

5.4 Water Quality Protection



This section provides information about federal statutes and assessments related to water quality.

5.4.1 Clean Water Act

R. Ranade

The *Clean Water Act* applies to point source discharges to surface waters of the United States. At the Hanford Site, the regulations are applied through the *EPA Administered Permit Programs: The National Pollutant Discharge Elimination System* (40 CFR 122) permits that govern effluent discharges to the Columbia River. There is one National Pollutant Discharge Elimination System permit, WA-002591-7, issued by EPA for the Hanford Site. The permit covers three active outfalls: outfall 001 for the 300 Area Treated Effluent Disposal Facility and outfalls 003 and 004 in the 100-K Area. Fluor Hanford, Inc. is the holder of this permit.

The Hanford Site was covered by one storm water permit during 2004. EPA's National Pollutant Discharge Elimination System Storm Water Multi-Sector General Permit WAR05A57F establishes the terms and conditions under which storm water discharges associated with industrial activity are authorized. This permit was issued on May 30, 2001, and supersedes all other National Pollutant Discharge Elimination System storm water permits previously in effect at the site. Fluor Hanford, Inc. is the holder of this permit.

Wastewater from the William R. Wiley Environmental Molecular Sciences Laboratory, located in the Richland North Area, is discharged to the city of Richland's wastewater treatment facility under pretreatment permit CR-IU005. This permit, formerly issued by the city to the DOE Richland Operations Office, was re-issued by the city of Richland to Pacific Northwest National Laboratory on October 1, 2001.

There are numerous sanitary waste discharges to the ground throughout the site. Sanitary wastewater from the 400 Area is discharged to a treatment facility of Energy Northwest's Columbia Generating Station (Figure 1.0.1). Sanitary wastewater from the 300 Area, the former 1100 Area, and other facilities north of and in Richland is discharged to the city of Richland's treatment facility. Sanitary wastewater in the 200 Areas is primarily treated in a series of onsite sewage systems. The placement of these systems is based on population centers and facility locations. In recent years, extensive efforts have been made to regionalize the onsite sewage systems. Many of the small onsite sewage systems have been replaced with larger systems. These larger systems (with design capacities of 13,248 to 54,883 liters [3,500 to 14,500 gallons] per day) operate under permits issued by the Washington State Department of Health and treat wastewater from several facilities rather than a single facility.

The Washington State Department of Ecology has a State Wastewater Discharge Permit Program that regulates the discharge or disposal of wastewater to groundwater. DOE is complying with this program at the Hanford Site and is currently holding several state wastewater discharge permits. During 2004, the Hanford Site had ten state waste discharge permits issued by the Washington State Department of Ecology (ST-4500, ST-4501, ST-4502, ST-4507, ST-4508, ST-4509, ST-4510, EPA NPDES Permit WA-002591-7, EPA Stormwater Permit WAR05A57F, and Permit CR-IU005 for wastewater discharges from Pacific Northwest National Laboratory's William R. Wiley Environmental Molecular Sciences Laboratory to the city of Richland's wastewater treatment facility).

There were no permit violations during 2004.



5.4.2 Safe Drinking Water Act

L. M. Kelly

In 1974, Congress passed the *Safe Drinking Water Act*. The act set up a cooperative program among local, state, and federal agencies to establish drinking water regulations applicable for all public water systems in the United States. States were granted primary responsibility for administering and enforcing the *Safe Drinking Water Act*, known as primacy. To obtain primacy, states had to meet certain criteria, including adoption of regulations equal to or more stringent than EPA's regulations.

The state of Washington was awarded primacy in 1978. The state Board of Health and the Washington State Department of Health became partners in developing and enforcing state drinking water regulations. The water systems on the Hanford Site were designated as public water systems in 1986, and became formally registered as public systems under the jurisdiction of the Washington State Department of Health in 1987.

The *Safe Drinking Water Act* was amended in 1986 to strengthen the act (*Safe Drinking Water Act Amendments*), and amended again in 1996. More standards are being established and some existing standards are becoming more stringent. The applicable state drinking water administrative codes have been revised consistent with the major regulatory changes. The latest revision of WAC 246-290, *Public Water Supplies*, was issued on July 3, 2004.

For the nine public water systems at Hanford, the administrative burden increased considerably in 2004 to ensure compliance with the new progressively complex regulations. A review of the revised regulations and associated guidance documents was performed during 2002 to 2004 to determine the impact on Hanford water systems. New monitoring plans and procedures were developed and implemented, and water treatment plants and processes were assessed to ascertain if hardware or process changes would be necessary to comply with the new and upcoming regulations. To disclose the information, training was provided to managers, engineers, and operators responsible for providing safe drinking water to Hanford consumers. Monitoring, reporting, and recordkeeping activities increased commensurate with the implementation of the new laws.

On August 10, 2004, the Washington State Department of Health conducted Sanitary Surveys for the Group A Hanford water systems supplied from the Columbia River. A Sanitary Survey evaluates the ability of a water system to reliably produce and distribute safe drinking water. No issues or deficiencies were noted in the final Sanitary Survey reports.

Hanford water systems were monitored during 2004 for the required microbiological, chemical, physical, and radiological constituents to ensure that all existing and new standards were being met. There were no microbiological detections and all chemical concentrations were well below the maximum contaminant levels set by the EPA. All analytical results for 2004 radiological monitoring are summarized in Section 8.6.