

<u>SUBJECT</u>			<u>DATE</u>
1056.	PCB Reporting and Recordkeeping Relief	ENCORE	JAN 12, 2014
1057.	Commercial Chemical Products and Unused Batteries	ENCORE	JAN 16, 2014
1058.	PCB Annual Records Retention Timeframes		JAN 31, 2014
1059.	Satellite Accumulation within a ≤90-day Accumulation Area		FEB 7, 2014
1060.	PCB Certificate of Disposal Relief	ENCORE	FEB 13, 2014
1061.	Used Oil and Weekly Inspections		FEB 20, 2014
1062.	Bags and RCRA Container Definition		FEB 27, 2014
1063.	Product Storage Tank Residues and Hazardous Waste Regulations	ENCORE	MAR 6, 2014
1064.	Spent Lead-Acid Batteries and Accumulation Time Limits		MAR 13, 2014
1065.	Land Disposal Restrictions and Dates of Accumulation		MAR 23, 2014
1066.	Universal Waste Accumulation Time Limits and the One Year Rule		MAR 29, 2014
1067.	PCB Manifest Discrepancy Reports and Estimated Waste Weights		APR 6, 2014
1068.	PCB Wastes, Independent Transporters and Confirmation of Receipt		APR 10, 2014
1069.	Paint Wastes and The Applicability of the F001-F005 Listings to Ingredients	ENCORE	APR 20, 2014
1070.	Other Paint Wastes and the Applicability of the F001-F005 Listings	ENCORE	APR 24, 2014
1071.	Multiple Characteristic Hazardous Waste Codes and Underlying Hazardous Constituents		MAY 1, 2014
1072.	TSCA "No PCBs" versus "Non-PCBs" versus "Nondetectable PCBs"	ENCORE	MAY 8, 2014
1073.	Purpose of Keeping a Hazardous Waste Container Closed	ENCORE	MAY 15, 2014
1074.	PCB Containers and Multiple Removed From Service Dates		MAY 22, 2014
1075.	Satellite Accumulation and RCRA Personnel Training		MAY 29, 2014
1076.	Transporter Signatures on Hazardous Waste Manifest and Multiple Drivers		JUN 5, 2014
1077.	Universal Waste and Nonhazardous Batteries		JUN 12, 2014
1078.	Universal Waste and Incandescent Bulbs		JUN 19, 2014
1079.	The PCB Mark and the Fields "Also Contact" and "Tel No"	ENCORE	JUN 29, 2014
1080.	Halon Fire Extinguishers - Banned or Not Banned?	ENCORE	JUL 5, 2014
1081.	Cabinets as RCRA Containers	ENCORE	JUL 13, 2014
1082.	LDR Storage Prohibitions and Treated Wastes	ENCORE	JUL 17, 2014
1083.	LDR Treatment Standards and F001 "Chlorinated Fluorocarbons"	ENCORE	JUL 24, 2014
1084.	RCRA Regulatory Status of Chlorinated Fluorocarbons Used as Refrigerants	ENCORE	JUL 31, 2014
1085.	Universal Wastes, Manifesting and DOT Shipping Names		AUG 7, 2014
1086.	CERCLA Hazardous Substances – A Brief Definition		AUG 14, 2014
1087.	CERCLA Hazardous Substances – The Petroleum Exclusion		AUG 21, 2014
1088.	PCB Concentration Assumptions for Use vs. PCB Disposal	ENCORE	AUG 28, 2014
1089.	Universal Waste and Basis for the One Year Accumulation Time Limit		SEP 4, 2014
1090.	Product Spills and Waste Determinations	ENCORE	SEP 11, 2014
1091.	PCB Concentrations and 10,000 PPM		SEP 18, 2014
1092.	PCB Concentrations and 1,000 PPM		SEP 25, 2014
1093.	Universal Waste Alkaline Batteries and Self-Transportation		OCT 2, 2014
1094.	Universal Waste Lithium Batteries and Self-Transportation		OCT 9, 2014
1095.	Universal Waste Batteries and Closed Containers	ENCORE	OCT 16, 2014
1096.	PCB Containers and Concentration of PCBs		OCT 23, 2014
1097.	Recyclable Chemicals and Zombie Destruction		OCT 31, 2014
1098.	Satellite Accumulation Requirements in Washington State	ENCORE	NOV 6, 2014
1099.	Satellite Accumulation and "At or Near"		NOV 13, 2014
1100.	Regulatory Status of Chromated, Copper, Arsenate, (CCA) Wood as Wood Mulch	ENCORE	NOV 20, 2014
1101.	Defining Criteria for Household Waste Exclusion	ENCORE	NOV 26, 2014
1102.	The Household Waste Exclusion and Renovation Debris		DEC 4, 2014
1103.	The Household Waste Exclusion and Renovation Debris – Part II		DEC 11, 2014
1104.	PCB Ballasts and Disposal Options	ENCORE	DEC 18, 2014
1105.	'Twas the Night Before Christmas – The Twenty-Second Edition		DEC 24, 2014
1106.	Printed Circuit Board Recycling – Shredded vs. Whole	ENCORE	JAN 1, 2015

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## TWO MINUTE TRAINING

**TO:** CH2M HILL PLATEAU REMEDIATION COMPANY

**FROM:** PAUL W. MARTIN, Senior Environmental Compliance Officer  
CHPRC Environmental Protection, Hanford, WA

**SUBJECT:** PRINTED CIRCUIT BOARD RECYCLING – SHREDDED VS. WHOLE

**DATE:** JANUARY 1, 2015

<u>CHPRC Projects</u>	<u>CH PRC - Env. Protection</u>	<u>MSA</u>	<u>Hanford Laboratories</u>	<u>Other Hanford Contractors</u>	<u>Other Hanford Contractors</u>
Richard Austin Tania Bates Ty Blackford Bob Cathel Rene Catlow Richard Clinton Larry Cole John Dent Brian Dixon Eric Erpenbeck Stuart Hildreth Mike Jennings Stephanie Johansen Jeanne Kisielnicki Melvin Lakes Jim McGrogan Stuart Mortensen Anthony Nagel Dean Nester Dave Richards Phil Sheely Connie Simiele Roni Swan Michael Waters Jeff Westcott Jeff Widney	Brett Barnes Ron Brunke Bill Cox Lorna Dittmer Rick Engelmann Ted Hopkins Jim Leary Dale McKenney Jon McKibben Rick Oldham Linda Petersen Fred Ruck Jennie Seaver Wayne Toebe Lee Tuott Daniel Turlington Dave Watson Joel Williams	Jerry Cammann Jeff Ehlis Garin Erickson Lori Fritz Panfilo Gonzales Jr. Dashia Huff Mark Kamberg Edwin Lamm Candice Marple Saul Martinez Jon Perry Thomas Pysto Don Rokkan Lana Strickling Lou Upton Christina Zerby	Alan Campbell Grant McCalmant  <u>DOE RL, ORP, WIPP</u>  Mary Beth Burandt Cliff Clark Mike Collins Tony McKarns Ellen Mattlin Greg Sinton Scott Stubblebine	Bill Bachmann Dean Baker Scott Baker Lucinda Borneman Paul Crane Tina Crane Greta Davis Jeff DeLine Ron Del Mar John Dorian Mark Ellefson Darrin Faulk Joe Fritts Tom Gilmore Rob Gregory Gene Grohs James Hamilton Andy Hobbs Ryan Johnson Dan Kimball Megan Lerchen Richard Lipinski Charles (Mike) Lowery Michael Madison Terri Mars Cary Martin Steve Metzger Tony Miskho Matt Mills Tom Moon Chuck Mulkey Judith Nielsen Mandy Pascual Kirk Peterson Jean Quigley	Mark Rollison Dan Saueressig Merrie Schilperoort Joelle Stamm Glen Triner Greg Varljen Julie Waddoups Kyle Webster Ted Wooley

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## TWO MINUTE TRAINING

**SUBJECT:** Printed Circuit Board Recycling – Shredded vs. Whole

**Q:** A customer has two drums of printed circuit boards destined for recycling. One drum contains whole circuit boards and the other contains shredded circuit boards. What is the regulatory path for recycling these two types of circuit boards?

**A:** Concerning whole circuit boards, per an [EPA letter dated August 26, 1992](#), EPA stated that used circuit boards are subject to regulation as scrap metal and are therefore exempt from RCRA Subtitle C regulation when recycled. Note that in the [May 12, 1997 Federal Register](#), (page 26013), EPA seemed to reverse its position on managing whole circuit boards as scrap metal since liquid mercury and batteries are not within the scope of the definition of scrap metal. However, after receiving feedback from the circuit board industry EPA re-clarified its position in the [May 26, 1998 Federal Register](#) (page 28629) that whole circuit boards can be managed as scrap metal since the amounts of liquid mercury and batteries on circuit boards are minimal.

Then per WAC 173-303-120(2)(a)(iv) [*40 CFR 261.6(a)(3)(ii)*], scrap metal is basically not regulated as a dangerous waste unless it is managed or released in a manner that is a threat to public health or the environment. Therefore the regulatory path for whole circuit boards is via the scrap metal exclusion.

Concerning shredded circuit boards, WAC 173-303-071, “Excluded categories of waste”, and section (3), paragraph (gg), [*40 CFR 261.4(a)(14)*] shredded circuit boards being recycled are basically exempt from dangerous waste regulations provided that the shredded circuit boards are stored in containers to prevent a release to the environment prior to recovery and the boards are free of mercury switches, mercury relays and nickel-cadmium batteries and lithium batteries. Since shredded circuit boards destined for recycling are not solid wastes they cannot be hazardous wastes. As long as the customer complies with WAC 173-303-071(3)(gg) the shredded circuit boards can be recycled and not be subject to any other parts of WAC 173-303-071(3)(gg) the shredded circuit boards can be recycled and not be subject to any other parts of WAC 173-303-071(3)(gg). Therefore the regulatory path for shredded circuit boards is via the dangerous waste exclusions.

Note that if whole or shredded circuit boards are destined for disposal, as opposed to recycle, the boards are solid waste subject to dangerous waste designations and appropriate waste management as dangerous or nondangerous waste.

### SUMMARY:

- Whole circuit boards are not regulated as dangerous waste when recycled per the scrap metal exclusion at WAC 173-303-120(2)(a)(iv).
- Shredded circuit boards are not regulated as dangerous waste when recycled per the dangerous waste exclusion at WAC 173-303-071(3)(gg).
- Both regulatory paths are dependent upon the circuit boards being recycled as opposed to disposed. If disposed, the boards are subject to dangerous waste designations and applicable waste management.

Excerpts from WAC 173-303-071 and WAC 173-303-120 are attached to the e-mail. If you have any questions, please contact me at “Paul\_W\_Martin@rl.gov” or at (509) 376-6620.

**FROM:** Paul W. Martin

**DATE:** 1/1/15

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**PG:** 1

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## TWO MINUTE TRAINING - ATTACHMENT

**SUBJECT:** Printed Circuit Board Recycling – Shredded vs. Whole

### WAC 173-303-071 Excluded categories of waste.

(3) Exclusions. The following categories of waste are excluded from the requirements of chapter 173-303 WAC, except for WAC 173-303-050 [*Department of ecology cleanup authority*], 173-303-145 [*Spills and discharges into the environment*] and 173-303-960 [*Special powers and authorities of the department*], and as otherwise specified:

(gg) Shredded circuit boards being recycled: Provided, that they are:

(i) Stored in containers sufficient to prevent a release to the environment prior to recovery; and

(ii) Free of mercury switches, mercury relays and nickel-cadmium batteries and lithium batteries.

(ff) Excluded scrap metal (processed scrap metal, unprocessed home scrap metal, and unprocessed prompt scrap metal) being recycled.

### WAC 173-303-120 Recycled, reclaimed, and recovered wastes.

(2)

(a) The following recyclable materials are solid wastes and sometimes are dangerous wastes. However, they are subject only to the requirements of (b) of this subsection, WAC 173-303-050 [*Department of ecology cleanup authority*], 173-303-145 [*Spills and discharges into the environment*] and 173-303-960 [*Special powers and authorities of the department*]:

(iv) Scrap metal that is not excluded under WAC 173-303-071 (3)(ff);

(b) Any recyclable material listed in (a) of this subsection will be subject to the applicable requirements listed in subsection (4) of this section if the department determines, on a case-by-case basis, that:

(i) It is being accumulated, used, reused, or handled in a manner that poses a threat to public health or the environment; or

(ii) Due to the dangerous constituent(s) in it, any use or reuse would pose a threat to public health or the environment. Such recyclable material will be listed in WAC 173-303-016 (6).

**FROM:** Paul W. Martin

**DATE:** 1/1/15

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