

DRAFT DOE WASTE PROFILE SHEET INSTRUCTIONS

General Instructions

The Waste Profile Sheet is the primary means by which Hanford/NTS Treatment, Storage and Disposal (TSD) units obtain data about each waste stream. These data are required to ensure that a waste stream can be managed in compliance with the TSD unit's permit conditions, safety basis and operational requirements. The profile must provide a clear picture of the waste stream's radiological and physical/chemical characteristics, its regulatory classification, and packaging methods to be used. Any relevant background information, documents, and analytical data should be referenced or attached. Attached materials should be listed in Section F.3. Information provided can be concise as long as it is complete.

The term "waste acceptance criteria" as used in these instructions means the current version of either *Hanford Site Solid Waste Acceptance Criteria* (HNF-EP-0063) or *Nevada Test Site Waste Acceptance Criteria* (DOE/NV-325), as applicable. Because this Profile Sheet may be used by generators requesting services at either Hanford or NTS or both, certain of the state-specific requirements may not apply to all waste streams.

Please contact your Waste Management Representative (WMR) if you have any questions concerning this form and how to complete it.

Profile Approval

After review and resolution of any questions about the Waste Profile Sheet, the Hanford/NTS acceptance organization will approve the waste stream. A Profile Approval Sheet will be attached to the profile. The approval sheet will include the following information:

- A Profile Number will be assigned to the waste stream. This number will be your primary means of identifying the waste you subsequently ship to Hanford/NTS TSD units.
- Specific conditions for acceptance of waste under this profile may be identified.
- The initial verification frequency for the waste stream will be identified.

Profiles are valid for a period of one year. At any time during the year, the profile may be amended as needed. Profiles must be changed if the generating process or characteristics of the waste changes. At the end of the year, you can recertify your profile if the waste stream has not changed, amend the profile if there are some changes, or complete a new Waste Profile Sheet.

Highly Variable Wastes

It is desirable for the profile to fully describe a waste stream. However, some waste streams, such as certain laboratory process wastes, may be highly variable in nature. Waste codes, physical/chemical characteristics, and radiological characteristics may vary substantially from one container to another. In the case of highly variable waste streams, the profile may not fully describe the characteristics of each waste container.

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In these cases, the profile should provide general information on the characterization strategies used for the waste stream. Sections C.1, C.9, D.2, and D.5 request information on highly variable waste streams. Generators can check the applicable boxes and describe the expected bounding values or ranges of values and the characterization strategies to be used on the waste stream in lieu of more specific data. If procedures, sampling and analysis plans, or similar documents are available for the waste stream, these should be referenced and attached. These data will need to be supplemented with container-specific information when the waste shipment paperwork is submitted. Any additional data required with the shipment paperwork will be identified as a condition of the profile sheet on the Profile Approval Sheet.

Special Instructions for TRU Waste

Transuranic (TRU) waste requires some additional information on the Waste Profile Sheet for eventual certification at the Waste Isolation Pilot Plant (WIPP). The detailed instructions below identify extra information needed for TRU in Sections A.3, B.2, B.3, and F.3.

Detailed Instructions

Answers must be provided for all items. The Waste Profile Sheet is provided as a Microsoft Word template, which is the preferred format for submittal. Generators who cannot use this format should contact their WMR for alternate formats or assistance in completing the form. If additional space is needed, indicate on the form that additional information is attached, and attach the information to the Waste Profile Sheet.

The following are itemized description of the information required on the Waste Profile Sheet.

A.1 **Generator company:** Enter the name of the company responsible for the waste.

A.2 **Address:** Enter the address of the facility generating the waste. For Hanford site generators, enter "Hanford Site".

A.3 **Generator facility:** Enter the specific facility generating the waste. For Hanford site generators, enter the area and building number. For TRU waste, include the specific rooms (if generated from individual rooms) generating the waste.

A.4 **Primary Technical Contact:** Enter the name, email address, phone number and FAX number of the primary technical contact at the waste generator's facility.

A.5 **DOE Contact:** Enter the name, email address, phone number and FAX number of the responsible DOE contact for the waste generator's facility.

A.6 **Waste Certification Official:** Enter the name, email address, phone number and FAX number of the generator's waste certification official that certifies the waste.

A.7 **EPA Identification Number:** Enter the waste generator's EPA Identification Number for waste streams involve hazardous materials.

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B.1 Waste stream name: Write the common name used by the generator to describe this waste stream. For TRU waste, include any facility-specific identifiers (e.g., RHZ-213-, etc).

B.2 Waste stream number: For NTS, unique two-part, 13-character alphanumeric code. First four characters are alphanumeric code for the facility found in NTS WAC Appendix C, page C-4. The second part is a generator determined nine-character alphanumeric code for the waste stream (e.g., LITN000000001, where LITN is the facility code for IT Corporation and 000000001 is the IT assigned waste stream code). Include the Profile revision number and date.

B.3 Waste generating process description: Describe the process generating the waste in sufficient detail to provide context for evaluation of data provided elsewhere on the profile sheet. **It is very important to fully describe the process that generated the waste. Failure to adequately describe the generating process can lead to delays in approval of profile sheets.** If there is a separate document that describes the generating process, it is acceptable to provide a very brief description of the process and reference the document. Flow charts and other materials may be attached for clarity. For TRU waste, indicate whether the waste is defense or non-defense TRU waste.

B.4 Waste management services requested: Mark the specific services requested. Mark the "treatment" box only if the waste is being sent for funded treatment during the current fiscal year (i.e., do not check this box if the waste is to be placed into storage for eventual treatment and disposal in future fiscal years).

B.5 Radiological classification: Check all of the applicable boxes for the waste stream. Since low-level and TRU waste must be segregated, only one of these two boxes may be checked. The LLW, TRU, Category 1, Category 3, exceeds Category 3, and NRC Class C calculations to make these determinations are described in the waste acceptance criteria. Accountable nuclear material is defined in the waste acceptance criteria. Classified waste is waste containing material that is classified for security reasons.

B.6 Estimated volume: Provide an estimate of the projected annual volume for ongoing streams, or total volume for one-time only use of this waste stream in cubic meters.

B.7 Estimated frequency of shipments: Describe the anticipated shipment frequency (e.g., monthly, quarterly). If the waste will only be generated and shipped once, enter "one-time".

C.1 Physical/chemical process knowledge: Check the applicable boxes and provide the additional detail requested. If process knowledge is a major source of the chemical characterization of the waste stream, it is important to thoroughly describe that knowledge. Reference any applicable documents, procedures, historical data, etc. Process knowledge that is used to make Underlying Hazardous Constituent determinations for the Land Disposal Restrictions of 40 CFR 268.48 must be described here. If the waste is highly variable, check the box and describe the characterization strategy or methods used for the waste stream.

C.2 Physical/chemical analysis. Check the appropriate box(es) describing the type of sampling and analysis performed to characterize the waste. If field screening or laboratory

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analysis data is used, describe in detail the sampling and analytical methods used and attach a copy of the analytical results from a representative sample or sample set.

C.3 Regulatory status: Check all of the boxes that apply, as defined by the referenced regulations. When asked for waste codes, type all waste codes that could apply to the waste stream. Waste codes that may apply to some containers but not others should be entered in parentheses.

C.4 Land disposal restrictions: Mark the box or boxes that describe the status of the waste with respect to the federal land disposal restrictions of 40 CFR Part 268. If the waste has been treated to meet any federal LDR requirements, describe the methods used to meet the LDR requirements. You may also provide an example LDR Notification/Certification form for the waste.

C.5 Waste characteristics: Check all boxes that may apply to the waste stream. The meaning of the boxes are those characteristics described in WAC 173-303-090. The pH given for solids should be that of a 50-50 mixture of the solid and water, by the test method given in WAC 173-303-110.

C.6 Physical state: Indicate the physical state of the waste by marking the applicable box or boxes.

C.7 Liquid form: If the waste contains liquids, describe the nature of the liquids by checking the appropriate box or boxes.

C.8 Other contents: Check all applicable boxes for other components of the waste listed.

C.9 Waste Composition: List the typical chemical constituents and waste components comprising the waste and the typical range in weight percent of the waste matrix (as generated). Do not include the contribution of waste packaging materials, such as liners, shielding, sorbents added for packaging, void fillers, blocking and bracing materials or rigging. For inert components in LLW, general terms may be entered (e.g., soil, building rubble, nonhazardous metal debris, nonhazardous compactable debris, etc).

For chemical compounds, enter the chemical name and the CAS number for the constituent. Do not use trade names. All chemical compounds that are a substantial portion of the waste matrix (greater than 1%) must be reported. In addition all chemical compounds that cause (or contribute to) a waste being regulated must be entered in this section. Trace chemical compounds (i.e., less than 1%) that do not cause a waste to be regulated do not need to be reported.

The following chemical constituents must be entered:

- Chemical constituents that cause the waste to be a listed waste.
- Chemical constituents that cause or contribute to the waste exhibiting a RCRA characteristic (i.e., ignitable, corrosive, reactive constituents and toxicity characteristic constituents).

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- Chemical constituents that contribute to a waste meeting the Washington State toxicity or persistence criteria.
- PCBs in regulated concentrations (either under 40 CFR Part 761 or 268, or under WAC 173-303).
- Underlying hazardous constituents and any other constituents that have concentration-based treatment standards under 40 CFR Part 268.

D.1 Radiological process knowledge: Describe the source or sources of radiological contamination in this waste stream (e.g., waste is contaminated with residues of high-level tank waste from processing of spent fuels). Describe the available knowledge used to determine the major radionuclides present. If there are documents available that describe the radiological process knowledge of this waste, they may be referenced

D.2 Radiological characterization methods: Check all of the applicable boxes. For each box checked, provide a brief but specific description of the methods used. Where multiple characterization methods are checked (e.g., nondestructive assay and scaling factors), briefly describe how these methods are used together to establish the radiological inventory of the waste.

D.3 External dose rates: Provide surface, 30-cm and 1-meter readings or projected dose rates.

D.4 Fissile material: If waste contains enriched uranium (^{235}U wt% ≥ 0.90), ^{233}U , ^{239}Pu , ^{241}Pu , $^{242\text{m}}\text{Am}$, ^{243}Cm , ^{245}Cm , ^{247}Cm , ^{249}Cf , or ^{251}Cf ; check those that apply for compliance with the criticality safety criteria of the NTSWAC and provide requested information.

Note: Natural and depleted uranium should not be reported here, regardless of quantity, as exempted by waste acceptance criteria.

D.5 Reportable radionuclides: Report the major radionuclides anticipated in the waste stream. Reportable radionuclides are those isotopes determined to be major radionuclides as described in the waste acceptance criteria. Report the anticipated concentration of each reportable radionuclide in the packaged waste (i.e., assuming internal container volume as specified in the waste acceptance criteria in Ci/m^3). In cases where the radionuclide concentration is variable, report the anticipated range of concentration. If the concentration is highly variable, check the box indicating that the isotopic composition is highly variable.

E.1 Packaging used: Check the applicable boxes and provide the additional detail requested about the sizes and types of the containers. Use external dimensions when identifying the container size. Typical container sizes can be provided as long as the maximum size is indicated in section E.2. Provide detail on venting, shielding and sorbent use. Provide detail on waste radiologically stabilized by the generator to meet waste acceptance criteria.

E.2 Maximum container size: Enter the maximum external dimensions of the container in meters. For rectangular packages, enter length, width, and height of the waste package in that order. For cylindrical packages (e.g. drums) enter diameter and length in that order.

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E.3 **Maximum container gross weight:** List the maximum anticipated container gross weight in kg. Mark this section N/A for bulk waste.

E.4 **Linings and/or protective coatings:** Describe the linings and/or protective coatings used for contamination control and for compatibility of the container with the waste. Mark this section N/A for bulk waste.

E.5 **Package Criteria:** Check "Yes" box if waste meets package criteria. List documentation that controls the package compliance.

E.6 **ALARA and Special Handling Instructions:** List any special handling procedures or ALARA documentation necessary for the waste.

F.1 **Comments:** This section may be used to provide any additional information about the waste.

F.2 **Exception request to waste acceptance criteria:** Complete this section if the waste stream requires an exception to any of the waste acceptance criteria.

F.3 **Attachments:** Number and list the attachments provided with this Waste Profile Sheet.

For TRU waste, the procedures used by the facility for packaging and inventorying the waste are required as an attachment.

G. **Certification Signature:** An authorized representative of the generator must sign and date the certification statement regarding the waste stream and the information provided on the form and attachments.