Appendix A

Sampling Plan for wire and Steel from the Decontaminated Lighting Ballasts

1.0 Objectives of this Sampling Plan

This sampling plan is intended to determine compliance with the applicable decontamination standards, under 761.79(h), contained in the Facility's TSCA PCB Approval (10 or 100 ug/100cm^2). To do that, this plan will characterize the decontaminated wire and steel at the Facility.

2.0 Background

The Facility stores and decontaminates PCB waste. Lighting Ballasts, which may contain PCBs, are dismantled and separated into components of wire (copper or aluminum), steel, potting compound and capacitors. The Facility disposes of potting compound and capacitors as PCB waste. The wire and steel are decontaminated and sent to off-site scrap metal recyclers. Depending on the applicable standard, the steel and wire may be sent to 1) facilities that specifically comply with EPA's regulations at 40 C.F.R. § 761.72, for concentrations greater than 10 ug/100cm^2 and less than 100 ug/100cm^2, or 2) any scrap metal recovery facility, for concentrations less than 10 ug/100cm^2.

3.0 Sampling Procedure

Selection of Wire Samples

Scrap wire is typically stored in drums. To sample a single drum, collect the wire samples near the edge of the drum from four locations and in the center of the drum as shown in Figure 1. Repeat this sampling pattern as deep as reasonably achievable in the drum. A shovel or other tool may be helpful to push aside wire on top. Finally, collect the final five samples between the surface samples and this collected at the lowest depth. If two or three drums of scrap wire are present, the samples should be divided between the drums (e.g., seven samples in one drum and eight in another or five in each drum). In both of these cases, the sampler should vary the depth and location of the samples in the container. Although more than four or more drums of wire may be present at the facility, no more than three randomly selected drums need to be sampled.

When collecting wire samples, collect only one winding per location. Set aside the windings on plastic sheeting as they as collected. The windings are typically 18, 16 or 14 Gauge copper or aluminum wire. A wire guide may be helpful to determine the exact size, but the sampler's best judgement may be used to estimate the closest wire size if it is misshapen (i.e. no longer round).

Table 1		
AWG Wire Gauge	Diameter (inches)	Length of Wire Equal to 100 sq. cm surface area
18	0.04030	10 feet 2 inches (3.12 meters)
16	0.05082	8 feet 1 inch (2.47 meters)
14	0.06408	6 feet 5 inches (1.95 meters)

Stretch a portion of the wire and use a ruler, yardstick or tape to measure the desired length of wire, see Table 1 above. If it is easier, the wire may be cut to specific lengths. Once measured (or measured and cut) open a sampling jar, remove the gauze sampling pad and wipe it along the wire. Then return the pad to the sample jar and repeat the procedure with the next length of wire.

Table 2		
Scrap Metal to be Sampled	Quantity Sampled	Correction Factor
Bottom of Ballast Casing	156 square centimeters	0.64
Top of Ballast Casing	291 square centimeters	0.34
Inner Ballast Laminants	95 square centimeters	1.05
Outer Ballast Laminants	64 square centimeters	1.56

Selection of Steel Samples

Scrap steel is typically stored in roll-off type bins outside the building where ballast decontamination occurs. Roll-off bin sample locations are shown in Figure 2. (Figure 3 is provided in the event that some metal, wire or steel, is stored in cubic-yard boxes.) Because the scrap metal is difficult to dig into deeply, samples should be taken a t depths randomly varying from the surface to as deep as readily available (e.g., 2 feet). The samples should include the bottom and top of the ballast casing, shown (flat) in Figures 4 and 5. Only the inside of the ballast casings should be sampled. Additionally, intact ballast laminated sections should be sampled, the shapes of the inner and outer laminate are shown in Figure 6. If the sample ballast was larger than the size shown in the attached figures, the sampling template in Figure 7 may be used or the sampling may develop correction factors for larger ballasts.

<u>Supply List:</u>
Plastic-Sheeting/Visqueen (approximately 1 square yard)

32 PCB-sampling containers, pre-filled with hexane, methanol or other acceptable solvent
gauze pads (if wipes are not included with sample containers)
gloves (to prevent dermal exposure to PCBs and prevent scratches and cuts from sharp metal surfaces)
AWG wire gauge guide
Equipment borrowed from the facility may be returned without decontamination

4.0 Disposal of Residual Material

Gloves, plastic sheeting and other residual material may be provided to the Facility for disposal. Except in unusual circumstances, this material may be disposed of as solid (non-TSCA and non-hazardous) waste.

5.0 Sample Documentation

The sampler shall complete Appendix B of the Operator's Approval, a third party certification form. Packing and shipping shall be completed as specified in Section 7 of the Application (Section 7.11). The approximate area sampled and correction factors, from Table 2, should be noted for each sample on the chain of custody form. A copy of all sample documentation should be provided to the Operator for submission to EPA.

6.0 Quality Control

One field blank sample shall be prepared per 15 samples. The field blank is intended to detect contamination that might be introduced during the sampling process or from the decontaminated sample container. The field blank will be prepared in the same manner as a ballast sample, except a PCB-free surface will be sampled (e.g., the sampler's bumper). The blank sample should be numbered as the last of the samples collected and not identified to the laboratory consistent lab's quality control plan contained in the Application.

Figures:

Figure 1: Scrap Wire Drum
Figure 2: Scrap Metal Bin
Figure 3: Scrap Wire Box
Figure 4: The bottom of a Casing for a Lighting Ballast
Figure 5: The Top of the Casing of a Lighting Ballast
Figure 6: Lighting Ballast Laminant Shapes
Figure 7: 100 cm^2 Sampling Template