

Action Memorandum for the Time-Critical Removal Action for 207-A South Retention Basin Closure Disposal at the Environmental Restoration Disposal Facility

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management



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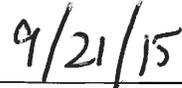
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DOE Approval Signature

This signature page acknowledges DOE approval of the Action Memorandum for the Time-Critical Removal Action for *207-A South Retention Basin Closure Waste Disposal at the Environmental Restoration Disposal Facility*. Conditions at the site meet the NCP section 300.415(b)(2) criteria for a removal action. The total estimated disposal cost is \$270,000.



Stacy L. Charboneau
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Richland Operations Office
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Date

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Terms

ARAR	applicable or relevant and appropriate requirement
CERCLA	<i>Comprehensive Environmental Response, Compensation and Liability Act of 1980</i>
DOE	U.S. Department of Energy
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
ERDF	Environmental Restoration Disposal Facility
ESD	Explanation of Significant Differences
HHE	human health and the environment
NCP	National Contingency Plan (40 CFR 300, “National Oil and Hazardous Substances Pollution Contingency Plan”)
NPL	National Priorities List (40 CFR 300, Appendix B)
OU	operable unit
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
ROD	record of decision
TBC	to be considered
TSD	treatment, storage, and/or disposal

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1 Purpose

This Action Memorandum documents approval of the proposed time-critical removal action described herein to support closure of the 207-A South Retention Basin treatment, storage, and/or disposal (TSD) unit.

The purpose of this removal action is to mitigate the threat to site workers, public health, and the environment by disposing of waste generated during closure of the 207-A South Retention Basin under the authority of WAC 173-303, “Dangerous Waste Regulations,” and the Hanford Facility Dangerous Waste Permit to the Environmental Restoration Disposal Facility (ERDF). Approval of this Action Memorandum authorizes disposal of the waste at ERDF under authority of the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA).

As discussed in the U.S. Environmental Protection Agency (EPA) 1996 Explanation of Significant Differences (ESD) (EPA/ESD/R10-96/145, *Explanation of Significant Differences: USDOE Environmental Restoration Disposal Facility, Hanford Site, Benton County, Washington*), the ERDF record of decision (ROD) (EPA/ROD/R10-95/100, *Declaration of the Interim Record of Decision for the Environmental Restoration Disposal Facility*) states that ERDF will also be eligible to receive certain wastes generated during closure activities at inactive *Resource Conservation and Recovery Act of 1976* (RCRA) TSD units at the Hanford Site. Closure of these units will typically generate wastes consisting of contaminated soil and structural components, such as contaminated concrete, rebar, piping, and equipment. In many instances, the TSD units are located within an operable unit (OU) that is being addressed under the CERCLA or RCRA past-practice process, and TSD closure will result in cleanup wastes that are, for all practical purposes, indistinguishable from wastes resulting from CERCLA or RCRA past-practice cleanup activities. These TSD closure wastes may be placed at ERDF in accordance with a remedial action ROD or removal action memorandum issued in accordance with CERCLA and the National Contingency Plan (NCP) (40 CFR 300, “National Oil and Hazardous Substances Pollution Contingency Plan”) after an opportunity for public comment, provided the ERDF waste acceptance criteria (WCH-191, *Environmental Restoration Disposal Facility Waste Acceptance Criteria*) are satisfied. The public comment period for closure of the 207-A South Retention Basin began on June 30, 2015, and included discussion regarding disposal of the waste.

To support final closure of the 207-A South Retention Basin, the following actions are addressed under this time-critical removal action:

- Ensure that debris and soil meet, or can be treated to meet, ERDF waste acceptance criteria (WCH-191)
- Place debris and soil in suitable roll-on/roll-off containers for transport to ERDF
- Transport roll-on/roll-off containers to ERDF
- Treat waste, as necessary, to meet ERDF waste acceptance criteria (WCH-191)
- Unload roll-on/roll-off containers in ERDF disposal cells

2 Site Conditions and Background

The U.S. Department of Energy (DOE) Hanford Site is situated in southeastern Washington State north and west of the cities of Richland, Kennewick, and Pasco, an area commonly known as the Tri-Cities. This region includes the Tri-Cities and the surrounding communities in Benton, Franklin, and Grant Counties.

2.1 Site Description

The Hanford Site is a 586 mi² (1,527 km²) federal facility located along the Columbia River. For administrative purposes, the Hanford Site was divided into four (40 CFR 300, Appendix B, National “Priorities List” [NPL]) sites under CERCLA, one of which is the 200 Area NPL. The CERCLA site identification number for the 200 Area is WA 1890090078. Also referred to as the Central Plateau, the 200 Area NPL is located on an elevated, flat area, where there are no wetlands, perennial streams, or floodplains.

Pursuant to CERCLA, the EPA recommended the 200 Area of the DOE operated Hanford Site for inclusion on the NPL (40 CFR 300, Appendix B) on June 24, 1988, and it was added in November 1989.

2.2 Physical Location

The 200 Area NPL contains approximately 800 waste sites and includes waste management facilities and inactive irradiated nuclear fuel reprocessing facilities. The 207-A South Retention Basin is located directly east of the 242-A Evaporator (Figure 1).

2.3 Site Characteristics

The 207-A South Retention Basin, also known as Process Condensate Basins 1, 2, and 3 (i.e., PC-1, PC-2, and PC-3), began operations in March 1977. The 207-A South Retention Basin consists of three separate, open liquid effluent storage cells constructed of concrete that operated as a surface impoundment. Each of the three cells had a 264,979 L (70,000 gal) design capacity for a total capacity of 794,937 L (210,000 gal). Each cell is 16.8 m (55 ft) long, 3 m (10 ft) wide at the bottom, and 2.1 m (7 ft) deep. The bottom of each basin cell slopes toward a drain located at the south end of the cell. During construction of the basin, a Hypalon[®] liner was installed first and then the basin itself. In 1982, all three concrete cells were coated with an elastomeric coating to prevent waste contaminants from penetrating the concrete. These concrete structures have remained intact since operations ceased, and no leaks have been reported from the basin during inspections. The TSD unit boundary, as shown on the RCRA Part A Form, was established as the exterior wall of the concrete basin structure.

2.4 Releases or Threatened Release into the Environment of a Hazardous Substance or Pollutant or Contaminant

The 207-A South Retention Basin operated from 1977 to 1989. The total quantity of process condensate waste onsite at any one time was limited to the combined design capacity of the storage cells of approximately 794,937 L (210,000 gal). The total volume of liquid effluent the TSD unit received for intermediate storage was 377,000,000 L (99,590,000 gal) of evaporator condensate.

[®] Hypalon was a registered trademark of DuPont, Wilmington, Delaware.

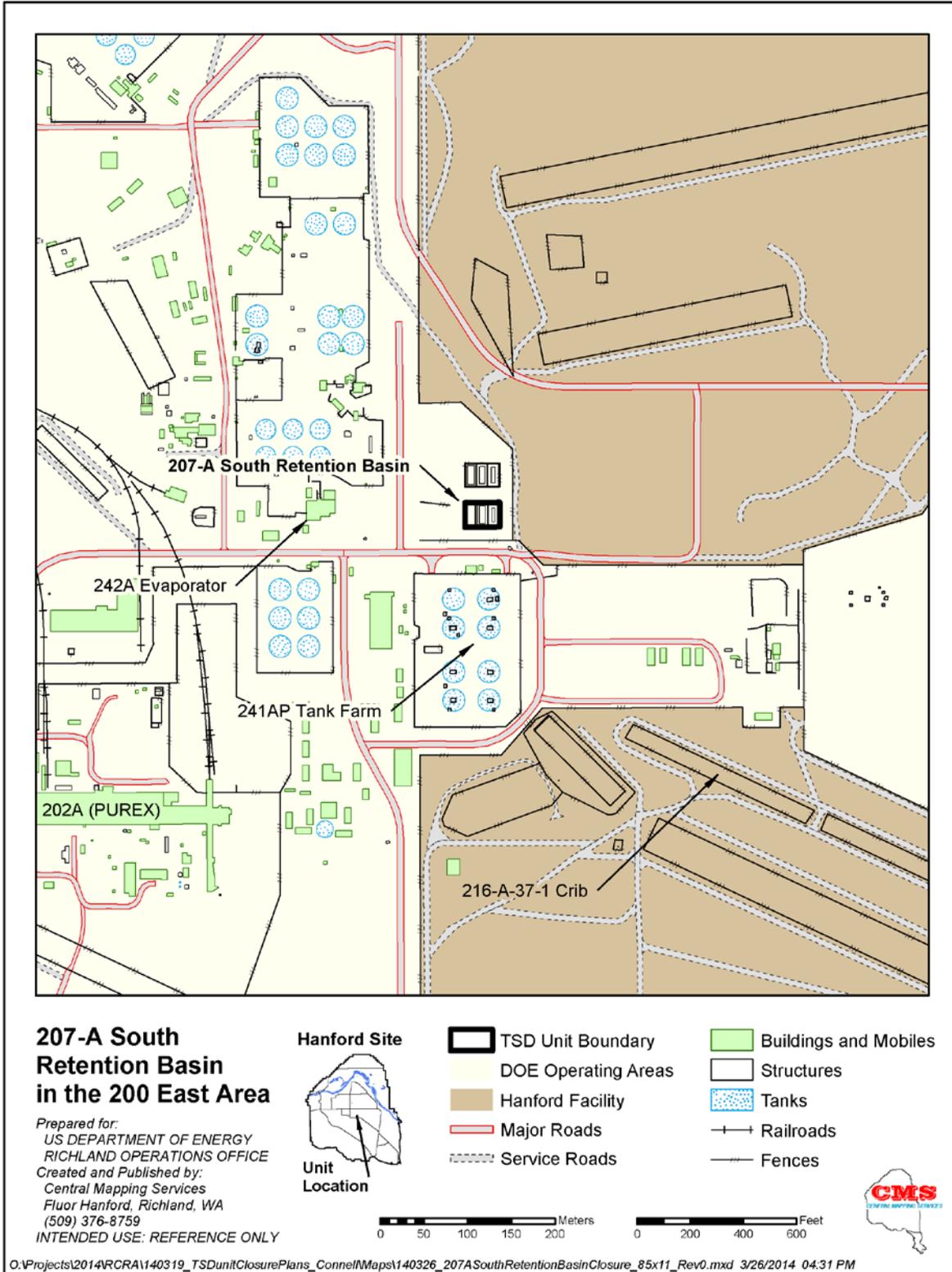


Figure 1. 207-A South Retention Basin

The process condensate is an aqueous, mixed waste solution containing trace amounts of dissolved cations and anions, such as sodium, potassium, aluminum, hydroxides, nitrates, and nitrites with radionuclides. The 242-A Evaporator process condensate was designated as mixed waste (WAC 173-303-040, "Definitions") because the waste was derived from a waste containing spent halogenated and nonhalogenated solvents (WAC 173-303 dangerous waste codes F001, F002, F003, F004, and F005) and because of the toxicity of ammonia (WT02, state only, toxic, dangerous waste). The TSD unit constituents associated with these dangerous waste codes include ammonia, acetone, *m*-cresol, *o*-cresol, *p*-cresol, and methylene chloride.

2.5 Other Actions to Date

No other CERCLA response actions have been taken in the immediate vicinity of the 207-A South Retention Basin.

2.6 State and Local Authorities Role

As a RCRA TSD unit under regulations in WAC 173-303-610, "Closure and Post-Closure," the closure process has begun. The Washington State Department of Ecology (Ecology) will approve the closure plan for the 207-A South Retention Basin after the public review and comment period has been completed, and the closure plan will then be placed in the Hanford Facility RCRA Permit. This closure plan identifies that removal and disposal of the basin is the preferred closure approach. Public review and comment of the permit modification of the Hanford Facility RCRA Permit to include the 207-A South Retention Basin closure plan started on June 30, 2015.

3 Threats to Public Health or Welfare to the Environmental and Statutory and Regulatory Authorities Environment

This document describes hazards associated with the 207-A South Retention Basin closure waste and any associated release/threat of release. Therefore, in addition to serving as a time-critical removal action memorandum, this document also serves as a removal site evaluation per 40 CFR 300.410, "Removal Site Evaluation."

The NCP (40 CFR 300.415(b)(2)) establishes factors to be considered in determining the appropriateness of a removal action. Related factors are hazardous substances, pollutants, or contaminants in drums, barrels, tanks, or other bulk storage containers that may pose a threat of release. Disposal of the waste in a timely manner in an approved disposal facility greatly reduces the threat of a release from these containers into the environment. Approximately 161 m³ (211 yd³) of concrete and soil or 635 metric tons (700 tons) of waste will be placed into roll-on/roll-off containers for disposal.

4 Endangerment Determination

The removal action proposed is necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances, including the spread of radioactive or chemical substances from the waste generated during closure of the 207-A South Retention Basin. Such a release or threat of release may present an imminent and substantial endangerment to public health, welfare, or the environment.

DOE will use CERCLA response authority whenever a hazardous substance is released, or there is a substantial threat of release, into the environment, and response is necessary to protect public health, welfare, or the environment.

5 Proposed Action and Estimated Cost

Waste that will be generated under this removal action will fall within the definition of waste eligible for disposal at ERDF established in the ERDF ROD (EPA/ROD/R10-95/100) and subsequent ESD (EPA/ESD/R10-96/145).

5.1 Proposed Action

Waste from the 207-A South Retention Basins closure will be disposed at ERDF. ERDF is an engineered facility that provides a high degree of protection to human health and the environment (HHE) and meets RCRA minimum technical requirements for landfills, including standards for a double liner, a leachate collection system, leak detection, monitoring, and a final cover. Construction and operation of ERDF was authorized using a separate CERCLA ROD (EPA/ROD/R10-95/100) that was modified by the ESD (EPA/ESD/R10-96/145) to clarify the eligibility of waste generated during cleanup of the Hanford Site. According to EPA/ESD/R10-96/145, ERDF is eligible for disposal of any low-level waste, mixed waste, and hazardous/dangerous waste generated as a result of cleanup actions, provided the waste meets ERDF waste acceptance criteria (WCH-191) and that appropriate CERCLA decision documents are in place. ERDF is considered onsite for management and/or disposal of waste from the removal action proposed in this document.¹

The types of contaminated materials described in DOE/RL-2005-89, *Closure Plan for the 207-A South Retention Basin*, are similar to other Hanford Site wastes going into ERDF and will not affect operations or require further expansion. Concrete and soil would meet ERDF waste acceptance criteria (WCH-191). The total cost for this alternative associated with disposal at ERDF is \$270,000. Once the waste has been disposed into ERDF, there is no need for post-removal action site controls including any additional institutional controls.

Another alternative that was considered would consist of disposing of 207-A South Retention Basin closure waste at Trenches 31 and 34, a RCRA TSD unit located within the 218-W-5 Burial Ground in the 200 West Area. These trenches also meet the RCRA minimum technological requirements for landfills, including standards for a double liner, a leachate collection system, leak detection, and a final cover. While performance of both landfills is similar to disposal at ERDF, ERDF is preferred since the costs associated with disposal at Trenches 31 and 34 are \$428,000.

5.2 Contribution to Remedial Performance

This action will not affect any potential remedial actions associated with the 200-EA-1 OU at which this removal action is located.

¹ CERCLA Section 104(d)(4), "Response Authorities," states that, where two or more noncontiguous facilities are reasonably related on the basis of geography, or on the basis of the threat or potential threat to the public health or welfare or the environment, the President may, at his discretion, treat these facilities as one for the purpose of this section. The preamble to the NCP (40 CFR 300) clarifies the stated EPA interpretation that when noncontiguous facilities are reasonably close to one another, and wastes at these sites are compatible for a selected treatment or disposal approach, CERCLA Section 104(d)(4) allows the lead agency to treat these related facilities as one site for response purposes and, therefore, allows the lead agency to manage waste transferred between such noncontiguous facilities without having to obtain a permit. Therefore, ERDF is considered to be onsite for response purposes under this removal action. It should be noted that the scope of work covered in this removal action is for a facility and waste contaminated with hazardous substances. Materials encountered during implementation of the selected removal action that are not contaminated with hazardous substances will be dispositioned by DOE.

5.3 Applicable or Relevant and Appropriate Requirements and Other Criteria, Advisories, or Guidance To Be Considered

Pursuant to 40 CFR 300.415(j), removal actions shall attain applicable or relevant and appropriate requirements (ARARs) to the extent practicable considering the exigencies of the situation. Practicability is based upon the urgency of the situation and scope of the removal. A requirement under other environmental laws may be either applicable or relevant and appropriate but not both. Identification of ARARs must be done on a site-specific basis and involves a two-part analysis: first, a determination whether a given requirement is applicable; then, if it is not applicable, a determination whether it is nevertheless both relevant and appropriate.

Applicable requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site.

Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law. While not applicable to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, they address problems or situations sufficiently similar to those encountered at the CERCLA site, so their use is well suited to the particular site.

To be considered (TBC) information consists of nonpromulgated advisories or guidance issued by federal or state governments that are not legally binding and do not have the status of ARARs. As appropriate, TBCs should be considered in determining the removal action necessary for protection of HHE. Requirements drawn from TBCs may be included in the selected alternative.

One or all of the following solid waste streams are anticipated to be generated during closure and may fall into any combination of these categories: nondangerous/nonradioactive, radioactive, mixed, hazardous, dangerous, suspect radioactive, suspect dangerous, and suspect mixed:

- Concrete and associated debris
- Soils
- Miscellaneous waste (e.g., rubber, glass, paper, personal protective equipment, cloth, plastic, and metal)
- Equipment and construction materials

The removal action will be performed in compliance with the identified ARARs in Table 1. Waste streams will be evaluated, designated, and managed in compliance with the ARARs. Before disposal, waste will be managed in a protective manner to prevent releases to the environment or unnecessary exposure to personnel.

Table 1. Identification of Applicable and Relevant or Appropriate Requirements and To Be Considered for the Removal Action

ARAR Citation	ARAR or TBC	Requirement	Rationale for Use
“Dangerous Waste Regulations” (WAC 173-303)			
“Identifying Solid Waste” WAC 173-303-016	ARAR	Identifies those materials that are and are not solid waste.	Substantive requirements of these regulations are applicable because they define how to determine which materials are subject to the designation regulations. Specifically, materials that are generated for removal from the CERCLA site during the removal action would be subject to the procedures for identifying solid waste to ensure proper management.
“Recycling Processes Involving Solid Waste” (WAC 173-303-017)	ARAR	Identifies materials that are and are not solid waste when recycled.	Substantive requirements of these regulations are applicable because they define how to determine which materials are subject to the designation regulations. Specifically, materials that are generated for removal from the CERCLA site during the removal action would be subject to the procedures for identifying solid waste to ensure proper management.
“Designation of Dangerous Waste” (WAC 173-303-070(3))	ARAR	Establishes the method for determining whether a solid waste is or is not a dangerous waste or an extremely hazardous waste.	Substantive requirements of these regulations are applicable to materials encountered during the removal action. Specifically, solid waste generated for removal from the CERCLA site during this removal action would be subject to the dangerous waste designation procedures to ensure proper management.
“Land Disposal Restrictions” (WAC 173-303-140(4))	ARAR	This regulation establishes state standards for land disposal of dangerous waste and incorporates, by reference, the federal requirements of 40 CFR 268, “Land Disposal Restrictions,” that are applicable to solid waste designated as dangerous or mixed waste in accordance with WAC 173-303-070(3).	Substantive requirements of this regulation are applicable to materials that may be encountered during the removal action.
<i>Environmental Restoration Disposal Facility Waste Acceptance Criteria</i> (WCH-191)	TBC	This document contains the waste acceptance criteria for the Environmental Restoration Disposal Facility.	Waste packages that will be disposed of from the 207-A South Retention Basin closure will have to meet these criteria.

Note: Complete reference citations are provided in Chapter 10.

ARAR = applicable or relevant and appropriate requirement

CERCLA = *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*

TBC = to be considered

6 Project Schedule

Closure of the 207-A South Retention Basin is scheduled to be initiated in September 2015 and completed by December 2015.

6.1 Estimated Cost

The cost to implement the removal action is presented in Table 2 and is cost effective for the disposal of debris and soil at ERDF.

Table 2. Total Cost for the Disposal of Debris and Soil at ERDF

Action	Total Cost
	Present Worth
Disposal of Debris and Soil at ERDF	\$270,000

7 Expected Change in the Situation Should Action Be Delayed or Not Taken

Severe weather can create conditions amenable to radiological and/or chemical releases from weathering of the containers. These conditions could result in an unplanned release into the environment. This result may cause a threat to HHE by direct exposure to nearby personnel and the environment.

8 Outstanding Policy Issues

There are no outstanding policy issues for this removal action.

9 Recommendation

This decision document represents the selected removal action for the 207-A South Retention Basin closure waste at the Hanford Site, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP (40 CFR 300). This decision is based on the administrative record for the site. Conditions at the site meet the NCP (40 CFR 300.415(b)) for a removal action. The preferred action for disposal of closure waste from the 207-A South Retention Basin is to ERDF, which provides overall protection of HHE, complies with ARARs, and is cost effective.

10 References

- 40 CFR 268, "Land Disposal Restrictions," *Code of Federal Regulations*. Available at: <http://www.gpo.gov/fdsys/pkg/CFR-2010-title40-vol26/xml/CFR-2010-title40-vol26-part268.xml>.
- 40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan," *Code of Federal Regulations*. Available at: <http://www.gpo.gov/fdsys/pkg/CFR-2010-title40-vol27/xml/CFR-2010-title40-vol27-part300.xml>.
- 300.410, "Removal Site Evaluation."
- 300.415, "Removal Action."

40 CFR 300, “National Oil and Hazardous Substances Pollution Contingency Plan,” Appendix B, “National Priorities List,” *Code of Federal Regulations*. Available at: <http://www.gpo.gov/fdsys/pkg/CFR-2010-title40-vol27/xml/CFR-2010-title40-vol27-part300-appB.xml>.

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Resource Conservation and Recovery Act of 1976, 42 USC 6901, et seq. Available at: <http://www.epa.gov/epawaste/inforesources/online/index.htm>.

WAC 173-303, “Dangerous Waste Regulations,” *Washington Administrative Code*, Olympia, Washington. Available at: <http://apps.leg.wa.gov/WAC/default.aspx?cite=173-303>.

303-040, “Definitions.”

303-070, “Designation of Dangerous Waste.”

303-016, “Identifying Solid Waste.”

303-017, “Recycling Processes Involving Solid Waste.”

303-140, “Land Disposal Restrictions.”

303-610, “Closure and Post-Closure.”

WCH-191, 2010, *Environmental Restoration Disposal Facility Waste Acceptance Criteria*, Rev. 2, Washington Closure Hanford, Richland, Washington. Available at: <http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=0084183>.

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