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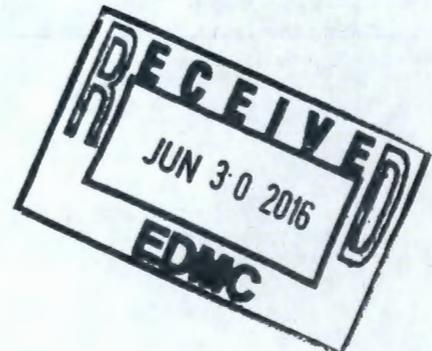
Waste Management Plan for Perched Water Pumping/Pore Water Extraction, 200-DV-1 Operable Unit

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



P.O. Box 550
Richland, Washington 99352

200-DV-1



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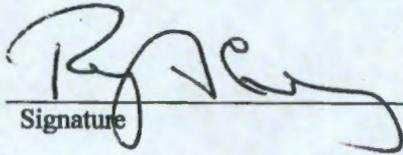
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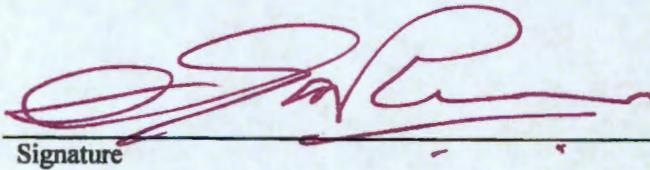
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Terms

CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
COC	contaminant of concern
DOT	U.S. Department of Transportation
ERDF	Environmental Restoration Disposal Facility
MCL	maximum contaminant level
MSU	modular storage unit
MSW	miscellaneous solid waste
OU	operable unit
P&T	pump and treat
S&GRP	Soil and Groundwater Remediation Project
TRU	transuranic
TSD	treatment, storage, and disposal

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1 Purpose

This waste management plan establishes the requirements for management and disposal of waste associated with implementation of a non-time-critical removal action for perched water in accordance with DOE/RL-2014-37, *Removal Action Work Plan for 200-DV-1 Operable Unit Perched Water Pumping / Pore Water Extraction*, and DOE/RL-2014-51, *Sampling and Analysis Plan for 200-DV-1 Operable Unit Perched Water Pumping/Pore Water Extraction*. Waste will be managed in accordance with this waste management plan and DOE/RL-2011-41, *Hanford Site Strategy for Management of Investigation Derived Waste*. The non-time-critical removal action activities completed for DOE/RL-2014-37 and DOE/RL-2014-51 support implementation of DOE/RL-2014-34, *Action Memorandum for 200-DV-1 Operable Unit Perched Water Pumping/Pore Water Extraction*. This waste management plan supersedes waste management requirements provided in DOE/RL-2011-40, *Field Test Plan for the Perched Water Pumping/Pore Water Extraction Treatability Test*.

The contaminants of concern (COCs) applicable to extracted perched water are uranium, technetium-99, nitrate, total chromium, hexavalent chromium, and tritium (DOE/RL-2014-34).

1.1 Waste Generation Activity

Perched water will be extracted from three wells (299-E33-344, 299-E33-350, and 299-E33-351) in the B Complex area in accordance with DOE/RL-2014-37. The perched water will be pumped to an 11,356 L (3,000 gal) aboveground polyethylene container located near the extraction wells. The contaminated water in the container will be transferred to the 200 West Pump and Treat (P&T) by tanker truck or by pipeline (once a pipeline is constructed). The COCs, with the exception of tritium, will be treated at the 200 West P&T in order to meet the aquifer injection criteria, the lower of drinking water maximum contaminant levels (MCLs) or WAC 173-340, "Model Toxics Control Act—Cleanup," Method B levels. There is no treatment method for tritium; however, the resulting combined discharge concentration from the 200 West P&T is expected to be below the MCL. The treated water will be injected into the underlying water table aquifer.

1.2 Projected Waste Streams

One or all of the following waste streams are anticipated and may fall into any combination of categories (radioactive, mixed, hazardous, dangerous, suspect radioactive, suspect dangerous, suspect mixed, and nonregulated):

- Miscellaneous solid waste (MSW) (e.g., rubber, glass, paper, personal protective equipment, cloth, plastic, and metal)
- Drill cuttings, soils, and slurries
- Equipment, construction, and decommissioning materials (e.g., well casing, drill string, drive barrel, construction equipment and materials, sampling equipment, decommissioning materials, and wooden pallets)
- Nondangerous/no-radiation-added (nonradioactive) solid waste (e.g., paper, wood, construction debris, metal, plastic, and glass)
- Unplanned release and associated cleanup material
- Decontamination fluids

- Purgewater generated during groundwater well installation, development, testing, monitoring, maintenance decanting of soils and slurries, and decommissioning
- Perched water encountered during drilling
- Liquids generated during screening analysis
- Treatability test waste
- Waste generated during perched water monitoring, sampling, and extraction

2 General Waste Management Requirements

All waste will be managed in accordance with this waste management plan and in accordance with DOE/RL-2011-41. Every effort will be made to minimize waste generation.

2.1 Waste Generation and Designation

Waste generated from drilling, groundwater monitoring, well maintenance, well decommissioning, geophysical logging, and perched water pumping/pore water extraction activities will be managed near the point of generation or at designated waste container storage areas. Waste will be designated in accordance with WAC 173-303, "Dangerous Waste Regulations," using process knowledge, historical analytical data, and analyses of samples obtained in accordance with DOE/RL-2014-51. Historical data from the 200-DV-1 Operable Unit (OU) may be used, as appropriate, for waste designation purposes.

2.2 Waste Packaging and Labeling

Waste packaging and labeling will be performed in accordance with a waste planning checklist or as directed by the waste management representative.

Waste packaging and labeling during storage and transportation will comply with DOE/RL-2011-41, Chapter 7, "Container Management." Accordingly, the substantive container management requirements are established in 40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Subpart I, "Use and Management of Containers;" WAC 173-303-630, "Use and Management of Containers;" and WAC 173-303-160, "Containers." All waste containers will be managed in accordance with the applicable substantive federal and/or state requirements, including labels that define the known major risk(s), dangerous waste codes, and if awaiting analysis, wording that states "waste pending analysis" with the date of initial sampling.

U.S. Department of Transportation (DOT) requirements will also apply, as appropriate. For onsite waste shipments, non-DOT packaging may be used if the container will provide an equivalent degree of safety and approval documents are in place. Materials requiring collection will be placed in containers appropriate for the materials and the receiving facility. DOT-approved drums may be used for some materials (e.g., drill cuttings); however, packaging/containment for large or irregular waste or large-volume waste (e.g., drill casing and excavated soil) may require the use of containers other than drums. Packaging/containment may include, but is not limited to, plastic wrap, 1.2 m by 1.2 m by 2.4 m (4 ft by 4 ft by 8 ft) boxes, and Environmental Restoration Disposal Facility (ERDF) roll-on/roll-off containers. Drill cuttings that are not required to be sampled for waste disposition may be placed in ERDF roll-on/roll-off containers.

Waste generated from well monitoring, maintenance, decommissioning, geophysical logging, and perched water pumping/pore water extraction may be bagged or placed in 208 L (55 gal) containers near the point of generation. Bags will be marked with the details of generation to identify the activity associated with the waste, taped, and labeled with the well identification number (at the well head) and date that the waste was generated. Waste containers will be labeled and marked appropriately to match the waste designation established for each waste stream. Containers will be sealed and shipped to the identified disposal facility or storage area.

2.3 Waste Storage and Transportation

Waste may be stored temporarily at the point of generation (e.g., waste site or well site) or transferred to an approved waste container storage area until being transported to ERDF (or another approved facility)

for disposal. Segregation and staging of waste containers/packages will be performed in accordance with the waste planning checklist or as directed by the waste management representative. The amount of waste stored at a waste container storage area should be kept to a minimum. Full containers should be prepared for disposal as quickly as economically feasible. Designated dangerous waste will be stored in accordance with substantive requirements of WAC 173-303-630. Dangerous waste and "waste pending analysis" containers will be inspected weekly. Nondangerous waste storage areas will be inspected monthly or at the frequency directed by the waste management representative. The perched water pumping/pore water extraction waste container storage area is shown in Figure 1.

Liquid waste (e.g., purgewater and decontamination fluids) will be collected and contained at the well head, if necessary, until transport to the purgewater modular storage units (MSUs) or to the 200 West P&T facility.

If sampling is required, it is anticipated that waste will be stored at the waste container storage area or near the point of generation until analytical results are received, excess characterization samples are returned, and proper waste shipping documents are completed. If return of excess characterization samples from the analytical laboratory is delayed, the majority of waste containers may be shipped for disposal, provided that a sufficient number of containers are available at the waste container storage area for receiving the excess sample volume.

Radioactive waste will be managed separately from nonradioactive waste. Containers bearing nonradioactive, nondangerous waste will be sealed, labeled, and stored at the waste container storage area.

2.4 Waste Disposal

Waste may be disposed at ERDF if the waste meets the ERDF waste acceptance criteria (WCH-191, *Environmental Restoration Disposal Facility Waste Acceptance Criteria*, and 0000X-DC-W0001, *Supplemental Waste Acceptance Criteria for the Environmental Restoration Disposal Facility*, as revised).

Wastes meeting radiological release criteria and that are nondangerous and nonradioactive may be disposed at an appropriate Subtitle D disposal facility in accordance with the criteria established for the respective facility. Wastes that do not meet radiological release criteria will either be disposed into the ERDF or, if they do not meet the ERDF waste acceptance criteria, placed in appropriate storage pending legally compliant treatment and disposal. In particular, ERDF cannot accept transuranic (TRU) waste and mixed TRU waste. Non-ERDF-eligible radioactive, mixed, TRU, and mixed TRU waste shall be placed into storage, in either a Hanford Site *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA)-authorized storage facility; a *Resource Conservation and Recovery Act of 1976* treatment, storage, and disposal (TSD) unit within the Hanford Site, such as the Central Waste Complex; and/or sent to an offsite TSD facility that is authorized to accept CERCLA response action wastes by the specific regional U.S. Environmental Protection Agency office that has jurisdiction over the receiving disposal facility.

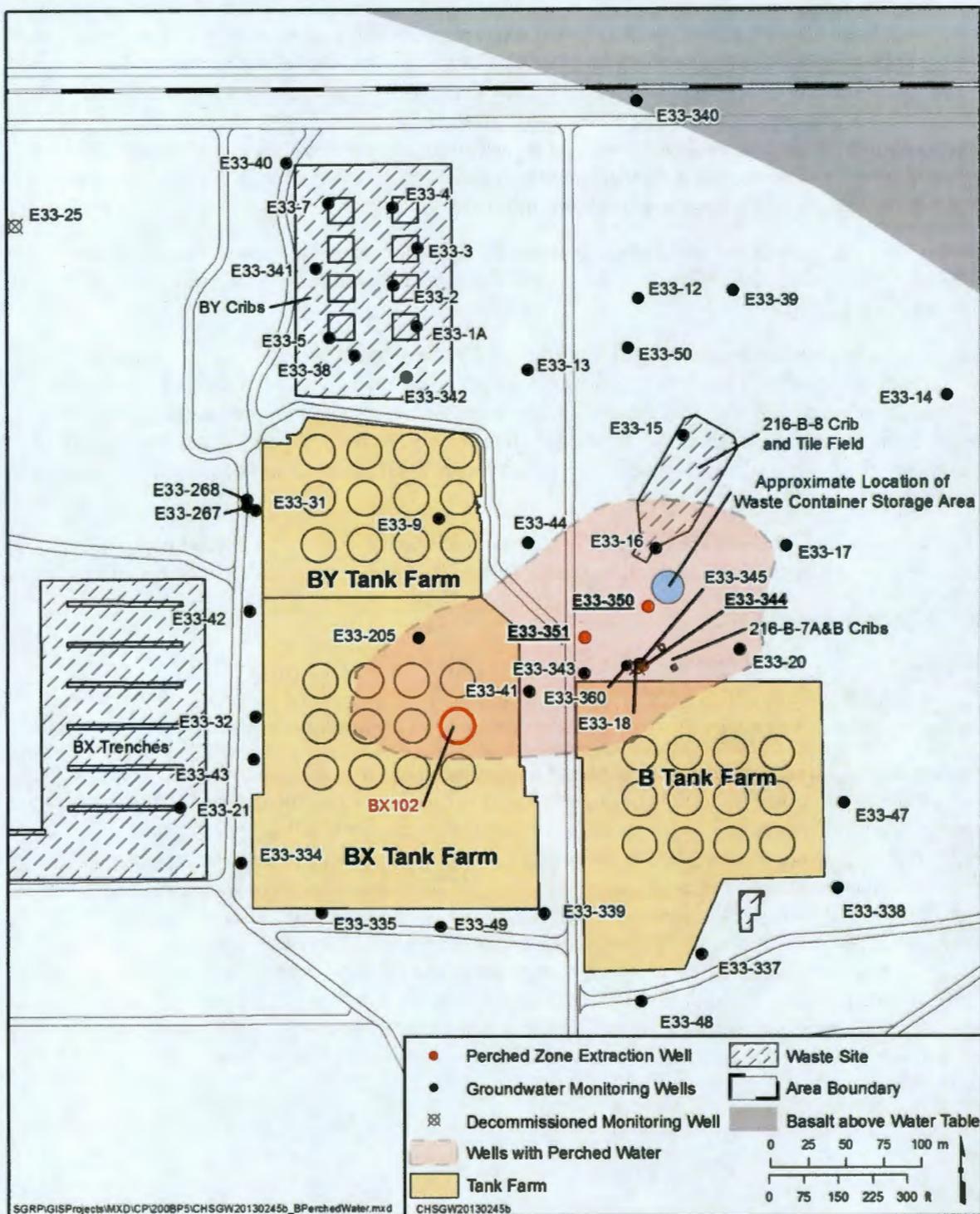


Figure 1. 200-DV-1 OU Perched Water Pumping/Pore Water Extraction Site in the B Complex Area

Soil containing hazardous and radiological constituents at levels below dangerous waste designation limits; at levels below the soil cleanup standards of the most recent Table 740-1 of WAC 173-340-900, "Tables;" and that has been released from a radiological perspective may be returned to the ground at or near the point of excavation.

Extracted perched water/pore water (collected in an aboveground container with integral secondary containment near the point of generation) will periodically be transferred to the 200 West P&T for treatment and disposal.

2.5 Records

Completed waste inventory documentation will be used to initiate waste tracking in the Solid Waste Information Tracking System. All records will be managed in accordance with applicable records management processes.

2.6 Perched Water/Pore Water Wells

A list of monitoring wells and extraction wells associated with perched water pumping/pore water extraction is provided in Appendix A.

3 Stream-Specific Waste Management Requirements

This chapter describes the management requirements for the waste streams anticipated for the 200-DV-1 OU perched water pumping/pore water extraction removal action.

3.1 Drill Cuttings

Drill cuttings may be treated as radioactive, mixed, hazardous, dangerous, suspect radioactive, suspect dangerous, suspect mixed, suspect hazardous, or nonregulated based on process knowledge and field screening results.

Nonregulated drill cuttings will be collected in stockpiles on plastic sheeting near the point of generation. Radioactive, mixed, hazardous, dangerous, suspect radioactive, suspect dangerous, or suspect mixed drill cuttings will be properly containerized/packaged to mitigate the spread of contaminants to the environment. Containers and packages will be properly marked and labeled. The containers will be separated from other materials, as appropriate. Containers of drill cuttings will be dispositioned using process knowledge and/or analytical results associated with the contaminated media that is contacted.

Waste soil not designated as dangerous waste in accordance with WAC 173-303, below WAC 173-340-740, "Unrestricted Land Use Soil Cleanup Standards," Method B cleanup standards, and determined to be low risk for radiological contamination has been field surveyed to verify that no detectable radioactivity is above background and may be returned to the ground at or near the point of generation. If any saturated drill cuttings are generated at boreholes drilled to groundwater, the drill cuttings will be dewatered, and free liquids remaining in the container will be mitigated to 1 percent or less by volume through decanting, evaporation, and/or adding sorbent material prior to disposal, as necessary.

3.2 Purgewater

All purgewater will be managed in accordance with DOE/RL-2009-80, *Investigation Derived Waste Purgewater Management Work Plan*, and DOE/RL-2011-41. Purgewater will be collected and contained at the wellhead, if necessary, until transport to the purgewater MSUs or to the 200 West P&T facility, if 200 West P&T facility waste acceptance criteria can be met.

3.3 Decontamination Fluids

Decontamination fluids (water and/or nondangerous cleaning solutions) generated from cleaning equipment and tools used at the OU will be contained, transported, and discharged at the MSUs in accordance with DOE/RL-2009-80. If necessary, decontamination fluids can be containerized and stored at the designated waste container storage area or near the point of generation (e.g., drilling accumulated waste) until transported to the MSUs. Small volumes of decontamination fluids may be stabilized to eliminate free liquids and then be disposed at ERDF, provided the facility's waste acceptance criteria can be met.

Additional chemical decontamination of sample equipment may be conducted at the Soil and Groundwater Remediation Project (S&GRP) sampling equipment cleaning facility because decontamination and containment systems already are established at this location.

3.4 Sample Screening and Analysis Liquids

Liquid waste generated during sample screening and analysis may be managed as purgewater or sent to the 200 West P&T facility in accordance with DOE/RL-2009-124, *200 West Pump and Treat Operations*

and Maintenance Plan, Appendix B, "Waste Management Plan for the 200 West Pump and Treat." Some liquids may be neutralized or stabilized to meet disposal facility waste acceptance criteria.

3.5 Equipment and Construction Materials

Equipment and construction materials that have been in contact with suspect dangerous and suspect mixed waste will be decontaminated with a three-bucket wash or a high-temperature and high-pressure wash (82°C and >7,000 kPa [180°F and >1,000 lbf/in²]) within a wash basin capable of retaining rinsate, or these materials will be treated as MSW. All water used for decontamination activities will be potable (i.e., Hanford Site potable water or city of Richland water). Rinsate will be managed as described in Section 3.3. All sampling equipment will be cleaned and decontaminated after radiological release by a radiological control technician. If contamination is determined to be fixed for any equipment or materials, the radiological control technician and task manager will decide whether to remove the contamination using more aggressive methods or dispose the equipment. As necessary, equipment and construction materials will be containerized or packaged to prevent the potential spread of contamination. The equipment and construction materials may be stored either at the designated waste container storage area or near the point of generation.

3.6 Nondangerous/No-Radiation-Added Solid Waste

All nondangerous/no-radiation-added (nonradioactive) solid waste that is radiologically released may be disposed at an offsite Subtitle D solid waste landfill. This waste will not have contacted any suspect dangerous or mixed waste and will be free of any liquids. Items in this category include, but are not limited to, paper, wood, construction debris, metals, plastic, food waste, and glass. If necessary, nondangerous/no-radiation-added solid waste can be containerized, segregated, and stored at the designated waste container storage area or near the point of generation.

3.7 Unplanned Release

The initial response to an unplanned release includes immediate (within 15 minutes) notification to the 200-DV-1 OU environmental compliance officer (372-2426 or 521-8633), the S&GRP shift office (373-7207 primary or 373-7209 secondary), and the CH2M HILL Plateau Remediation Company spill reporting single point of contact. Reporting requirements will be met, as required by DOE O 232.2 Admin Chg 1, *Occurrence Reporting and Processing of Operations Information*, and by CERCLA Section 103, which provides criminal penalties for failure to immediately report spills to the environment of Reportable Quantities of hazardous substances to the National Response Center in accordance with 40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan." Once the initial assessment is completed, and appropriate measures have been taken to address the spill or release, containerized waste will be properly marked, labeled, and segregated from other materials based on process knowledge, field screening results, and location. Wastes associated with spill cleanup will be managed in accordance with Chapter 2 of this waste management plan.

3.8 Miscellaneous Solid Waste and Well Decommissioning Waste

MSW including (but not limited to) rubber, glass, paper, personal protective equipment, cloth, plastic, and metal will be generated periodically during drilling, geophysical logging, sampling, well and equipment decommissioning, and other activities. MSW that has contacted suspect dangerous or suspect mixed waste will be managed as such. Field screening may be used to segregate radioactive MSW from no-radiation-added (nonradioactive) MSW. The MSW may be placed in a plastic bag, taped closed, and marked to identify the activity associated with the waste. Container(s) will be managed in accordance

with Chapter 2 of this waste management plan. Containers of MSW will be dispositioned using process knowledge and/or analytical results obtained from the soil or groundwater contacted.

Process knowledge and representative analytical data will be used to profile the well decommissioning wastes. Some waste associated with decommissioning may be considered environmentally controlled material or nondangerous/no-radiation-added (nonradioactive) solid waste, based on process knowledge or representative analytical (or both) or based on field data. Decommissioning waste will be containerized, marked, segregated, staged, and dispositioned in accordance with Chapter 2 of this waste management plan.

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Appendix A

**200-DV-1 Operable Unit Perched Water Pumping/
Pore Water Extraction Well List**

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Table A-1 lists the extraction and monitoring wells within the 200-DV-1 Operable Unit perched water pumping/pore water extraction area delineated in Figure 1 of this waste management plan.

Table A-1. Perched Water Pumping/Pore Water Extraction Well List

Hanford Well Name	Hanford Well Identification Number
299-E33-16	A6855
299-E33-18	A4844
299-E33-20	A4847
299-E33-41	A4867
299-E33-205	C5989
299-E33-343	C5858
299-E33-344	C5859
299-E33-350	C8914
299-E33-351	C8915

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