

Land Disposal Restrictions Training
Lesson 1: Preparing for Inspection
Exercise 1: Reviewing Facility Information

Instruction: Now that you have familiarized yourself with the LDR regulations, this exercise asks you to apply your knowledge by reviewing some brief compliance scenarios and responding to questions. As you do so, we encourage you to re-visit the Part 268 regulations as often as needed if you are unclear about the requirements or have other questions.

1. Metal Furnaces Inc. operates a secondary lead smelter that generates baghouse dust from its furnaces (K069). The facility performed a TCLP test of the K069 dust (non-wastewater) indicating the presence of lead at 0.89 mg/L TCLP and cadmium at 0.10 mg/L TCLP. The dust will be sent offsite for treatment to meet the LDR standards.

A. True or False: The dust meets the applicable LDR treatment standard for the K069 calcium sulfate (low lead) subcategory.

True or False	Answer
1. True	Incorrect. The applicable treatment standard for K069 non-wastewater in the calcium sulfate subcategory is 0.11 mg/L TCLP for cadmium and 0.75 mg/L TCLP for lead. See the Treatment Table at 268.40. Metal Furnaces Inc.'s baghouse dust exceeds the lead standard (0.89 mg/L > 0.75 mg/L). For more information, refer to the RCRA, Superfund & EPCRA Hotline Monthly Report, September 2000 available on RCRA Online (RCRA Online Number 14495).
2. False	Correct. The applicable treatment standard for K069 non-wastewater in the calcium sulfate subcategory is 0.11 mg/L TCLP for cadmium and 0.75 mg/L TCLP for lead. See the Treatment Table at 268.40. Metal Furnaces Inc.'s baghouse dust exceeds the lead standard (0.89 mg/L > 0.75 mg/L). For more information, refer to the RCRA, Superfund & EPCRA Hotline Monthly Report, September 2000 available on RCRA Online (RCRA Online Number 14495).

B. True or False: The K069 baghouse dust must be monitored and treated for underlying hazardous constituents (UHCs) as defined at 268.2(i).

True or False	Answer
<p>1. True</p>	<p>Incorrect. The requirement to determine the presence of UHCs in a waste, and to treat the UHCs, applies to characteristic waste, but not listed waste. Specifically, the treatment standards for characteristic wastes entail rendering the waste non-hazardous (i.e., de-characterizing the waste or removing the characteristic). In addition, characteristic wastes must be examined and treated for UHCs as specified. See 268.9(a) for this requirement. These constituents are not what cause the waste to exhibit a characteristic, but they can pose hazards nonetheless. The UHCs in characteristic waste must meet constituent-specific levels. These levels are referred to as the Universal Treatment Standards (UTS) and are presented in a table at 268.48. Once such characteristic hazardous wastes have been de-characterized and treated for UHCs as necessary, they can exit Subtitle C and be disposed of in a nonhazardous waste landfill.</p> <p>Listed hazardous wastes are dealt with somewhat differently under RCRA. With very few exceptions, listed wastes do not exit Subtitle C, even after they meet LDR treatment standards. Listed wastes are not subject to UHC requirements per se, because UHC requirements are aimed exclusively at characteristic waste. Nonetheless, listed wastes do contain “regulated hazardous constituents” that must meet constituent-specific levels before land disposal. K069 (low lead) is an example of this. K069 is not subject to UHC requirements because it is a listed waste. However, two regulated hazardous constituents in K069 are subject to the LDR treatment standards: lead and cadmium.</p>
<p>2. False</p>	<p>Correct. The requirement to determine the presence of UHCs in a waste, and to treat the UHCs, applies to characteristic waste, but not listed waste. Specifically, the treatment standards for characteristic wastes entail rendering the waste non-hazardous (i.e., de-characterizing the waste or removing the characteristic). In addition, characteristic wastes must be examined and treated for UHCs as specified. See 268.9(a) for this requirement. These constituents are not what cause the waste to exhibit a characteristic, but they can pose hazards nonetheless. The UHCs in characteristic waste must meet constituent-specific levels. These</p>

	<p>levels are referred to as the Universal Treatment Standards (UTS) and are presented in a table at 268.48. Once such characteristic hazardous wastes have been de-characterized and treated for UHCs as necessary, they can exit Subtitle C and be disposed of in a nonhazardous waste landfill.</p> <p>Listed hazardous wastes are dealt with somewhat differently under RCRA. With very few exceptions, listed wastes do not exit Subtitle C, even after they meet LDR treatment standards. Listed wastes are not subject to UHC requirements per se, because UHC requirements are aimed exclusively at characteristic waste. Nonetheless, listed wastes do contain “regulated hazardous constituents” that must meet constituent-specific levels before land disposal. K069 (low lead) is an example of this. K069 is not subject to UHC requirements because it is a listed waste. However, two regulated hazardous constituents in K069 are subject to the LDR treatment standards: lead and cadmium.</p>
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C. Which LDR paperwork requirements apply to the facility for the K069 waste?

Requirement	Does the Requirement Apply?		Answer
	Yes	No	
Transmit and keep records of notice under 268.7(a)(2)			(Yes is Correct), this requirement applies. Section 268.7(a)(2) requires that, if a waste or contaminated soil does not meet the treatment standards, or if the generator chooses not to make the determination of whether his waste must be treated, the generator must send a one-time written notice to each treatment or storage facility receiving the waste, and place a copy in the file. The K069 waste does not meet the treatment standards. The content of that one-time written notice is listed in the “Generator Paperwork Requirements Table” found in 268.7.
Transmit and keep records of notice under 268.7(a)(3)			(No is Correct), this requirement does not apply. The K069 waste does not meet the treatment standards. Section 268.7(a)(3) is a

Requirement	Does the Requirement Apply?		Answer
	Yes	No	
			notification requirement for wastes that do meet the treatment standards.
Transmit and keep records of notice under 268.7(a)(4)			(No is Correct), this requirement does not apply. Section 268.7(a)(4) requires that, if a generator's waste is exempt from the treatment standards (e.g., under a case-by-case extension), then with the initial shipment of waste, the generator must send a one-time written notice to each land disposal facility receiving the waste. No such exemption applies to Metal Furnace K069 waste in this scenario.
Develop and follow waste analysis plan under 268.7(a)(5)			(No is Correct), this requirement does not apply because Metal Furnaces is not treating the K069 waste onsite under 262.34, e.g., not treating the K069 in drums to meet the LDR treatment standard.
Keep records under 268.7(a)(6)			(Yes is Correct), this requirement applies. Section 268.7(a)(6) provides that, if a generator determines that the waste or contaminated soil is restricted based on knowledge or testing, all supporting data used to make this determination must be retained on-site in the generator's files. Metal Furnaces must retain records of its TCLP tests.
Retain notice under 268.7(a)(7)			(No is Correct), this requirement does not apply. Section 268.7(a)(7) provides that, if a generator determines that he is managing a prohibited waste that is excluded from the definition of hazardous or solid waste or is exempted from Subtitle C regulation under 40 CFR 261.2 through 261.6 <i>subsequent to the point of generation</i> (including deactivated characteristic hazardous wastes managed in wastewater treatment systems subject to the Clean Water Act (CWA) as specified at 40 CFR 261.4(a)(2) or that are CWA-equivalent, or are managed in an underground injection well regulated by the SDWA), he must place a one-time notice describing such generation, subsequent exclusion from the definition of hazardous or solid waste or exemption from

Requirement	Does the Requirement Apply?		Answer
	Yes	No	
			RCRA Subtitle C regulation, and the disposition of the waste, in the facility's on-site files. Metal Furnaces K069 waste is not excluded from the definition of solid or hazardous waste subsequent to the point of generation.
Keep records under 268.7(a)(8)			(Yes is Correct), this requirement applies. Section 268.7(a)(8) provides that generators must retain on-site a copy of all notices, certifications, waste analysis data, and other documentation produced pursuant to 268.7 for at least three years from the date that the waste that is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal. The three year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator. Metal Furnaces has prepared a notice and waste analysis data under 268.7 that must be kept for 3 years (or longer during an enforcement action).

D. Should samples of the K069 waste be gathered through grab or composite sampling?

Choose the Correct Answer	Answer
1. Grab sampling	Correct. A grab sample is a one-time sample taken from any part of the waste. A composite sample is a number of individually collected samples that are combined into a single sample for subsequent analysis. A generator should use grab samples to determine if a hazardous waste meets the applicable treatment standards. However, if a treatment standard is based on the analysis of composite samples, then a generator can use composite samples to determine compliance with that treatment standard. The treatment standard for K069 nonwastewaters was based on analysis of grab samples and thus the facility should use grab samples. See the RCRA Inspector Training on Waste

	Analysis and Data Evaluation for additional information.
2. Composite sampling	Incorrect. A grab sample is a one-time sample taken from any part of the waste. The grab sample is assumed to be taken from a waste this is homogenous material. A composite sample is a number of individually collected samples that are combined into a single sample for subsequent analysis. A generator should use grab samples to determine if a hazardous waste meets the applicable treatment standards. However, if a treatment standard is based on the analysis of composite samples, then a generator can use composite samples to determine compliance with that treatment standard. The treatment standard for K069 nonwastewaters was based on analysis of grab samples and thus the facility should use grab samples. See the RCRA Inspector Training on Waste Analysis and Data Evaluation for additional information.

2. A petroleum refinery sends a caustic process wastewater to its on-site wastewater treatment unit. The wastewater first enters the primary treatment system, consisting of an API separator, then a series of tanks for settling. The wastewater then enters a secondary biological treatment tank, and is discharged under a National Pollutant Discharge Elimination System (NPDES) Permit.

The waste handler uses their knowledge to determine that the wastewater exhibits the corrosivity characteristic (D002) and toxicity characteristic for benzene (D018). As the wastewater commingles with other process wastewaters in the wastewater collection system, however, the caustic wastewater is diluted and no longer exhibits any hazardous waste characteristics.

Sludge is periodically removed from the biological treatment tank for offsite shipment and the owner has used his knowledge to determine that it exhibits the characteristic of corrosivity. (The sludge is not K051.)

A. True or False: The wastewater managed in the biological treatment pond and discharged under a NPDES permit are subject to the LDR treatment standards.

True or False	Answer
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<p>1. True</p>	<p>Incorrect. Under the consolidated treatment standard table (40 CFR 268.40), the treatment standard for D002 wastewaters is given as “DEACT and meet 268.48 standards.”⁸⁹ Footnote 8 provides that wastes that have been rendered nonhazardous (i.e., they no longer exhibit a hazardous waste characteristic) and that are then sent to a Clean Water Act system are not subject to treatment standards. Therefore, the caustic waste must simply be “deactivated” so that it no longer exhibits a characteristic prior to entering the biological treatment unit. Since the caustic wastewater ceases to exhibit any hazardous waste characteristic after it has been commingled with other process wastewaters, no further treatment would be needed for LDR purposes. The same holds true for the benzene (D018). Note that, in its correspondence, EPA takes a broader position, making clear that the “Land Disposal Restrictions do not apply to waste managed in systems that are entirely tank-based.” See EPA correspondence titled, “Applicability of Land Disposal Restrictions to Tank-Based Wastewater Treatment Systems” (RCRA Online Number 14214).</p>
<p>2. False</p>	<p>Correct. Under the consolidated treatment standard table (40 CFR 268.40), the treatment standard for D002 wastewaters is given as “DEACT and meet 268.48 standards.”⁸⁹ Footnote 8 provides that wastes that have been rendered nonhazardous (i.e., they no longer exhibit a hazardous waste characteristic) and that are then sent to a Clean Water Act system are not subject to treatment standards. Therefore, the caustic waste must simply be “deactivated” so that it no longer exhibits a characteristic prior to entering the biological treatment unit. Since the caustic wastewater ceases to exhibit any hazardous waste characteristic after it has been commingled with other process wastewaters, no further treatment would be needed for LDR purposes. The same holds true for the benzene (D018). Note that, in its correspondence, EPA takes a broader position, making clear that the “Land Disposal Restrictions do not apply to waste managed in systems that are entirely tank-based.” See EPA correspondence titled, “Applicability of Land Disposal Restrictions to Tank-Based Wastewater Treatment Systems” (RCRA Online Number 14214).</p>

B. Which LDR paperwork requirements at 268.7(a) apply to the facility for the wastewater?

Requirement	Does the Requirement Apply?		Answer
	Yes	No	
Transmit and keep records of notice under 268.7(a)(2)			(No is Correct), this requirement does not apply. Section 268.7(a)(2) requires that, if a waste or contaminated soil does not meet the treatment standards, or if the generator chooses not to make the determination of

Requirement	Does the Requirement Apply?		Answer
	Yes	No	
			whether his waste must be treated, the generator must send a one-time written notice to each treatment or storage facility receiving the waste, and place a copy in the file. This requirement does not apply because land disposal is not taking place due to the discharge being subject to the Clean Water Act rather than RCRA. See 261.4(a)(2).
Transmit and keep records of notice under 268.7(a)(3)			(No is Correct), this requirement does not apply. Section 268.7(a)(3) requires that, if a waste or contaminated soil meets the treatment standard at the original point of generation (or after onsite treatment by the generator), the generator must send a one-time written notice to each treatment, storage, or disposal facility receiving the waste, and place a copy in the file. This requirement does not apply because land disposal is not taking place due to the discharge being subject to the Clean Water Act rather than RCRA. See 261.4(a)(2).
Develop and follow waste analysis plan under 268.7(a)(5)			(No is Correct), this requirement does not apply. The LDR requirements do not apply to wastes managed in NPDES or POTW discharge systems that are entirely tank-based. If the discharge system does not include a surface impoundment, the system is not subject to LDR requirements, regardless of the treatability group of the wastes managed in the system. For additional information, refer to section 268.1(c)(4) and EPA correspondence in March 1997 available on RCRA Online (RCRA Online Number 14214).
Retain notice under 268.7(a)(7)			(Yes is Correct), this requirement applies. Section 268.7(a)(7) provides that, if a generator determines that he is managing a prohibited waste that is excluded from the definition of hazardous or solid waste or is exempted from Subtitle C regulation under 40 CFR 261.2 through 261.6 subsequent to the point of generation (including deactivated characteristic hazardous wastes managed in

Requirement	Does the Requirement Apply?		Answer
	Yes	No	
			wastewater treatment systems subject to the Clean Water Act (CWA) as specified at 40 CFR 261.4(a)(2) or that are CWA-equivalent, or are managed in an underground injection well regulated by the SDWA), he must place a one-time notice describing such generation, subsequent exclusion from the definition of hazardous or solid waste or exemption from RCRA Subtitle C regulation, and the disposition of the waste, in the facility's on-site files. This section applies because the wastewater was deactivated characteristic hazardous waste that was managed in CWA wastewater treatment system and excluded subsequent to its point of generation.

C. True or False: The sludge removed from the biological treatment tank is subject to the LDR treatment standards at 268.40.

True or False	Answer
1. True	Correct. Sludge generated from wastewater treatment is a newly generated waste that should be evaluated at the point of generation. Sludge produced in the treatment unit requires further treatment under Subtitle C if it displays a hazardous characteristic when removed from the unit (66 FR 27266, 27272; May 16, 2001). The facility's sludge is corrosive (D002) and the LDR requirements apply (e.g., 268.7(a)(2), (a)(6), (a)(8)).
2. False	Incorrect. Sludge generated from wastewater treatment is a newly generated waste that should be evaluated at the point of generation. Sludge produced in the treatment unit requires further treatment under Subtitle C if it displays a hazardous characteristic when removed from the unit (66 FR 27266, 27272; May 16, 2001). The facility's sludge is corrosive (D002) and the LDR requirements apply (e.g., 268.7(a)(2), (a)(6), (a)(8)).

3. During unloading of incoming waste, a facility has a minor spill of characteristic-only hazardous waste. They clean it up and drum it. The contaminated soil exhibits the toxicity characteristic (TC) for lead when generated. The TC's regulatory threshold for lead is 5mg/L TCLP. The initial concentration of lead in the soil (non-wastewater) is 40 mg/L TCLP, and there are no UHCs present at the point of generation. The generator

intends to treat the waste in containment buildings under the LDRs and send it for land disposal offsite.

A. What are the alternative treatment standards for the lead in this soil, as provided at 40 CFR 268.49?

Choose the Correct Answer	Answer
1. 90% reduction in soil concentration or 10 times TC	Incorrect. The LDR alternative treatment standards require that contaminated soils which will be land disposed must be treated to reduce concentrations of hazardous constituents by 90 percent or meet hazardous constituent concentrations that are 10 times the universal treatment standard (UTS), whichever is greater. For additional information, see "Guidance on Demonstrating Compliance with the Land Disposal Restrictions (LDR) Alternative Soil Treatment Standards" at http://www.epa.gov/osw/hazard/tsd/ldr/soil_f4.pdf .
2. 90% of UTS or 10% reduction in soil concentration	Incorrect. The LDR alternative treatment standards require that contaminated soils which will be land disposed must be treated to reduce concentrations of hazardous constituents by 90 percent or meet hazardous constituent concentrations that are 10 times the universal treatment standard (UTS), whichever is greater. For additional information, see "Guidance on Demonstrating Compliance with the Land Disposal Restrictions (LDR) Alternative Soil Treatment Standards" at http://www.epa.gov/osw/hazard/tsd/ldr/soil_f4.pdf .
3. 90% reduction in soil concentration or 10 times UTS	Correct. The LDR alternative treatment standards require that contaminated soils which will be land disposed must be treated to reduce concentrations of hazardous constituents by 90 percent or meet hazardous constituent concentrations that are 10 times the universal treatment standard (UTS), whichever is greater. For additional information, see "Guidance on Demonstrating Compliance with the Land Disposal Restrictions (LDR) Alternative Soil Treatment Standards" at http://www.epa.gov/osw/hazard/tsd/ldr/soil_f4.pdf .
4. None of the above	Incorrect. The LDR alternative treatment standards require that contaminated soils which will be land disposed must be treated to reduce concentrations of hazardous constituents by 90 percent or meet hazardous constituent concentrations that are 10 times the universal treatment standard (UTS), whichever is greater. For additional information, see "Guidance on Demonstrating Compliance with the Land Disposal Restrictions (LDR) Alternative Soil Treatment Standards" at http://www.epa.gov/osw/hazard/tsd/ldr/soil_f4.pdf .

B. True or False: If the generator treats the soil to meet 10 times UTS, the treated soil can be managed as a non-hazardous waste and sent to Subtitle D landfill, as provided at 268.49.

True or False	Answer
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1. True	Incorrect. 10 times UTS = $10 \times 0.75 \text{ mg/L TCLP} = 7.5 \text{ mg/L}$. 7.5 mg/L is higher than the TC's regulatory threshold for lead (5 mg/L TCLP). See 268.49.
2. False	Correct. 10 times UTS = $10 \times 0.75 \text{ mg/L TCLP} = 7.5 \text{ mg/L}$. 7.5 mg/L is higher than the TC's regulatory threshold for lead (5 mg/L TCLP). See 268.49.

- C. True or False: If the generator treats the soil to achieve 90% reduction in lead concentration, the treated soil can be managed as a non-hazardous waste and sent to Subtitle D landfill as provided at 268.49.

True or False	Answer
1. True	Correct. 90 percent reduction = $40 \text{ mg/L TCLP} \times 0.10 = 4 \text{ mg/L TCLP}$. 4 mg/L is lower than the TC's regulatory threshold for lead (5 mg/L TCLP). See 268.49.
2. False	Incorrect. 90 percent reduction = $40 \text{ mg/L TCLP} \times 0.10 = 4 \text{ mg/L TCLP}$. 4 mg/L is lower than the TC's regulatory threshold for lead (5 mg/L TCLP). See 268.49.

- D. Suppose the generator treats the soil in 90-day containment buildings to achieve 90% reduction in lead concentration and the treated soil is fully de-characterized and has no UHCs. It will be sent to Subtitle D landfill. Which of the following LDR paperwork requirements apply to the facility for the treated soil?

Requirement	Does the Requirement Apply?		Answer
	Yes	No	
Transmit and keep records of notice under 268.7(a)(2)			(No is Correct), this requirement does not apply. This requirement applies only if the contaminated soil does not meet the treatment standards.
Transmit and keep records of notice under 268.7(a)(3)			(Yes is Correct), this requirement applies. Wastes that exhibit a characteristic are subject to 268.7, except that once the waste is no longer hazardous, a one-time notice and certification must be placed in the generator's files onsite under 268.9(d). The soil is no longer hazardous after treatment. Hence, this requirement partially applies. However, because the treated waste is no longer

Requirement	Does the Requirement Apply?		Answer
	Yes	No	
			hazardous and will be sent to a non-Subtitle C facility (e.g., solid waste landfill), there is no requirement to transmit the notice/certification offsite. Rather, the generator must comply with this requirement by preparing and retaining the notice and certification required at 268.9.
Develop, follow and retain waste analysis plan under 268.7(a)(5)			(Yes is Correct), this requirement applies. Section 268.7(a)(5) requires a generator to develop and follow a waste analysis plan if he is managing and treating prohibited waste or contaminated soil in tanks, containers, or containment buildings regulated under 262.34 to meet applicable treatment standards. The plan must be kept onsite. The contaminated soil is treated in containment buildings regulated under 262.34 to meet the LDR standards.
Prepare and retain notice and certification under 268.9(d)			(Yes is Correct), this requirement applies. Section 268.9(d) provides that wastes that exhibit a characteristic are also subject to 268.7 requirements, except that once the waste is no longer hazardous, a one-time notification and certification must be placed in the generator's or treater's on-site files. The notification and certification must be updated if the process or operation generating the waste changes and/or if the subtitle D facility receiving the waste changes. The treated soil is non-hazardous waste.

4. An LQG generates a spent tetrachloroethylene nonwastewater at greater than 10% concentration before use. The non-wastewater was used for degreasing.

A. Which waste code(s) applies for purposes of determining the applicable treatment standard: D039, F001, or both?

Choose the Correct Waste Code	Answer
1. D039	Incorrect. The rules for characteristic wastes under 40 CFR 268.9 require generators to identify all the

Choose the Correct Waste Code	Answer
	<p>listed and characteristic waste codes that could apply to their waste. Therefore, if a listed waste also exhibits a characteristic, the waste must meet the treatment standards for both the listed and characteristic waste codes prior to land disposal. The exception to this rule is when a treatment standard for the listed waste also contains the constituent that caused the waste to exhibit a characteristic. In that case, the treatment standard for the listed waste would operate instead of the characteristic treatment standard. The LQG's waste is listed (F001) and exhibits a characteristic (D039). The treatment standard for the listed waste would operate instead of the characteristic treatment standard because the LDR treatment standard for F001 includes a standard for tetrachloroethylene. See 268.9(b).</p> <p>However, note that the LDR treatment standard for F001 includes limits that must be met for constituents other than tetrachloroethylene. (Technically, these constituents are called "regulated hazardous constituents" rather than "underlying hazardous constituents," albeit they both generally have the same numerical value.)</p>
<p>2. F001</p>	<p>Correct. The rules for characteristic wastes under 40 CFR 268.9 require generators to identify all the listed and characteristic waste codes that could apply to their waste. Therefore, if a listed waste also exhibits a characteristic, the waste must meet the treatment standards for both the listed and characteristic waste codes prior to land disposal. The exception to this rule is when a treatment standard for the listed waste also contains the constituent that caused the waste to exhibit a characteristic. In that case, the treatment standard for the listed waste would operate instead of the characteristic treatment standard. The LQG's waste is listed (F001) and exhibits a characteristic (D039). The treatment standard for the listed waste would operate instead of the characteristic treatment standard because the LDR treatment standard for F001 includes a standard for tetrachloroethylene. See 268.9(b).</p> <p>However, note that the LDR treatment standard for F001 includes limits that must be met for constituents other than tetrachloroethylene.</p>

Choose the Correct Waste Code	Answer
	(Technically, these constituents are called “regulated hazardous constituents” rather than “underlying hazardous constituents,” albeit they both generally have the same numerical value.)
3. Both	<p>Incorrect. The rules for characteristic wastes under 40 CFR 268.9 require generators to identify all the listed and characteristic waste codes that could apply to their waste. Therefore, if a listed waste also exhibits a characteristic, the waste must meet the treatment standards for both the listed and characteristic waste codes prior to land disposal. The exception to this rule is when a treatment standard for the listed waste also contains the constituent that caused the waste to exhibit a characteristic. In that case, the treatment standard for the listed waste would operate instead of the characteristic treatment standard. The LQG’s waste is listed (F001) and exhibits a characteristic (D039). The treatment standard for the listed waste would operate instead of the characteristic treatment standard. See 268.9(b).</p> <p>However, note that the LDR treatment standard for F001 includes limits that must be met for constituents other than tetrachloroethylene. (Technically, these constituents are called “regulated hazardous constituents” rather than “underlying hazardous constituents,” albeit they both generally have the same numerical value.)</p>

B. Is the waste subject to the treatment standards for UHCs at 268.48?

Yes or No	Answer
1. Yes	<p>Incorrect. This waste is listed (F001) and exhibits a characteristic (D039). As discussed in Question 4.A., the treatment standard for the listed waste would operate instead of the characteristic treatment standard. Thus there would be no need to meet treatment standards for underlying hazardous constituents (UHCs) since only characteristically hazardous wastes must have their UHCs meet LDR treatment standard.</p> <p>As explained earlier, however, keep in mind that the LDR treatment standard for F001 includes limits that</p>

	<p>must be met for constituents other than tetrachloroethylene. These constituents are called “regulated hazardous constituents” rather than “underlying hazardous constituents,” albeit they both generally have the same numerical value.</p>
<p>2. No</p>	<p>Correct. This waste is listed (F001) and exhibits a characteristic (D039). As discussed in Question 4.A., the treatment standard for the listed waste would operate instead of the characteristic treatment standard. Thus there would be no need to meet treatment standards for underlying hazardous constituents (UHCs) since only characteristically hazardous wastes must have their UHCs meet LDR treatment standard.</p> <p>As explained earlier, however, keep in mind that the LDR treatment standard for F001 includes limits that must be met for constituents other than tetrachloroethylene. These constituents are called “regulated hazardous constituents” rather than “underlying hazardous constituents,” albeit they both generally have the same numerical value.</p>

5. A facility generates a spent F005 solvent (wastewater) containing 2-Nitropropane as the only listed F001-5 solvent. What would constitute acceptable treatment to meet the LDR standard at 268.40?

Treatment methods	Is this acceptable treatment?		Answer
	Yes	No	
1. Combustion			(Yes is Correct). Combustion (CMBST) is specified as a sole treatment standard. Click on this link to find this treatment standard. Abbreviations are described in Table 1 of 40 CFR 268.42.
2. Wet air oxidation followed by carbon adsorption			(Yes is Correct). This is a correct translation of “WETOX f b CARBN.” Click on this link to find this treatment standard. Abbreviations are described in Table 1 of 40 CFR 268.42.
3. Wet air oxidation or chemical oxidation			(No is Correct). This treatment is incomplete. Either of these methods must be followed by carbon adsorption (CARBN). Click on this link to find this treatment standard. Abbreviations are described in Table 1 of 40 CFR 268.42.
4. Chemical oxidation followed by carbon adsorption			(Yes is Correct). This is a correct translation of “CHOXD f b CARBN.” Click on this link to find this treatment standard. Abbreviations are described in Table 1 of 40 CFR 268.42.

6. A facility operates an elementary neutralization tank that is exempt from permit under 264.1, to remove the corrosivity characteristic from its wastewater prior to discharge to a POTW. The tank had a hazardous waste leak on the ground and the contaminated soil exhibits the corrosivity characteristic. The owner/operator left it there, deactivated it but did not monitor or address UHCs. Is this an acceptable response to the release?

Choose Yes or No	Answer
1. Yes	Incorrect. If a soil is contaminated by a spill of characteristic waste, then a determination must be made as to whether the soil exhibits characteristic properties. If the soil is identified as characteristic, then the soil is considered to contain hazardous waste and RCRA requirements, including LDR treatment requirements, apply. Even if the soil is not a

	<p>characteristically hazardous waste, the underlying hazardous constituents must still meet the LDR treatment standards because the spill was characteristically hazardous . The facility failed to monitor for UHCs, which should be determined at the point of generation, and the characteristic soil was left it in place, which is illegal disposal. For more information, refer to EPA correspondence, May 2001, available on RCRA Online (RCRA Online Number 14547).</p>
<p>2. No</p>	<p>Correct. If a soil is contaminated by a spill of characteristic waste, then a determination must be made as to whether the soil exhibits characteristic properties. If the soil is identified as characteristic, then the soil is considered to contain hazardous waste and RCRA requirements, including LDR treatment requirements, apply. Even if the soil is not a characteristically hazardous waste, the underlying hazardous constituents must still meet the LDR treatment standards because the spill was characteristically hazardous . The facility failed to monitor for UHCs, which should be determined at the point of generation, and the characteristic soil was left it in place, which is illegal disposal. For more information, refer to EPA correspondence, May 2001, available on RCRA Online (RCRA Online Number 14547).</p>

7. A university’s main campus owns and operates several laboratories as part of its hospital and teaching facilities. As a result of its operations, the campus generates various waste streams, including lab packs, and qualifies as a LQG. It sends its lab packs offsite for incineration under the alternative lab pack standards of section 268.42(c). During a routine inspection, you obtain its LDR notices sent under 268.7(a)(9) and learn that it has been shipping a wide variety of wastes, including among others: ignitable wastes (D001), corrosive wastes (D002), mercury (D009), chloroform (D022), methyl ethyl ketone (D035), 2,6-Dinitrotoluene (U106), hydrogen fluoride (U134), methyl methacrylate (U162), tetradhydrofuran (U213). Which wastes if any raise a compliance concern under the alternative lab pack standards?

Wastes	Is there a potential compliance concern with this waste?		Answer
	Yes	No	
1. methyl ethyl ketone (D035)			(No is Correct), there is no compliance concern with this waste under the alternative lab pack standard.
2. 2,6-Dinitrotoluene (U106)			(No is Correct), there is no compliance concern with this waste under the alternative lab pack standard.
3. hydrogen fluoride (U134)			(Yes is Correct), this waste is prohibited under the alternative standards, as provided by 268.42(c)(2) and Appendix IV to Part 268.
4. tetrahydrofuran (U213)			(No is Correct), there is no compliance concern with this waste under the alternative lab pack standard.
5. mercury (D009)			(Yes is Correct), this waste is prohibited under the alternative standards, as provided by 268.42(c)(2) and Appendix IV to Part 268.
6. methyl methacrylate (U162)			(No is Correct), there is no compliance concern with this waste under the alternative lab pack standard.