



6.4 RCRA Summary

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More than 60 treatment, storage, and disposal units are recognized under the RCRA permit for the Hanford Site. The units that required groundwater monitoring are grouped into 24 waste management areas. Locations of these sites were given in Figure 6.1.3. Table 6.4.1 provides a summary of groundwater monitoring activities and results for these sites during calendar year 2001. Additional information, including complete listings of

constituents measured in monitoring wells from October 2000 through September 2001, is available in PNNL-13788. Although radionuclide results are discussed in Table 6.4.1, it is noted that they are not regulated under RCRA. These results are presented for completeness, identifying impacts of constituents regulated by RCRA as well as the *Atomic Energy Act*.

Table 6.4.1. Summary of RCRA Monitoring Results in 2001

RCRA Unit	Monitoring Status	Highlights in 2001
1301-N facility	Indicator evaluation	No contamination indicator parameter exceedance.
1325-N facility	Indicator evaluation	No contamination indicator parameter exceedance.
1324-N/NA facilities	Indicator evaluation	No contamination indicator parameter exceedance.
183-H basins	Corrective action	Corrective-action monitoring continued during operation of the 100-HR-3 chromium pump-and-treat system. Leakage from basins in past contaminated groundwater with chromium, nitrate, technetium-99, and uranium. CERCLA program directs corrective action.
216-A-29 ditch	Indicator evaluation	No contamination indicator parameter exceedance.
216-B-3 pond	Indicator evaluation	Washington State Department of Ecology issued guidance letter regarding alternative statistical methods. DOE submitted proposal for new approach in November 2001.
216-B-63 trench	Indicator evaluation	No contamination indicator parameter exceedance.
216-S-10 pond and ditch	Indicator evaluation	No contamination indicator parameter exceedance. Another downgradient well went dry in 2001, leaving just one useable, shallow, downgradient well.
216-U-12 crib	Assessment	Nitrate and technetium-99 plumes mingled from various sources, including crib. Monitoring network contains just two useable downgradient wells and no upgradient wells.
316-5 process trenches	Corrective action	Trenches and other sources contaminated groundwater with cis-1,2-dichloroethene, trichloroethene, and uranium. Corrective action deferred to CERCLA; involves monitored natural attenuation of contaminants. Trichloroethene declined below 5 µg/L maximum contaminant level. New monitoring plan written, implementing alternative statistical methods.
LERF	Indicator evaluation	Another downgradient well went dry in 2001, leaving just one useable downgradient well. Washington State Department of Ecology directed DOE to cease statistical evaluations.
LLWMA 1	Indicator evaluation	No contamination indicator parameter exceedance.
LLWMA 2	Indicator evaluation	No contamination indicator parameter exceedance.
LLWMA 3	Indicator evaluation	No contamination indicator parameter exceedance. Wells going dry. Poor downgradient coverage.
LLWMA 4	Indicator evaluation	No contamination indicator parameter exceedance. Wells going dry. Only two downgradient wells.

Table 6.4.1. (contd)

RCRA Unit	Monitoring Status	Highlights in 2001
NRDWL	Indicator evaluation	No contamination indicator parameter exceedance.
PUREX cribs	Assessment	Iodine-129, tritium, and nitrate elevated in groundwater.
SST WMA A-AX	Indicator evaluation	Directions of groundwater flow re-interpreted and require modifications to monitoring network.
SST WMA B-BX-BY	Assessment	Tanks may have contributed to technetium-99, nitrate, nitrite, and uranium. Other major sources (e.g., BY Cribs, 216-B-8 crib) produced most contamination. Nitrate continued to migrate across WMA, with highest concentrations in north. Technetium-99 decreased, uranium rose sharply in central WMA. Tritium identified as new contaminant of interest on west side of BX tank farm. Three new wells installed.
SST WMA C	Indicator evaluation	Directions of groundwater flow re-interpreted and require modifications to monitoring network.
SST WMA S-SX	Assessment	Sources within tank farms contaminated groundwater with chromium, nitrate, and technetium-99. Well in southwest WMA shows impact of 1960s tank leak, high technetium-99 and uranium. Studies indicate extent of tank waste in groundwater from that leak very limited. Technetium-99 in other wells suggests longer-term releases in past. Sharp rise in chromium, nitrate, and technetium-99 represents vadose zone source possibly originating in S tank farm. Two new wells installed.
SST WMA T	Assessment	Technetium-99, chromium, and nitrate had source within tank farm. Tank-related contaminants largely restricted to zone of lower permeability in upper portion of aquifer. Lateral extent of low permeability zone and extent to which contaminants migrating into deeper zone of higher permeability uncertain. Lateral extent of contamination also uncertain because of lack of monitoring wells north and east of zone of known contamination.
SST WMA TX-TY	Assessment	Nearby pump-and-treat system affects groundwater flow, may have impact on distribution of contaminants. Technetium-99 may be drawn from beneath WMA into pump-and-treat. Plume containing chromium, iodine-129, nitrate, and technetium-99 originated within WMA. Second plume from sources not in WMA superimposed on tank plume. Seven new wells installed in 2000-2001.
SST WMA U	Assessment	Nitrate and technetium-99 continued to rise, especially in wells on west side of WMA, but concentrations remained below drinking water standards. Three new wells installed.

CERCLA = *Comprehensive Environmental Response, Compensation, and Liability Act.*
 DOE = U.S. Department of Energy.
 LERF = Liquid Effluent Retention Facility.
 LLWMA = Low-Level Waste Management Area.
 NRDWL = Nonradioactive Dangerous Waste Landfill.
 PUREX = Plutonium-Uranium Extraction Plant.
 SST = Single-shell tank.
 WMA = Waste management area.