

Mixed Waste Treatment



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Mixed Waste Receipt at NTS

(as of February 29, 2008)

- 86 shipments of mixed waste received
 - Nine (9) different generators
 - 725 packages
 - More than 40,000 cubic feet (more than 1,100 cubic meters) of mixed waste* disposed in Pit 3 since December 2005

****Does not include low-level waste required to be managed as mixed waste***



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Mixed Waste Treatment Types

- Macroencapsulation
 - Grouting in carbon steel boxes or drums
 - Welded stainless steel containers
 - UltraTech containers
 - High-Integrity containers
 - Low-density polyethylene (LDPE)/polyethylene
- Amalgamation
- Stabilization
- Thermal desorption
- Plasma gasification
- Physical extraction



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Macroencapsulation with Grout



Debris waste prepared prior to pouring grout

Macroencapsulation with Grout

(continued)



Grout poured around debris



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Macroencapsulation with Grout

(continued)



First grout pour completed



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Macroencapsulation with Grout

(continued)



Second grout pour



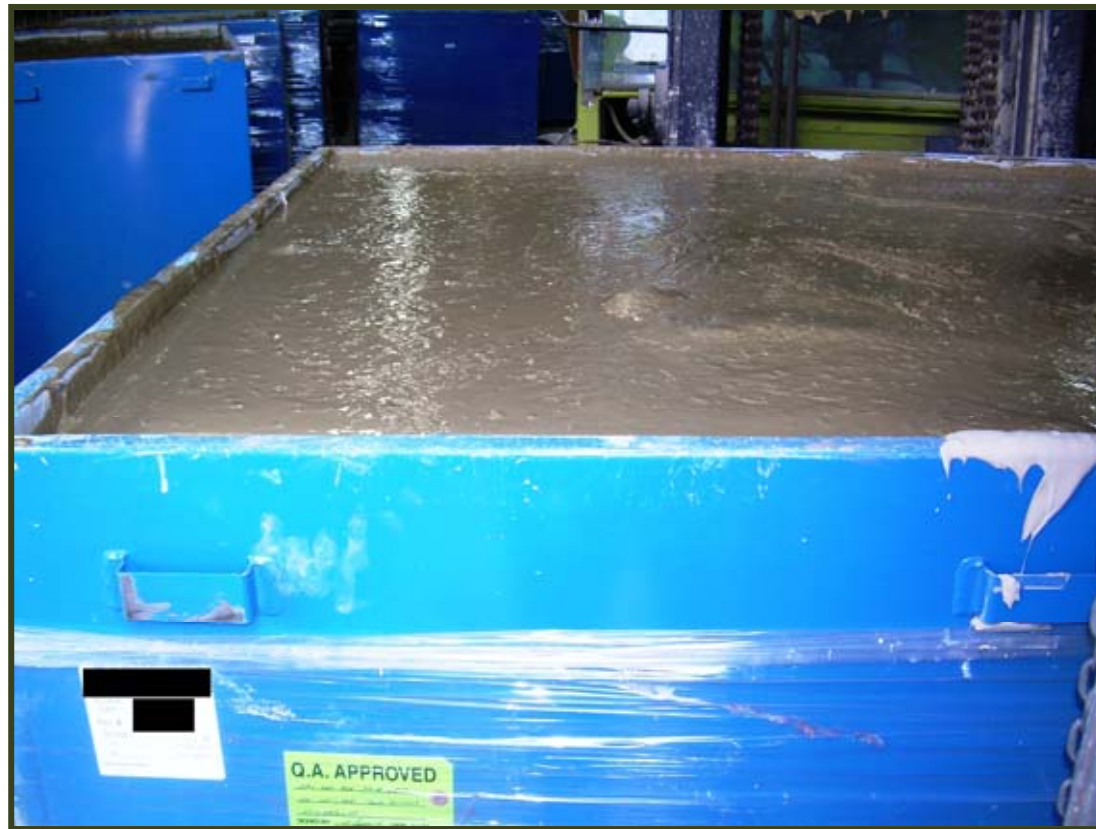
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Macroencapsulation with Grout

(continued)



Grout pouring completed



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Macroencapsulation with Grout

(continued)



Cured grout box filled with absorbent



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Macroencapsulation Using Stainless Steel Containers



Empty B-25 stainless steel box



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Macroencapsulation Using Stainless Steel Containers (continued)



Stainless steel box prior to loading



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Macroencapsulation Using Stainless Steel Containers (continued)



Loading debris into stainless steel box



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Macroencapsulation Using Stainless Steel Containers (continued)



Loading debris into stainless steel box



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Macroencapsulation Using UltraTech Containers



UltraTech box liner and lid

Poly liner in
steel box



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Macroencapsulation Using UltraTech Container (continued)



Waste drums loaded into UltraTech box



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Macroencapsulation Using UltraTech Containers (continued)



Loaded box sprayed with foam to fill void space



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Macroencapsulation Using UltraTech Containers (continued)



Filled waste container



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Macroencapsulation Using UltraTech Containers (continued)



Macro Liner lid being placed onto container



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Macroencapsulation Using UltraTech Containers (continued)



Macro Liner lid being fused to macro liner



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Macroencapsulation Using UltraTech Containers (continued)



Steel lid bolted to container



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Macroencapsulation Using UltraTech Containers (continued)



Debris waste being loaded into 55-gallon
UltraTech Macro Liner container



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Macroencapsulation Using UltraTech Containers (continued)



Absorbent/void filler added to 55-gallon Macro Liner container



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Macroencapsulation Using UltraTech Containers (continued)



Closing 55-gallon Macro Liner container



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Macroencapsulation Using UltraTech Containers (continued)



UltraTech 63-inch diameter MacroPack
loaded with debris and foam to fill void space



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Macroencapsulation Using UltraTech Containers (continued)



Void space in UltraTech MacroPack filled
with non-biodegradable absorbent



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Macroencapsulation Using UltraTech Containers (continued)



UltraTech MacroPack 63-inch diameter container

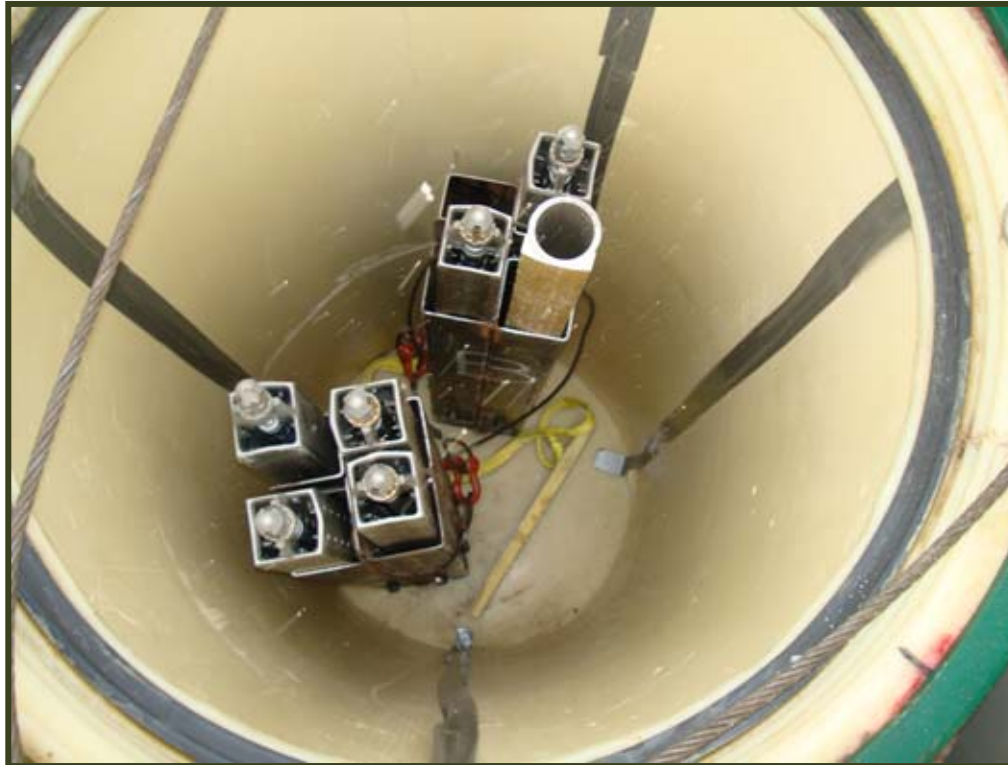


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Macroencapsulation Using High Integrity Containers (HICs)



Debris waste control rods in HIC



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Macroencapsulation Using HICs

(continued)



Epoxy applied to HIC lid



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Macroencapsulation Using HICs

(continued)



Bentonite added to fill void space in HIC



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Macroencapsulation Using HICs

(continued)



HIC placed in stainless steel overpack



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Macroencapsulation Using HICs

(continued)



Bentonite added to fill annular space
between HIC and overpack



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Macroencapsulation Using HICs (continued)



Final package after
emplacement in shipping cask



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Macroencapsulation Using LDPE/Polyethylene



Debris waste placed into form



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Macroencapsulation Using LDPE/Polyethylene (continued)



Heated LDPE poured around debris



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Macroencapsulation Using LDPE/Polyethylene (continued)

Final hardened LDPE waste form
loaded into a 55-gallon drum



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Plasma Gasification



Unit at PermaFix Northwest



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Plasma Gasification

(continued)



Tank residue treated by plasma gasification



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Amalgamation



Amalgamation of radioactive mercury



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Stabilization



Stabilization using mixing blade in drum



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Thermal Desorption



M&EC thermal desorption unit



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Questions?



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