



M-091 Change Package (and more)

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Introduction to TRU

- Elements having atomic numbers greater than that of uranium are called transuranic.
- Elements within TRU are typically man-made and are known to contain americium-241 and several isotopes of plutonium.
- TRU is disposed of more cautiously than low level waste and intermediate level waste because of the elements' longer half-lives. [Wikipedia]
- Defense-related TRU can be disposed at the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico

DOE Technical definition of TRU: 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.



M-91 Milestone

- Hanford M-91 milestones apply to waste that is or was believed to meet the TRU waste criteria when it was placed in the 218-W-4B, 218-W-4C, 218-W-3A and 218-E-12B burial ground trenches after May 6, 1970.
 - Applies to Retrievably Stored Waste and any TRU in storage as of June 30, 2009
- M-26 milestone (Land Disposal Restricted/LDR waste), and CERCLA milestones may apply to other Hanford TRU waste in storage or generated in the future.



TRU and TRUM WASTE AT HANFORD, INCLUDING PROJECTED WASTES*



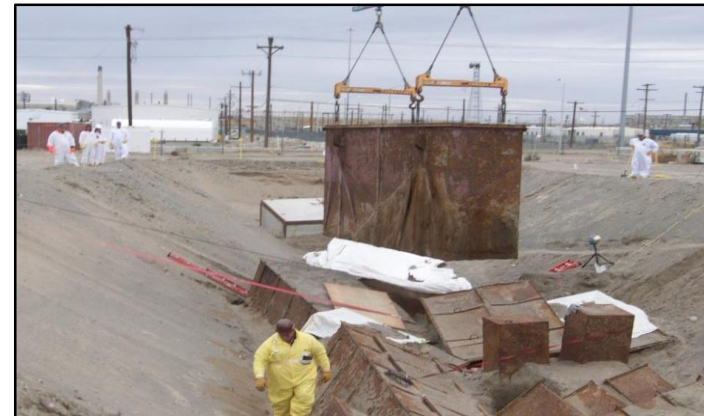
CWC/WRAP**
 Disposition Baseline Est.: 2018-2046
 Total = 10,364 containers (7,662m³)
 Mixed = 6,719 containers (4,737m³)
 M-091 = 5,758 containers (3,488m³)

OSA-A and OSA-B
 Disposition Baseline Est.: 2018-2026
 Total = 132 containers (3,990m³)
 Mixed = 122 containers (3,710m³)
 M-091 = 122 containers (3,710m³)

CERCLA NOSA
 Disposition Baseline Est.: 2018-2022
 Total = 28 containers (1,427m³)
 Mixed = 0 containers (0m³)
 M-091 = 0 containers (0m³)

D-10 Tank
 Disposition Baseline Est.: 2025-2035
 Total = 1 container (28m³)
 Mixed = 1 container (28m³)
 M-091 = 0 containers (0m³)

CWC/WRAP



Burial Grounds - Trenches
 Disposition Baseline Est.: 2020-2037
 Total = 12,006 containers (2,658m³)
 Mixed = 11,032 containers (2,451m³)
 M-091 = 11,032 containers (2,451m³)
 Includes RF drums, excludes RINM

Alpha Caissons
 Disposition Baseline Est.: 2020-2047
 Total = 5,534 containers (23.5m³)
 Mixed = 5,534 containers (23.5m³)
 M-091 = 5,534 containers (23.5m³)

Burial Grounds

Facility D & D (projected)
 Disposition Baseline Est.: 2022-2075
 Total = 6,700m³
 Mixed = 6,700m³
 M-091 = 0 m³
 Debris

Waste Sites (projected)
 Disposition Baseline Est.: 2022-2075
 Total = 3,300m³
 Mixed = 3,300m³
 M-091 = 0 m³
 Soils

Tank Waste (projected)***
 Disposition Baseline Est.: TBD
 Total = 5,350m³
 Mixed = 5,350m³
 M-091 = 0m³

Projected Waste



T-Plant Complex
 Total = 14 containers (83m³)
 Mixed = 10 containers (46m³)
 M-091 = 10 containers (46m³)

K-Basin Sludge
 Disposition Baseline Est.: 2022-2035
 (current form)
 Total = 23 forecast containers (25m³)
 Mixed = 0 containers (0m³)
 M-091 = 0 containers (0m³)

T-Plant Complex

NOTES:

Remote-handled waste is included.

Projected waste for Facility D&D and Waste Sites obtained from FY18 ATWIR (data date = 12/31/17).

External volumes of TL-1800 containers in CWC/WRAP and CERCLA NOSA are reported..

Burial Ground information obtained from SWITS Custom Spreadsheet #612 (8/2/18).

Above-Ground Storage information obtained from SWITS Custom Spreadsheet #2049 (8/2/18).

* M-091 waste quantities in above-ground storage obtained from SWITS Report #1041 (8/2/18)

** CWC quantities include waste in LLBG 3AE.

*** Obtained from ORP ATWIR submission (current form – potential) Waste prohibited at WIPP

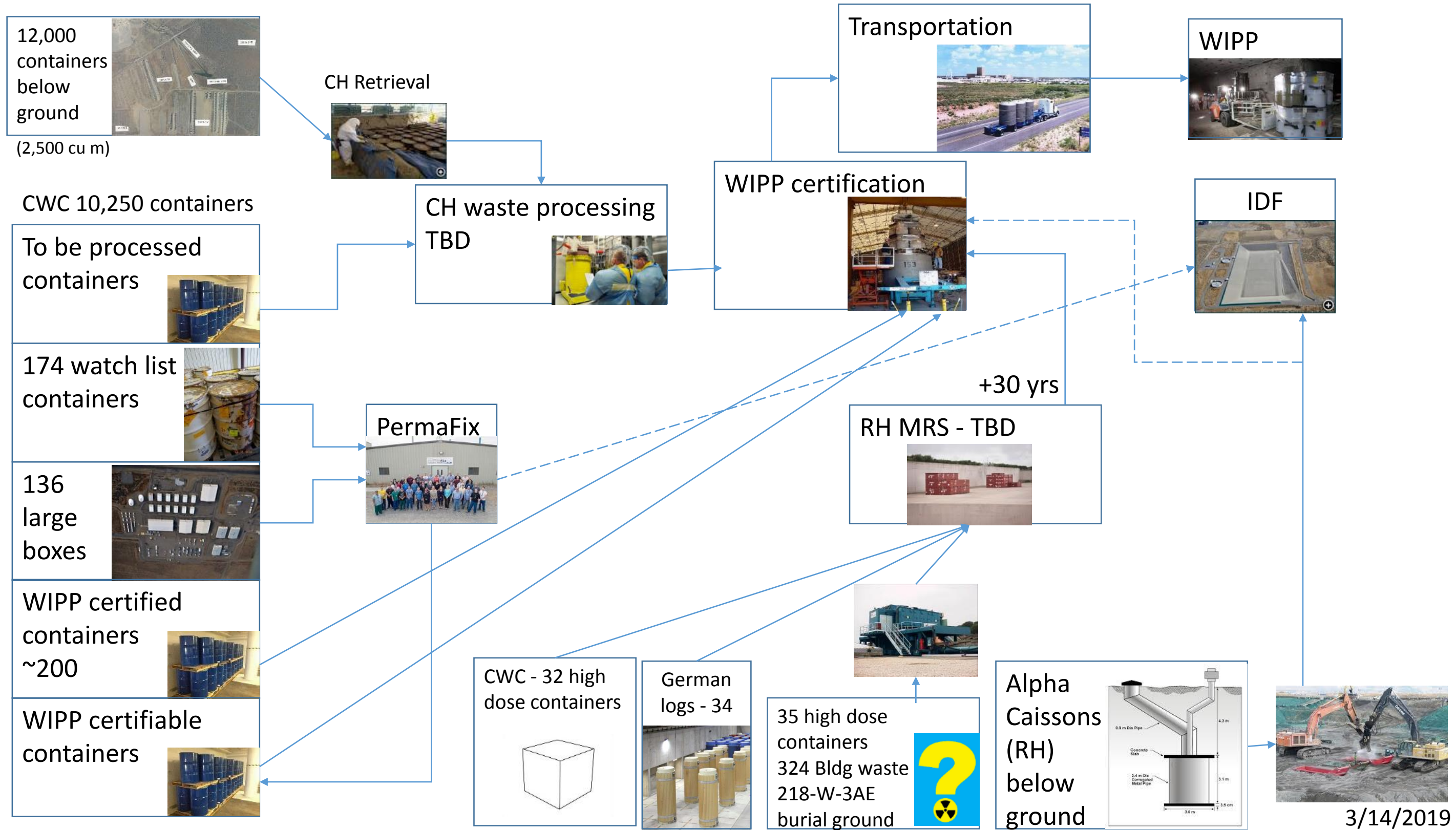
DRAFT

Existing
Waste

Projected
Waste

August 2018





Why does it matter?

- Managing M-91 TRU waste will cost \$100+ million per year from the 2020s through 2050
 - A big fraction compared to DOE-Richland FY2019 appropriated budget of \$865 million
- Hanford WIPP shipments shut down after ARRA funding expired. Re-start was postponed by WIPP shutdown, slow-down after accidents
 - Hanford is last w/in DOE, may re-start 2028
 - Stored containers may degrade over the years
- Projected waste will be “newly generated” and isn’t included in M-91



Questions?



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