

28. CUMULATIVE IMPACTS FROM THE HANFORD SITE

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28.1 INTRODUCTION

Other hazardous and radioactive waste will remain at the Hanford Site after closure. During the past 65 years, radioactive waste has been intentionally discharged into cribs, trenches, and ponds, unintentionally discharged (pipeline leaks, tank leaks, and tank overfills), or buried in disposal facilities (for example, the Solid Waste Burial Grounds or the Environmental Remediation Disposal Facility). As the Hanford Site cleans up contaminated buildings and soils, more waste will be treated and then disposed.

Operations at the Hanford Site have and will impact the environment. Tank farms are only a part of such impacts. The *Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland Washington* will provide the estimated cumulative impacts.

The *Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland Washington* ([76 FR 5655](#)) will provide estimated cumulative impacts.

28.2 INVENTORY

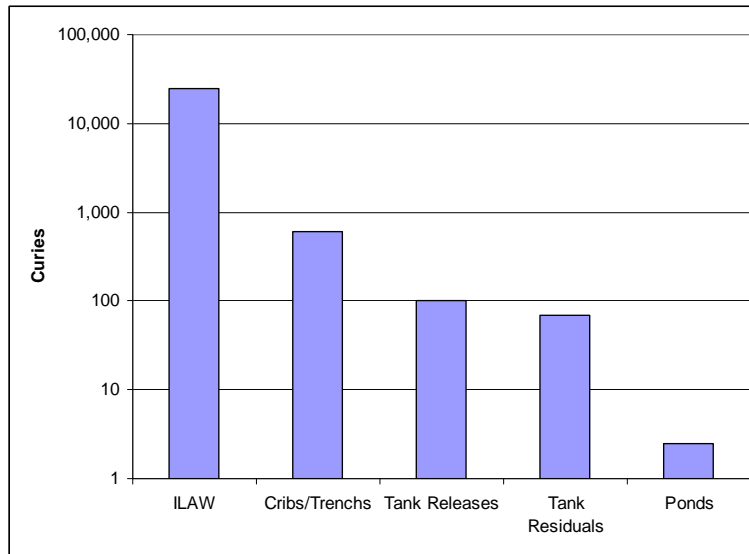
Previous Hanford Site efforts to determine impacts from all Hanford Site operations ([Kincaid 1998](#)) have only identified a few more contaminants (carbon tetrachloride and trichloroethylene) than are considered in tank waste assessments (see [Chapter 17](#)). Both of these new contaminants arise from discharges from the Plutonium Finishing Plant in the central part of the 200 West Area.

For long-term groundwater impacts, technetium-99 still reigns as the radioactive waste constituent contributing the highest impacts. [Figure 28-1](#) displays the location, inventory, and the waste form for the major sources of technetium-99 after Hanford Site closure. This figure assumes that the spent fuel and immobilized high-level waste have been transferred off the Hanford Site.

Based on the assumptions contained in [Corbin et al. 2005](#) and [Kirkbride et al. 2005](#), the major sources of technetium-99 on the Hanford Site at closure are the following:

- ◆ Integrated Disposal Facility (having about 22,000 Curies in packages containing glass, ~300 Curies in packages containing grout)
- ◆ Cribs and trenches (about 600 Curies)
- ◆ Leaked or spilled tank wastes (about 100 Curies)
- ◆ Tank waste residuals (about 68 Curies, assumed to be grouted)
- ◆ Ponds (about 2.5 Curies).

Figure 28-1. Location, Inventory, and Waste Form for the Major Sources of Technetium-99 after Hanford Site Closure



28.3 GROUNDWATER IMPACTS

As seen in Figure 2-5 of [Chapter 2](#) (where a plume is seen in the northeastern part of the 200 East Area and two smaller plumes along the eastern edge of the 200 West Area), technetium-99 has reached groundwater. According to published site-wide assessments ([Kincaid et al. 1998](#), [Bryce et al. 2002](#), and [Eslinger et al. 2006](#)), most of the groundwater impacts have occurred from wastes intentionally discharged to cribs (for example, the BY cribs). However, releases from tank farms have also impacted groundwater. In addition, contamination that has not yet reached groundwater is still migrating toward groundwater.

28.4 REFERENCES

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