WORK PLAN

WASTE CHARACTERIZATION PLAN
REVISION I

EQ INDUSTRIAL SERVICES
APEX, NORTH CAROLINA

Prepared for

EQ Industrial Services – North Carolina
Apex, North Carolina

October 14, 2006

URS Corporation – North Carolina
1600 Perimeter Park Drive
Suite 400
Morrisville, North Carolina 27560

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PURPOSE AND OBJECTIVES

This Waste Characterization Plan has been prepared for Environmental Quality Industrial Services – North Carolina (EQ) of Apex North Carolina to characterize waste remaining following a fire within it's RCRA Part B permitted hazardous waste storage building. The objective is to methodically and efficiently characterize these materials to facilitate proper handling, management, and disposal.

This plan has been revised per an email message received from the North Carolina Department of Environment and Natural Resources (NCDENR) at 1:57 PM on October 13, 2006, and further clarifications during a meeting / conference call with NCDENR at EQ's Apex facility between 9:45 and 11:00 AM, October 14, 2006.

This plan does not address Health & Safety procedures, which will be governed by a site specific Health & Safety Plan prepared by the responding contractors.

2.1 FACILITY DESCRIPTION AND OVERVIEW

The EQ facility is a RCRA Permitted waste management facility permitted to manage a variety of waste streams. Figure 1 presents a map of the facility as viewed on October 10, 2006. Containerized wastes are stored in a 90' by 130' building located in the center of the property. There are six bays within the building where containers with similar waste characteristics are stored. Through the center of the building is a 16 foot wide concrete staging area elevated above the bays. On the west end of the building the staging area is 30 feet wide to allow a staging area dedicated to consumer commodities. Each of the bays are pitched toward the center of the building, where any spills or runoff are contained within the bay and pumped to a containment system. The building was constructed in 1992, and contained no insulation or other fibrous construction material.

2.2 CURRENT CONDITIONS

On Thursday October 5, 2006 a fire began that destroyed the storage structure. The fire was for the most part allowed to burn out, with final extinguishing completed by an EQ contractor on Friday October 6, 2006. The metal structure was delicately removed with a backhoe to avoid disturbing the contents of the building, and consolidated into three piles shown on Figure 1. At the time of the fire, five of the bays were in use as discussed below. The Bay at the southwest corner of the building was empty at the time of the fire, and will be designated Bay Empty (BE) for the purposes of this characterization project. Additionally within the building, there were two distinct staging areas, also described below.

2.2.1 Bay H (Household Materials)

The bay on the northwest corner of the facility was used to contain paints, household flammable liquids, household corrosive materials, antifreeze, detergents, and other consumer commodities. Materials burning in this area were smothered by mixing non-burning materials with a backhoe. The remaining material is thus a mixture of charred consumer commodities, with containers no longer intact. For the purposes of this project this area will be designated Bay Household (BH).

2.2.2 Bay F (Flammables)

The bay immediately east of the Household Materials Bay is contained flammable sludges, flammable solids, and flammable caustic mixtures. Specific items of note propane cylinders, paint cans, two drums of magnesium and a drum of sodium metal. There are 150-200 total drums in this area, many of which appear to be intact. There are also hundreds of aerosol cans. For this waste characterization project this area will be designated Bay Flammables (BF).

2.2.3 Bay L (Lab-packs)

The bay on the north east corner of the building contained lab packs. A lab pack is a consolidation of containers of small quantities of waste into a single container for storage, shipment, or disposal. Classes of stored on the western half of this bay included oxidizers, bases, cyanides, and poisons. On the eastern half wastes consisted of acids and flammable liquids. Approximately 30 -35 drums are present in this area, as well as several miscellaneous containers

1-gallon or smaller. For this waste characterization project this area will be characterized Bay Lab-pack (BL).

2.2.4 Bay O (Oxidizers)

The Bay on the southeast corner of the building contained oxidizers, cyanides, bases/alkali, and Class 9 solids. There are approximately 150 drums in this area, with around 20 double stacked. Ten to twelve drums are significantly deformed. Other containers as small as quart size were observed, and 3 piles of white/yellow solids. For the purposes of this characterization project, this Bay will be designated Bay Oxidizer (BO).

2.2.5 Bay A (Acids)

The Bay in the south central portion of the building contained acids, flammables, and acid/flammable mixtures. Noted to be located in this bay were approximately 30 drums of flammable waste, ten - one cubic yard boxes with paint cans, and ten kegs of nitric acid. A total of approximately 100 drums were observed in this area, ten 5-gallon buckets, and several smaller containers. For the purposes of this characterization project, this Bay will be designated Bay Acids (BA).

2.2.6 Staged Consumer Commodities

Adjacent to Bay H in the center staging area were staged consumer commodities. These items have been identified as six household boxes, on box of propane bottles, and 13 pallets of consumer commodities. Similar to Bay H in Section 2.2.1, burning materials in this area were smothered by mixing with non-burning materials. As a result there are very little intact containers in this area. For the purposes of this characterization project, this area will be designated Staged Consumer Commodities (CC).

2.2.7 Staged Outbound Load

Adjacent to Bays O and A on the staging area was an Outbound Load of waste materials staged for shipment to the EQ facility in Michigan. Staged in this area were six super sacs of F006 waste (wastewater treatment sludges from electroplating operations), Class 9 Solid waste, as well as acids and bases. Approximately 30 drums were observed in this area. For the purposes of this characterization project, this area will be designated Staged Outbound Load (OL).

2.2.8 Miscellaneous Units

Scorched Trailer

Near the northeast corner of the building was a trailer that contained some bottles, cans and a metal tank. Materials found in this area will be handled consistent with the Lab-Pack Bay. The trailer will be managed as a destroyed vehicle.

Drums near Household Bay

North of the Household Bay are approximately 26 drums, with approximately nine 5-gallon buckets staged on top of them. The buckets appear to contain paints. These materials will be managed with other buckets and drums in the BH area.

Shredded materials

North of the building are several drums of residual materials from a shredding operation. This area does not appear to have been significantly impacted by the fire, and will not be included in this Waste Characterization program.

A summary of the designated areas is presented in Table 1.

2.3 UPDATE TO SITE CONDITIONS

Since this plan was originally submitted, the following observations have been made based upon further assessments of the bays:

- Materials have for the most part remained within their locations of origin within the bays. No exceptions have been noted. Thus compatible waste materials have remained together, to the extent that the areas have been evaluated so far.
- Many containers that remained intact have relatively inert materials, such as soil. In contrast containers that formerly contained flammable materials, for example, are largely empty.

Based upon these observations, and the comments from NCDENR, modifications to the Waste Characterization Plan have been made as identified in Section 3.

3.1 STEEL BUILDING CARCASS

The waste storage building was constructed of steel frame and sheeting. There was no insulation or other fibrous materials. During the fire the structure was subject to extreme heat that caused some sections of the building to buckle. To access smoldering materials within the building, the structure was carefully removed utilizing a backhoe, and placed in four distinct piles approximately located on Figure 1. The carcass piles are staged on concrete and / or asphalt. The steel will be consolidated and transported to a scrap yard for recycling. Since the steel will not be land disposed, the steel is exempt from land disposal restrictions and does not need to be characterized for recycling. A notice identifying this per 40 CFR 268.7(a)(7) is included in Appendix A.

At NCDENR's request, a characterization sample will be collected from each distinct pile. Procedures to collect and analyze the steel are identified in Appendix A. Once he samples are collected, the carcass will be placed into onsite containers. The steel will not be transported to a scrap yard for recycling until receipt and review of analytical results by NCDENR.

3.2 CONTAINER MANAGEMENT

EQ will work with their contractors to best identify containers in each area. Container sizes range from 55- gallon drums to 5-gallon paint buckets, to containers as small as quart and pint sizes. For areas BH, CC, and BF, containers less than 10-gallons in size will be bulked with similar materials in a roll-off container or similar by source area. In areas BA, BO, and BL, even containers less than 10-gallons will be characterized to determine compatibilities for bulking.

Containers to be characterized will be segregated between empty and intact or semi-intact. Intact containers will be defined as containers that visually appear to be intact enough to still contain waste materials. Containers that meet the definition of RCRA empty will be crushed and consolidated for appropriate disposal. Guidance from the EPA regarding this RCRA empty determination is presented in Appendix C, pages 7-9. Plastic containers were largely melted, and will in most cases be handled with miscellaneous residue left within each area as described in Section 3.3.7.

3.2.1 Aerosol Cans / Gas Tanks

Aerosol cans and tanks for gases such as propane should be segregated, confirmed empty, and consolidated for appropriate disposal. Cans and tanks that are contaminated by other wastes may be crushed and managed with miscellaneous residues.

3.2.2 Container Identification

Prior to entering the building area, all stacked containers will be re-staged so that they can be accessed for characterization. The initial location will be recorded prior to re-staging. Bulging or misshapen containers should be opened remotely, within the building footprint. The empty Bay (BE), or the center staging platform may be used to stage containers that cannot be safely staged within the section that they are found.

Intact containers will be numbered by area and mapped. For example containers in Bay F will be numbered BF-1, BF-2, etc, and identified on a scaled drawing of each bay. Containers will be numbered based upon the location they are found, rather than locations they are staged. Each container will be marked in large characters that are legible from the fence line. A master log of containers will be maintained by an EQ contractor. A sample Container Log sheet is included in Appendix A. A tally of containers that are RCRA Empty or for other reasons are not HazCat evaluated will be maintained per area. However container identification numbers will only be assigned to containers for which characterization tests are conducted.

EQ employees familiar with the building contents prior to the fire will be asked to assist in identifying individual containers or groups of containers to the extent possible, based upon location within the building, and facility records. When the contents of individual or groups of containers can be visually identified, the waste will be handled as previously intended by the facility, and need not be re-characterized by Haz-Cat or analytical testing.

3.2.3 Haz-Cat Testing

A contractor for EQ will implement Haz-Cat Testing on all non-unique containers determined to be intact. Procedures for the Haz-Cat testing (inclusive of cyanide) is presented in Appendix B. Additional testing using a Fourier Transform Infared (FTIR) instrument (Smith Detection-HazMat ID Inc.) will also be performed. An individual Haz-Cat test sheet will be prepared for each container tested. A summary of the results will be identified on the Container Log Sheet.

3.2.4 Analytical Testing

NCDENR has requested that four discrete samples be collected to represent conditions from each area. The sampling procedure to meet this request is identified in the Sampling and Analysis Plan for Groundwater, Ash / Residue, and Collected Firewater Runoff, (URS Corporation, October 13, 2006). These samples will be analyzed for total Volatile Organic Compounds (VOCs), total Semi-Volatile Organic Compounds (SVOCs), total RCRA metals plus manganese, nickel, and beryllium, total herbicides / pesticides, cyanide, and dioxins / furans. This comprehensive sampling, combined with Haz-Cat of individual containers, will be used to characterize the wastes in each Bay of the building. Total analysis results in milligrams / kilogram (mg/kg) for each constituent will be divided by 20 and compared to Toxicity Characteristic Leaching Procedure (TCLP) per the *Generator Closure Guidelines*, NCDENR Hazardous Waste Section, December, 2002, pg 16. Constituents on the TCLP list and corresponding waste code are identified on Table 2.

Should additional waste characterization of any specific container, bulked waste, residue, or other area become necessary, analysis will be limited to VOCs, SVOCs, and RCRA metals, except in the CC or BH areas, where pesticides analysis will be added.

3.2.5 Waste Disposal

Table 3 presents hazardous waste management and/or disposal facilities that will be considered for receipt of waste generated from remediation within the building footprint. Actual disposal facilities will be selected based upon characterization results and facility acceptance. Waste

TABLES

Table 1 (Revision 1)
Waste Characterization Areas
EQ Industrial Services
Apex, NC

Name	Primary Class	Identified Materials	Proposed Analyses	Probable Disposal Method
Bay H	Household Waste	Paints, household flammable liquids, household corrosive materials, antifreeze, detergents, and other consumer commodities	HazCat[1]; and VOC, SVOC, Pesticides, and Metals	Non-Haz: Subtitle C Landfill - TBD If Hazardous - TBD
Bay F	Flammables	Flammable sludges, flammable solids, flammable caustic mixtures, two cubic yard boxes of propane cylinders, cubic yard boxes of paint cans, two drums of magnesium, and a drum of sodium metal	HazCat[1]; and VOC, SVOC, and Metals	Non-Haz: Subtitle C Landfill Drums with reactive metals: Incineration If Hazardous - TBD
Bay L	Lab-Packs	Lab-packs of oxidizers, bases, cyanides, and poisons on western half and lab-packs of acids and flammable liquids on eastern half.	HazCat[1] as necessary.	Incineration
Bay O	Oxidizers/Bases	Oxidizers, cyanides, bases/alkali, and Class 9 solids	HazCat[1]; VOC, SVOC, and Metals	Oxidizers: EQ-Detroit or Stablex-Quebec Caustic Liquids / Solids: EQ-Detroit IDW Drums: Subtitle C Landfill Cyanides: EQ-Detroit
Bay A	Acids/Flammables	Acids, flammables, acid/flammable mixtures, 30 drums of flammable waste, 10 one cubic yard boxes containing paint cans and two kegs of nitric acid	HazCat[1]; and VOC, SVOC, and Metals	To EQ-Detroit or Stablex-Quebec
Bay E	Empty	None	None	None
CC	Staged Consumer-Commodities	Six household boxes, one box of propane cylinders, and 13 pallets of consumer commodities	HazCat[1]; and VOC, SVOC, and Metals	Non-Haz: Subtitle C Landfill If Hazardous - TBD
OL	Staged Outbound Load	Six super sacs of F006 waste (wastewater treatment sludges from electroplating operations), Class 9 Solid waste, acids, and bases.	HazCat[1]; VOC, SVOC, and Metals	Non-Haz: Subtitle C Landfill If Hazardous - TBD
SC	Building Structure Carcass	Twisted Metal.	VOCs, SVOCs, Metals	Metals Recycler

[1]HazCat: Field test that includes water reactivity, solubility, pH, peroxides, oxidizers, flammability, and halogens

Table 2
Waste Analytes
EQ Industrial Services
Apex, NC

Analyte	EPA Hazardous Waste Number	TCLP Regulatory Level (mg/L)
TCLP Volatile Organic Compounds by SW-846 Methods 1311/8260B		
• Benzene	D018	0.5
• Carbon tetrachloride	D019	0.5
• Chlorobenzene	D021	100.0
• Chloroform	D022	6.0
• 1,2-Dichloroethane	D028	0.5
• 1,1-Dichloroethene	D029	0.7
• Methyl ethyl ketone (2-Butanone)	D035	200.0
• Tetrachloroethene	D039	0.7
• Trichloroethene	D040	0.5
• Vinyl Chloride	D043	0.2
TCLP Semivolatile Organic Compounds by SW-846 Methods 1311/8270C		
• o-Cresol (2-Methylphenol)	D023	200.0[1]
• m-and p-Cresol (3 & 4-Methylphenol)	D024/D025	200.0[1]
• Cresol	D026	200.0[1]
• 1,4-Dichlorobenzene[2]	D027	7.5
• 2,4-Dinitrotoluene	D030	0.13[3]
• Hexachlorobenzene	D032	0.13[3]
• Hexachloro-1,3-butadiene	D033	0.5
• Hexachloroethane	D034	3.0
• Nitrobenzene	D036	2.0
• Pentachlorophenol	D037	100.0
• Pyridine	D038	5.0[3]
• 2,4,5-Trichlorophenol	D041	400.0
• 2,4,6-Trichlorophenol	D042	2.0
TCLP Pesticides by SW-846 Methods 1311/8081A		
• Chlordane	D020	0.03
• 2,4-D	D016	10.0
• Endrin	D012	0.02
• Heptachlor	D031	0.008
• Lindane	D013	0.4
• Methoxychlor	D014	10.0
• Toxaphene	D015	0.5
• 2,4,5-TP (Silvex)	D017	1.0

[1] If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol concentration is used. The regulatory level for total cresol is 200 mg/L.
[2] 1,4-Dichlorobenzene may be determined by either SW-846 8260B or 8270C
[3] Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.

Table 2
Waste Analytes
EQ Industrial Services
Apex, NC

Analyte	EPA Hazardous Waste Number	TCLP Regulatory Level (mg/L)
TCLP RCRA Metals by SW-846 Methods 1311/6010B/7470A		
• Arsenic	D004	5.0
• Barium	D005	100.0
• Cadium	D006	1.0
• Chromium	D007	5.0
• Lead	D008	5.0
• Mercury	D009	0.2
• Selenium	D010	1.0
• Silver	D011	5.0

TCLP Toxicity Characteristic Leaching Procedure
m/L Milligrams per liter

Table 3
Potential Hazardous Waste Management Facilities
Waste Characterization Plan
EQ-Industrial Services
Apex, North Carolina

Company	Location	Type of Services
Ross Environmental Services	Grafton, OH	Incineration
VonRoll	E. Liverpool, OH	Incineration
Veolia - Sauget	Sauget, IL	Incineration
Veolia - Port Arthur	Port Arthur, TX	Incineration
EQ - Florida	Tanpa, FL	Lab Packs
EQ - Detroit	Detroit, MI	RCRA Treatmant Facility
WM - Emelle	Emelle, AL	RCRA Treatment and Landfill
EQ - Michigan/Wayne Disposal	Belleville, MI	RCRA Treatment and Landfill
WM - Model City	Model City, NY	RCRA Treatment and Landfill
Stablex	Blainville, Quebec	RCRA Treatment and Landfill
WM - Vickery	Vickery, OH	Waste Water Treatment
Dupont - Chamberwork	Deepwater, NJ	Waste Water Treatment
Clean Harbors - Baltimore	Baltimore, MD	Waste Water Treatment
EQ- Augusta	Augusta, GA	Waste Water Treatment

DRAWINGS

N/F
SEABOARD AIRLINE AND RAILROAD CO.

PROPERTY LINE

MONITORING WELL

MONITORING WELL

N/F
F.W. DILLINGER
PLASTERING CONT. INC.

N/F
BURMA RAINES
BULLOCK

SC-1

SC-2

SC-3

SC-4

BH

BF

BL

CC

OL

BE

BA

BO

ELECTRIC

1" COPPER WATERLINE

WATER METER

SEWER CLEANOUT

PROPERTY LINE

WATERLINE

PROPERTY LINE

WATERLINE

8" SANITARY SEWER

MANHOLE

INVESTMENT BOULEVARD

LEGEND

BH Household Bay
BF Flammables Bay
BL Lab Packs Bay
BA Acids Bay
BO Oxidizers Bay
BE Empty Bay
CC Staged Consumer Commodities
OL Staged Outbound Load
SC Building Structure Carcass Piles (Locations Approximate)

0 40
APPROX. SCALE, ft.

SOURCE: TAYLOR & TAYLOR PLAN SET, SHEET PE-1, JOB #9502.

SCALE: AS SHOWN	DESIGNED BY	DATE	DRAWING TITLE: Figure 1. Site Map EQ North Carolina Apex, North Carolina
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS RDU, NORTH CAROLINA 27560	DRAWN BY: TSH	DATE: 10OCT06	
	CHECKED BY: CDF	DATE: 14OCT06	CONTRACT NO. / DRAWING NO.: FIGURE-1 / REV.: 1
	APPROVED BY: CDF	DATE: 14OCT06	

P:\Common_Projects\EQNorthCarolina\Emergency Response\3.0 Deliverables\Waste Characterization Plan\Characterization Plan Rev1\Figure 1.dwg

APPENDIX A

Project Forms and Notifications

ONE TIME NOTICE TO FILE

[as required by 40 CFR 268.7(a)(7)]
EQ – North Carolina
Apex, North Carolina

The following waste is exempt from land disposal restrictions based on the exemption listed below:

Waste Name: Metal building carcass

Description of Waste Generation: Building demolition following fire.

Process Name: N/A

Basis for Exclusion:
If recycled, exempt as scrap metal (40 CFR 261.6(a)(3)(ii).

Disposition:

Metal recycler to be determined.

Comments:
Material to be recycled was a steel structure that house a RCRA part B Hazardous Waste Storage Area. The structure was completely made of steel and is currently staged on concrete and/or asphalt.

_____
Printed Name

_____
Signature and Date

Sample Collection Procedure for the Building Carcass

1. Obtain appropriate laboratory bottleware for the analytical procedures listed on the atttached Table as well as 3 times the volume of laboratory-supplied analyte-free water to adequately fill the bottleware.
2. Select a representative* portion of each of the four (4) building carcass piles in order to collect the sample. **NCDENR personnel will approve of the selected representative sample prior to initiation of Step 4**.
3. Pour the water over the surface of the representative area and allow the water to contact the selected portion of the building carcass. The selected area shall be sized and oriented so that the flow of water maximizes contact time between the carcass member and the water.
4. At the downstream end of the selected sample area, collect the water in the appropriate laboratory-supplied containers. The order of collection shall be from most volatile to least volatile.
5. Immediately label the containers with the sample identification, site name, date, time, sample analysis, preservative used as well as the samplers initial.
6. Immediately pack the sample into a cooler with double-bagged ice and absorbent packing material, and keep under custody until the cooler is ready for shipment to the laboratory.
7. Sample custodian shall fill-out the chain-of-custody record and include in the cooler.
8. Apply the custody seal to each cooler and ship to the selected laboratory.

Analytical Suite in Sample Collection Order

- Volatile Organic Compounds (VOCs) by SW-846 Method 8260B
- Semivolatile Organic Compounds (SVOCs) by SW-846 Method 8270C
- RCRA 8 Metals by SW-846 Method 6010B and 7470A

* Selection of "representative sample" should be determined by the personnel performing the sampling activities. There is no defined quantity of surface (i.e. 1 square foot) that the rinsate water needs to contact. The most likely scenariowould be to find a long piece of the building (siding or I-beam) that was exposed to the fire, is safely accesible, and is sloped. Pour the water down that surface and try to contact as much of the surface area as possible (i.e. don't pour down a small channel, pour over an essentially flat surface) This method attempts to recreate what would normally be performed as an equipment rinsate blank following decontamination procedures.

Parameter	Analytical Methods	Sample Container		Preservation		Holding Time	
		Aqueous	Solid	Aqueous	Solid	Aqueous	Solid
Volatile organic Compounds (VOCs)	SW8260B	3 X 40 mL glass VOA vial, PTFE septum caps No headspace **Note: Small bubbles** may occur during shipping and handling. Samples with bubbles < 6 mm in diameter (pea sized) are acceptable.	1 wm glass jar with PTFE-lined cap	pH < 2 with H2SO4, a HCl, or NaHSO4, Cool to 4 °C	Cool to 4 °C	7 days (no preservative) 14 days (preservative added)	48 hours if only cooled to 4 °C
Semivolatile Organic Compounds (SVOCs)	SW8270C	2 X 1-Liter amber glass bottles with PTFE-lined lids per parameter	250 mL amber glass wide-mouth jar (or can be clear if stored in dark)	Cool to 4 °C.	Cool to 4 °C	7 days until extraction and extracts analyzed within 40 days after extraction	14 days until extraction and extracts analyzed within 40 days after extraction
Metals (except Hg)	SW6010B	1 Liter glass or HDPE bottle	250 mL wide-mouth glass jar	HNO3 to pH < 2	Cool to 4 °C	180 days	180 days
Mercury	SW7470A (aqueous)/ SW7471A (solid)					28 days	28 days

Area Description_____

CONTAINER CHARACTERIZATION AND MANAGEMENT PROJECT
EQ INDUSTRIAL SERVICES, APEX NC
Container Log

Date Identified	Container ID	Description	Haz-Cat	TCLP Parameters	Haz or Non/haz?	TSDF	Manifest Number	Date Shipped

DAILY CONSTRUCTION REPORT

DAY	S	Mx	T	W	T	F	S

CONTRACTOR _____

PROJECT Apex Response

LOCATION Apex, North Carolina

DATE _____

PROJECT NO. _____

WEATHER	CLR	P.CLY	CLDY	FOG
TEMP	HIGH °F	°F	LOW °F	
WIND	CALM	MOD	HIGH	
PREC	RAIN	LITE	MOD	HVY
	SNOW	LITE	MOD	HV Y

EQUIPMENT ON SITE	ACTIVE/IDLE

SUBCONTRACTORS ON SITE

SUMMARY OF ACTIVITIES/DISCUSSIONS/DECISIONS

DISTRIBUTION:

Page _____ of _____

DAILY CONSTRUCTION REPORT

SUMMARY OF ACTIVITIES/DISCUSSIONS/DECISIONS (CONTINUED)

EPA's Chemical Compatibility Chart

EPA-600/2-80-076 April 1980

A METHOD FOR DETERMINING THE COMPATIBILITY OF CHEMICAL MIXTURES

Please Note: This chart is intended as an indication of some of the hazards that can be expected on mixing chemical wastes. Because of the differing activities of the thousands of compounds that may be encountered, it is not possible to make any chart definitive and all inclusive. It cannot be assumed to ensure compatibility of wastes because wastes are not classified as hazardous on the chart, nor do any blanks necessarily mean that the mixture cannot result in a hazard occurring. Detailed instructions as to hazards involved in handling and disposing of any given waste should be obtained from the originator of the waste.

CODE	CONSEQUENCE
H	Heat Generation
F	Fire
G	Innocuous and non-flammable gas generation
GT	Toxic Gas formation
GF	Flammable Gas formation
E	Explosion
P	Violent Polymerization
S	Solubilization of toxic substance
U	May be hazardous, but Unknown

#	REACTIVITY GROUP NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	101	102	103	104	105	106	107
1	Acids, Mineral, Non-oxidizing																																									
2	Acids, Mineral, Oxidizing																																									
3	Acids, Organic		G H																																						
4	Alcohols and Glycols	H	H F	H P																																					
5	Aldehydes	H P	H F	H P																																					
6	Amides	H	H GT																																						
7	Amines, Aliphatic and Aromatic	H	H GT	H		H																																			
8	Azo Compounds, Diazo Compounds and Hydrazines	H G	H GT	H G	H G	H																																			
9	Carbamates	H G	H GT						G H																																
10	Caustics	H	H	H		H				H G																															
11	Cyanides	GT GF	GT GF	GT GF					G																																
12	Dithiocarbamates	H,F GF	H,F GF	H,GT GF		GF GT		U	H G																																
13	Esters	H	H F						H G		H																														
14	Ethers	H	H F																																						
15	Fluorides, Inorganic	GT	GT	GT																																					
16	Hydrocarbons, Aromatic		H F																																						
17	Halogenated Organics	H GT	H,F GT					H GT	H G		H GF	H																														
18	Isocyanates	H G	H,F GT	H G	H P			H P	H G		H,P G	H G	U																													
19	Ketones	H	H F						H G		H	H																														
20	Mercaptans and Other Organic Sulfides	GT GF	H,F GT						H G									H	H	H	20																				
21	Metals, Alkali and Alkaline Earth, Elemental	H,F GF	H,F GF	H,F GF	H,F GF	H,F GF	GF H	GF H	GF H	GF H	GF H	GF H	GF,H GT	GF H				H E	GF H	GF H	GF H	21																			
22	Metals, Other Elemental & Alloys as Powders, Vapors, or Sponges	H,F GF	H,F GF	G F					H,F GT	U	GF H							H E	GF H		H,F GF		22																		
23	Metals, Other Elemental & Alloys as Sheets, Rods, Drops, etc.	H,F GF	H,F GF						H,F G									H F						23																
24	Metals and Metal Compounds, Toxic	S	S	S			S	S			S														24																
25	Nitrides	GF HF	H,F E	H GF	H,E GF	GF H			U	H G	U	GF H	GF H	GF H				GF H	U	GF H	GF H	E				25														
26	Nitriles	H,GT GF	H,F GT	H							U											H P			S	GF H	26													
27	Nitro Compounds, Organic		H,F GT			H					H E											H,E GF				H,E GF		27												
28	Hydrocarbons, Aliphatic, Unsaturated	H	H F			H																	H E					28											
29	Hydrocarbons, Aliphatic, Saturated		H F			H																							29										
30	Peroxides and Hydroperoxides, Organic	H G	H E		H F	H G		H GT	H,F E	H,F GT		H,E GT	H,F GT					H E	H	E	H,F GT	H E	H G		H G	H,E GF	H,P GT		H P		30									
31	Phenols and Cresols	H	H F						H G										H P			GF H				GF H					H	31								
32	Organophosphates, Phosphothioates, Phosphodithioates	H GT	H GT						U		H E											H									U		32							
33	Sulfides, Inorganic	GT GF	HF GF	GT		H			E										H												H GT			33						
34	Epoxides	H P	H P	H P	H P	U		H P	H P		H P	H P	U								H P	H P	H P		H P	H P					H P	H P	U	H P	34					
101	Combustible and Flammable Materials, Miscellaneous	H G	H,F GT																			H,F G				H,F GF					H,F GT					101				
102	Explosives	H E	H E	H E					H E		H E			H E								H E	H E	H E	E	E					H E	H E		H E	H E	H E	102			
103	Polymerizable Compounds	P H	P H	P H					P H		P H	P H	U									P H	P H	P H	P H	P H					P H	H		P H			H E	103		
104	Oxidizing Agents, Strong	H GT		H GT	H F	H F	H,F GT	H,F GT	H E	H,F GT		H,E GT	H,F GT	H F	H F		H F	H GT	H,F GT	H F	H,F GT	H,F E	H,F E	H F		H,F E	H F	H F	H F	H GT	H G	H F	H,F GT	H,F GT	H,F G	H,F G	H E	H,F GT	104	
105	Reducing Agents, Strong	H GF	H,F GT	H GF	H,F GF	H,F GF	H GF	H G			H	H GT	H F				H,F E	H E	H GF	H GF	H GF						H GF	H E			H E	H GF	H GF	H	H GF	H E	H,P GF	H,F E	105	
106	Water and Mixtures Containing Water	H	H						G		H G		H GF	H GF		S	H GF																	GT GF					GF GT	106	
107	Water Reactive Substances	<---EXTREMELY REACTIVE! DO NOT MIX WITH ANY CHEMICAL OR WASTE MATERIAL! EXTREMELY REACTIVE!--->																																						107
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	101	102	103	104	105	106	107

APPENDIX B

Haz-Cat Procedures

JOB TASK ANALYSIS

JTA Number:

Company: **United States Environmental Services**

Evaluation Date: **10/11/06**

Job Title: **Sample Analysis**

Performed by: **JTN & RLW**

Total Shift Hours: 12 Hrs

Break Schedule: AM: minutes Lunch: minutes PM: minutes Total: hr(s) minutes

Job Rotation: yes X no *If yes, description:*

Personal Protective Equipment Used: modified poly coated tyvek, nitrile gloves , and safety glasses

Chemical Products Used: Test strips and hydrochloric acid

JOB TASK STEPS:

1. Sample unknown containers and label with characteristic ID Number.
2. Analyze samples with HazCat and FTIR for Flammability, Reactivity, Toxicity, corrosivity, and water solubility.
3. Determine waste streams based on Hazcat results and professional judgment.
4. Representatively sample each bulked waste stream for analysis at an analytical lab for waste profiling for disposal.
5.
6.
7.
8.
9.
10

JOB TASK STEP	IDENTIFIED HAZARD TYPE	CONTROL DESCRIPTION	GRADINGS				
			Accident/ Event Potential	Injury Significance Potential	Control Adequacy Potential	Total Points	PRIORITY
1	1	PPE and air monitoring	1	0	1	2	Low
2	2	PPE and air monitoring					
3	N/A		1	0	1	2	Low
4	1	PPE and air monitoring	1	0	1	2	Low

HAZARD TYPES :

1-Chemical – Contact	5- Fall - Heights	9-Contact With Sharp / Burred Edge	13-Manual Handling – Force	17-Repetitive Motion – Force
2- Chemical – Respiratory	6-Fall (Slip/Trip)– Same Level	10-Contact With Point/Puncture	14-Manual Handling – Posture	18-Repetitive Motion – Posture
3- Struck By	7-Step On / In	11-Foreign Debris In Eye	15-Manual Handling – Repetition	19-Repetitive Motion – Repetition
4- Struck Against	8-Caught In / Under / Between	12-Burn	16-Noise	20-OTHER

HAZARD GRADING KEY: ***All gradings are inherently subjective and are based on the professional judgement of the individual performing the analysis. The purpose of providing gradings is to enable a means for prioritizing identified hazards and managing corrective action protocols.**

ACCIDENT/EVENT POTENTIAL		INJURY SIGNIFICANCE POTENTIAL		CONTROL ADEQUACY		PRIORITY SCALE	
0	Not expected/rare occurrence.	0	No treatment expected.	0	Controlled beyond expectation (Hazard eliminated/ Best Practice)	**9-12 Pts**	**High**
1	Unlikely but not unreasonable.	1	Onsite first aid likely / lost time possible.	1	Controlled to reasonable expectations (Hazard minimized but not eliminated .)	**5-8 Pts**	**Moderate**
2	Moderate expectation (near misses and complaints reported)	2	Offsite medical assistance / lost days possible.	2	Some controls in place. (Hazard reduced but not minimized.)	**0-4 Pts**	**Low**
3	Significant likelihood (prior minor injuries & complaints of discomfort/pain)	3	Significant injury / permanency possible.	3	Ineffective controls. (Little or no hazard reduction.)		
4	High likelihood/expected (serious injuries reported/imminent danger)	4	Fatality possible.	4	No controls in place.		

HAZ-CAT TEST SHEET

Project: _____

Date: _____

Sample Description: _____

_____

_____

_____

Water Reactivity: _____

Water Solubility: _____

pH: _____

Peroxides: _____

Oxidizer: _____

Flammability: _____

Halogens: _____

Sample Determination: _____

_____

_____

_____

Analyst Signature/Date: _____

Task 1- Sampling

Each container from the fire area will be sampled and given a characteristic sample identification number by the site entry team.

Task 2 – Hazard Categorization (HAZCAT) Analysis

Each unknown sample will be analyzed by EPA Hazard Categorization analyses and FTIR analysis to identify the following hazards:

- Flammability
- Reactivity
- Toxicity
- Corrosivity
- Solubility

Task 3 – Determination of Waste Streams

After HAZCAT and FTIR analysis, waste streams of compatible compounds will be determined.

Task 4 – Waste Profiling

Representative samples from each containerized waste stream will be collected for waste profile analysis at a fixed laboratory.

APPENDIX C

RCRA Container Guidance

RCRA Training Module

Solid Waste and Emergency Response
(5305W)
EPA530-K-05-010

Introduction to

Containers

(40 CFR Parts 264/265, Subpart I; §261.7)

United States
Environmental Protection
Agency

September 2005

CONTAINERS

CONTENTS

1. INTRODUCTION

Containers represent one of the most commonly used and diverse forms of units for hazardous waste storage. Compared to tanks or surface impoundments, containers are less expensive and generally less difficult to manage. Containers are also mobile, allowing an owner or operator to use only one unit for storage, transportation, and disposal. Prior to regulation under the Resource Conservation and Recovery Act (RCRA), however, containers were frequently mismanaged or abandoned. When the abandoned containers became weathered or corroded, the hazardous contents were released, posing a far-reaching danger to human health and the environment.

This module reviews two sets of regulatory requirements for containers: requirements that pertain to the management of hazardous waste containers and regulations governing residues of hazardous waste in empty containers. The regulations covering management of hazardous waste stored in containers are found in 40 CFR Part 264/265, Subpart I. These specific requirements must be met by the owners and operators of treatment, storage, and disposal facilities (TSDFs) and generators who accumulate hazardous waste in containers.

The regulations regarding the management of empty containers and residues remaining in empty containers are found in §261.7. These regulations set out procedures for establishing a container as "empty." Since empty containers no longer contain hazardous waste, these regulations are also used to determine when containers are no longer subject to the RCRA requirements.

When you have completed this module you will be able to apply the appropriate regulations governing hazardous waste containers and specifically will be able to:

- find the definitions of "container" and "empty container" and provide examples and citations for each
- provide an overview of the requirements for the design and operation of hazardous waste containers
- explain the difference between the container standards set out in Part 264 and Part 265
- state the requirements for rendering a hazardous waste container "RCRA empty"
- explain when container rinsate must be managed as a hazardous waste.

Use this list of objectives to check your knowledge of this topic after you complete the training session.

2. REGULATORY SUMMARY FOR MANAGEMENT OF CONTAINERS

Containers storing hazardous waste at permitted and interim status facilities are subject to the general facility standards in Part 264/265, Subparts A through E, as well as the unit-specific requirements in Part 264/265, Subpart I. See the training module entitled RCRA Treatment, Storage, and Disposal Facilities for more information about the general facility standards.

When EPA promulgated the unit-specific requirements for hazardous waste containers, the Agency emphasized that although mismanagement of containers has caused some of the worst contamination, relatively few regulations would be needed to eliminate most of these problems. These straightforward regulations are viewed simply as "good management practices." The regulations for containers in Part 264/265, Subpart I, include provisions regarding design and operating requirements, inspections, and closure. These requirements are designed to ensure that the integrity of the container is not breached; thus, the same standards apply regardless of whether the containers are used for treatment or storage.

Since the interim status standards in Part 265 are designed to regulate existing facilities until they can comply with the permitted standards, certain portions of the container regulations for interim status facilities are less stringent than those for permitted facilities. Specifically, the Part 265, Subpart I, regulations do not address requirements for secondary containment or closure, whereas the standards in Part 264, Subpart I do. Therefore, the discussions of these standards will only cite Part 264 standards.

The following is a summary of the regulations affecting containers used to treat or store hazardous waste.

2.1 APPLICABILITY

Unless a container is specifically exempted from regulation in §264/ 265.1, all containers storing hazardous waste must comply with the regulations found in Part 264/265, Subpart I. Hazardous waste containers at generator sites must be in compliance with the Part 265 standards as well. A container is any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled (§260.10). This definition is intentionally broad to encompass all the different types of portable devices that may be used to handle hazardous waste. For example, a container may be a 55-gallon drum made from steel or plastic, a large tanker truck, a railroad car, a small bucket, or a test tube.

Storage means holding hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere. Again, this definition is made intentionally broad to include any situation in which hazardous waste is held for any period of time.

2.2 DESIGN REQUIREMENTS

The regulations governing the design of a container storage area are intended to ensure that the waste will not escape the storage area. These regulations ensure that the owner or operator is using a functional container and that the container will hold waste that is compatible with the container itself and other wastes in the container. In addition, the containers must be placed in a containment area designed to prevent releases from the containers from reaching the environment. The following sections detail these requirements.

CONDITION OF CONTAINER

Containers that are deteriorating (e.g., cracked, rusted) or leaking must not be used. Waste stored in defective containers must be transferred to containers in good condition or handled in another way that satisfies the requirements in Part 264/265 (§264/265.171).

COMPATIBILITY WITH WASTE

Sections 264/265.172 and 264/265.177 regulate situations involving incompatible wastes. The term incompatible waste refers to a hazardous waste which is unsuitable for (1) placement in a container because it may cause corrosion or decay of the container or inner liner; or (2) commingling with another waste or material under uncontrolled conditions because it might produce heat or pressure, fire or explosion, violent reaction, toxic dusts, mists, fumes or gases, or flammable fumes or gases (§260.10).

Containers used to store hazardous waste must be made of or lined with materials that will not react with and are otherwise compatible with the waste in the container (§264/265.172). Incompatible wastes and materials must not be placed in the same container (§264/265.177). This requirement includes unwashed containers that previously held an incompatible waste or material. Incompatible wastes or materials can only be mixed in a manner that will not cause an adverse reaction, such as an explosion or uncontrolled flammable fumes (§264/265.17(b)).

Appendix V in Part 264/265 provides a list of potentially incompatible wastes. The list is not intended to be exhaustive. Adequate analysis should be performed to avoid creating uncontrolled hazards such as heat generation, violent reaction, fire, explosion, and generation of flammable or toxic gases.

CONTAINMENT

As mentioned in the summary, the regulations for containment only apply to permitted facilities, not generators or facilities operating under interim status. In general, the interim status regulations are less comprehensive because some of the regulations for permitted facilities require the retrofit of equipment, which could place undue burden on the facilities. Therefore, only permitted container storage areas must have a secondary containment system (§264.175(a)). Secondary containment provides a backup system to prevent a release into the environment should primary containment (i.e., the container) fail. This usually consists of a poured concrete pad or other impervious base with curbing to prevent releases of hazardous waste into the environment and to allow drainage of any accumulated liquid to a sump, tank, or other container.

Storage areas holding containers with no free liquids are not required to have secondary containment systems provided that (1) the storage area is sloped or otherwise designed and operated to remove precipitation; or (2) the containers are elevated or otherwise protected from contact with accumulated liquid (§264.175(c)). Containers holding listed dioxin wastes (i.e., F020, F021, F022, F023, F026, and F027) are not eligible for the exemption. Free liquids are liquids that readily separate from the solid portion of a waste under ambient temperature and pressure (§260.10). The Agency requires use of the Paint Filter Liquids Test (PFT), Method 9095, to determine whether sludges or semisolids contain free liquids (Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA SW-846, provides information on test methods).

Technical Requirements

At a minimum, the secondary containment system must meet certain criteria designed to ensure that the waste will remain in the containment system until it is removed in a "timely" manner. Specifically, the containment system must meet the following requirements:

- The base must be free of cracks or gaps and must be sufficiently impervious to contain leaks, spills, and accumulated precipitation (§264.175(b)(1)).

- The base must be sloped or the system must be designed so that liquids resulting from releases can drain and be removed. This is not necessary, however, if the container is elevated (e.g., on pallets) or otherwise protected from contacting accumulated liquids (§264.175(b)(2)).

- The secondary containment system must have the capacity to contain at least 10 percent of the volume of the containers or 100 percent of the volume of the largest container, whichever is greater. If containers hold no free liquids, they do not have to be considered in this calculation (§264.175(b)(3)).

- Stormwater run-on must be prevented from entering the system unless the collection system has sufficient capacity to contain any run-on entering the system in addition to the capacity requirements (§264.175(b)(4)).

- Any waste that has spilled or leaked into the secondary containment area or any accumulated precipitation must be removed in as timely a manner as is necessary to prevent overflow (§264.175(b)(5)).

2.3 OPERATING REQUIREMENTS

Even the most well-designed storage areas can fail if the containers and the waste are not handled properly. When EPA promulgated the rules for container storage areas, the Agency believed that the following operating guidelines would curtail the bulk of container mismanagement in the United States. Note that although secondary containment is addressed under the design

requirements, there are also specific requirements to maintain the secondary containment properly.

MANAGEMENT OF CONTAINERS

Containers holding hazardous waste must always be closed during storage, except when waste is added or removed (§264/265.173). In addition, containers must not be handled, opened, or stored in a manner that may cause them to leak.

IGNITABLE AND REACTIVE WASTES

Containers holding ignitable or reactive wastes must be located at least 15 meters (50 feet) from the facility's property line (§264/265.176). This requirement is sometimes referred to as the buffer zone requirement because it creates a zone of protection between waste storage and adjoining properties. The general facility standards in §264/265.17(a) specify additional requirements for ignitable and reactive wastes.

2.4 INSPECTIONS

At least once a week, container storage areas must be visually inspected for leaking and deteriorating containers (§264/265.174). Recordkeeping requirements for inspections are detailed in §264/265.15(d). The owner or operator must record inspections in a log, including the date and time of the inspection, the name of the inspector, observations made, and the date and nature of any repairs. These records must be kept for a minimum of three years from the date of inspection.

2.5 CLOSURE

As mentioned in the regulatory summary, specific closure requirements for containers only apply to permitted facilities. At closure, all hazardous waste and associated residues must be removed from the container storage area. Remaining containers, liners, bases, and soil contaminated with hazardous waste must be decontaminated or removed (§264.178).

Although no container closure requirements are in Part 265, Subpart I, the general closure standards in Part 265, Subpart G, are applicable to interim status facilities (47 FR 2831; January 12, 1981). Section 265.114 requires that wastes be removed from storage facilities at closure and that structures and equipment be disposed of or decontaminated.

At closure, the owner or operator must determine whether any solid waste (e.g., residues) removed from the containment system is hazardous waste. If an owner or operator determines the solid waste is hazardous waste, that individual is considered the generator of the waste and must manage it in compliance with all applicable requirements in Parts 262 through 266.

2.6 SPECIAL ISSUES

In addition to those regulations heretofore discussed, there are two issues specific to containers that are worthy of discussion. Containers are subject to certain air emissions standards, and there are regulations that govern the addition of absorbent material to containers.

AIR EMISSIONS STANDARDS

On December 6, 1994, EPA published a final rule promulgating air emission standards for containers, tanks, and surface impoundments at treatment, storage, and disposal facilities and large quantity generator sites (59 FR 62896). This rule, as amended by the November 25, 1996 Federal Register (61 FR 59932), requires owners and operators of hazardous waste containers to comply with Part 264/265, Subparts AA, BB, and CC, within specified time frames (§§264.179 and 265.178). EPA further revised the air emissions standards on December 8, 1997 (62 FR 64636), and January 21, 1999 (64 FR 3382). See the module entitled Air Emissions Standards for more details about the Subpart AA, BB, and CC requirements.

ADDITION OF ABSORBENT MATERIAL TO CONTAINERS

Per §§264.1(g)(10) and 265.1(c)(13), the addition of absorbent material to waste in a container or the addition of waste to absorbent material in a container, provided that these actions occur at the time waste is first placed in the container, does not constitute treatment requiring interim status or a permit. The absorbent treatment process must take place in a container with solid structural integrity, and the waste, the absorbent material, and the container must be compatible.

3. REGULATORY SUMMARY OF THE EMPTY CONTAINER REQUIREMENTS

The regulations in §261.7 define when hazardous waste residue in an empty container is exempt from regulation. These regulations specify the requirements for rendering a container or inner liner "empty." To distinguish between the usual meaning of the word "empty" and the strict regulatory definition, the phrase "RCRA empty" is sometimes used. Any hazardous waste remaining in either a RCRA empty container or inner liner is not subject to regulation under RCRA Subtitle C. EPA promulgated these regulations to advise owners and operators how to empty their containers so that the containers would no longer be subject to regulation, even if some residues remain in the container. Therefore, these regulations allow an owner or operator to reuse containers or inner liners meeting the provisions in §261.7, since the container is no longer considered to hold hazardous waste.

3.1 REGULATORY STANDARDS

Throughout this section, there will be references to the term "inner liner." This term refers to a continuous layer of material placed inside a tank or container that protects the construction materials of the container from contact with the contained waste or reagents used to treat the waste (§260.10). The following is a summary of the standards for rendering a container or inner liner RCRA empty.

GASES

Containers holding compressed gases that are hazardous wastes are considered empty when the pressure in the container approaches atmospheric pressure (§261.7(b)(2)).

ACUTELY HAZARDOUS WASTE

A container or inner liner of a container holding acutely hazardous waste (i.e., all P-listed wastes and other hazardous wastes with the designated hazard code H) is empty when one of the following conditions is met:

- the container has an inner liner that prevents contact with the container and the liner is removed (§261.7(b)(3)(iii))
- the container has been triple rinsed with a solvent appropriate for removing the acutely hazardous waste (§261.7(b)(3)(i))
- when triple rinsing is inappropriate, an alternate method is used (§261.7(b)(3)(ii)).

To date, EPA has not defined triple rinsing in the regulations or in interpretative guidance. The rinsate is considered acutely hazardous waste according to the mixture rule; however, the act of triple rinsing is not considered treatment (45 FR 78524, 78528; November 25, 1980).

OTHER HAZARDOUS WASTE

A container or an inner liner removed from a container holding nonacute hazardous waste as identified in Part 261, Subpart D, is empty when:

- all wastes have been removed using practices commonly employed industry-wide to remove wastes from containers or liners, such as pouring, pumping, aspirating, and draining (§261.7(b)(1)(i)), and

- no more than 2.5 centimeters (1 inch) of material remains in the container or liner (§261.7(b)(1)(ii)), or

- no more than 3 percent by weight of the container remains for containers with a capacity of 110 gallons or less, and no more than 0.3 percent by weight remains for containers with a capacity greater than 110 gallons (§261.7(b)(1)(iii)).

On March 4, 2005, EPA finalized changes to the 110 gallon container capacity to conform with the DOT definition for bulk packaging that includes any container with a capacity greater than 119 gallons. Thus, this final rule modifies the regulations so that §261.7(b)(1)(iii) would define a container as empty if no more than 3 percent by weight of the container remains for containers with a capacity of 119 gallons or less, and no more than 0.3 percent by weight remains for containers with a capacity greater than 119 gallons (70 FR 10776, 10815; March 4, 2005). This final rule is effective September 6, 2005.

RESIDUES FROM EMPTY CONTAINERS

Residues remaining in a RCRA empty container are exempt from Subtitle C regulation. Residues removed from a container that is not RCRA empty or that result from rendering a container empty are fully subject to Subtitle C. Whether residues or rinsate from an empty container that exhibits a characteristic of hazardous waste are exempt or regulated is currently under review by EPA.

3.2 SPECIAL ISSUES: AEROSOL CANS

A recurring issue within the container and empty container regulations is the puncturing or venting of aerosol cans. The issue stems partly from the applicability of the empty container regulations to aerosol cans and partly from the issue of whether the can itself is considered to be part of the waste.

In general, aerosol cans are capable of holding either compressed gas or liquid. If the can is sent for scrap metal recycling, the can and its contents are exempt from regulation as scrap metal per §261.6(a)(3)(iii). The act of emptying the can may be an exempt recycling activity per §261.6(c), and any residues from emptying the can would be regulated if they are listed or exhibit a characteristic of hazardous waste. If the can is sent for disposal, both the contents of the can and the can itself are subject to regulation. To dispose of the aerosol can as nonhazardous, the can must be RCRA empty according to §261.7, and the can itself must not

qualify as a hazardous waste. If the aerosol can is holding a compressed gas, it is unclear whether the act of venting to render the can empty would constitute treatment. This question must be answered by the appropriate EPA Region or authorized state.