

<u>SUBJECT</u>		<u>DATE</u>
1253. Used Oil Filter Regulation – The Feds vs. Washington State	ENCORE	NOV 16, 2017
1254. PCB Radioactive Wastes and Exception Reporting	ENCORE	NOV 21, 2017
1255. Satellite Accumulation Requirements and Container Inspections	ENCORE	NOV 30, 2017
1256. Disposing of PCB Ballasts with PCB Potting Material	ENCORE	DEC 7, 2017
1257. Fluorescent Light Ballasts and PCB Annual Reporting		DEC 14, 2017
1258. 'Twas the Night Before Christmas – The Twenty-Fifth Annual Edition		DEC 21, 2017
1259. The Purpose of Keeping Containers Closed Except When Adding or Removing Wastes	ENCORE	DEC 28, 2017
1260. Satellite Accumulation and Product Vessel Cleanouts	ENCORE	JAN 4, 2018
1261. Conservative Declaration that Material is a Hazardous Waste	ENCORE	JAN 11, 2018
1262. Defining Criteria for Household Waste Exclusion	ENCORE	JAN 18, 2018
1263. The Household Waste Exclusion and Renovation Debris	ENCORE	JAN 25, 2018
1264. The Household Waste Exclusion and Renovation Debris – Part II	ENCORE	FEB 1, 2018
1265. The Mixtures Rule – Washington State vs. The Feds	ENCORE	FEB 8, 2018
1266. Spent Lead-Acid Batteries and Secondary Containment	ENCORE	FEB 15, 2018
1267. Spent Lead-Acid Batteries and Accumulation Time Limits	ENCORE	FEB 23, 2018
1268. CERCLA Hazardous Substances – A Brief Definition	ENCORE	MAR 1, 2018
1269. Radioactively Contaminated Lead-Acid Batteries and Hazardous Debris	ENCORE	MAR 8, 2018
1270. RCRA Treatment and the Two-Part Definition	ENCORE	MAR 15, 2018
1271. Who Wants to be a Generator!!!	ENCORE	MAR 22, 2018
1272. Who Wants to be a Generator Part 2!!!	ENCORE	MAR 29, 2018
1273. “No Smoking” Signs and Tobacco-Free Facilities		APR 5, 2018
1274. Aqueous Solutions and the Characteristic of Corrosivity	ENCORE	APR 12, 2018
1275. Aqueous Solutions and the Characteristic of Ignitability	ENCORE	APR 19, 2018
1276. PCB Bulk Product Wastes and the One Year Disposal Requirement	ENCORE	APR 26, 2018
1277. PCB Radioactive Wastes and Exception Reporting	ENCORE	MAY 3, 2018
1278. TSCA/PCB Determinations for Fluorescent Light Ballasts via the Manufacture Date	ENCORE	MAY 10, 2018
1279. RCRA Liquids, Free Liquids, and Releasable Liquids	ENCORE	MAY 17, 2018
1280. Satellite Accumulation Areas and the Three-Day Time Limit for Excess Accumulation		MAY 24, 2018
1281. Satellite Accumulation of Aerosol Cans and Determining the 55-Gallon Limit	ENCORE	MAY 31, 2018
1282. Universal Waste and Basis for the One Year Accumulation Time Limit	ENCORE	JUN 7, 2018
1283. F001 Degreaser versus F002 Solvent	ENCORE	JUN 14, 2018
1284. Hazardous Waste Determinations and Phase Separation	ENCORE	JUN 20, 2018

DISCLAIMER - “Two Minute Training” (“2MT”) is a peer-to-peer communication, presented to share the benefit of the author’s work experience with other professionals, who can independently evaluate his analysis. 2MT does not necessarily reflect the opinions, conclusions or policies of the author’s past or current employers or the US Department of Energy. The author’s employers do not take any responsibility for the accuracy of its conclusions. 2MT is not intended to be used as authoritative guidance or direction by any person or entity. Anyone transmitting or reproducing it is prohibited from modifying its content, this disclaimer, or other text, or republishing it independent of its original source.

TWO MINUTE TRAINING

TO: CH2M HILL PLATEAU REMEDIATION COMPANY

FROM: PAUL W. MARTIN, RCRA Subject Matter Expert
CHPRC Environmental Protection, Hanford, WA

SUBJECT: HAZARDOUS WASTE DETERMINATIONS AND PHASE SEPARATION

DATE: JUNE 20, 2018

<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 Rene Catlow Richard Clinton Larry Cole John Dent Lorna Dittmer Brian Dixon Eric Erpenbeck Stuart Hildreth Mike Jennings Stephanie Johansen Melvin Lakes Richard Lipinski Jim McGrogan Stuart Mortensen Dave Richards Phil Sheely Connie Simiele Jennie Stults Jeff Westcott Jeff Widney	Bob Bullock Bill Cox Laura Cusack Sasa Kosjerina Jim Leary Anthony Nagel Robert Nielson Linda Petersen Fred Ruck Ray Swenson Wayne Toebe Daniel Turlington Dave Watson	Brett Barnes Jerry Cammann Jeff Ehlis Garin Erickson Panfilo Gonzalez Jr. Dashia Huff Mark Kamberg Jon McKibben Saul Martinez Jon Perry Christina Robison Lana Strickling Lou Upton	(TBD) <u>DOE RL, ORP, WIPP</u> Mary Beth Burandt Duane Carter Cliff Clark Tony McKarns Ellen Mattlin Scott Stubblebine	Bill Bachmann Dean Baker Scott Baker Lucinda Borneman Paul Crane Tina Crane Ron Del Mar John Dorian Mark Ellefson Tom Gilmore Rob Gregory Gene Grohs James Hamilton Andy Hobbs Ryan Johnson Megan Lerchen Charles (Mike) Lowery Michael Madison Terri Mars Cary Martin Grant McCalmant Steve Metzger Tony Miskho Matt Mills Tom Moon Chuck Mulkey Kirk Peterson	Jean Quigley Dan Saueressig Merrie Schilperoort Joelle Moss Glen Triner Greg Varljen Julie Waddoups Jay Warwick Ted Wooley

DISCLAIMER - "Two Minute Training" ("2MT") is a peer-to-peer communication, presented to share the benefit of the author's work experience with other professionals, who can independently evaluate his analysis. 2MT does not necessarily reflect the opinions, conclusions or policies of the author's past or current employers or the US Department of Energy. The author's employers do not take any responsibility for the accuracy of its conclusions. 2MT is not intended to be used as authoritative guidance or direction by any person or entity. Anyone transmitting or reproducing it is prohibited from modifying its content, this disclaimer, or other text, or republishing it independent of its original source.

TWO MINUTE TRAINING

SUBJECT: Hazardous Waste Determinations and Phase Separation

Q: A customer has a water-solvent cleaning solution used to clean parts. The solution is agitated during use to maintain a homogenous mixture. Once the solution is spent, the homogenous mixture is collected in a container and determined to be a nonhazardous waste, i.e., does not exhibit the characteristic of ignitability. However, a few weeks later the container is reopened and the solvent has separated from the water and now resides at the surface of the waste. The solvent is sampled and found to exhibit the characteristic of ignitability (D001). Can the customer continue to manage the water-solvent waste as nonhazardous since there was no ignitability at the initial point of generation or must the customer now manage the waste as hazardous, i.e., is the generator required to routinely check waste following generation to see if any changes to the waste status has occurred?

A: Per [WAC 173-303-070\(3\)](#), “Designation procedure”, and subparagraph (a)(iii), it states that the generator must “determine if the waste exhibits any dangerous waste characteristics”. There is no bounding timeframe like “at the initial point of generation” or “during subsequent accumulation or storage”. However, [40 CFR 261.3\(b\)\(3\)](#) states that a solid waste becomes a hazardous waste when:

“In the case of any other waste (including a waste mixture), when the waste exhibits any of the characteristics identified in subpart C [characteristics of hazardous waste] of this part.”

As further clarification, an EPA guidance letter dated November 20, 2012 ([RCRA Online Number 14834](#)) states:

“... a generator's responsibility to make a hazardous waste determination may continue beyond the determination made at the initial point of generation. In the case of a nonhazardous waste that may, at some point in the future, exhibit a hazardous waste characteristic or meet a hazardous waste listing description, there is an ongoing responsibility to monitor and reassess if changes occur that may cause the waste to become hazardous. 40 CFR 261.3(b)(3) states that "a solid waste becomes a hazardous waste ... when the waste exhibits any of the characteristics ... " (Also see [45 FR 33095](#), May 19, 1980.) Thus, if there is reason to believe that the waste may physically or chemically change during management in a way that might cause the waste, or a portion of the waste, to become hazardous, the generator must monitor the waste for these changes. The generator should also notify any subsequent handlers of the waste so they are aware that they should also monitor the waste for changes.”

Based on the regulations and guidance, the customer would be required to manage the solvent phase as a D001 characteristic hazardous waste. It did not matter that at the point of generation the solid waste did not exhibit a characteristic of dangerous waste. Once the bi-phasic solution separated into the solvent and water components, the solvent exhibited a characteristic of dangerous waste and was therefore regulated as a dangerous/hazardous waste.

Note that the land disposal restrictions (LDRs) would apply whenever the waste was determined to be a hazardous waste. Also note that if the opposite scenario occurred and the solid waste was a hazardous waste at the initial point of generation but later became a nonhazardous waste, any applicable LDRs that applied at the initial point of generation would continue to apply.

SUMMARY:

- Dangerous/hazardous waste determinations apply at the initial point of generation.
- However, a generator's responsibility to make subsequent dangerous/hazardous waste determinations may continue beyond the determination made at the initial point of generation.
- Note that LDR requirements may apply at the initial or subsequent points of generation.

The November 20, 2012, EPA letter and excerpts from WAC 173-303-070 and 40 CFR 261.3(b)(3) 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: 6/20/18

FILE: 2MT\2018\062018.rtf

PG: 1

DISCLAIMER - “Two Minute Training” (“2MT”) is a peer-to-peer communication, presented to share the benefit of the author’s work experience with other professionals, who can independently evaluate his analysis. 2MT does not necessarily reflect the opinions, conclusions or policies of the author’s past or current employers or the US Department of Energy. The author’s employers do not take any responsibility for the accuracy of its conclusions. 2MT is not intended to be used as authoritative guidance or direction by any person or entity. Anyone transmitting or reproducing it is prohibited from modifying its content, this disclaimer, or other text, or republishing it independent of its original source.

TWO MINUTE TRAINING – ATTACHMENT

SUBJECT: Hazardous Waste Determinations and Phase Separation

WAC 173-303-070 **Designation of dangerous waste.**

(3) Designation procedures.

(a) To determine whether or not a solid waste is designated as a dangerous waste a person must:

- (i) First, determine if the waste is a listed discarded chemical product, WAC 173-303-081;
- (ii) Second, determine if the waste is a listed dangerous waste source, WAC 173-303-082;
- (iii) Third, if the waste is not listed in WAC 173-303-081 or 173-303-082, or for the purposes of compliance with the federal land disposal restrictions as adopted by reference in WAC 173-303-140, **determine if the waste exhibits any dangerous waste characteristics, WAC 173-303-090**; and
- (iv) Fourth, if the waste is not listed in WAC 173-303-081 or 173-303-082, and does not exhibit a characteristic in WAC 173-303-090, determine if the waste meets any dangerous waste criteria, WAC 173-303-100.

40 CFR Part 261.3 **Definition of hazardous waste**

(b) A solid waste which is not excluded from regulation under paragraph (a)(1) of this section becomes a hazardous waste when any of the following events occur:

- (1) In the case of a waste listed in subpart D of this part, when the waste first meets the listing description set forth in subpart D of this part.
- (2) In the case of a mixture of solid waste and one or more listed hazardous wastes, when a hazardous waste listed in subpart D is first added to the solid waste.
- (3) **In the case of any other waste (including a waste mixture), when the waste exhibits any of the characteristics identified in subpart C [characteristics of hazardous waste] of this part.**

FROM: Paul W. Martin

DATE: 6/20/18

FILE: 2MT\2018\062018.rtf

PG: 2

DISCLAIMER - "Two Minute Training" ("2MT") is a peer-to-peer communication, presented to share the benefit of the author's work experience with other professionals, who can independently evaluate his analysis. 2MT does not necessarily reflect the opinions, conclusions or policies of the author's past or current employers or the US Department of Energy. The author's employers do not take any responsibility for the accuracy of its conclusions. 2MT is not intended to be used as authoritative guidance or direction by any person or entity. Anyone transmitting or reproducing it is prohibited from modifying its content, this disclaimer, or other text, or republishing it independent of its original source.

TWO MINUTE TRAINING – ATTACHMENT

SUBJECT: Hazardous Waste Determinations and Phase Separation

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Nov 20, 2012

Office of
Solid Waste and
Emergency Response

Mr. Gary Jones
Assistant Vice President, EHS Affairs
Printing Industries of America
200 Deer Run Road
Sewickley, PA 15143

Dear Mr. Jones:

This letter is in response to your email of May 3, 2011, and subsequent q-mails on May 5th and 12th, 2011 regarding the regulatory status of a water-solvent cleaning solution that becomes phase separated after use under the Resource Conservation and Recovery Act (RCRA) hazardous waste regulations.

As we understand, a common practice in printing operations with automatic blanket wash systems is to mix an organic solvent with water to make a cleaning solution that is applied to the blanket. The mix ratio is typically 40% water to 60% solvent. Once the solution has been used, it is collected in a container located at the side of the press, and once full, transferred to a larger container, such as a 55-gallon drum, for disposal. You explained that the solvent used is not one of the solvents that is a listed hazardous waste when spent or one that can cause a waste to exhibit the Toxicity Characteristic (see 40 CFR 261.24). You also explained that at the point the spent solvent is generated, the solvent and water are thoroughly mixed and the flash point of the mixture is over 140 °F. Thus, the solution does not exhibit the characteristic of ignitability (see 40 CFR 261.21). However, after some time, the spent solvent solution can phase separate into its two original components, leaving the organic solvent on the top and the water on the bottom, much like vinegar and oil. This is known as a biphasic solution.

In the particular situation you described, a printer shipped this waste as non-hazardous, not realizing that the solvent-water mixture had separated into two layers. When the container arrived at the disposal facility, it was opened and sampled from the top (the organic solvent layer) and rejected, as the flashpoint was below 140 °F, indicating that the solvent layer was a RCRA ignitable hazardous waste (waste code D001, see 40 CFR 261.21).

In reference to this situation, you seek answers to the following questions:

1. When determining the RCRA regulatory status of the waste (hazardous vs. nonhazardous), when is the determination made?
2. Is there any available guidance on sampling waste streams that are not homogenous?
3. If the waste phase-separates prior to shipment, may the generator remove the water phase and either use knowledge or testing to determine if it is nonhazardous? How would such separation be regulated?

Our responses are below:

1. When determining the RCRA regulatory status of the waste (hazardous vs. nonhazardous), when is the determination made?

FROM: Paul W. Martin

DATE: 6/20/18

FILE: 2MT\2018\062018.rtf

PG: 3

DISCLAIMER - "Two Minute Training" ("2MT") is a peer-to-peer communication, presented to share the benefit of the author's work experience with other professionals, who can independently evaluate his analysis. 2MT does not necessarily reflect the opinions, conclusions or policies of the author's past or current employers or the US Department of Energy. The author's employers do not take any responsibility for the accuracy of its conclusions. 2MT is not intended to be used as authoritative guidance or direction by any person or entity. Anyone transmitting or reproducing it is prohibited from modifying its content, this disclaimer, or other text, or republishing it independent of its original source.

TWO MINUTE TRAINING – ATTACHMENT

SUBJECT: Hazardous Waste Determinations and Phase Separation

In this situation, the generator must make the hazardous waste determination not only at the point of generation, but also after the waste separates into phases. Generators of solid waste are required to make a hazardous waste determination at the initial point of generation following the procedure described in 40 CFR 262.11, which allows use of generator knowledge and/or testing, as appropriate. In this case, the initial point of generation would be when the spent water/solvent solution is removed from the blanket wash system and placed in the container located at the side of the press. A generator's hazardous waste determination at the initial point of generation is critical to ensure proper management of the waste not only by the generator, but also by transporters and treatment, storage and disposal facilities (TSDFs) who rely upon the generator's determination to allow them to safely manage the waste.

However, a generator's responsibility to make a hazardous waste determination may continue beyond the determination made at the initial point of generation. In the case of a nonhazardous waste that may, at some point in the future, exhibit a hazardous waste characteristic or meet a hazardous waste listing description, there is an ongoing responsibility to monitor and reassess if changes occur that may cause the waste to become hazardous. 40 CFR 261.3(b)(3) states that "a solid waste becomes a hazardous waste ... when the waste exhibits any of the characteristics ... " (Also see 45 FR 33095, May 19, 1980.) Thus, if there is reason to believe that the waste may physically or chemically change during management in a way that might cause the waste, or a portion of the waste, to become hazardous, the generator must monitor the waste for these changes. The generator should also notify any subsequent handlers of the waste so they are aware that they should also monitor the waste for changes.

With respect to the situation involving the printer's operation, the printer, like any person generating or managing waste, has a responsibility to understand the physical and chemical properties of the waste being managed that may affect whether the waste is hazardous. In this particular case, the printer should evaluate the solvent-water solution after it becomes biphasic, in addition to at the point of generation of the solvent-water solution. That is, the generator would be required under 40 CFR 262.11 to determine whether the various phases of the waste are hazardous. This is analogous to and consistent with situations we have discussed in the past such as when, over time, sludges that exhibit the characteristic of toxicity settle out of nonhazardous wastewaters managed in surface impoundments (55 FR 39410, September 27, 1990).

2. Is there any available guidance on sampling waste streams that are not homogenous?

A specific RCRA sampling protocol called the COLIW ASA (Composite Liquid Waste Sampler, ASTM D-5495), found in Chapter Nine of EPA's waste testing guidance, "Test Methods for Evaluating Solid Waste (SW-846)," can be used to sample each phase in a multiphase solution. See also SW -846, Chapter Two, Sections 2.2.1, 2.2.4, and 2.3 .1 5 for additional guidance. The COLIWASA test was developed to allow sampling of all phases throughout a container, including those that are not homogenous. The test involves placing a tube in the drum to capture a representative sample of each of the different layers from top to bottom.

3. If the waste phase-separates prior to shipment, may the generator remove the water phase and either use knowledge or testing to determine if it is nonhazardous? How would such separation be regulated?

Separating or physically removing the water phase from the ignitable solvent phase is considered treatment under the RCRA hazardous waste regulations. (See 40 CFR 260.10 for a definition of treatment.) However, under the federal hazardous waste regulations, generators may treat their hazardous waste without a permit or interim status in accumulation tanks and containers that are managed in compliance with the generator accumulation provisions of 40 CFR 262.34. (See 51 FR 10168, March 24, 1986.)

As specified in 40 CFR 262.11(c), for a waste that is not a listed hazardous waste, a generator may use either knowledge or testing to determine if the waste exhibits a characteristic. Thus, the printer may use either knowledge or testing to determine if the water phase after it separates from the solvent phase exhibits any of the characteristics of hazardous waste. In this case, the generator's knowledge that the cleaning solution can naturally separate into two layers, one of which is ignitable, is knowledge that is relevant to the hazardous waste determination. This knowledge must be considered in making the hazardous waste determination.

FROM: Paul W. Martin

DATE: 6/20/18

FILE: 2MT\2018\062018.rtf

PG: 4

DISCLAIMER - "Two Minute Training" ("2MT") is a peer-to-peer communication, presented to share the benefit of the author's work experience with other professionals, who can independently evaluate his analysis. 2MT does not necessarily reflect the opinions, conclusions or policies of the author's past or current employers or the US Department of Energy. The author's employers do not take any responsibility for the accuracy of its conclusions. 2MT is not intended to be used as authoritative guidance or direction by any person or entity. Anyone transmitting or reproducing it is prohibited from modifying its content, this disclaimer, or other text, or republishing it independent of its original source.

TWO MINUTE TRAINING – ATTACHMENT

SUBJECT: Hazardous Waste Determinations and Phase Separation

The COLIWASA protocol may be used to obtain a sample of the water layer if the generator would like to make this determination prior to removing the water phase from the biphasic solution. If the water that is removed proves to be non-hazardous, the generator may manage it in accordance with applicable requirements (e.g., place the water into another container for off-site disposal, or discharge it either directly or indirectly under the applicable Clean Water Act requirements, etc.). If any phase of the biphasic solution proves to be a hazardous waste, then the generator must manage such waste in compliance with the hazardous waste regulations at 40 CFR Parts 261-270.

Please note that most states are authorized to implement the RCRA hazardous waste program. State regulations, therefore, apply in authorized states in lieu of the federal regulations. Persons with questions about how the hazardous waste regulations apply to their operations should contact their implementing state agency or EPA regional office (in States not authorized for the RCRA program).

Thank you for your interest in the hazardous waste regulations. Should you have any questions regarding this response, please contact Greg Helms, at (703) 308- 8815 or helms.greg@epa.gov, or Jim O'Leary, at (703) 308-8827 or oleary.jim @epa.gov.

Sincerely,

Betsy Devlin, Director
Materials Recovery and
Waste Management Division

FROM: Paul W. Martin

DATE: 6/20/18

FILE: 2MT\2018\062018.rtf

PG: 5

DISCLAIMER - "Two Minute Training" ("2MT") is a peer-to-peer communication, presented to share the benefit of the author's work experience with other professionals, who can independently evaluate his analysis. 2MT does not necessarily reflect the opinions, conclusions or policies of the author's past or current employers or the US Department of Energy. The author's employers do not take any responsibility for the accuracy of its conclusions. 2MT is not intended to be used as authoritative guidance or direction by any person or entity. Anyone transmitting or reproducing it is prohibited from modifying its content, this disclaimer, or other text, or republishing it independent of its original source.