

# **Central Internet Database: Environmental Restoration Data**

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# **Environmental Restoration Data Strategy Is Mission Focused**

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- ◆ **The Settlement Database must accommodate multiple data strategies for numerous and varied activities**
  
- ◆ **Environmental Restoration data strategy focus:**
  - Document the flow of materials from cradle to grave
    - Contaminated environmental media; waste; facilities and structures
    - Includes cleanup activity, treatment, and disposal
    - Current restoration data is mostly projections
    - Actuals will be collected

# Environmental Restoration Data Strategy

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- ◆ **Environmental Restoration Activities Address Multiple Contamination Problem Types**
  - Contaminated environmental media
    - Soil, debris, surface water, and groundwater
  - Stored wastes
    - Containerized or bulk
  - Contaminated media: structures and equipment
    - Buildings, equipment, and materials
  
- ◆ **Environmental Restoration Activities Address Multiple Waste Types:**
  - LLW, MLLW, TRU, HAZ, 11(e)2

# Restoration Strategy: In-situ

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## ◆ In-situ remedies :

- Goal: Clean-up activity addresses contaminated media in place.
- Generally does not generate waste:
  - Not generated for cap in place; surveillance and monitoring; access control
  - Small volume may be generated from in-situ treatment process: pump and treat; plant incineration
- Generally contamination remains:
  - In place contamination is contained
  - Contamination is removed and clean media remains in place

# Restoration Strategy: Ex-situ

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## ◆ Ex-situ remedies:

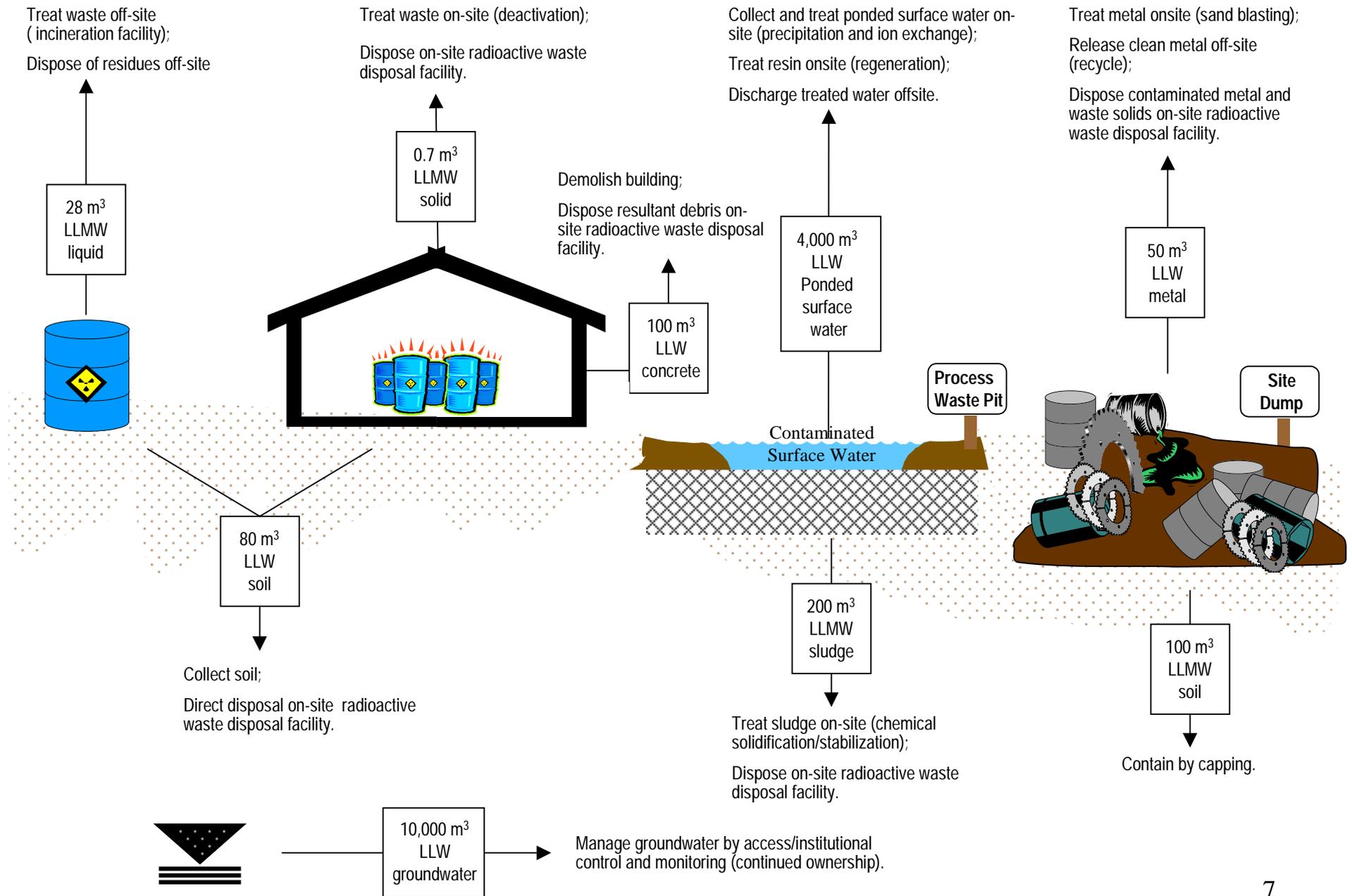
- Goal: Clean-up activity removes contaminated media from location
  - Agreed upon clean-up level is achieved
- Large volumes of waste may be generated
- Process can be tracked:
  - Contaminated Media > Clean-up Activity > Waste > Treatment > Disposal
  - Generated waste can tracked in the same manner as operations-generated wastes
  - Waste > Treatment > Disposal

# Restoration Strategy: Reuse/Recycle

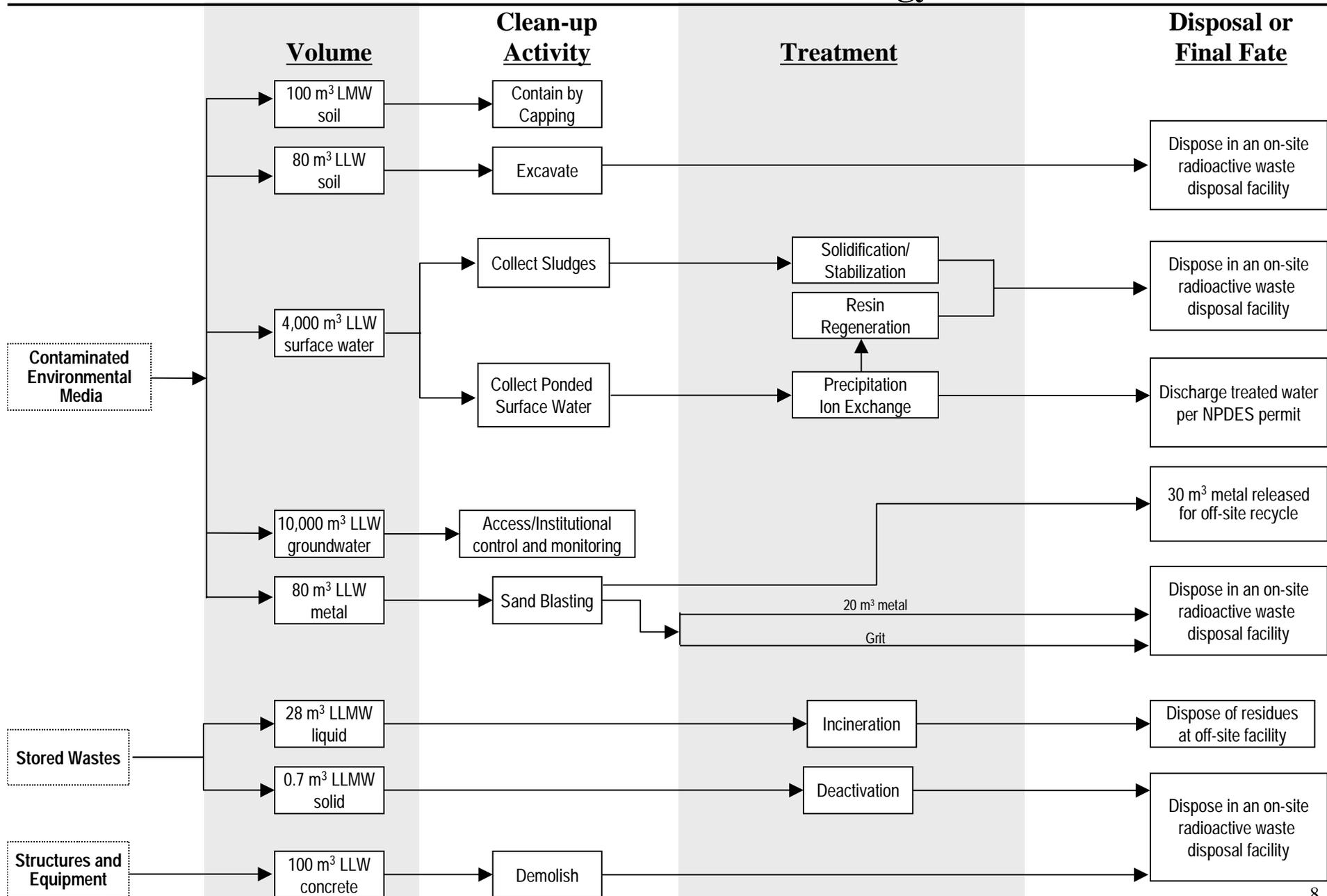
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- ◆ **Clean-up activities may remove waste from otherwise uncontaminated materials**
  - Decontaminate facilities
  - Decontaminate equipment
  - Decontaminate “waste” metals
- ◆ **Low volume of waste is generated and managed the same as operations-generated waste**
- ◆ **Large volume of uncontaminated material can be released**
  - Reuse of facilities and equipment
  - Recycle of metal
  - Dispose of sanitary media

# Environmental Restoration Projects May Address Numerous Problems



# The Environmental Restoration Has A Cradle-to-Grave Data Strategy



# Example Data for ER Projects

Element	Waste	Contaminated Environmental Media	Contaminated Structures and Equipment
<b>Location</b>			
Site Name	Hanford	Hanford	Hanford
State	Washington	Washington	Washington
Operations Office	Richland	Richland	Richland
<b>Inventory &amp; Projections</b>			
Program	Environmental Restoration	Environmental Restoration	Environmental Restoration
Location/Activity	100 Area	200 Area	200W
Name of Waste Stream*	Plutonium Sludge	NA (No Waste Generated)	Pu Fabric Facility
Waste Stream Comments			Nuclear Chem Process Facility
Waste Stream Status	Projected	Complete	On-going
Activity Type	Waste Stabilization	Remediation	Decontamination
Media Category	Stored Waste	Environmental Media	Facility
Media Type	Sludge 1	Rubble/Debris, Soil	Concrete Debris
Volume (Inventory) m <sup>3</sup>	200	20,000,000	150
Total Volume Addressed	200	20,000,000	100
Waste Type	MLLW	LLW	MLLW
Process Type	Stabilization	In-Situ Stabilization	Collect and Direct Disposal
Specific Process	Cement Solidification	Capping	Demolition
TSD Facility	Solidification Plant 1	NA	On-site
Follow-on Waste Stream Name (Proj.)	Solid 1	NA	
Follow-on Media Type (Proj.)	Final Waste Form	NA	
Follow-on Media Category (Proj.)	Waste	NA	
Follow-on Waste Type (Proj.)	LLW	NA	
Follow-on TSD (Proj.)	on-site disposal cell	NA	
Projected Schedule (Vol/Years)	Year 2000	NA	1 Year
<b>Contaminants</b>			
<b>Chemical</b>			
Name of Waste Stream*			
Key Contaminants	Benzene	Mercury	Benzene
Contaminant Type	Organic	Metal	Organic
EPA Code	71-43-2	74-39-97-6	71-43-2
Ave./Max. Concentration/Units	10 mg/kg	10 mg/kg (Ave.)	10 mg/kg
<b>Radionuclides</b>			
Key Contaminants	cesium-137, strontium-97	cesium-137, strontium-97, plutonium	U-238, Radium 228, Radium 226
Total Curries	10	20,000	12,000

Projects do not exist; they are for example only

# Environmental Restoration Data Concerns

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- ◆ **Data collection requirements of restoration related media and/or waste are driven by regulatory requirements and agreements**
  - Demonstrates compliance with legal requirements
  - Demonstrates compliance with agreements with regulatory and oversight agencies
  - Documents clean-up activities and completions
- ◆ **Data collection for Environmental Restoration projects have occurred annually (approximate) at the program level**
  - Overtime, variations in estimates are apparent

# Variations in Environmental Restoration Data

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- ◆ **Variation in estimated volumes of contaminated media and waste may result from:**
  - Improved characterization information
  - Changes in agreements with local, state and Federal regulatory agencies
  - Revised project scope or cleanup levels
  - Changes in proposed restoration strategy
  - Changes in waste treatment, storage, and/or disposal plans
- ◆ **Variations result from improved scope definition or different baseline assumptions.**
- ◆ **Variations are not corrections of previous errors**