

Identifier: **EP-ERSS-SOP-5022**
(was SOP-01.06 and
SOP-01.10)

Revision: **0.0**



Effective Date: 7/31/07

Environmental Programs-Environment & Remediation Support Services (ERSS) Division

Standard Operating Procedure

for **CHARACTERIZATION AND MANAGEMENT OF ENVIRONMENTAL RESTORATION (ER) PROJECT WASTE**

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1.0 PURPOSE, SCOPE, AND TRAINING

This standard operating procedure (SOP) delineates the process for characterizing and managing waste generated during corrective action activities conducted by the Environmental Programs-Environment & Remediation Support Services Division (EP-ERSS or the Project) at the Los Alamos National Laboratory (LANL or Laboratory).

This procedure is limited to the planning, implementation, and management activities for all wastes generated by the Project, and the preparation, approval, and retention of all required EP-ERSS and Laboratory documents associated with EP-ERSS waste generation, management, and disposal.

Training to this procedure shall consist of reading the procedure and documenting the training in accordance with EP-DIR-SOP-2011.R0.0 - Personnel Training and Qualification.

This SOP shall be used in conjunction with the most current revision of Laboratory Performance Requirements (LPRs), Laboratory Implementation Requirements (LIRs), Laboratory Implementation Guidance (LIGs), and Implementation Procedures (IMPs) associated with waste management activities. These LIRs, LIGs, and IMP include:

- LIR 404-00-02, General Waste Management Requirements
- LIR 404-00-03, Hazardous and Mixed Waste Requirements
- LIR 404-00-04, Managing Solid Waste
- LIR 404-00-05, Managing Radioactive Waste
- LIR 404-00-06, Managing Polychlorinated Biphenyls
- LIR 405-10-01, Packaging and Transportation
- LIR 402-700-01, Occupational Radiation Protection Requirements
- LIG 404-00-02, Acceptable Knowledge Guidance
- LIG 404-00-03, Waste Profile Form Guidance
- LIG 404-00-04, Chemical Waste Disposal Request Guidance
- LIG 404-00-05, Preparing the Waste With No Disposal Path Approval Package
- IMP 313.2, Roles, Responsibilities, Authorities, and Accountabilities

2.0 DEFINITIONS

NOTE: A glossary of definitions is located on the EP-ERSS internal homepage at <http://erinternal.lanl.gov/WritingGuide.shtml> . Waste management-specific definitions not included in the glossary are provided in this section.

- 2.1 **Acceptable knowledge (AK)**—A waste stream characterization method that can be used to meet all or part of the waste analysis requirements appropriate for the waste media. The method may include documented process knowledge, supplemental waste analysis data, and/or facility records of analysis. (LIG 404-00-02)
- 2.2 **Accumulation date**—The date a hazardous waste is first generated, or the date that hazardous waste collected in a satellite accumulation area exceeds: (a) 55 gallons of hazardous waste, or (b) 1 kilogram of acute hazardous waste, or (c) 100 kilograms of any residue or contaminated

soil, waste, or other debris resulting from the cleanup of a spill, into or onto any land or water of any acute hazardous waste.

- 2.3 **Acute hazardous waste**—Environmental Protection Agency (EPA) hazardous waste number designated with an (H) in the "hazard code" column of Title 40, Code of Federal Regulations (40 CFR) § 261.31-33.
- 2.4 **Area of contamination (AOC)**—A certain discrete area of generally dispersed contamination which is considered to be equivalent to a RCRA unit. Because an AOC is equated to a RCRA unit, consolidation or treatment within the AOC does not create a new point of hazardous waste generation for purposes of RCRA (EPA Office of Solid Waste and Emergency Response, Publication 530-F-98-026).
- Note:** The acronym "AOC" is also used for Area of Concern; see Project Glossary for definition.
- 2.5 **By-product material**—Radioactive material resulting from producing or processing nuclear materials.
- 2.6 **Committed dose equivalent**—The predicted dose equivalent to a tissue or organ over a 50-year period after an intake of a radionuclide into the body. It does not include dose contributions from radiation sources external to the body. Committed dose equivalent is expressed in units of rem (or sievert). (DOE Order 5400.5)
- 2.7 **Committed effective dose equivalent (CEDE)**—The sum of the *committed dose equivalents* to various organs or tissues in the body from radioactive material taken into the body, each multiplied by the tissue-specific weighting factor. Committed effective dose equivalent is expressed in units of rem (or sievert). (DOE Order 5400.5)
- 2.8 **Construction and demolition debris**—Materials generally considered to be not water soluble and non-hazardous in nature, including, but not limited to, steel, glass, brick, concrete, asphalt roofing materials, pipe, gypsum wallboard, lumber, and other materials discarded during the construction or destruction of a structure or project. Construction and demolition debris also includes rocks, soil, tree remains, trees, and other vegetative matter that normally results from land clearing. (Title 20 of the New Mexico Administrative Code, Chapter 9, Part 1, Section 105.T (20.9.1.105.T))
- 2.9 **Environmental Media**—Borehole cuttings and core, soil, rock, sediments, surface water, and groundwater that are displaced during corrective action.
- 2.10 **Hazardous Constituent (hazardous waste constituent)**— (1) a constituent that causes the administrative authority to list the hazardous waste in 40 CFR Part 261, Subpart D, or a constituent listed in Table 1 of 40 CFR Part 261.24; (2) According to the March 1, 2005, Compliance Order of Consent (Consent Order), any constituent identified in Appendix VIII of Part 261, Title 40 CFR (incorporated by 20.4.1.200 New Mexico Administrative Code [NMAC] or any constituent identified in 40 CFR 264, Appendix IX (incorporated by 20.4.1.500 NMAC).
- 2.11 **Hazardous waste**—1) solid waste (as defined in 40 CFR 261.2 and incorporated by 20.4.1.200 NMAC) that is not excluded from regulation as a hazardous waste and is a listed hazardous waste (as provided in 40 CFR Part 261, Subpart D, incorporated by 20.4.1.200 NMAC) or a waste that exhibits any of the characteristics of hazardous waste (i.e., ignitability, corrosivity, reactivity, or toxicity, as provided in 40 CFR Part 261, Subpart D, incorporated by 20.4.1.200 NMAC; 2) the Consent Order defines hazardous waste as any solid waste or combination of solid wastes which because of quantity, concentration, or physical, chemical, or infectious characteristics meets the description set forth in New Mexico Statutes Annotated 1978, 74-4-3(K) [NMHWA], and is listed

as a hazardous waste or exhibits a hazardous waste characteristic under 40 CFR Part 261, Subpart D, incorporated by 20.4.1.200 NMAC. The statutory requirements for hazardous waste management are set forth in RCRA Subtitle C, incorporated by the NMHWA.

- 2.12 **High-level waste**—A highly radioactive waste material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations, and other highly radioactive material that is determined, consistent with existing law, to require permanent isolation. (DOE Order 435.1 and LIR 404-00-05)
- 2.13 **Industrial Waste**—Solid waste generated by manufacturing or industrial processes that is not hazardous waste regulated under Subtitle C of RCRA.
- 2.14 **Investigation-derived waste (IDW)**—Solid or hazardous waste that was generated as a result of investigation and/or characterization corrective action activities. IDW may include drilling muds, cuttings and purge water from test pit and well installation; purge water, soil, and other materials from collection of samples; residues from testing of treatment technologies and pump and treat systems; contaminated PPE; and solutions (aqueous or otherwise) used to decontaminate non-disposable PPE (EPA Office of Solid Waste and Emergency Response, Publication 9345.3-03FS, January 1992).
- 2.15 **Low-level waste**—Radioactive waste that is **not** classified as high-level waste, spent nuclear fuel, transuranic (TRU) waste, by-product material (as defined in Section 11e.(c) of the Atomic Energy Act of 1954, as amended), or naturally occurring and accelerator-produced radioactive material. (DOE Order 435.1 and LIR 404-00-05)
- 2.16 **Mixed waste**—Any waste containing both hazardous waste and source, special nuclear, or by-product materials subject to the Atomic Energy Act of 1954. (LIR 404.00.03)
- 2.17 **Naturally occurring and accelerator-produced radioactive material**— Radioactive materials that are considered either naturally occurring and are **not** source, special nuclear, or by-product material or are produced in a charged particle accelerator.
- 2.18 **Non-radioactive waste**—Waste that meets the ISD 121-1.0, Table 14-2 release criteria for both surface and volume contamination.
- 2.19 **Polychlorinated biphenyl (PCB)**—Any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contains such substance. (40 CFR §761.3)
- 2.20 **PCB remediation waste**—Waste containing PCBs as a result of a spill, release, or other unauthorized disposal, at the following concentrations:
- materials disposed of prior to April 18, 1978, that are currently at concentrations greater than or equal to 50 parts per million (ppm) PCBs, regardless of the concentration of the original spill;
 - materials that are currently at any volume or concentration where the original source was greater than or equal to 500 ppm PCBs beginning on April 18, 1978, or greater than or equal to 50 ppm beginning on July 2, 1979; and
 - materials that are currently at any concentration if the PCBs are spilled or released from a source not authorized for use under 40 CFR Part 761. (40 CFR § 761.3)

PCB remediation waste means soil, rags, and other debris generated as a result of any PCB spill cleanup, including, but not limited to

- Environmental media containing PCBs, such as soil and gravel; dredged materials (e.g., sediments); settled sediment fines; and aqueous decantate from sediment.
- Sewage sludge containing less than 50 ppm PCBs and that is not a use regulated by 40 CFR Parts 257, 258, and 503;
- PCB sewage sludge;
- Commercial or industrial sludge contaminated as the result of a spill of PCBs including sludges located in or removed from any pollution control device; or aqueous decantate from an industrial sludge;
- Building and other man-made structures (such as concrete floors, wood floors, or walls contaminated with a leaking PCB or PCB-contaminated transformer), porous surfaces, and non-porous surfaces.

2.21 **Radioactive waste**—Solid, liquid, or containerized gaseous material that contains radionuclides regulated under the Atomic Energy Act of 1954, as amended, and is of negligible economic value, considering costs of recovery. Radioactive waste has radioactive surface contamination or volume contamination in excess of the ISD 121-1.0 Table 14-2 release criteria.

2.22 **Radiological controlled area (RCA)**—Any area to which access is managed to protect individuals from exposure to radiation or radioactive materials.

Note: For RCAs controlled for surface contamination, a reasonable potential shall exist for contamination to occur at levels in excess of those specified ISD 121-1.0 Table 14-2.

Note: For RCAs controlled for volume contamination, a reasonable potential shall exist for the presence of volume-contaminated materials that are not individually labeled.

2.23 **Radiation Control Technician (RCT)**— RCTs implement the Laboratory's Radiation Control Program by performing Operational Health Physics coverage. The RCT also verifies that waste packages meet DOT shipping requirements for external contamination, contact, and one-meter dose requirements, through screening and measurements.

2.24 **Recycled**—A material that is used, reused, or reclaimed. (LIR 404-00-03)

2.25 **Reclaimed**—A material that is processed to recover usable products or is regenerated. (LIR 404-00-03)

2.26 **Satellite accumulation area**—A designated space for accumulating hazardous and mixed waste where the volume of waste shall not exceed 55 gallons or the volume of acutely hazardous/mixed waste shall not exceed 1 kilogram. (40 CFR § 262.34, 20.4.1.300, and LIR 404-00-03)

2.27 **Segregate**—To separate wastes that can be managed together based on similar characteristics and ultimate handling approach (such as radioactively contaminated vs. non-radioactive waste).

2.28 **Site-Specific Health and Safety Plan (SSHASP)**—A health and safety plan that is specific to a site or ER-related field activity that has been approved by an ER health and safety representative. This document contains information specific to the project, including scope of work, relevant history, descriptions of hazards by activity associated with the project site(s), and techniques for exposure mitigation (e.g., personal protective equipment [PPE]) and hazard mitigation.

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2.29 **Solid waste**—Any garbage; refuse; sludge from a waste treatment plant, water-supply treatment plant, or air-pollution-control facility; and other discarded material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities. (20.9.1.105.BV and LIR 404-0004)

Note: Refer to the glossary of definitions (see **Solid Waste**) located on the ER Project internal homepage at <http://erinternal.lanl.gov/WritingGuide.shtml>. for specific exclusions regarding source, special nuclear, and by-product material from the definition of solid waste. **Note:** LIR 404-00-04 contains specific requirements for managing solid waste.

2.30 **Source material**—Material containing any combination of uranium or thorium in any physical or chemical form or ores containing 0.05% or more uranium, thorium, or both.

Note: “Source material” excludes “special nuclear material.”

2.31 **Special nuclear material**—Plutonium or uranium enriched to a higher-than -natural assay. *Special nuclear material* includes plutonium-239, uranium 233, uranium containing more than the natural abundance of uranium-235, or any material artificially enriched by one of these isotopes.

2.32 **Special waste**—Solid waste identified in the New Mexico Solid Waste Management Regulations (20.9.1.105. BZ) as requiring unique handling, transportation, or disposal to assure protection of the environment and the public health, welfare, and safety. Special waste includes treated formerly characteristic hazardous waste, asbestos waste, ash, infectious waste, sludge, industrial solid waste, spill of a commercial chemical product, dry chemicals that become characteristic hazardous waste when wetted, and petroleum-contaminated soil.

Note: LIR 404-00-04 contains specific requirements for managing special waste.

2.33 Spent nuclear fuel—Fuel that has been “burned” (irradiated) in a nuclear power plant’s reactor to the point where it no longer contributes efficiently to the nuclear chain reaction.

Note: Spent fuel is hot and highly radioactive.

2.34 **Surface contamination**—Radioactive contamination present on the surface of material in excess of the ISD 121-1.0 Table 14-2.

2.35 **Transuranic waste**—*Radioactive waste* containing more than 100 nanocuries (3700 becquerels) of alpha-emitting transuranic isotopes per gram of waste, with half-lives greater than 20 years, except for (1) high-level radioactive waste; (2) waste that the Secretary of Energy has determined, with the concurrence of the Administrator of the EPA, does not need the degree of isolation required by 40 CFR Part 191 disposal regulations; or (3) waste that the Nuclear Regulatory Commission has approved for disposal on a case-by-case basis in accordance with 10 CFR Part 61. (DOE Order 435.1 and LIR 404-00-05)

2.36 **Use or reuse**—A material that is either employed as an ingredient in an industrial process to make a product or employed in a particular function or application as an effective substitute for a commercial product. (LIR 404-0003.a)

2.37 **Volume contamination**—Radioactive contamination dispersed throughout a matrix in excess of the appropriate release criteria. Examples of volume contamination are contaminated liquids and soils, materials activated by irradiation (e.g., beams of charged particles), and smelted metals (i.e., where the smelting process incorporates radioactive material into the matrix of the metal).

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2.38 **Waste generator**—Any person, by site, whose act or process produces hazardous waste or whose act first causes a hazardous waste to become subject to regulation. (40 CFR §260.10 and Title 20 of the New Mexico Administrative Code, Chapter 4, Part 1, Section 100 (20.4.1.100 NMAC) and LIR 404-00-03)

Note: The definition above is specific to hazardous waste because it is defined in the hazardous waste management regulations. In this SOP “any person” means EP-ERSS personnel. The specific responsibilities of a waste generator for any other type of waste are provided in LIR 404-00-03.

2.39 **Waste Management Coordinator (WMC)**—The person responsible for coordinating waste-management activities on behalf of waste generators, line managers, facility managers, field project leaders, the Waste Management Groups, and other Laboratory organizations.

Note: The specific functions of a WMC are provided in LIR 404-00-02.3, General Waste Management Requirements.

2.40 **Waste management record**—A complete package of documents constituting the written record for a waste stream.

2.41 **Waste Management Technician-Field (FWMT)**— Subcontractor or LANL employee who is authorized per ‘EP-ERSS Field Waste Management Technician Qualification Standard, CT-DTS-ERSS-TRN-QS-001’; and has been delegated various aspects of project waste generation and management by an EP-ERSS Project Leader. The FWMT is typically accountable for on-site waste management and for the development and/or processing of required waste related documents, forms and records.

2.42 **Waste staging**—The accumulation of radioactive waste to facilitate transportation, transfer, treatment and/or disposal. (LIR 404-00-05 and LIG404-00-04)

2.43 **Waste stream**—A group of wastes from one site than can be managed together because of the similar characteristics and ultimate handling approach.

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3.0 BACKGROUND AND PRECAUTIONS

The Compliance Order on Consent (Consent Order) is an enforcement document signed by the NMED, the New Mexico Attorney General, DOE, and the University of California on March 1, 2005 that prescribes the requirements for corrective action at the Laboratory. The Consent Order contains specific requirements for management of IDW generated by the Laboratory in the course of corrective action, investigation and remediation, which are typically implemented through work plans that are prepared by the Laboratory and approved by the NMED. Other waste-generating activities conducted by EP-ERSS include those driven by the Hazardous Waste Facility Permit, such as RCRA closures, and certain site preparation and decontamination & decommissioning activities that may need to precede Consent Order-driven corrective actions. In all cases, the requirements of this SOP apply to EP-ERSS waste-generating activities.

Wastes generated through the EP-ERSS program include hazardous waste, mixed hazardous waste, New Mexico special waste, TSCA waste, low level radioactive waste, TRU waste, industrial and municipal solid waste. Environmental media (e.g., soil, tuff, groundwater) and other IDW may fall into any of those regulatory classifications.

Waste management activities are conducted using an Integrated Work Package (IWP). This procedure is implemented in the field through a site-specific work plan or Integrated Work Document/Site-Specific Health and Safety Plan (IWD/SSHASP). This procedure shall be used in conjunction with the appropriate Laboratory and EP-ERSS waste management documents.

Documentation and characterization requirements beyond those described in this procedure may exist for the Laboratory's treatment, storage, and disposal (TSD) facilities, or off-site TSD facilities.

Waste management assistance should be obtained by contacting a waste management coordinator. Questions concerning the applicability of the requirements of this SOP, should be directed to the Environmental Protection Division–Water Quality and RCRA (ENV-RCRA) Group.

4.0 EQUIPMENT AND TOOLS

<ul style="list-style-type: none"> • Waste Management Area signage (e.g., "Satellite Accumulation Area" (SAA), "less-than-90-day accumulation area", "New Mexico Special Waste Storage Area", "Universal Waste Storage Area", or "Radioactive Waste Area", as appropriate); • Labels; • Item identification numbers; • Eye wash, shower, or water supply source; • Spill control equipment; • Fire extinguisher; 	<ul style="list-style-type: none"> • Miscellaneous tools, as needed; • Scale, or other equipment to weigh containers; • Barricade tape or rope; • Waste containers that meet Department of Transportation (DOT) shipping requirements for the waste; • Pallets; • Personal protective equipment, including gloves, eye protection, protective coveralls, respirator, etc.; and • Decontamination equipment.
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5.0 REQUIRED DOCUMENTS AND FORMS

5.1 Descriptions of commonly used forms are given below. These forms are required to document waste management activities.

5.1.1 Waste Characterization Strategy Form (WCSF). The WCSF is a planning and implementation document that is required to be prepared before any waste-generating activity is undertaken by

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EP-ERSS. The WCSF documents site history, planned field activities, and the characterization approach for each waste stream expected to be managed. For Consent Order driven work, the WCSF is used to implement the IDW requirements of the NMED-approved work plan. The Laboratory's waste operations group also uses the information provided on this form to support regulatory classifications of EP-ERSS-generated wastes.

- 5.1.2 Waste Profile Form (WPF). A form used by the Laboratory's waste operations group to document the characterization of any solid, hazardous, radioactive, or mixed waste.
- 5.1.3 Chemical Waste Disposal Request (CWDR) Form. A form used by the Laboratory's waste operations group to describe packages of waste that require collection and management by a permitted facility, relative to a specific WPF.
- 5.1.4 Land Disposal Restriction (LDR) and Underlying Hazardous Constituents Notification. A form used by the Laboratory's waste operations group to identify applicable LDR notification requirements and list underlying hazardous constituents present in characteristic hazardous waste.

Note: This form shall accompany documentation required to ship hazardous waste. The form can be downloaded from the waste management coordinator home page associated with the Laboratory's waste operations group.

6.0 STEP-BY-STEP PROCESS DESCRIPTION

6.1 General Process Summary		
EP-ERSS Waste Generators (WG), Field Waste Management Technicians (FWMT), EP-ERSS Waste Management Coordinators (WMC), EP-ERSS Project Leaders (PL), and the ENV-RCRA Representative	6.1.1	Identify project, gather historical information, and develop work plan, closure plan, or other applicable work document for the anticipated waste-generating activities.
	6.1.2	Identify all anticipated wastes that will be generated during the project including wastes with no disposal path, wastes which may be candidates for a "contained in" determination (see Section 6.19), wastes which can be recycled or reused, environmental media which may be suitable for land application or re-use, wastes that will be characterized using acceptable knowledge (AK) or wastes that may be treated in a <90 day area. Identify whether an AOC designation may be appropriate for the area(s) where waste will be managed on site.
	6.1.3	Upon approval of the work plan, closure plan, or other work document draft a Waste Characterization Strategy Form (WCSF) and submit for peer review. The WCSF should be consistent with waste management identified in the NMED-approved work plan, or closure plan (for Consent Order or Hazardous Waste Facility Permit-driven work, respectively), or other approved work document.
	6.1.4	Identify any Waste Profile Forms (WPFs) from previous projects at the same site which may be applicable and are active or can be reactivated.
	6.1.5	Generate WPFs for wastes where AK will be used for characterization. If possible, use results of in-situ characterization sampling as a basis for AK, prior to waste generation in order to characterize in a timely manner.

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- 6.1.6 Perform work, generate wastes, sample and submit for analysis (if characterization cannot be completed based on AK alone) and manage wastes conservatively until a thorough characterization can be completed.
- 6.1.7 Characterize waste based on analytical results in combination with AK (as applicable), prepare WPFs, prepare for submittal of contained-in determination request for listed hazardous wastes, where appropriate.
- 6.1.8 Based on approved WPFs and authorizations, prepare Chemical Waste Disposal Requests (CWDRs) for transport and disposal of wastes.
- 6.1.9 Dispose, reuse, or recycle wastes generated.

6.2	Work Plan (IDW Section)
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PL, ENV-RCRA Representative	<p>6.2.1 Identify the project and its scope. Identify all historical information regarding the site or previous projects. Develop a Work Plan that identifies all chemicals of potential concern (COPCs) and waste streams and includes an appendix on anticipated Investigation-Derived Waste (IDW) management. The appendix of the work plan addressing IDW should be as detailed as possible regarding waste anticipated to be generated, but provide flexibility for a range of regulatory classifications and disposition options.</p> <p>Note: IDW includes solid or hazardous waste that was generated as a result of investigation and/or characterization of corrective action activities. It may include the following:</p> <ul style="list-style-type: none"> • drilling muds, cuttings, and purge water from test pit and well installation; • purge water, soil, and other materials from collection of samples; • residues from testing of treatment technologies and pump and treatment systems; • contaminated personal protective equipment (PPE); and • solutions (aqueous or otherwise) used to decontaminate non-disposable protective clothing and equipment.
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6.3 Preparation of the Waste Characterization Strategy Form (WCSF)

NOTE: See Section 7.0 for WCSF Process Flow Chart

WG, FWMT,
WMC and
ENV-RCRA
Representative

- 6.3.1 Prior to the initiation of any EP-ERSS project that will generate any waste, do the following:
- identify all waste streams that are anticipated to be generated by the work;
 - identify requirements specified in the work plan, closure plan, or other approved work document;
 - formulate a waste characterization strategy; and
 - review available EP-ERSS project reports for the planned work sites that provide characterization data and that identify wastes generated by previous activities.
- 6.3.2 Develop a waste characterization strategy by
- reviewing existing data and/or documentation for the waste stream; and
 - determining whether it meets the requirements for acceptable knowledge (AK), as specified in LIG 404-00-02.0.
- Note:** The Environmental Protection Agency guidance broadly defines acceptable knowledge as process knowledge, whereby detailed information on a particular waste is obtained from existing published or documented waste analysis data or studies conducted on hazardous wastes generated by similar processes; waste analysis data; and/or existing facility records of analysis.
- 6.3.3 If the existing data and/or documentation do not meet the requirements of AK, determine whether the existing data and/or documentation provide any useful information for characterizing any portion of the waste stream.
- 6.3.4 If there is some useful information based on AK, develop a strategy for sampling and analysis that will complete the characterization for the waste stream.
- 6.3.5 If there is no useful information, develop a strategy for sampling and analysis that will identify and quantify all chemicals of potential concern in the waste stream.
- 6.3.6 Review and verify the most recent facility waste acceptance criteria (WAC) requirements for potential receiving facilities.

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6.3.7 Using existing information for the site, and the strategy developed for each waste stream, make a preliminary waste classification determination using the following categories:

- Radioactive.
- Solid,
- Hazardous,
- Mixed (hazardous and radioactive),
- Toxic Substances Control Act (TSCA),
- New Mexico Special Waste,
- Industrial waste, and
- Recyclable or reusable materials

Note: Some waste streams may be classified as a combination of the above. Requirements and guidelines for the appropriate characterization and management of wastes are provided in Laboratory documents and the Laboratory's WAC document. Wastes with no disposal path shall not be generated without prior approval. Guidance for this process is contained in LIG 404-00-05, Preparing the Waste with No Disposal Path Approval Package. For contained in determinations see Section 6.19.

Note: Identify any pertinent regulatory decisions, memos, guidance, and/or previous Waste Characterization Strategy Forms (WCSFs) for similar waste streams that may be useful for WCSF development.

FWMT and WG 6.3.8 Complete a WCSF (see Attachment 1) with the project title and the WCSF completion date on the top of each page.

Note: The site history should include the appropriate information from the EP-ERSS Potential Release Site database, located at the EP-ERSS internal home page, which provides a concise historical summary, and a summary of analytical detections above background and screening levels.

- 6.3.9 Provide the following information regarding the waste characterization strategy on the WCSF:
- the physical form of the waste;
 - the anticipated regulatory classifications; and
 - the characterization approach (i.e., AK from site investigation data or existing data, or direct sampling of the waste) or a combination thereof.
- NOTE:** If data are insufficient to make a definitive regulatory classification at the time of WCSF completion, more than one box on the characterization table may be checked, along with an explanation in the text section. The final regulatory classification will be reflected on the Waste Profile Form (WPF).
- Ensure that the WCSF identifies the suite of analyses required based on site knowledge, and include the following:
- the nature of on-site management (e.g., SAA, <90 day, other);
 - summary of existing knowledge;
 - the anticipated waste streams;
 - the potential disposition of the waste; and
 - the schedule for disposal of the waste.
- 6.3.10 For AK waste streams, identify the document(s) used in support of the AK (e.g., material data safety sheet, previous sampling results), and attach those documents (or appropriate portions thereof) to the WCSF.
- 6.3.11 If a determination has been made that a waste stream no longer contains a hazardous waste, attach the documentation supporting that determination. If a “contained in” determination has not been made for a given waste stream but may be warranted, initiate a “contained in” determination request through ENV-RCRA. (see Section 6.19)
- 6.3.12 Identify the anticipated storage, treatment, and disposal option(s).
- 6.3.13 Complete the characterization table within the WCSF for each waste stream identified in the characterization strategy section.

6.4 Review and Approve the Completed WCSF

- | | | |
|-------------------------|-------|---|
| FWMT and WG | 6.4.1 | Initiate the review, approval, and tracking of the draft WCSF in accordance with procedure EP-ERSS-SOP-4002, Document Production. Allow a two-week minimum for the review and approval process (i.e., one week for the EP-ERSS Project Leader, the EP-ERSS WMC, and ENV-RCRA review, and the following week for waste acceptance (WS-WA) review, comment resolution, and obtaining signatures). Resolve any conflicting comments. |
| ENV-RCRA
Rep. | 6.4.2 | Review and confirm that the draft WCSF is consistent with the NMED-approved work plan along with any “contained in” determinations, AOC designations, or other variances granted by the NMED, and brief the WS-WA Representative on any key regulatory issues. |
| WS-WA
Representative | 6.4.3 | Review and provide comments to the WCSF preparer and other reviewers, as applicable. |
| FWMT and WG | 6.4.4 | Incorporate all comments, ensure all reviewers concur with the comment resolution, and obtain signatures. Add the final WCSF to the EP-ERSS WCSF folder in the RPF. |

6.6 Amendment of the WCSF

FWMT and WG 6.6.1 Amend the approved WCSF under the following conditions:

- when an unanticipated waste is generated,
- when an approved strategy for management of a waste stream significantly changes,
- when a correction to the approved form is necessary

Complete Attachment 2 , WCSF Amendment Form. Ensure the information on Attachment 2 includes the following:

- the original WCSF title and document number must be in the amendment heading for ease of reference;
- the Introduction provides a complete reference to the original WCSF, its completion date, the SWMUs and/or AOCs at the site, and the reason for the amendment (e.g., new waste stream not included in the original WCSF);
- the Background provides a concise summary of the information in the original WCSF, and provides details on the change(s) necessitating the amendment;
- the Waste Description provides a detailed description of the waste that is the subject of the amendment and the activity generating the waste; and
- Characterization, Management, and Disposal provides a detailed description of new information concerning how the waste will be characterized and managed, and the anticipated method(s) of storage, treatment, or disposal.

Note: Analytical results or AK documentation should be cited and attached to this amendment. This information should be consistent with the applicable instructions in this procedure. When generation of a new waste is the reason for the amendment, the original approved WCSF must have the approved amendment in place (i.e., all signatures) prior to submitting the WPFs to WS-WA.

6.7 Site Preparation

FWMT and WG	6.7.1	Ensure the site is set-up with the appropriate areas for storage of the waste (e.g., <90 day, SAA, New Mexico Special, radioactive waste staging area). Register the site as applicable.
	6.7.2	Send the registration for the waste management area, if applicable, to the WMC for review.
WMC	6.7.3	Send the registration to the Radiation Control Technician (if the waste meets certain radiation levels) Refer to ISD 121-1.0 Table 14-2.
	6.7.4	Send the registration to ENV-RCRA (if hazardous, NM Special, PCB or universal waste).

6.8 Field Management

- FWMT and WG 6.8.1 Observe initial and ongoing waste generation (e.g., drill cuttings).
NOTE: If initial waste generation is expected to be less than 55 gallons, an SAA is recommended. If waste volumes will immediately be greater than 55 gallons, management in a <90 day area is necessary and the storage clock begins upon generation.
- 6.8.2 Develop a schedule for activities to meet the <90 day storage clock.
- 6.8.3 Communicate the schedule to the WMC.
- 6.8.4 Ensure the FWMT performs inspections on the waste storage, and reports the results to the WG.
- 6.8.5 Ensure the WG and the WMC are informed of the intent to sample.
- 6.8.6 Ensure the samples are collected and are dispositioned at the Sample Management Office (SMO).
- 6.8.7 Ensure that the Samples Taken Table (STT) is retained by the WG and WMC for review.
- 6.8.8 Review the STT for completeness, and compare it with the WCSF.
- 6.8.9 Resolve any discrepancies between the STT and the WCSF.
- 6.8.10 Contact the SMO to gain confirmation that the laboratory can support fast turnaround times for the waste samples, as needed.
- 6.8.11 Request that the Data Steward track analytical data from the waste sample ID.
- 6.8.12 Segregate all waste into the following categories by characterization and compatibility to prevent cross-contamination:
- Hazardous waste,
 - New Mexico Special Waste,
 - Low-level waste,
 - Transuranic (TRU) waste,
 - Mixed waste,
 - Solid waste,
 - PCB remediation waste, and
 - Recyclable or reusable material.
- 6.8.13 Segregate the liquid, sludge, and solid components of wastes.
- 6.8.14 Leave adequate space, or install a physical barrier, between different waste characterizations, and between any incompatible waste streams within a characterization.

6.9 Waste Classification

- Data Steward 6.9.1 Track the analytical data from sample ID provided by the FWMT and WG.
- 6.9.2 When it becomes available, extract and provide analytical data to the FWMT and WG for waste determination purposes.
- 6.9.3 Perform data validation and assist with waste determination when required or as appropriate.
- FWMT and WG 6.9.4 Review the data and make an initial waste determination (e.g., hazardous or non-hazardous).
- 6.9.5 Verify existing or prepare a new Waste Profile Form (WPF) for each anticipated waste stream identified on the WCSF.
- NOTE:** Certain common waste streams have approved, project-wide WPFs. If the project is in a second or third phase and there were previous WPFs that are still active or can be re-activated, then those WPFs should be used.
- 6.9.6 Ensure the EP-ERSS Project Leader, EP-ERSS WMC, and ENV-RCRA review the WPF, and sign the EP Document Signature Form and/or the WPF, as appropriate.
- 6.9.7 Submit the WPF to the WS-WA representative, who reviews and activates.
- NOTE:** If the waste determination is not complete at or before Day 45 of the <90 day clock, process a WAC Exception Form (WEF) through WS-WA.
- 6.9.8 Generate the CWDR and submit it to the WMC for approval.
- 6.9.9 Submit the CWDR to the WS-WA representative.
- NOTE:** If the CWDR is not complete at or before Day 60 of the <90 day clock, process a WAC Exception Form (WEF) through WS-WA.
- 6.9.10 At Day 70, if a waste determination is not complete and not anticipated to be complete by Day 80 of the <90 day clock, and the waste is not anticipated to be shipped by Day 89, process (through ENV-RCRA) a request for a <90 day clock extension from the NMED. Concurrently begin contingency planning in the event that the extension request is not supported or granted.
- 6.9.11 At Day 80 of the <90 day clock, if the request for a <90 Day extension is not granted by NMED, prepare to ship as regulated waste prior to expiration of the <90 day clock.
- NOTE:** Arranging for shipment at Day 80 should be identified as a compliance driven **RUSH** to the appropriate Waste Services Group(s).
- 6.9.12 At Day 90 of the <90 day clock, if regulated waste is not shipped from the <90 day area, notify the ENV-RCRA representative and support any actions required by ENV Division to maintain compliance.
- 6.9.13 For newly generated waste, repeat Steps 6.8.1 through 6.9.12 above.

6.10 Reporting

PL 6.10.1 Compile all waste paperwork for inclusion in Consent Order-required reports to the NMED.

6.11 Minimization and/or Recycling of Waste

FWMT and WG 6.11.1 Reduce the volume of waste generated by as much as is technically and economically feasible.

Note: Specific waste minimization and/or recycling requirements and guidance are provided in LIR 404-00-02. Contact the EP-ERSS WMC for assistance with waste minimization and/or recycling.

WG 6.11.2 Ensure metals from radiological controlled areas are managed for disposal, or are recycled within the DOE complex only.

FWMT and WG 6.11.3 Report waste minimization and/or recycling efforts to the WMC, at the end of field operations.

Note: This information is included in an annual report, the Hazardous Waste Minimization Report, which is a requirement of Module VIII of the Laboratory's Hazardous Waste Facility permit. The Waste Minimization Success Story Form, available from the ENV-RRO, can be used for this purpose.

6.12 Managing Waste Generation and Storage

FWMT and WG 6.12.1 Before the start of field operations that generate waste, determine and prepare for the storage, control, and transportation of each potential waste type and characterization.

Note: Use the guidance in the appropriate Laboratory documents, listed in Section 1.0 of this SOP.

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6.12.2 For drilling, development, well rehabilitation, and purge waters from monitoring wells required under the Consent Order, refer to the ENV-RCRA-SOP-010.0, Land Application of Groundwater, which provides for implementation of the NMED approved Notice of Intent (NOI) decision tree for these waters. The decision tree guides the WG through a series of steps for characterizing the water using a combination of existing and newly collected data.

Disposition options include land application of the water if specific screening criteria in the decision tree are met. If the screening criteria cannot be met, the decision tree identifies the waste disposal paths for the water.

NOTE: The NOI decision tree does not provide a land application pathway for decontamination water; it must be managed as waste unless an alternative has been proposed and approved by NMED in a work plan (for example, “No discharge plan required” determinations have been made by NMED for decontamination water from sampling in limited circumstances). Consult with ENV-RCRA for assistance. Otherwise, direct discharge of decontamination water to the ground, a watercourse, or to drilling pits is strictly prohibited.

NOTE: A decision tree for solid IDW/environmental media from drilling operations is currently pending NMED review/approval. Consult with the ENV-RCRA representative for disposition options available for solid environmental media from drilling (e.g. drill cuttings).

6.12.3 Establish a waste storage area **BEFORE** generating waste, using the requirements in the applicable Laboratory documents and the site-specific WCSF.

FWMT and WG 6.12.4 Consider the following when establishing the waste storage area:

- vehicle traffic,
- site drainage,
- accessibility for container-handling equipment,
- site egress for emergency planning,
- fire protection, and
- personnel radiological exposure.

6.12.5 Cross-check to ensure that the general location of the waste storage area is the same which is indicated in the WCSF.

6.12.6 Fence and lock any waste storage areas in publicly accessible locations.

FWMT and WG 6.12.7 Follow the requirements of LIR 404-00-03 when waste is stored in Satellite Accumulation Areas (SAAs) or in less-than-90-day accumulation areas.

6.12.8 Ensure spill control equipment is available for less-than-90-day accumulation areas.

Note: Spill control equipment is recommended but not required for SAAs.

6.12.9 Ensure eye wash, shower, or water supply source of adequate volume and pressure to accommodate decontamination of personnel is available for less-than-90-day accumulation areas that store liquid waste.

Note: eye wash, shower, or water supply source is recommended but not required for SAAs.

6.12.10 Establish controls to prevent unauthorized personnel from inadvertent addition to, or other management of, waste that is stored in waste management areas located in controlled access areas of the Laboratory.

6.12.11 Store liquid hazardous or mixed waste on a level area.

Note: Secondary containment is recommended but not required for <90 day or SAAs.

6.12.12 Individually label each container of waste generated immediately following containerization with the following information:

- waste characterization,
- item identification number, and
- radioactivity (if applicable). Refer to ISD 121-1.0, Chapter 17.

Note: Containers of radioactive waste with a total activity over 2nCi/g are subject to additional labeling and transportation requirements in accordance with 49 CFR Part 173.

6.12.13 Characterize and manage as waste all returned contaminated sample material.

FWMT and WG 6.12.14 Establish waste management requirements for the returned samples based on the approved work plan and WCSF.

6.12.15 When possible, add the sample material to the same waste stream that generated the sample, and store it with other waste generated during the ERSS project activity.

Note: After a sample has been used for its intended purpose and returned, it is no longer entitled to an exclusion under 40 CFR Part 261.4(d).

6.12.16 Post an authorized user list, or key control, for each storage area or container.

6.12.17 Maintain absolute control while adding, removing, sampling, labeling, or shipping waste.

6.12.18 Conduct an inspection at the end of daily field activities to confirm that all waste containers are properly closed, stored on level ground, and screened for radiological contamination by a LANL qualified RCT.

6.12.19 Document this inspection in the project notebook.

6.12.20 Ensure containerized waste meets appropriate DOT requirements.

6.12.21 Ensure the waste storage durations for hazardous and mixed waste, special waste, PCB waste, and radioactive wastes meet the appropriate regulatory requirements.

- 6.12.22 If no preliminary determination can be made as to waste characterization, manage the waste as hazardous waste in accordance with LIR 404-00-03.1.
- 6.12.23 Once analytical results are received, determine the waste characterization and establish the appropriate management requirements.
- 6.12.24 If the waste characterization was not previously identified on the WCSF, amend the WCSF to reflect the current condition.
- 6.12.25 Ensure empty containers that held radioactive material in excess of 2nCi/g total activity have a DOT-specified "EMPTY" label placed on the container.
- 6.12.26 Identify and implement any additional storage area requirements for high explosives and transuranic (TRU) wastes.
Note: Contact the EP-ERSS WMC for additional storage requirements.
- 6.12.27 Ensure all waste documentation and waste characterization is coordinated with WS-WA.
- 6.12.28 Release waste and/or material from a radiologically-contaminated area (RCA) in accordance with ISD 121-1.0, which establishes the release requirements
- 6.12.29 Sample and survey all suspected radioactively contaminated waste and/or material for radioactivity prior to disposal.
- 6.12.30 Manage suspected radioactively contaminated waste and/or material in accordance with all applicable Laboratory documents and Department of Energy (DOE) Orders. Refer to ISD 121-1.0, 10 CFR 835 and DOE Order 5400.5, as applicable.
- 6.12.31 Determine surface and volume contamination levels for the purpose of potentially releasing non-radioactive material for public landfill disposal, beneficial use, or recycle (termed free release) with assistance from Health Physics Operations (RP-1).
- 6.12.32 Ensure qualified personnel perform the evaluation to determine if free release is permitted in accordance with the following RP-1 standards:
ESH-1-02-02, Surveying for Fixed and Removable Contamination; and
ESH-1-03-04, Supporting Documentation, Decontrolling, and Decommissioning of Facilities.
- 6.12.33 If routine and straightforward radiological protection activities normally performed by RP-1 are performed by other organizations or individuals, complete and approve a Radiological Surveillance Authorization Agreement in accordance with ESH-1-01-03.
- 6.12.34 Maintain radiological survey records and project notebooks at the work site. Provide RP-1 copies of any radiological surveys not performed by RP-1 RCTs.

FWMT, WG,
and RCT

6.13 Treatment of Wastes Prior to Disposal

FWMT and WG 6.13.1 When EP-ERSS work has generated waste that requires treatment prior to disposal, ensure that any planned on-site waste treatment (i.e., “generator treatment” of hazardous or mixed waste or other treatment activities) is coordinated with ENV-RCRA for obtaining NMED approval prior to treatment.

6.14 Establishing the Authorized Release Limits for the Wastes

- Project Leader 6.14.1 Retrieve and review the January 7, 1997, DOE-Headquarters memorandum that addresses the issue of establishing authorized release limits for disposal of hazardous and solid waste containing low levels of radioactivity as residual materials at non-licensed Resource Conservation and Recovery Act (RCRA) permitted facilities.
- 6.14.2 Submit a draft request simultaneously to Environmental Protection, the Laboratory’s waste operations group, and DOE-Albuquerque.
- 6.14.3 Submit the transmittal of the finalized request to the appropriate state regulatory entity where the treatment or disposal site resides.
- Note:** Authorized Release Limit requests are handled on a case-by-case basis.
- 6.14.4 Submit a draft request to establish release limits simultaneously to Environmental Protection, the Laboratory’s waste operations group, and DOE Albuquerque.
- 6.14.5 Following resolution of all comments and required approvals, transmit the finalized request to the appropriate state regulatory entity where the treatment or disposal site resides.

6.15 Packaging and/or Transporting the Wastes

- FWMT, WG, and WMC 6.15.1 Package all waste in accordance with Department of Transportation (DOT) and all the appropriate Laboratory documents consistent with the on-site and/or off-site waste acceptance criteria, as appropriate.
- 6.15.2 Label all waste containers for chemical and radiological hazards in accordance with DOT requirements and ISD 121-1.0 Chapter 17.
- 6.15.3 Measure or calculate the actual weight of the container (tare weight of the container plus contents) with an accuracy of +/- 10%.
- 6.15.4 When practical, a calibrated scale shall be used to establish container weight.
- 6.15.5 When mobilization or use of a scale at a field site is not practical, use the table shown in Attachment 1 to accurately estimate container weights.
- 6.15.6 Ensure that the DOT rating for maximum container weight is observed.
- Radiation Control Technican 6.15.7 For radioactive waste, obtain DOT radiological screening data immediately following containerization, at the end of the daily field activities, or as specified in the Site-Specific Radiological Control Work Package (RWCP), including the following data: external package contamination, contact dose rate, and one-meter dose rate.

- FWMT and WG 6.15.8 Inspect used containers in accordance with DOT requirements **before** reuse.
- 6.15.9 Do not use rusted, dented, or otherwise damaged containers for waste packaging.
- 6.15.10 Obtain new waste containers with adequate testing and documentation for a specified packaging class from either Business Operations Division, Materials Management Group, or the Laboratory's waste operations group.
- 6.15.11 Ensure no more than 1% solid physical form material is present in a container containing liquid waste.
- 6.15.12 Ensure no more than 1% free liquid is present in a container containing solid physical form waste.
- 6.15.13 If the waste is going to a commercial disposal facility that requires containers to be "sealed" by the generator prior to shipment, record the date the container was sealed in the project notebook.
- RCT 6.15.14 Package solid radioactive waste to fill the container to greater than 90% capacity.
- 6.15.15 Repackage radioactive waste not meeting the 90% capacity fill requirements into smaller containers.
- Note:** Bulk packaged waste and liquid waste are exempt from this requirement.
- FWMT and WG 6.15.16 Follow all labeling and placarding instructions provided in the Shipping Documents prepared by the Laboratory's waste operations group.
- 6.15.17 Document the details of vehicle placarding and container labeling in the project notebook.
- 6.15.18 Coordinate waste transportation directly with the disposal facility or through the Laboratory's waste operations group.
- Note:** Transportation shall be by an approved carrier in accordance with DOE's Motor Carrier Qualification Program.
- 6.15.19 Inspect waste containers prior to shipment, and document the evaluation in the project notebook.
- 6.15.20 Verify all shipping containers are secured by the waste hauler prior to transportation.

6.16 Determination and Specification of the Disposal Options for Wastes

- FWMT, WG and WMC 6.16.1 Coordinate disposal directly with the disposal facility or through the Laboratory's waste operations group.
- 6.16.2 Ensure that the disposal facilities used by EP-ERSS and its subcontractors are approved by the Laboratory's waste operations group prior to shipment.
- Note:** A list of approved disposal facilities can be obtained from the EP-ERSS Waste Management Coordinator (WMC).

6.17 Area of Contamination Policy

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- FWMT and WG 6.17.1 Where appropriate, implement the “Area of Contamination (AOC) Policy” in accordance with this procedure.
- Note:** The AOC Policy allows certain discrete areas of generally dispersed contamination to be considered RCRA land disposal units, and thus, movement and in-situ treatment of hazardous waste is allowed without triggering land disposal restrictions or minimum technology requirements. These activities would not create a new point of hazardous waste generation if carried out within the AOC. The 90-day clock for waste generation would not be triggered, as long as the waste remains inside the AOC boundary.
- 6.17.2 Where appropriate, apply the AOC Policy to any hazardous remediation waste (including non-media waste) that is in or on the land.
- 6.17.3 Identify AOCs on a case-by-case basis.
- 6.17.4 Coordinate with the ENV-RCRA representative, who will prepare the request for AOC designation to NMED on behalf of the Project. The AOC designation must be approved by NMED prior to implementation.
- NOTE:** For Consent Order driven work, NMED requires that the AOC designation request be submitted at least 15 days prior to initiation of field activities.

6.18 Definition and Handling of Environmental Media

- FWMT and WG 6.18.1 Where appropriate, implement the “Environmental Media Policy” in accordance with this procedure.
- Note:** Environmental Media is not considered to be a solid waste, in the sense of being abandoned, recycled, or inherently waste-like. Thus, the “mixture” and “derived-from” rules do not apply to environmental media. However, environmental media that contains a hazardous or mixed waste is subject to regulatory requirements. Well drilling development, rehabilitation, and purge water are considered Environmental Media, and are evaluated for discharge or management as waste through the NMED-approved Notice of Intent (NOI) Decision Tree discussed in Section 6.12.2.
- 6.18.2 Return Environmental Media to its point of origin only under the following conditions:
- The Environmental Media meets the criteria for land application in the NMED-approved NOI decision tree for drilling, development, rehabilitation, and purge waters, and the ENV-RCRA representative has provided written verification per the requirements of ENV-RCRA-SOP-010.0, Land Application of Groundwater.
 - The Environmental Media meets the criteria for land application delineated in other agreements with NMED for IDW management on a case-by-case basis (consult with the ENV-RCRA representative).
 - The Environmental Media meet criteria that were specified in Consent Order-required work plans and approved by NMED.

6.18.3 Document any Environmental Media returned to its point of origin for inclusion in the IDW documentation portion of Consent Order-required reports.

NOTE: The ENV-RCRA-SOP-010.0, Land Application of Groundwater, contains forms for approval/documentation of land application for drilling, development, rehabilitation, and purge waters, for inclusion in reports to NMED

6.18.4 Do not return Environmental Media to its point of origin if any of the following conditions exist:

The source of the media is a borehole in hydraulic communication with groundwater or surface water;

The Environmental Media could be construed to be refuse in a water course or could potentially exceed the New Mexico Water Quality Standards; or

The Environmental Media encountered was not what was anticipated to be encountered (e.g., visual contamination noted, odor noted, or field screening instruments determine that contamination is present).

6.19 Using the "Contained-in" Definition for Wastes

FWMT and WG 6.19.1 Where appropriate, implement the "Contained-in Policy" in accordance with this procedure.

Note: Environmental Media contaminated with hazardous waste shall be managed as hazardous waste until the media no longer contains the hazardous waste. Environmental Media contains hazardous waste when

- It exhibits a characteristic of a hazardous waste; or
- It is contaminated with concentrations of hazardous constituents that originated from listed hazardous waste.

Environmental Media is considered to no longer contain hazardous waste when

- It no longer exhibits a characteristic of hazardous waste, or
- The regulatory agency determines that concentrations of hazardous constituents from listed hazardous waste are below health-based levels based on data submitted by the facility.

6.19.2 When an Environmental Media contains a characteristic hazardous waste (i.e., one not listed by the regulatory agency), make the determination that the Environmental Media no longer contains the hazardous waste using the designated appropriate analytical testing.

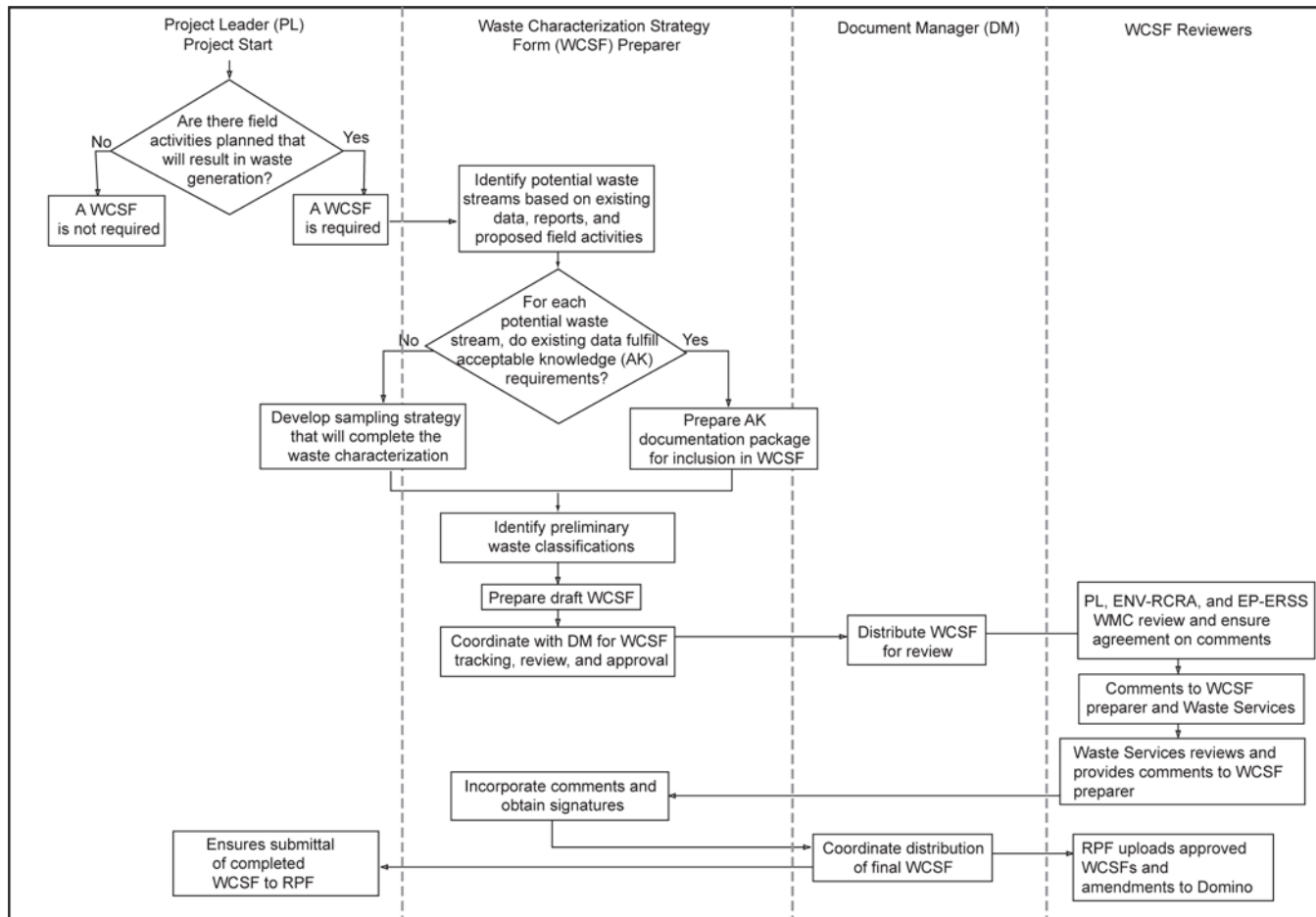
Note: This determination requires no formal approval by the regulatory agency. The Environmental Media shall not be diluted to meet the requirements for this determination.

- 6.19.3 When Environmental Media are contaminated with hazardous constituents from listed hazardous waste, submit all applicable data and site information to ENV-RCRA for assistance in demonstrating that the hazardous constituents are below health-based levels.
- 6.19.4 ENV-RCRA will prepare and submit the letter to NMED on behalf of the Project.
- 6.19.5 Ensure that “contained in” determinations received from NMED are incorporated into the WCSF and implemented as part of the project’s waste management activities.

6.20 Records

- | | | |
|------------------------|--------|--|
| Project Leader | 6.20.1 | <p>Submit the following records generated by this procedure to the Records Processing Facility:</p> <ul style="list-style-type: none"> • Work Plan; • WCSFs; • Amendments to WCSFs; • Related waste management documentation and supporting information (e.g., training, inspection, site registration, waste inventory); and • Miscellaneous documentation (e.g., IWD, RWP) <p>Note: For both WCSFs and amendments to WCSFs, the submittals to the RPF must be in final form (i.e., with all signatures by the appropriate reviewers) and must include all attachments (e.g., AK documentation, data summaries, figures).</p> |
| Project Leader and WMC | 6.20.2 | <p>Submit the following records generated by this procedure to the Records Processing Facility:</p> <ul style="list-style-type: none"> • WPF; • CWDR or CRWSS; and • Manifest, LDR, Bill of Lading. |

7.0 WCSF PROCESS FLOW CHART



8.0 ATTACHMENTS

Attachment 1: 5022-2 Waste Characterization Strategy Form (WCSF) (4 pages)

Attachment 2: 5022-3 WCSF Amendment Form (1 page)

9.0 REVISION HISTORY

Revision No. [Enter current revision number, beginning with Rev.0]	Effective Date [DCC inserts effective date for revision]	Description of Changes [List specific changes made since the previous revision]	Type of Change [Technical (T) or Editorial (E)]
Rev. 0	7/31/07	Combined SOP 01.06 and 01.10 plus notes from a waste generation flow meeting. Revision by Mark Powell.	T and E

[Using a CRYPTOCARD, click here to record "self-study" training to this procedure.](#)

If you do not possess a CRYPTOCARD or encounter problems, contact the ERSS training specialist.

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ATTACHMENT 1: WASTE CHARACTERIZATION STRATEGY FORM (WCSF)

5022-2

Waste Characterization Strategy Form (WCSF)

Records Use only



Project Title:

**Solid Waste Management Unit
or Area of Concern Number:**

Activity Type:

**Project Leader/Waste
Generator:**

**Waste Management
Coordinator/Field Waste
Management Technician:**

Completed By:

Date:

Description of Activity:

Site History and Description:

Characterization Strategy:

- Waste #1:

- Waste #2:

- Waste #3:

- Waste #4:

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ATTACHMENT 1: WASTE CHARACTERIZATION STRATEGY FORM (WCSF) (Cont.)

5022-2

Records Use only

Waste Characterization Strategy Form (WCSF)



Characterization Table

Project Title:		Completion Date:		
Waste Description	Waste #__	Waste #__	Waste #__	Waste #__
Volume				
Packaging				
Regulatory Classification:				
• radioactive				
• Solid				
• Hazardous				
• Mixed (hazardous and radioactive)				
• Toxic Substances Control Act (TSCA)				
• New Mexico Special Waste				
• Industrial				
Characterization Method				
Acceptable Knowledge (AK): Existing Data/Documentation				
AK: Site Characterization				
Direct Sampling of Containerized Waste				
Analytical Testing				
Volatile Organic Compounds (EPA 8260-B)				
Semivolatile Organic Compounds (EPA 8270-C)				
Organic Pesticides (EPA 8081-A)				
Organic Herbicides (EPA 8151-A)				
PCBs (EPA 8082)				
Total Metals (EPA 6010 [or 6020] -B/7471-A)				
Total Cyanide (EPA 9012-A)				
High Explosives Constituents (EPA 8330/8321-A)				
Asbestos				
Total Petroleum Hydrocarbon (TPH)-GRO (EPA 8015-M)				
TPH-DRO (EPA 8015-M)				

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ATTACHMENT 1: WASTE CHARACTERIZATION STRATEGY FORM (WCSF) (Cont.)

5022-2

Waste Characterization Strategy Form (WCSF)

Records Use only



Toxicity Characteristic Leaching Procedure (TCLP) Metals (EPA 1311/6010-B [or 6020])				
TCLP Organics (EPA 1311/8260-B & 1311/8270-C)				
TCLP Pesticides & Herbicides (EPA 1311/8081-A/1311/8151-A)				
Gross Alpha (alpha counting) (EPA 900)				
Gross Beta (beta counting) (EPA 900)				
Tritium (liquid scintillation) (EPA 906.0)				
Gamma Spectroscopy (EPA 901.1)				
Isotopic Plutonium (chemical separation/alpha spectroscopy) (HASL-300)				
Isotopic Uranium (chemical separation/alpha spectroscopy) (HASL-300)				
Total Uranium (6020 inductively coupled plasma mass spectroscopy [ICPMS])				
Strontium-90 (EPA 905)				
Americium-241 (chemical separation/alpha spectroscopy) (HASL-300)				
SW-846, Chapter 7.3 – Reactivity Sulfide				
SW-846, Chapter 7.3 – Reactivity Cyanide				
SW-846, Method 9095 – Paint Filter				
SW-846, Method 9045C – Corrosivity				
SW-846, Method 1010A - Ignitability				
Waste Profile Form Number				

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ATTACHMENT 1: WASTE CHARACTERIZATION STRATEGY FORM (WCSF) (Cont.)

5022-2

Waste Characterization Strategy Form (WCSF)

Records Use only



Project Title:

Completion Date:

Signatures

Date

EP-ERSS Project Leader/Waste Generator (Printed Name/Signature)

EP-ERSS Waste Management Coordinator (Printed Name/Signature)

ENV-RCRA Representative (Printed Name/Signature)

WS-WA Representative (Printed Name/Signature)

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ATTACHMENT 2: AMENDMENT TO THE WCSF

5022-3

Amendment to the WCSF

Records Use only



Introduction:

Background:

Waste Description:

Characterization, Management, and Disposal:

EP-ERSS Project Leader/Waste Generator:

EP-ERSS Waste Management Coordinator:

Printed Name/Signature Date

Printed Name/Signature Date

ENV-RCRA Representative:

WS-WA Representative:

Printed Name/Signature Date

Printed Name/Signature Date

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