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ENVIRONMENTAL RESTORATION PROGRAM
STRATEGY FOR MANAGEMENT OF
INVESTIGATION DERIVED WASTE

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1.0 PURPOSE

This revision of the Investigation Derived Waste (IDW) strategy enhances the previous strategy dated July 1, 1995 in establishing a flexible and effective approach to the management of investigation derived waste (IDW) while ensuring protection of human health and the environment. The temporary storage and subsequent disposal of IDW from *Comprehensive Environmental Response, Compensation, and Liability* (CERCLA) and *Resource Conservation and Recovery Act* (RCRA) sites at Hanford will meet the applicable substantive requirements of RCRA, as implemented through the authorized state program by the Washington State Dangerous Waste Regulations (Chapter 173-303 WAC). Hanford IDW that meets the Environmental Restoration Disposal Facility (ERDF) waste acceptance criteria (WAC), applicable land disposal restriction standards, and approval authorization requirements is eligible for disposal in the ERDF.

The final rule to the National Contingency Plan (NCP) (Federal Register, March 8, 1990, page 8756) provides guidance for removal actions conducted at CERCLA units as follows:

"...studies and investigations undertaken pursuant to CERCLA section 104(b), such as activities conducted during the RI/FS, are considered removal actions (54 FR 13298, March 31, 1989). EPA's policy...is that removal actions will comply with ARARs to the extent practicable, considering the exigencies of the circumstances. Thus, the field investigation team should, when handling, treating or disposing of investigation-derived waste on-site, conduct such activities in compliance with ARARs to the extent practicable."

Administrative RCRA requirements such as obtaining permits, documentation, reporting, and record keeping, are not applicable to actions undertaken at CERCLA units. The U.S. Department of Energy, Richland Operations (RL) will manage IDW in accordance with the substantive requirements of federal and state regulations. With regard to IDW, the substantive portions of RCRA and Chapter 173-303 WAC are considered to be ARAR. Applicable DOE Orders are to-be-considered for management of radioactive contaminants. Therefore, the substantive requirements associated with management of dangerous/hazardous and radioactive waste in containers will be complied with to the extent practicable. If RL, the Environmental Protection Agency (EPA), or the Washington State Department of Ecology (Ecology), also known as the Tri-Parties, concludes that such compliance is not practicable, they will seek to obtain agreement from the other Parties, and they will resolve any disputes in accordance with Article VIII or Article XVI of the *Hanford Federal Facility Agreement and Consent Order* (the "Tri-Party Agreement").

Investigation derived waste is defined as any waste generated as a result of conducting a CERCLA or RCRA past-practice investigation, treatability study or well construction, maintenance or abandonment activity. IDW may include but is not limited to: drilling mud; cuttings from test pit and well installation; materials from well maintenance, remediation and abandonment; purge water, soil, and other materials from collection of samples; residues (e.g., ash, spent carbon) from testing of treatment technologies; contaminated personal protective equipment (PPE); and solutions (aqueous or otherwise) used to decontaminate non-disposable protective clothing and equipment; or any waste resulting directly from CERCLA or RCRA past-practice investigation, treatability study, or well maintenance/abandonment activity.

An Explanation of Significant Difference to the ERDF ROD and subsequent clarification letter issued to the Administrative Record states that investigation-derived waste may be placed in the ERDF provided regulatory approval is gained and the waste acceptance criteria are met. A variety of wastes are produced as a result of activities associated with the Hanford cleanup effort that are authorized for disposal at ERDF. Since IDW generated during investigations of the operable units is similar in nature and contamination to the cleanup waste, EPA has authorized disposal of IDW at ERDF. The ERDF provides for safe and environmentally protective disposal of this material. IDW waste will be managed at the waste site or at a designated central storage area until final disposition (e.g., disposal at ERDF).

2.0 APPLICABILITY

This strategy applies primarily to IDW generated from groundwater monitoring activities (well drilling, sampling, maintenance and decommissioning), site characterization activities, and environmental investigations of past practice units regulated under CERCLA and RCRA provided such activities or investigations have been authorized by a Treatability Test Plan, Sampling and Analysis Plan, or similar document approved by the lead regulatory agency. In accordance with the provisions of Section 9.0, the Project Manager for the Lead Regulatory Agency may authorize exceptions to the requirements of this strategy on a case-by-case basis. Any IDW generated from within the fenceline of the following TSDs is excluded from this strategy: Single-Shell Tanks, Double-Shell Tanks, and any TSD identified in Appendix B of the Tri-Party Agreement as needing an operating permit. If agreed to by the Project Manager from the Lead Regulatory Agency, this strategy may apply to certain wastes generated during investigation at inactive RCRA treatment, storage, and disposal (TSD) units at Hanford pursuant to the ERDF Explanation of Significant Difference and the associated letter of clarification. Site managers shall strive to minimize the generation of IDW through proper planning of activities to reduce the need for special storage or disposal requirements.

Purgewater and, where specified in this strategy, other IDW liquids will be managed according to the Hanford Site purgewater agreement, "Strategy for Handling and Disposing of Purgewater at the Hanford Site, Washington" (DOE-90-ERB 073). For purposes of this strategy, purgewater means groundwater and other liquids such as drilling fluids and groundwater separated from slurries associated with groundwater activities. It includes liquids generated during groundwater

related activities, including but not limited to the following: well drilling, well development, aquifer testing, groundwater sampling and monitoring, well maintenance and decommissioning, decontamination or well drilling and sampling equipment, and groundwater treatability studies. In the event that a contaminant is identified in a waste site for which there is no collection criteria established in the Purgewater Agreement, a site-specific limit shall be established in the associated Waste Control Plan.

3.0 WASTE SITE IDENTIFICATION

In most cases, waste sites within a given operable unit will be identified in an associated work scope document. When site characterization and environmental investigation operations are conducted within a known or suspected waste site, all IDW will be collected and managed, with the exception of soils associated with IDW test pits. Soils associated with IDW test pits may be managed within the area of contamination and returned to the excavation site upon completion of work. When site characterization and environmental investigation operations are conducted outside of or near the boundaries of a known waste site, agreement will be reached between RL and the lead regulatory agency to determine the need for IDW collection.

Waste site boundaries within an operable unit shall be determined in concurrence with the lead regulatory agency. This determination will be initially based upon existing process knowledge and environmental monitoring data and then substantiated in the field with the use of field screening instrumentation. The actual waste site boundary, container storage location, and the need for soil piles and/or slurry pits, if any, will be agreed to and documented. A Waste Control Plan will be utilized to conduct the activity and control waste. This plan will be prepared by the task manager and will identify waste site boundaries, and IDW storage and disposal points, if any, and requirements for IDW sampling. The plan will be submitted to the lead regulatory agency for concurrence.

4.0 COLLECTION OF WASTE

4.1 Investigation Conducted Within a Waste Site or Suspect Waste Site

When an IDW generating activity is conducted within a waste site or suspect waste site the resulting waste may be managed at the site or transferred to a centralized location. A Waste Control Plan shall identify the waste site boundary, the required collection location and method, and final disposition as agreed to by the lead regulatory agency. Waste collection will be performed pending receipt of analytical results to enable proper disposition of the waste.

Collection of soils associated with IDW test pits is not required unless directed otherwise on a case-by-case basis by the lead regulatory agency. Test pit soil will normally be managed within the area of contamination and returned to the excavation site in accordance with the requirements of Section 6.1.

4.2 Investigations Conducted Outside of a Waste Site

IDW generated outside a known or suspected waste site will not normally require collection, storage or sampling unless visual evidence or field screening indicates the potential presence of contamination or the project managers identify a need to do so. Slurry pits and liquid discharged to the soil outside the waste unit boundary will normally be allowed unless the area becomes suspect as described above. If collection is required for IDW outside the waste site boundaries, samples will be analyzed only for the constituents of concern identified by the project managers in an approved Sampling and Analysis Plan. Waste requiring sampling will have well defined boundaries (e.g. soil piles). Should the analyses indicate contamination, waste stored on the soil surface will be excavated to a depth to ensure all contaminated material generated as part of the investigation is removed. Contaminated waste and any associated liquid, semi-liquid, and miscellaneous wastes from such areas shall be managed in accordance with the requirements for waste generated within a waste site or suspect waste site.

5.0 WASTE CHARACTERIZATION

In most cases, samples will be routinely collected as part of the investigation process. These samples will be submitted for analysis and will provide the basis for characterization. The results from these analyses, or other documentation as agreed upon by the Project Managers, will be utilized to characterize IDW materials. If additional data are needed to characterize IDW, samples will be collected and analyzed for the constituents of concern as identified in the associated work plan, treatability test plan or equivalent document. Process knowledge and/or waste characterization information will be used in conjunction with field screening to identify those wastes that would be designated as characteristic or listed dangerous waste per WAC 173-303. Regardless of any other characterization requirements, a Sampling and Analysis Plan (SAP) approved by the lead regulatory agency is required for any IDW to be disposed of in the ERDF. This SAP must be sufficient to demonstrate compliance with the ERDF Waste Acceptance Criteria and, where applicable, must address all underlying hazardous constituents present in IDW designated as RCRA LDR waste.

For solid material generated within the boundaries of a waste site, the toxicity characteristic of the waste may be determined if necessary. If a total analysis obtained during characterization demonstrates that individual analytes are present in concentrations that could not exceed the toxicity criteria, the IDW in question may not be analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) nor be assigned the toxicity characteristic waste code. If the total analysis indicates concentrations sufficiently high enough to possibly fail the TCLP, the test will be performed on the material and waste codes will be assigned accordingly.

In addition to required chemical analysis, samples will be collected and screened for radiological constituents. Screening for radiological contamination will be performed as indicated in the work plan or equivalent document. Waste analysis to identify radiological constituents will be performed when necessary. The above actions, along with the use of existing process

knowledge, will serve to identify major risks and to protect human health and the environment during these specific types of activities.

Under certain conditions soil samples are not collected for chemical analyses because the area in question is not expected to be contaminated. For example, these conditions may be encountered during drilling operations to install groundwater monitoring wells or when test pits are constructed for the purpose of collecting background environmental samples. In these cases, soil will be accumulated at the point of generation provided that evidence does not justify otherwise (as discussed in Section 4.2).

6.0 WASTE MANAGEMENT DETERMINATIONS

This section provides the basis upon which IDW management determination will be made. The following sections describe management of IDW prior to final disposition (e.g., disposal at ERDF).

6.1 Soils

Soils will be characterized as described in the appropriate site-specific plan and Section 5.0 of this strategy. Process knowledge and field screening may be used to manage soils as clean material such as when drilling boreholes or digging test pits outside of a waste site. In these cases, soil will be collected in stockpiles at the point of excavation provided that evidence does not justify otherwise (as discussed in Section 4.2). Soils may be placed back into the test pit upon completion of the activity.

Contaminated or suspect contaminated soils shall be managed to mitigate the spread of contaminants to the environment, e.g. placed on a tarp or containerized. Unless directed otherwise by the Project Manager from the Lead Regulatory Agency, test pit soils may be managed within the area of contamination and returned to the excavation site upon completion of sampling. Containers of soil from activities other than test pits that contain contaminants above established release criteria (as described in Section 8.0), whether generated inside or outside a waste site boundary, will be managed in accordance with Section 7.0 of this strategy.

6.2 Groundwater

All extracted groundwater, including purgewater and free liquids separated from groundwater slurries, will be contained or managed in accordance with the Purgewater Agreement or, alternatively, managed in accordance with Sections 7.0 and 8.0. In the event that a contaminant is identified in a waste site for which there is no collection criteria established in the Purgewater Agreement, a site-specific limit shall be established in the associated Waste Control Plan.

6.3 Slurry Waste

Slurry waste includes groundwater slurries and drilling fluids, but excludes groundwater and free liquids separated from groundwater slurries. Slurry waste generated within a waste site boundary will be containerized and sampled as described in the approved Sampling and Analysis Plan. Containerized slurry waste will be appropriately managed on-site or in a designated storage area pending analytical results. Containerized slurry waste that contain contaminants above established release criteria (as described in Section 8.0) will be appropriately managed in accordance with Section 7.0 of this strategy. Slurry waste containing hazardous and radiological constituents below these levels will be returned to the ground at or near the point of origination.

Slurry waste generated outside a waste site boundary may be placed in a pre-excavated, lined (porous membrane liner) slurry pit located adjacent to the drill rig if the area under investigation is not suspect (as described in Section 4.2 of this strategy) and the location of the investigation is not within an area requiring purgewater management under the Hanford Site purgewater agreement, "Strategy for Handling and Disposing of Purgewater at the Hanford Site, Washington" (DOE-90-ERB 073). Slurry pit locations must be outside the exclusion zone and will be documented.

6.4 Decontamination Fluids

Decontamination fluids (water and/or non-hazardous cleaning solutions) generated from operations conducted within the boundaries of a waste site or suspect waste site will be contained and managed in accordance with the Purgewater Agreement or in accordance with Section 7.0 of this strategy as determined by the Project Manager from the lead regulatory agency. In the event that a contaminant is identified in a waste site for which there is no collection criteria established in the Purgewater Agreement, a site-specific limit shall be established in the associated Waste Control Plan.

Decontamination fluids and other liquid materials accumulation from operations conducted outside the boundaries of a waste site or suspect waste site will be managed as non-contaminated unless the area under investigation is suspect as described in Section 4.1 of this strategy. If not a suspect area, these wastes may be disposed to the ground at or near the point of excavation. These waste disposal locations will be documented.

6.5 Treatability Waste

Waste resulting from treatability tests performed in conjunction with CERCLA or RCRA past-practice remediation site activities shall be managed as IDW. Waste will be managed as described above for on-site or off-site activities, contaminants present, and specific waste form, i.e. solid or liquid as identified in the treatability test plan as approved by the Lead Regulatory Agency.

6.6 Miscellaneous Solid Waste

All miscellaneous solid waste (MSW) that is generated as a result of site characterization and environmental investigation efforts (e.g., rags, personnel protective equipment) and that has contacted potentially contaminated materials (contact MSW) will be segregated from soils, slurries, and liquids to the extent practicable. Contact MSW will be collected upon generation and managed in accordance with Section 7.0 of this strategy.

Waste management determinations for contact MSW will be based on results obtained from characterization activities. Where analytical data indicate that the dangerous and radioactive constituents are below established release criteria, contact MSW will be disposed of at an appropriate facility. If analyses indicate that contaminant limits are exceeded, the contact MSW will be disposed of as IDW at ERDF or other appropriate facility.

All MSW generated that has not contacted waste material (non-contact MSW) will be segregated from all other material generated at the unit and disposed in an appropriate facility.

7.0 CONTAINER MANAGEMENT

7.1 Storage Location

IDW will be stored at the waste site or at another storage location specified in the approved Waste Control Plan until analytical data is evaluated for proper waste designation. While in storage, IDW will be managed in accordance with the approved plan. Most contaminated IDW will be disposed at ERDF if it meets the waste acceptance criteria. However, based upon field screening instrumentation and/or analytical data, it may be determined that it is appropriate to manage certain types of IDW at another approved facility, rather than at the ERDF.

IDW that cannot be treated to meet the waste acceptance criteria for the approved disposal facility will remain on the waste site or in a centralized storage area pending disposal at an appropriate facility. If, after characterization of the waste is completed, the waste must be stored for longer than 6 months, RL will obtain concurrence from the Lead Regulatory Agency on the current storage, treatment and disposal options and schedule for disposition of the waste.

7.2 Substantive Container Management Requirements

The federal and state regulatory requirements for management of containers are established at 40 CFR 264 Subpart I, WAC 173-303-630 and WAC 173-303-160. All containers of IDW will be managed in accordance with the applicable substantive federal and/or state requirements including labels which define the known the major risks, dangerous waste codes, and if awaiting analysis, wording which states "waste pending analysis" with the date of initial sampling.

7.3 Release Reporting

Reporting of any release of IDW shall be done in accordance with applicable provisions of WAC 173-303-145 and 40 CFR 302.

8.0 DISPOSAL OF IDW

Contaminated IDW that meets that ERDF waste acceptance criteria and, if applicable, meets the land disposal restriction standards for underlying hazardous constituents will be disposed of to ERDF. Soil IDW containing hazardous and radiological constituents below dangerous waste designation limits and the Model Toxics Control Act (MTCA) soil cleanup standards, and that have been released from a radiological perspective, will be returned to the ground at or near the point of excavation. The IDW will be stored in accordance with the approved Waste Control Plan until disposal is authorized in an appropriate decision document (e.g., work plan, sampling and analysis plan, treatability test plan, action memorandum, record of decision, or other document approved by the lead regulatory agency). Upon receiving the analytical results and profiling the waste, waste resulting from that action will be treated, stored and/or disposed as appropriate. Liquids will be managed as described in Sections 6.2 or 6.4, as applicable. Miscellaneous material that does not require disposal in ERDF will be disposed in an appropriate solid waste disposal facility.

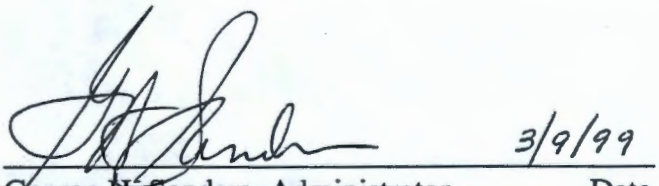
9.0 SPECIAL CIRCUMSTANCES

The RCRA and CERCLA Project Managers designated by the respective Tri-Party participants (DOE-RL, Ecology and EPA) shall have authority to negotiate IDW criteria not specified in this strategy. Additionally, the Project Managers may, on a case-by-case basis, negotiate exceptions to requirements identified in this strategy. Any such exceptions shall require the approval, in writing, from the Project Manager of the Lead Regulatory Agency. If management of IDW is not conducted in accordance with this strategy and agreement on special management actions cannot be reached by the project managers, the IDW will be managed in accordance with Chapter 173-303 WAC until the issue is resolved.

Concurrence with language in RL or Contractor IDW procedures that are not addressed in this strategy will be the responsibility of the individual project managers during development of each unit's Waste Control Plan and based upon site-specific conditions.

The provisions of this strategy shall be periodically reviewed by the signatory parties or their designees for purpose of amending the document if it is deemed necessary. If there is a significant need by any of the signatory parties for revision at any time, the strategy may be revised and approved by them.

Signature sheet for the *Environmental Restoration Program Strategy for Management of Investigation Derived Waste.*



3/9/99

George H. Sanders, Administrator Date
Hanford Tri-Party Agreement
U.S. Department of Energy
Richland Operations Office

Signature sheet for the *Environmental Restoration Program Strategy for Management of Investigation Derived Waste.*

Michael C. Wilson 3/15/99

Michael Wilson Date
Program Manager, Nuclear and Mixed Waste Program
Washington State Department of Ecology

Signature sheet for the *Environmental Restoration Program Strategy for Management of Investigation Derived Waste.*

Douglas R. Sherwood 3/17/99

Douglas R. Sherwood Date
Hanford Project Manager
U.S. Environmental Protection Agency
Hanford Project Office