass as daily cover. This has been frustrating competing against these individuals who receive substantially favored rates versus recycling.

On that note, I would also say that we personally approve of clean panel glass being used as a replacement aggregate to virgin aggregate or recycled concrete/blacktop even on landfill roads. We feel this is still recycling. We agree with your stance on daily cover and leaded glass not being preferred in any landfill application. If you don't allow this, our downstream vendors do not utilize this so is fine with, but thought I'd mention it as reference.

Take Care,  
Miles

*Via e-mail*

Date: May 12, 2014

From: Jeff DeGarmo [jeff.degarmo@kuusakoski.us](mailto:jeff.degarmo@kuusakoski.us)

To: Murray, Sarah C - DNR [Sarah.Murray@wisconsin.gov](mailto:Sarah.Murray@wisconsin.gov)

Subject: Wisconsin Guidance Comments

Hi Sarah,

I trust you're doing well, and I appreciate your response on Friday. I'm sending this email, as our comments to your proposed new Guidance regarding CRTs.

As you, and all of the WI stakeholders are aware, I've taken a great deal of pride on our State E-Waste Recycling Program. I've stated many times, it was implemented and managed very well by the DNR to give WI residents many Electronics Recycling options. I've participated in many stakeholder discussions, from the beginning, and managed hundreds of collection events and sites throughout our State.

One of the many goals, of the Legislation was to create jobs and economic opportunities for Collection sites and Recyclers throughout WI. This was certainly the case, through the first couple program years. Unfortunately, at the same time the Economy was harshly challenged, CRT Glass Processing Global options had decreased dramatically.

This challenged, Profitable opportunities for Collectors and small to Mid-size Recyclers to move CRTs to responsible, economical destinations. As the costs for CRT recycling increased, while OEM funding continued to decrease, the smaller markets became less desirable or ignored by the larger recyclers. This created 2 major issues, some collection sites just went away, and Cathode Ray Tubes recycling options have diminished or they're being left sitting throughout the Region. Many Recyclers have ignored the CRT Rule prohibiting Speculative Accumulation of CRTs exceeding 12 Months, as they didn't have viable or affordable options.

Kuusakoski Recycling commissioned Shaw Environmental, which provided a thorough Analysis of the Demand for CRT Glass Processing in the US. This is by far the most extensive study, I've reviewed in our Industry, since the

CRT Rule Document of 2006.

We couldn't ignore these facts, so implemented our Responsible Recycling option. Kuusakoski Recycling in Peoria, IL manually disassembles CRT TVs and CRT Monitors. Cathode Ray Tubes then go through our Automated Separation Process, removing steel and breaking the Glass. Crushed CRT Glass is then sent to PDC for Stabilization Process of Funnel Glass to be reused as ADC. All of our customers have the satisfaction of documentation that all Material is managed, tracked and treated then reused at one location in an economical, timely manner. I've always, hoped this documentation was demanded, by all parties responsible for CRTs.

I know, Sarah, you're already aware of these facts. I just wanted to share my concerns, for the stakeholders, to be allowed to take advantage of our processing Option. We are saving our customers 50-85% costs to responsibly process their CRT material. We're very pleased to give Recyclers and Collectors throughout the US, this opportunity to responsibly move this material while maintaining responsible, profitable workplaces.

1) What are the approved recommended Processes/Markets for CRT Glass to be included in WI Program?

2) Where are the Viable Markets advised, when these Markets Capacities can't accommodate the CRTs Generated?.

I'll look forward to your comments, to these concerns.

Thank you very much, Sarah.

Jeff

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May 5, 2014

Ms. Sarah Murray  
E-Cycle Wisconsin Coordinator  
Bureau of Waste and Material Management  
Wisconsin Department of Natural Resources

Dear Sarah,

Sims Recycling Solutions (Sims) appreciates the opportunity to provide comments on the proposed guidance document "Guidance on requirements for Landfill Disposal of Processed CRT Glass and E-Cycle Wisconsin Eligibility." Sims would like to thank the Department of Natural Resources for recognizing the changing landscape of CRT management and preparing the proposed guidance document.

Sims is the world's largest recycler of electronics, operating recycling facilities around the world, including 14 facilities in North America. We have a substantial research and development budget attempting to improve all phases of the recycling process. Much of the focus of this research lately has been in the area of CRT glass management. It is with this experience Sims submits the following comments concerning the proposed guidance.

Much has changed in the marketplace in recent years as you have pointed out in the guidance document. However, these changes are more of a financial change rather than an operational change. There are still lead smelters taking CRT glass and the glass-to-glass option is also still available. The difference is that the financial equation has changed; it costs more now than it did before to do the right thing.

The E-Cycle Wisconsin law was implemented, in part, to keep this material out of landfills. In the discussions leading up to the passage of the law, the cost of doing the right thing was not really a consideration. Had costs been a factor under consideration, the law probably would not have been passed. Sims agrees with Section 287.17(1)(m) of the Wisconsin statute that recycling does not include land disposal. The intent of the law was that this material be recycled, not disposed.

The DNR has included in their guidance document a method for recyclers who land dispose a portion of the CRT glass they generate to still be able to count at least some CRT glass as weight under E-Cycle Wisconsin. The DNR has recognized the operational challenges of the comingling of E-Cycle Wisconsin material and non-E-Cycle Wisconsin material. However, this creates a huge loop hole in the system as there is no guidance for how the recycler is to demonstrate to the DNR that a specific weight amount was sent to a specific approved downstream process vs. another non-approved downstream, other than simple through a declaration by the recycler.

Another challenge for the DNR (and the regulatory bodies in every state) is that Wisconsin (or any state) does not exist in isolation. Recyclers of Wisconsin covered devices also collect and process devices in Wisconsin that are not from covered entities and devices from other states. Some state may allow land disposal, while other, such as Wisconsin, do not. It would not be unheard of for a recycler to collect 1 million pounds of CRT glass in each of 10 different states. The recycler could send 1 million pounds of that glass to a smelter and the balance to land



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disposal. Under the guidance document, they could report to DNR the 1 million pounds that was sent to the smelter and have all of it count under E-Cycle Wisconsin. Unfortunately, there is nothing preventing the recycler from reporting the same 1 million pounds that was not land disposed to every other state that does not recognize land disposal as recycling. This duplicate reporting of the same weight is a huge concern in our industry and the DNR should be doing everything in its power to implement regulations that makes the practice of double reporting weight an impossibility.

The Great Lakes regional states have a long history of working closely together on the issue of e-waste. Sims would encourage the DNR to continue that relationship and share information between the regulatory entities in all of the surrounding states. Comparing numbers each state receives and the documentation the recyclers provide, could help in eliminating the opportunity for double reporting. The DNR should study what additional documentation it needs to be able to assure the intent of the law is being adhered to as well as the letter of the law.

Again, Sims appreciates the opportunity to submit comments on the proposed guidance document and we look forward to continuing to work closely with the DNR as the E-Cycle Wisconsin program evolves.

Kindest Regards,

Larry King  
Legislative Analyst