

Iodine-129 in Onsite and Offsite Samples at Hanford

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Ambient air, water and biota are routinely monitored for Hanford-origin radionuclides as part of the sitewide Surface Environmental Surveillance Project. Four continuously operated air monitoring stations are located near operating facilities, along the perimeter of the Hanford Site, and in the communities near the Site. The network emphasizes locations downwind of the Site in areas of potential public exposure. Columbia River water and milk samples are routinely monitored at similar locations for I-129 concentrations.

Ambient air results for 1996, showed I-129 concentrations at the site perimeter to be slightly elevated when compared to background locations for iodine-129. Columbia River results were elevated in down river locations as compared to up river locations. The concentrations of I-129 were below U.S. Department of Energy guidelines in 1996.

Long-term ambient air monitoring results provide a mechanism to evaluate Site operations relative to contaminant concentrations in air. When the PUREX separation facility was operating, mean concentrations of iodine-129 at the site perimeter were elevated compared to the background location. In addition, there were correlations between the annual 200 Area emissions (primarily PUREX releases) and the annual average concentrations of iodine-129 measured at both onsite and downwind perimeter locations. Concentrations of I-129 were also observed to be higher in Columbia River water sampled down stream of Hanford than upstream as a result of contaminated groundwater entering the river.

The concentrations found and I-129 detection methodology will be discussed.