0085250

CHPRC-00434
Revision 0

Waste Control Plan for the 105-KE Reactor Core Sampling

RECEIVED
FEB 24 2010
EDMC

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

Contractor for the U.S. Department of Energy
under Contract DE-AC 06-08RL14788

CH2MHILL
Plateau Remediation Company

P.O. Box1600
Richland, Washington 99352

Approved for Public Release;
Further Dissemination Unlimited

CHPRC-00434
Revision 0

Waste Control Plan for the 105-KE Reactor Core Sampling

Date Published
January 2010

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

Contractor for the U.S. Department of Energy
under Contract DE-AC 06-08RL14788

CH2MHILL
Plateau Remediation Company

P.O. Box 1600
Richland, Washington 99352

Release Approval 01/15/2010
Date

Approved for Public Release;
Further Dissemination Unlimited

TRADEMARK DISCLAIMER

Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

This report has been reproduced from the best available copy.

Printed in the United States of America

Contents

Waste Control Plan **1**

Appendices

A **Investigation-Derived Waste Management** ..... **A-i**

B **Location of the 105-KE Reactor and Waste Container Storage Area** ..... **B-i**

Terms

CERCLA	*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*
CHPRC	CH2M HILL Plateau Remediation Company
COC	contaminants of concern
COPC	contaminants of potential concern
DOT	U.S. Department of Transportation
ERDF	Environmental Restoration Disposal Facility
ETF	200 Area Effluent Treatment Facility
IDW	investigation-derived waste
RL	U.S. Department of Energy, Richland Operations Office
WAC	Washington Administrative Code
WCP	Waste Control Plan

Waste Control Plan

Work Scope Description – This waste control plan (WCP) applies to the management of investigation-derived waste (IDW) generated from the sampling of the 105-KE Reactor Core located within the 100-K Area, and equipment decontamination for the 105-KE Reactor Core investigation, as appropriate. The scope of work for the 105-KE Reactor Core sampling is further described in DOE/RL-2005-33, *100-K Area Interim Safe Storage and D4 Project Waste Sampling and Analysis Plan*, Rev. 1, and TPA-CN-305. Analysis of the reactor core will support waste designation and disposition, along with health and safety. Appendix A of this WCP identifies specific IDW management.

List Contaminants of Concern (COCs) – The COCs identified for the 105-KE Reactor Core include arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, polychlorinated biphenyls, americium-241, antimony-125, carbon-14, cesium-134, cesium-137, chlorine-36, cobalt-60, curium-242, curium-244, europium-152, europium-154, europium-155, iodine-129, lead-210, neptunium-237, nickel-59, nickel-63, niobium-94, plutonium-238, plutonium -239/240, promethium-147, radium-226, radium-228, samarium-151, selenium-79, strontium-90, technetium-99, thorium-232, tritium, uranium-233/234, uranium-235/236, and uranium-238.

Site Description – 105-KE Reactor Core, 100 K Area, U. S. Department of Energy, Hanford Site, Richland, WA, 99352

Reference – DOE/RL-2005-33, *100-K Area Interim Safe Storage and D4 Project Waste Sampling and Analysis Plan*, Rev. 1, and TPA-CN-305

Date Approved: November 2006 and November 2009, respectively.

Preparer – Deanna Klages (CH2M HILL Plateau Remediation Company [CHPRC])

Sign Name Deanna Klages **Date** 1/13/2010

Environmental Field Manager – Dottie Norman (CHPRC)

IDW Coordinator/Environmental Compliance Officer – Brett Barnes (CHPRC)

Project Manager – Colburn Kennedy (CHPRC)

Planned Start and Finish Dates – This activity is scheduled to begin January 2010 with a completion date of May 2010.

Waste Storage Facility ID Number – Not applicable.

Field Screening Methods – See TPA-CN-305

Laboratory Methods (COCs and COPCs) – See TPA-CN-305

Waste Control Plan

Waste Container Storage Area(s) Coordinate Location (s) – Waste generated from the 105-KE Reactor Core sampling activities will be stored in the 100 K Area *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) *of 1980* CERCLA Waste Container Storage Area shown in Appendix B or in the 105-KE Reactor Building, if freeze protection or additional radiological controls are needed (e.g., liquid waste or high dose rate material).

Requirements for Soil Pile Sampling (if any) – Not applicable.

Non-regulated Material Disposal Location(s) – Waste generated from the 105-KE Reactor Core sampling activities that are not radiologically contaminated and not a hazardous waste may be disposed of to a Subtitle 'D' landfill contractually obligated to receive Hanford Site waste or an onsite demolition landfill as appropriate.

Sketch of Work Site – The area within the 105-KE Reactor Core sampling scope of this WCP is included in Appendix B.

APPROVALS (Print / Sign Name and Date)

Brett M. Barnes — 2/1/10
Brett Barnes — Date
IDW Coordinator/Environmental Compliance Officer

2-1-10
Dottie Norman — Date
Environmental Field Manager

CE Kennedy — 1/25/10
Colburn Kennedy — Date
Project Manager

2-9-2010
Tom Teynor, Federal Project Director — Date
U.S. Department of Energy
Richland Operations Office

2-11-2010
Rod Lobos, Project Manager — Date
U. S. Environmental Protection Agency

Appendix A

Investigation-Derived Waste Management

This page intentionally left blank.

A1 Waste Management

The following sections describe how the waste generated from the 105-KE Reactor Core sampling activities will be managed.

105-KE Reactor Core sampling activities include data collection for hazardous substances, waste characterization and radiological dose rates to ensure that health and safety requirements are met before the reactor core is demolished.

A1.1 Waste Streams

Expected waste streams from the 105-KE Reactor Core sampling activities may include the following.

- Miscellaneous solid waste such as unused sample portions, equipment (e.g., sampling and monitoring), filters, wipes, gloves and other personal protective equipment, cloth, sampling and measuring equipment, pumps, hoses, pipe, wire, plastic sheeting, tools, paper, metal, and glass
- Decontamination fluids and other liquid waste (e.g., coring water) generated during sampling and analysis

A1.2 Designation

Waste will be designated in accordance with Washington Administrative Code (WAC) 173-303 using a combination of process knowledge, historical analytical data, and analyses of samples required by DOE/RL-2005-33, *100-K Area Interim Safe Storage and D4 Project Waste Sampling and Analysis Plan*, Rev. 1, TPA-CN-305, as appropriate.

A1.3 Management of Specific Waste Streams

A1.3.1 Miscellaneous Solid Waste

Miscellaneous solid waste that has contacted potentially contaminated materials will be segregated from other materials and will be disposed of based on the waste designation. Contaminated materials or materials that have contacted contaminated media may be disposed to the Environmental Restoration Disposal Facility (ERDF) if the acceptance criteria can be met, or to another offsite approved facility or Hanford Site facility, if the ERDF criteria cannot be met. Waste may also be shipped to the Central Waste Complex for storage pending final disposition. An offsite determination will be required for any waste that is not sent to the ERDF for storage or disposal with the exception of solid waste that is nonhazardous and radiologically released or waste that has not contacted potentially contaminated materials. This type of solid waste may be disposed off the Hanford Site to a solid waste landfill, or recycled as appropriate without an offsite determination.

A1.3.2 Decontamination Fluids and Other Liquids

Decontamination of specialized equipment may be necessary or warranted to enable reuse or redeployment. If decontamination is performed, the resulting waste stream will consist of decontamination fluids and miscellaneous solid waste.

Decontamination fluids (water and/or nonhazardous cleaning solutions) generated from cleaning equipment and tools in the operable unit or liquids from sampling and analysis activities will be containerized and transported to the 200 Area Effluent Treatment Facility (ETF) (provided the ETF acceptance criteria can be met). Decontamination fluids or other liquids may also be stabilized to eliminate free liquids and then disposed to the ERDF, provided the solid waste acceptance criteria can be

met. If the ETF or ERDF criteria cannot be met, then another facility must be identified, which can accept the waste stream. Once a facility is found, an offsite determination must be approved by the lead regulatory agency.

A1.3.3 Sample Analysis Wastes

Sample wastes will be disposed to the ETF, ERDF, or other appropriate facility as authorized by the lead regulatory agency depending on the waste designation. Some liquids may be neutralized and/or stabilized to meet disposal facility waste acceptance criteria following a Waste Treatment Plan, as needed.

A1.4 Packaging, Marking, and Labeling

Materials requiring collection will generally be placed in drums. However, packaging for large or irregular-shaped IDW (e.g., sampling equipment) may include containment other than drums. The packaging shall provide insurance against migration of contaminants and protection from environmental degradation. The packaging may include, but is not limited to, plastic wrap or a Standard Waste Box.

Low-volume miscellaneous materials associated with activities such as sampling and analysis may be bagged, taped and labeled with the 105-KE Reactor Building number. The bagged material will be transported in a protective manner (i.e., containment of the material is maintained) while proceeding to the waste storage area within the 100-K Area. Upon arrival at the storage location, the materials will be placed in an accumulation container and managed as waste. Presently the waste storage area is located east of the 183-KE Facility.

All containers of IDW will be managed in accordance with the applicable federal and/or state requirements as established in 40 Code of Federal Regulations 264, Subpart I, WAC 173-303-160 and 630. Containers of IDW will be marked and/or labeled with the known major risks, dangerous waste codes as applicable, and if awaiting analysis, wording that states, "waste pending analysis" with the initial date of sampling.

Packaging, marking, and labeling for transportation on the Hanford Site will be in accordance with U.S. Department of Transportation (DOT) 49 Code of Federal Regulations requirements or with an approved U.S. Department of Energy, Richland Operations Office (RL) packaging and shipping document such as a safety analysis report for packaging, or some type of risk-based exemption approved by RL. Shipments made off of the Hanford Site must comply with DOT.

A1.5 Storage and Transportation

Waste will be stored in the CERCLA Waste Container Storage Area (identified in Appendix B) within the CERCLA Response Area boundary, which includes the entire area shown in Appendix B, until analytical data are evaluated for proper waste designation. If the waste is liquid and could freeze in the container, or if additional radiological controls are required, the waste may also be stored within the 105-KE Reactor Building prior to disposal. Record all waste generated in a logbook, including such details as the location and type of waste, depth of sample (if applicable), date of initial placement into the container, date container was closed and Package Identification Number. Some waste (e.g., field decontamination fluids) may be temporarily (generally less than 2 weeks after generation) accumulated near the point of generation at the 105-KE Reactor Building, then staged at the waste storage location east of the 183-KE Facility. Waste will be transported in accordance with WAC 173-303 and DOT requirements as discussed in Section A1.4.

Much of the IDW is generated in small quantities on an ongoing basis. The IDW waste may be stored for up to 6 months after analyses are completed; an extension is required for storage beyond 6 months.

A1.6 Container Management

Weekly inspections will be performed to document integrity of the containers, marking and labeling of containers, physical container placement, storage area, boundaries/identification/warning signs, and spill control.

A2 References

DOE/RL-2005-33, *100-K Area Interim Safe Storage and D4 Project Waste Sampling and Analysis Plan*, Revision 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: http://www2.hanford.gov/arpir/?content=findpage&AKey=DA04084569

Ecology, EPA, and DOE, 1989, *Hanford Federal Facility Agreement and Consent Order*, 2 vols, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington, as amended. Available at: http://www.hanford.gov/?page=91&parent=0. TPA-CN-305

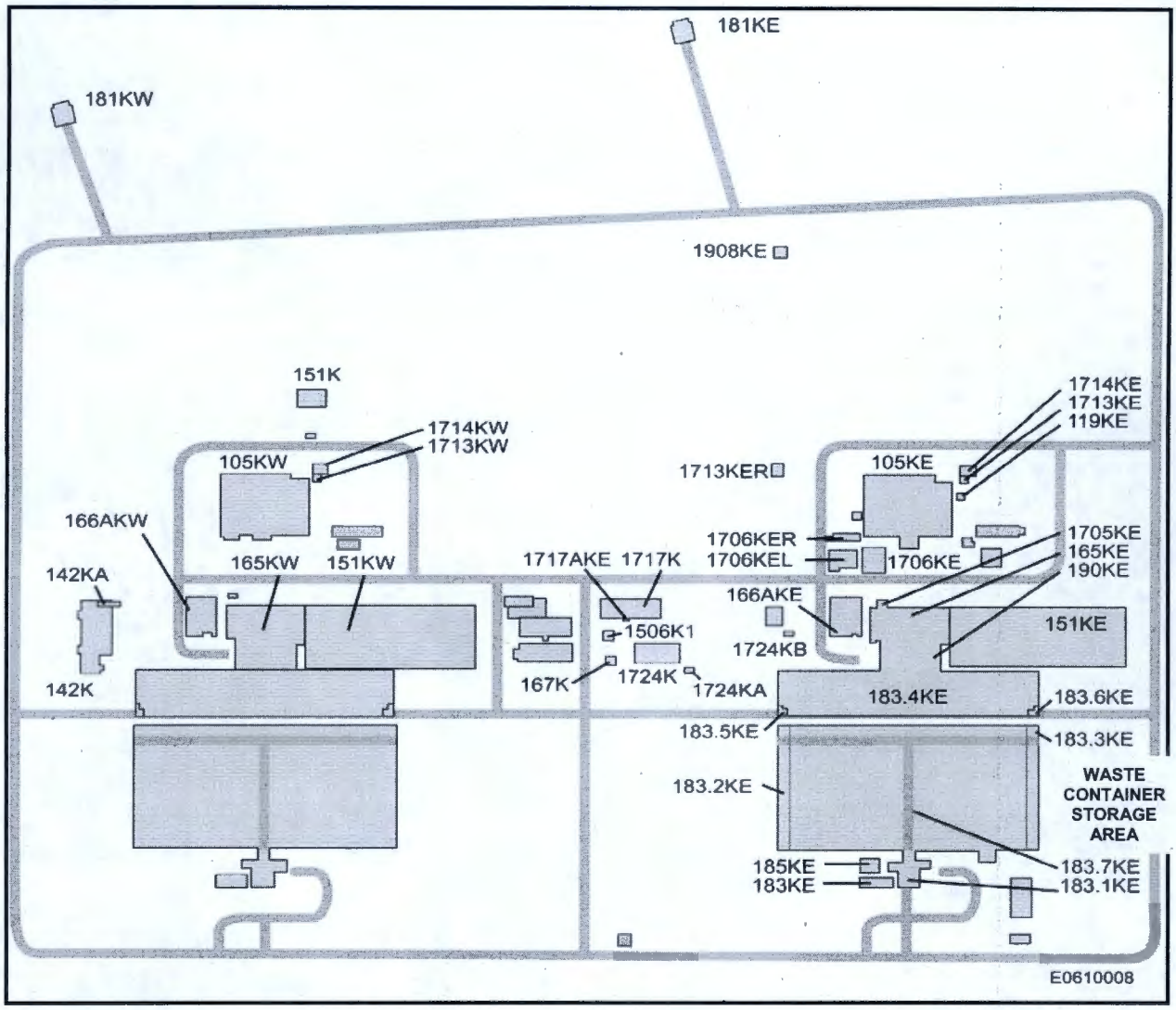
WAC 173-303, "Dangerous Waste Regulations", *Washington Administrative Code*, as amended, Washington State Department of Ecology, Olympia, Washington. Available at: http://apps.leg.wa.gov/WAC/default.aspx?cite=173-303

This page intentionally left blank.

Appendix B

Location of the 105-KE Reactor and Waste Container Storage Area

This page intentionally left blank.



The 105-KE Reactor Building is located on the northeast side of the 100-K Area as shown. Waste from the sampling and analysis activities will be stored in the Waste Container Storage Area located on the southeast side of the 100-K Area as shown.

This page intentionally left blank.