Composite samples are flow-weighted (10 hours) at the Area 6 Yucca Lake and Area 23 Mercury systems; these systems are equipped with an ultrasonic flow meter for this purpose.

All water samples were collected in accordance with accepted practices, and the analyses were performed by state-approved laboratories. Approved analytical methods listed in NAC 445A and Title 40 CFR 141 were used by the laboratories.

In 2004, the Water Pollution Control General Permit GNEV93001 expiration date was extended from December 7, 2004 to May 7, 2005. This extension was granted to allow completion of a project at the Area 23 Mercury sewage lagoons. That project, which began in 2004 and will be completed in 2005, was to combine the primary lagoon and the first installation basin. This project will also install a geosynthetic clay liner and high-density polyethylene liner to convert the primary lagoon to total containment. Once this project is complete, a new permit will be issued that will have reduced monitoring requirements and no longer require the sampling of well SM-23-1.

4.2.3.1 Quarterly Analysis of Influent Water Quality

A composite sample from each influent headwork was collected quarterly. The composite sample was analyzed for three parameters: 5-day biological oxygen demand (BOD_5), total suspended solids (TSS), and pH (Table 4-11). The compliance limits for these parameters, established under Water Pollution Control General Permit GNEV93001, are shown in Table 4-11. All quarterly monitoring results for BOD_5, TSS, and pH for sewage system influent waters were within permit limits in 2004.

Table 4-11. Water quality analysis results for NTS sewage lagoon influent waters in 2004

		Minimum and Maximum Values from Quarterly Samples	
Parameter	**Units**	**Area 6 Yucca**	**Area 23 Mercury**
BOD_5	mg/L	45.3 - 190	42.5 - 86
BOD_5 Permit Limit		No Limit	No Limit
BOD_5 Mean Daily Load [(a)]	kg/d	1.50 – 7.16	9.32 – 16.32
BOD_5 Mean Daily Load Limit		8.66	172
TSS	mg/L	99.5 - 320	57.9 - 161
TSS Permit Limit		No Limit	No Limit
pH	S.U.	7.93 – 8.61	7.20 – 8.12
pH Permit Limit		6.0 – 9.0	6.0 – 9.0

(a) BOD 5 Mean Daily Load in kg/d = (mg/L BOD x L/d Average Flow x 3.785)/10^6.

4.2.3.2 Annual Analysis of Toxicity of Sewage Lagoon Pond Waters

A grab sample from the Area 23 Mercury primary lagoon and an equal-volume composite sample from the two Area 6 Yucca Lake primary lagoons were collected in April.

Each grab and composite sample was filtered, the solids discarded, and the filtrate analyzed directly, using methods of analysis cited in EPA Publication SW-846. Each sample was analyzed for those contaminants listed in Table 4-12. The limits for these contaminants are also specified under state permit; they are the same limits specified in 40 CFR 261.24, Table 1, Maximum Concentration of Contaminants for the Toxicity Characteristic. Annual monitoring of Area 6 Yucca Lake and Area 23 Mercury sewage lagoon waters adjacent to lagoon inlets showed that no contaminants exceeded permit limits (Table 4-12).