2.11 600 Area

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This section discusses groundwater contamination in the 600 Area including the following specific facilities: Nonradioactive Dangerous Waste Landfill, Solid Waste Landfill, Gable Mountain Pond, 618-10 burial ground, and 316-4 crib. Additional constituent information is provided for the Central plateau, western 600 Area, and 200-PO-1 Operable Unit.

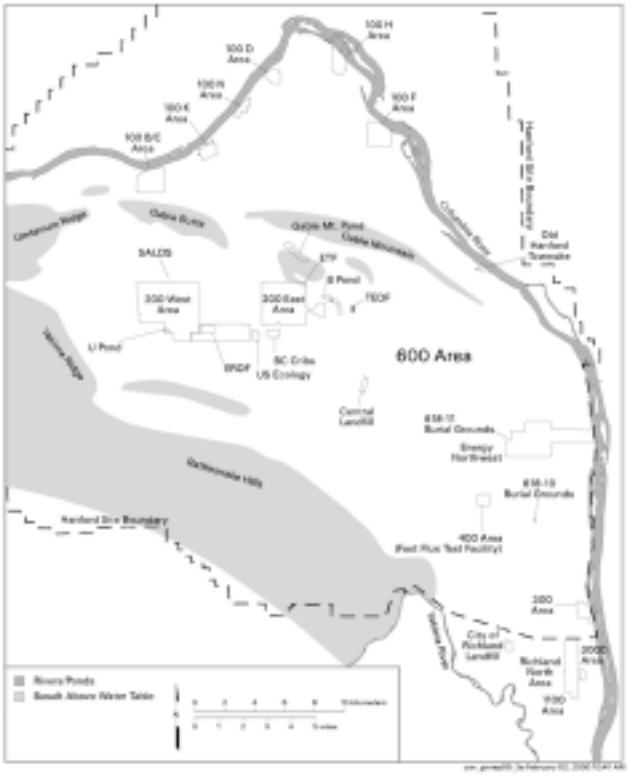
Monitoring Objectives in 600 Area

Groundwater monitoring is conducted in the 600 Area:

- triennially to annually to describe the nature and extent of contamination
- annually in "guard wells" to ensure that no unexpected contaminants migrate beyond the 200 Areas or into the Columbia River
- semiannually to detect possible impacts of the Nonradioactive Dangerous Waste Landfill RCRA Site
- quarterly to detect possible impacts of the Solid Waste Landfill.

2.11.1 Nonradioactive Dangerous Waste Landfill

The Nonradioactive Dangerous Waste Landfill is a *Resource Conservation and Recovery Act of 1976* (RCRA) treatment, storage, and disposal facility regulated under an interim status, indicator parameters program. The Nonradioactive Dangerous Waste Landfill and the adjacent Solid Waste Landfill make up what is known as the Central Landfill.



2.11.1.1 Groundwater Flow

No new data concerning groundwater flow at the Central Landfill became available during fiscal year 1999.

Groundwater flow directions and flow rates at the Central Landfill are difficult to determine from water-table maps because of the extremely low hydraulic gradient. The best indicators of flow direction are the major plumes of iodine-129, nitrate, and tritium. These plumes flow to the southeast (~125 degrees east of north, Section 17.0 in DOE/RL-91-03) in the vicinity of the Central Landfill. The flow rate estimated by the decrease in nitrate and tritium concentrations across the site is ~6 meters per day. For more information on groundwater flow rate and flow direction, see Table A.2.

Water-level data from two well pairs, sampling the top of the unconfined aquifer and the top of the Ringold Formation, indicate that the vertical gradient within the upper portion of the aquifer is negligible. The well pairs are 699-25-33A and 699-25-34A and 699-26-35A and 699-26-35C.

2.11.1.2 Resource Conservation and Recovery Act of 1976 Parameters

Monitoring of the Nonradioactive Dangerous Waste Landfill focuses on the RCRA interim status indicator parameters (pH, specific conductance, total organic carbon, and total organic halides). Chlorinated hydrocarbons are monitored because they may represent groundwater contamination originating from the Nonradioactive Dangerous Waste Landfill. Tritium and nitrate are present in groundwater and have sources in the 200 East Area (see Section 2.9.2). The groundwater quality parameters (chloride, iron, manganese, phenols, sodium, and sulfate) are monitored but are either not detected or not found in concentrations above background.

The Nonradioactive Dangerous Waste Landfill, a RCRA site, showed no evidence of significant contamination under interim status monitoring.

The values for RCRA indicator parameters did not exceed their critical means in fiscal year 1999.

Six chlorinated hydrocarbons were detected in Nonradioactive Dangerous Waste Landfill network wells during fiscal year 1999 but none at concentrations exceeding the maximum contaminant levels. They include 1,1-dichloroethane, 1,2-dichloroethane, 1,1,1-trichloroethylene, carbon tetrachloride, tetrachloroethylene, and trichloroethylene. The source of the chlorinated hydrocarbons could be either from the Solid Waste Landfill (to the south) or the Nonradioactive Dangerous Waste Landfill. For example, tetrachloroethylene is present in vadose zone vapor beneath the Solid Waste Landfill (PNL-7147) and also is the principal vadose zone vapor contaminant around the chemical disposal trenches at the Nonradioactive Dangerous Waste Landfill (Section 5.2 of DOE/RL-93-88). It is possible that both of these sources potentially contribute to the contamination.

Tritium and nitrate were detected in all Nonradioactive Dangerous Waste Landfill network wells. Concentrations increase from the southwestern wells, lowest concentrations, to the northeast where concentrations are highest. The Nonradioactive Dangerous Waste Landfill is on the edge of the major tritium and nitrate plumes emanating from the 200 East Area (see Plate 3 and Figures 2.1-3 and 2.1-4). Both tritium and nitrate concentrations in the Nonradioactive Dangerous Waste Landfill network wells are decreasing with time.

2.11.2 Solid Waste Landfill

The Solid Waste Landfill is regulated by the Washington State Department of Ecology under WAC 173-304, *Washington Solid Waste Regulations*. WAC 173-304 parameters and site-specific parameters (including alkalinity, chlorinated hydrocarbons, gross alpha, gross beta, and tritium) are analyzed on groundwater samples collected quarterly. Groundwater flow was described in Section 2.11.1.

The Solid Waste Landfill has had little negative impact on Hanford Site groundwater, except minor chlorinated hydrocarbon contamination below drinking water standards but above WAC 173-200 levels, which are lower and applicable to the Solid Waste Landfill. Downgradient wells show higher specific

The Solid Waste Landfill is regulated under the Washington Administrative Code. The landfill has had little negative effect on groundwater quality. Low levels of hydrocarbons are detected in groundwater near this site and the adjacent Nonradioactive Dangerous Waste Landfill.

conductance, lower pH, and higher sulfate than upgradient wells. This is apparently a result of high concentrations of carbon dioxide in the vadose zone resulting from the degradation of sewage material beneath the Solid Waste Landfill (Section 5.3 of DOE/RL-93-88).

2.11.2.1 WAC 173-304 Parameters

Each WAC 173-304 parameter is discussed separately below. See Table A.48 for a complete list of all results for required constituents at the Solid Waste Landfill during fiscal year 1999.

- Temperature — Average values for replicate temperature determinations measured during sampling in downgradient wells ranged from 17.3 to 19.9 degrees Celsius. All measurements were below the background threshold value of 21 degrees Celsius. See Table A.49 for a total list of fiscal year 1999 background threshold values for WAC 173-304-required parameters.
- Specific conductance — Due to laboratory errors, many of the field measurements through May 1999 were determined to be unreliable. However, each time replicate field samples were collected, an additional sample was collected and analyzed in the laboratory as a backup. Therefore, laboratory derived data are used for specific conductance for three quarters of the data collected during fiscal year 1999.

  Specific conductance measurements on samples from all of the Solid Waste Landfill downgradient wells exceeded the background threshold value of 550 µS/cm. The range was from 576 to 826 µS/cm. Monitoring wells 699-22-35 and 699-23-34B also exceeded the 700 µS/cm standard (WAC 246-290-310) in fiscal year 1999 as they have in previous years. The August 1999 result for specific conductance also exceeded the 700 µS/cm standard in well 699-24-34C.
- Constituent pH — Average values for replicate pH measurements in downgradient wells ranged from 6.6 to 7.4. None of the pH measurements exceeded the background threshold range of 6.2 to 8.46.
- Total organic carbon — The average of replicates for total organic carbon concentrations in downgradient wells ranged from below the method detection level, less than 220 to 965 µg/L. None of the reported values exceeded the 1,140 µg/L background threshold value.
- Chloride — Chloride concentrations in downgradient wells ranged from 5,190 to 7,430 µg/L. The 9,045 µg/L background threshold value was not exceeded.
- Nitrate — Nitrate concentrations in the downgradient wells ranged from 11 to 22 mg/L. Neither the 33.8 mg/L background threshold value nor the 45 mg/L maximum contaminant level were exceeded in any downgradient well. The source of nitrate at the Solid Waste Landfill is from upgradient sources in the 200 East Area.
- Nitrite and ammonium — Nitrite and ammonium concentrations in all downgradient wells were less than the method detection levels, 70 µg/L for nitrite and 37 µg/L for ammonium.
- Sulfate — Reported sulfate concentrations in downgradient wells ranged from 39 to 56 mg/L. Three samples from well 699-22-35 and four samples from well 699-23-34B exceeded the background threshold value of 51.5 mg/L. None of the samples exceeded the 250 mg/L standard (WAC 173-200).
- Filtered iron — Reported values for filtered iron ranged from 31.2 to 117.0 µg/L in downgradient wells. None of the reported values exceeded the 160.0 µg/L background threshold value.
- Filtered zinc — Reported values for filtered zinc ranged from 3.9 to 36.2 µg/L in downgradient wells. Only the reported value of 36.2 µg/L in well 699-24-34C in December 1998 exceeded the 34.0 µg/L background threshold value.
- Filtered manganese — Reported values for filtered manganese in downgradient wells ranged from less than 3 to 9.2 µg/L. None of the reported values in downgradient wells exceeded the 11.0 µg/L background threshold value.

- Chemical oxygen demand — Values for chemical oxygen demand in downgradient wells were reported to be less than 3,820 µg/L, the method detection limit, except for those samples collected in May 1999. The May 1999 values were all above the 5,000 µg/L background threshold values, but are suspect due to laboratory errors.
- Coliform bacteria (most probable number) — The reported values for coliform bacteria were all non-detections (i.e., 0.0 colonies per 100 milliliters), and, therefore, the background threshold value of 16 colonies per 100 milliliters was not exceeded in any downgradient wells.

2.11.2.2 Site-Specific Parameters

Site-specific parameters at the Solid Waste Landfill include chlorinated hydrocarbons, gross alpha, gross beta, and tritium. Elevated concentrations of chlorinated hydrocarbons continue to be detected at the Solid Waste Landfill during fiscal year 1999. Several exceeded the groundwater criteria set forth in WAC 173-200. The range of reported concentrations of chlorinated hydrocarbons is given in Table 2.11-1.

Chlorinated hydrocarbons were detected in all of the Solid Waste Landfill monitoring wells, including the upgradient wells. The chlorinated hydrocarbons detected were

carbon tetrachloride
1,1-dichloroethane
1,4-dichlorobenzene
trichloroethylene
chloroform
1,2-dichloroethane
tetrachloroethylene
1,1,1-trichloroethane.

Of those detected, only chloroform and 1,4-dichlorobenzene did not equal or exceed the WAC 173-200 concentration limits.

The most likely cause of the widespread chlorinated hydrocarbon contamination at the Solid Waste Landfill, including upgradient wells and the adjacent Nonradioactive Dangerous Waste Landfill, is the dissolution of vadose zone vapors into groundwater. However, the source of the vapors is uncertain. The most probable source is chlorinated hydrocarbons dissolved in liquid sewage waste that was discharged to trenches at the site.

Gross alpha and gross beta were detected in most of the upgradient and downgradient wells at the Solid Waste Landfill. However, neither exceeded the interim drinking water standards, 15 pCi/L for gross alpha and 50 pCi/L for gross beta. The range of reported gross alpha values was 2.27 to 7.95 pCi/L. The range for gross beta was 9.9 to 17.1 pCi/L.

Tritium, which has a source in the 200 East Area (see Section 2.9.2.2), is highest in concentration in the northeast and lowest to the southwest, corresponding to position on the edge of the major plume emanating from the 200 East Area. Although the overall levels are decreasing gradually with time, five Solid Waste Landfill monitoring wells have tritium levels that remain greater than the 20,000 pCi/L interim drinking water standard. The maximum concentration level reported during fiscal year 1998 was 91,400 pCi/L. During fiscal year 1999, the maximum reported was 73,700 pCi/L.

2.11.3 Gable Mountain Pond

Gable Mountain Pond is located in the area between the 200 East Area and Gable Mountain. Beneath the southern portion of the pond, basalt bedrock is above the water table. Beneath the northern portion of the pond, the groundwater flow direction is probably to the west based on the water-table map (see Plate 2).

Strontium-90 concentrations reversed a rising trend over the last few years in several wells near Gable

The former Gable Mountain Pond contaminated groundwater with strontium-90. Levels declined in fiscal year 1999.

Mountain Pond. No wells sampled in fiscal year 1999 had concentrations greater than the derived concentration guide (Figure 2.11-1), though concentrations were greater than the derived concentration guide in fiscal year 1998. Examples of the trends are shown for wells 699-53-47B and 699-53-48A in Figure 2.11-2. The maximum annual average strontium-90 concentration detected in the pond area in fiscal year 1999 was 948 pCi/L in well 699-53-47B. The interim drinking water standard is 8.0 pCi/L. Strontium-90 in the Gable Mountain Pond area apparently resulted from the discharge of waste to that pond during its early use. Wells completed above the basalt in the vicinity of this pond are becoming difficult to sample because of declining water levels.

Nitrate continued to be detected in wells monitoring Gable Mountain Pond at levels above the maximum contaminant level in fiscal year 1999. Well 699-53-48B contained 402 mg/L of nitrate, which was the maximum detected in Gable Mountain Pond vicinity. This sample also contained 4.3 mg/L nitrite (as NO_2^-), slightly above the maximum contaminant level. Nitrite, however, was not detected in nearby well 699-53-48A suggesting that the presence of nitrite may be affected by highly localized reducing conditions.

2.11.4 618-10 Burial Ground and 316-4 Crib

This burial ground and adjacent crib are southeast of the 400 Area, adjacent to Route 4S. Based on water-table contours, groundwater flow is to the east (see Plate 2). This site was investigated as part of a *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) limited field investigation for the 300-FF-2 Operable Unit (DOE/RL-96-42). In fiscal year 1995, high levels of uranium, 768 µg/L unfiltered, were detected in well 699-S6-E4A, which is adjacent to both the burial ground and crib. The presence of hydrocarbon contamination was detected also in well 699-S6-E4A and included

- 104 mg/L total petroleum hydrocarbon
- ~770 to 1,800 µg/L alkane and assorted decanes
- ~3,200 µg/L unknown volatile organics.

Subsequently, tributyl phosphate was detected in well 699-S6-E4A. The CERCLA investigation included re-configuration of well 699-S6-E4A and sampling of two cone penetrometer borings near this well. The conclusions in DOE/RL-96-42 were that uranium and hydrocarbon groundwater contamination are probably localized in the area of well 699-S6-E4A, and the source of such contamination is primarily the crib, with possibly some contribution from the burial ground.

Uranium in well 699-S6-E4A appears to have leveled off at a fiscal year 1999 average value of 92 µg/L (Figure 2.11-3). This uranium is highly depleted in uranium-234 and uranium-235. The uranium isotopic composition for this well is compared to natural abundance and to an average of 24 samples from 200 Area wells in Table 2.11-2. Although details of the disposal to the burial ground and crib have not been researched, the waste is known to have come from 300 Area operations and depleted uranium is known to have been used there. The presence of a low concentration of uranium-236 suggests that a component of the uranium has been irradiated in a reactor.

Tributyl phosphate concentrations reported in well 699-S6-E4A have been highly erratic (Figure 2.11-4). The reasons for the erratic concentrations have not been established but may be related to the petroleum hydrocarbons detected in the past.

During fiscal year 1996, well 699-S6-E4C (previously completed in multiple zones) was re-configured to provide two deep, depth-discrete, monitoring intervals within the Hanford/Ringold aquifer system that, in conjunction with shallow monitoring wells 699-S6-E4B and 699-S6-E4D, provided information on the vertical distribution of contaminants at this location. The two monitored intervals are piezometers 699-S6-E4CT at 26 meters below the water table and 699-S6-E4CS at 50 meters below the water table. Tritium concentrations at the water table in fiscal year 1999 were 23,600 pCi/L in well 699-S6-E4D. Tritium concentrations in piezometer 699-S6-E4CT declined from 27,800 pCi/L shortly after reconfiguration in fiscal year 1996 to 6,691 pCi/L in fiscal year 1999. Tritium

values for piezometer 699-S6-E4CS were still lower at 421 pCi/L in fiscal year 1999. This suggests that the earlier value resulted from intercommunication down the well bore prior to reconfiguration. Continued monitoring, as the well effect dissipates, is needed to determine the tritium value at these depths. However, preliminary results indicate that the highest concentrations of tritium are near the water table and concentrations decrease with depth.

2.11.5 618-11 Burial Ground

In January 1999, a sample from well 699-13-3A, located along the eastern (downgradient) fence line of the 618-11 burial ground, contained 1.86 million pCi/L of tritium (see Plate 3). This value is far higher than data found from the surrounding wells. The value was confirmed by re-analysis. A January 2000 sample contained 8.1 million pCi/L of tritium. This is the highest concentration of tritium detected onsite in recent years. The January 1999 sample collected from this well was the first sample to find tritium. A special investigation of the groundwater at the 618-11 burial ground is being undertaken in fiscal year 2000 to define the source of the high tritium results.

This burial ground is located west of the Energy Northwest reactor complex in the eastern 600 Area. The burial ground was active from 1962 to 1967 and received a variety of low and high activity waste from the 300 Area. The Waste Information Data System description of this site identified contaminants of concern (i.e., uranium, cesium, strontium, curium, cobalt-60, zirconium, and plutonium). Other contaminants that might be encountered include thorium, beryllium, aluminum-lithium, carbon tetrachloride, hydrogen gas, and sodium-potassium eutectic.

Well 699-13-3A was drilled and first sampled in 1995. Radionuclides analyzed at least once in this well include tritium, uranium, cesium-137, cobalt-60, europium-152, europium-154, and europium-155. No radionuclides have been detected at levels above drinking water standards except for the tritium discussed above. Gross alpha measurements have all been less than 9 pCi/L. Gross beta measurements are all less than 30 pCi/L but have shown a slight increasing trend (Figure 2.11-5). No organic chemical constituents have been detected. No other constituents have been detected at levels above primary maximum contaminant levels. Aluminum, iron, and manganese have been detected at levels above secondary maximum contaminant levels in unfiltered samples. Only aluminum was above the secondary maximum contaminant level in fiscal year 1999. Manganese was detected in filtered samples at levels above the secondary maximum contaminant level in fiscal year 1996 (64.5 to 69.3 μg/L).

2.11.6 Central Plateau

Chromium is frequently detected in filtered samples south of the 200 East Area. In recent years, concentrations in well 699-32-62 have been above the maximum contaminant level, but this well was not sampled in fiscal year 1999. The sources and extent of this contamination are uncertain. Early disposal to the vicinity of the 216-S-10 pond and ditch is one possible source. The extent of chromium contamination to the south is particularly poorly defined. See PNNL-13080 for further details.

2.11.7 Western 600 Area

The western 600 Area is the area of the Hanford Site west of the 200 West Area and south of the Columbia River. This area includes the portion of the Hanford Site near the southwestern part of the site along Rattlesnake Ridge.

Nitrate was detected in wells in the western part of the site, but the levels remained lower than the maximum contaminant level in fiscal year 1999 with the exception of well 699-17-70 (54 mg/L), located 6 kilometers south-southeast of the 200 West Area (Figure 2.11-6). Nitrate upgradient of the 200 West Area and in well 699-17-70 north of the Rattlesnake Hills appears to have a source off the Hanford Site, possibly related to agricultural activity. An extension of Yakima Ridge, south of the 200 West Area, forms a

partial hydraulic barrier for the unconfined aquifer system, and hydraulic head is considerably higher to the south of the ridge (see Plate 2). For this reason and the lack of other Hanford Site contaminants, such as tritium, nitrate in well 699-17-70, south of the ridge, is not believed to result from Hanford Site activities.

2.11.8 200-PO-1 Operable Unit

The 200-PO-1 Operable Unit encompasses the area bounded by the 2,000 pCi/L isopleth of the major Hanford Site tritium plume originating from the 200 East Area and extending eastward and southeastward to the Columbia River (see Plate 3). This area also contains the far-field well network of the PUREX cribs RCRA facility (see Section 2.9.2.7). The purpose of the 200-PO-1 Operable Unit and PUREX cribs well networks is to monitor the extent and concentration of the three major plumes of groundwater contamination extending east and southeastward from the 200 East Area. The three major plumes are iodine-129 (see Figure 2.1-6), nitrate (see Figure 2.1-4), and tritium (see Plate 3). They are described with their source area in Section 2.9.2.

Table 2.11-1. Ranges of Chlorinated Hydrocarbon Concentrations (µg/L) in Groundwater at the Solid Waste Landfill, December 1998 to August 1999

Constituent	Limit (µg/L)	699-22-35	699-23-34A	699-23-34B	699-24-33	699-24-34A
Carbon tetrachloride	WAC 0.3	<0.02 - 0.2	<0.2 - <0.45	<0.02 - **0.5**	<0.02 - <0.45	<0.02 - <0.45
Chloroform	WAC 7.0	0.6 - 0.8	<0.03 - 0.4	<0.03 - 1.0	<0.03 - 0.3	<0.03 - 0.2
1,1-Dichloroethane	WAC 1.0	**2.0 - 3.0**	**2.0 - 4.0**	**2.0 - 5.0**	**1.0 - 2.0**	0.6 - **2.0**
1,2-Dichloroethane	WAC 0.5	<0.02 - <0.22	<0.02 - <0.22	<0.22 - 1.0	<0.02 - <0.22	<0.02 - <0.22
1,4-Dichlorobenzene	WAC 4.0	<0.03 - <0.17	0.2 - 1.0	<0.03 - <0.17	<0.03 - <0.17	<0.03 - <0.17
cis-1,2-Dichloroethylene	MCL 70	<0.02 - <0.37	<0.02 - <0.37	<0.02 - <0.37	<0.02 - <0.37	<0.02 - <0.37
trans-1,2-Dichloroethylene	MCL 100	<0.03 - <0.33	<0.03 - <0.33	<0.03 - <0.33	<0.03 - <0.33	<0.03 - <0.33
Tetrachloroethylene	WAC 0.8	**1**	**2.0 - 10.0**	**1.0 - 7.0**	**2.0 - 11.0**	**2.0 - 9.0**
Total organic halides	NA	2.7 - 11.5	3.05 - 8.7	6.7 - 16.3	3.5 - 7.9	<2.38 - 8.85
Trichloroethylene	WAC 3.0	0.8	0.7 - **3.0**	0.6 - 2.0	1.0 - **3.0**	0.7 - 2.0
1,1,1-Trichloroethane	WAC 0.2	**5.0 - 7.0**	**4.0 - 13.0**	**4.0 - 16.0**	**3.0 - 9.0**	**3.0 - 10.0**
1,1,2-Trichloroethane	MCL 5.0	<0.04 - <0.27	<0.04 - <0.27	<0.04 - <0.27	<0.04 - <0.27	<0.04 - <0.27

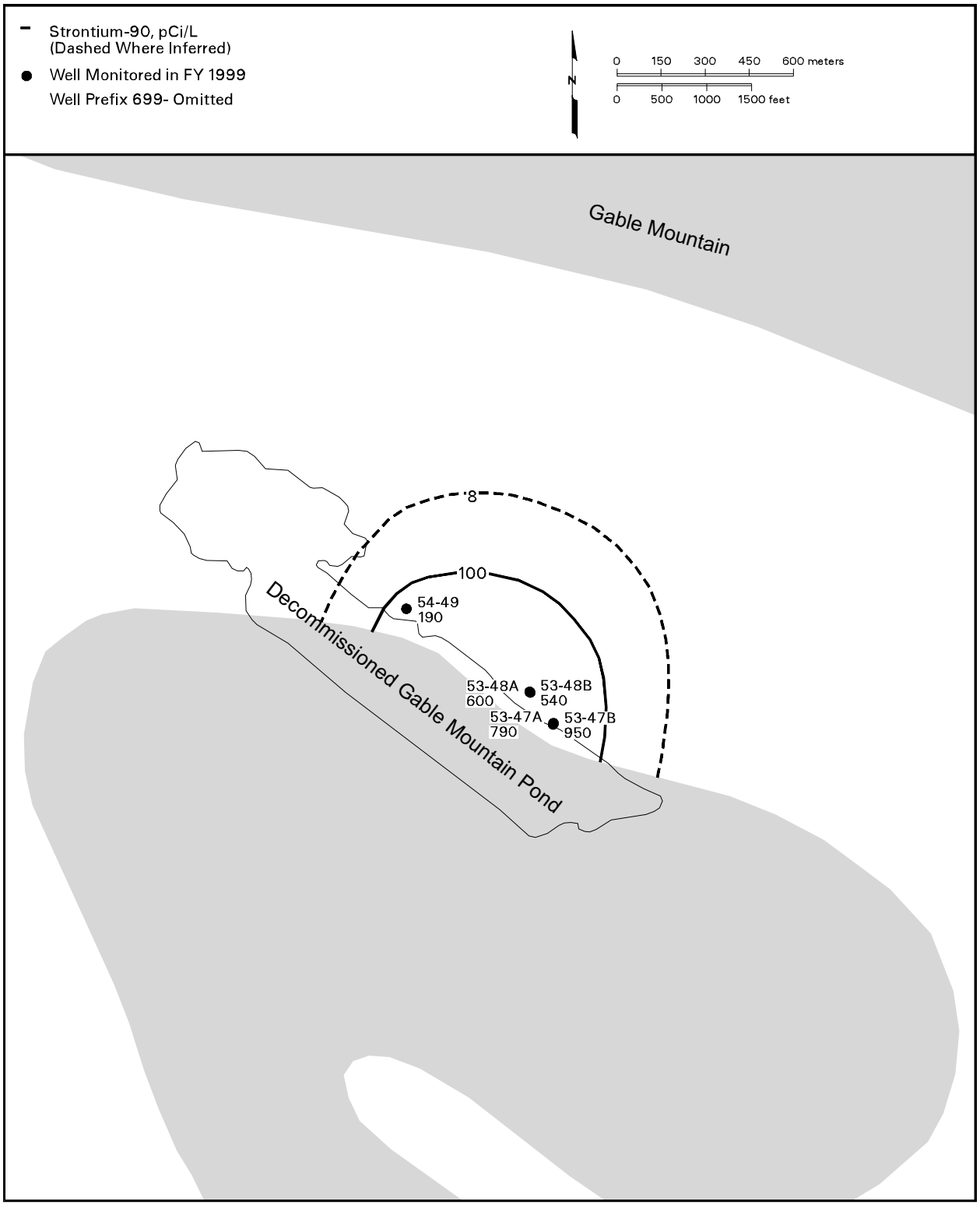
Constituent	Limit (µg/L)	699-24-34B	699-24-34C	699-24-35	699-25-34C	699-26-35A
Carbon tetrachloride	WAC 0.3	<0.02 - <0.45	<0.02 - 0.2	<0.02 - <0.45	<0.02 - **0.4**	<0.2 - **0.5**
Chloroform	WAC 7.0	<0.03 - 0.3	<0.03 - 0.3	<0.03 - <0.29	<0.03 - 0.6	<0.03 - 1.0
1,1-Dichloroethane	WAC 1.0	<1.0 - **2.0**	<1.0 - **2.0**	0.4 - 0.8	0.4 - **1.0**	<0.18 - 0.3
1,2-Dichloroethane	WAC 0.5	<0.02 - <0.22	<0.02 - <0.22	<0.02 - <0.22	<0.02 - <0.22	<0.22 - **1.0**
1,4-Dichlorobenzene	WAC 4.0	<0.03 - 0.4	<0.03 - <0.17	<0.03 - <0.17	<0.03 - <0.17	<0.03 - <0.17
cis-1,2-Dichloroethylene	MCL 70	<0.02 - <0.37	<0.02 - <0.37	<0.02 - <0.37	<0.02 - <0.37	<0.02 - <0.37
trans-1,2-Dichloroethylene	MCL 100	<0.03 - <0.33	<0.03 - <0.33	<0.03 - <0.33	<0.03 - <0.33	<0.03 - <0.33
Tetrachloroethylene	WAC 0.8	**2.0 - 9.0**	**1.0 - 9.0**	<0.03 - **3.0**	<0.03 - **7.0**	<0.03 - **3.0**
Total organic halides	NA	4.1 - 6.95	2.65 - 12.7	<2.38 - 7.9	<2.38 - 5.95	3.25 - 6.9
Trichloroethylene	WAC 3.0	0.7 - 2.0	0.7 - 2.0	<0.03 - 1.0	0.7 - **3.0**	<0.03 - 1.0
1,1,1-Trichloroethane	WAC 0.2	**2.0 - 8.0**	**2.0 - 7.0**	**2.0 - 6.0**	**1.0 - 5.0**	**<0.34 - 4.0**
1,1,2-Trichloroethane	MCL 5.0	<0.04 - <0.27	<0.04 - <0.27	<0.04 - <0.27	<0.04 - <0.27	<0.04 - 0.27

(a) WAC = Washington Administrative Code.
MCL = Maximum contaminant level.
NA = Not applicable.
Values in bold type equal or exceed WAC 173-200-40.

Table 2.11-2. Uranium Isotopic Composition in Well 699-S6-E4A

Well Name	Sample Date	Sample Time	U-234 (µg/L)	U-235 (µg/L)	U-236 (µg/L)	U-238 (µg/L)	Total U (µg/L)
699-S6-E4A	1/25/99	12:27	0.003272	0.516064	0.001344	98.33263	98.853

	U-234 Abundance (µg/L)	U-235 Abundance (µg/L)	U-236 Abundance (µg/L)	U-238 Abundance (µg/L)
699-S6-E4A	3.37E-05	5.29E-03	1.37E-05	9.95E-01
Natural abundance	5.50E-05	7.20E-03	0.00E+00	9.93E-01
Average 200 Area	6.30E-05	7.01E-03	4.44E-05	9.93E-01



can_gwrep99_48 February 24, 2000 11:49 AM

Figure 2.11-1. Average Strontium-90 Concentrations at Gable Mountain Pond, Top of Unconfined Aquifer

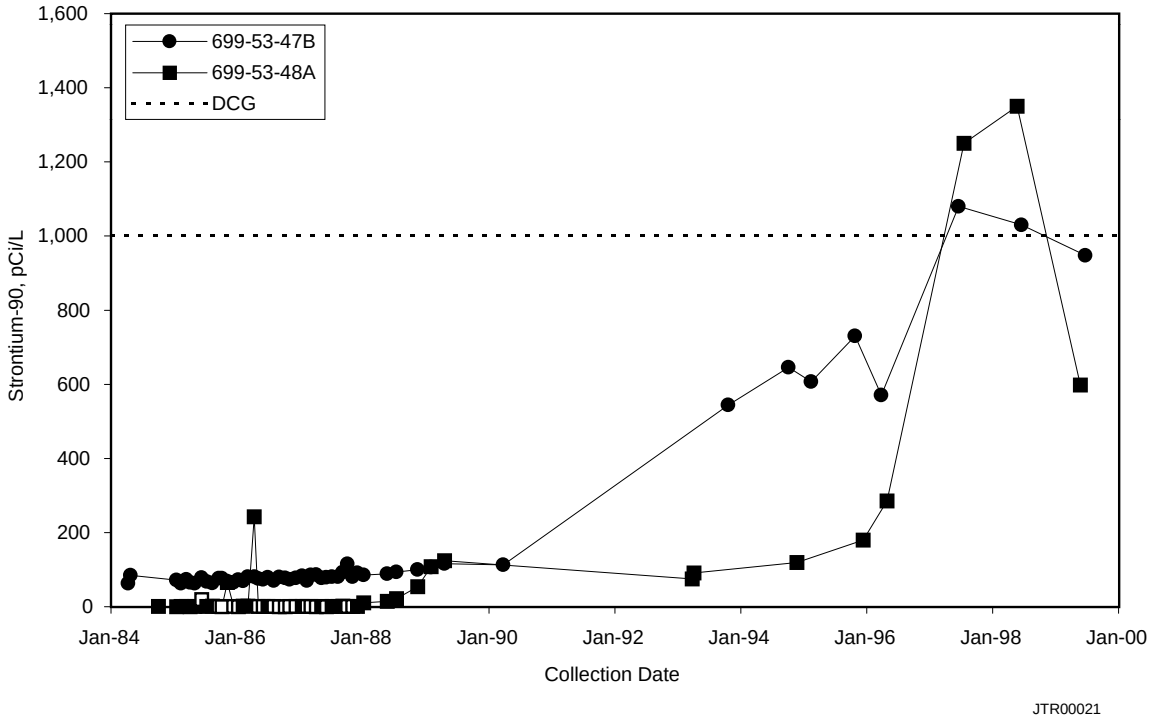


Figure 2.11-2. Strontium-90 in Wells 699-53-47B and 699-53-48A Near Gable Mountain Pond

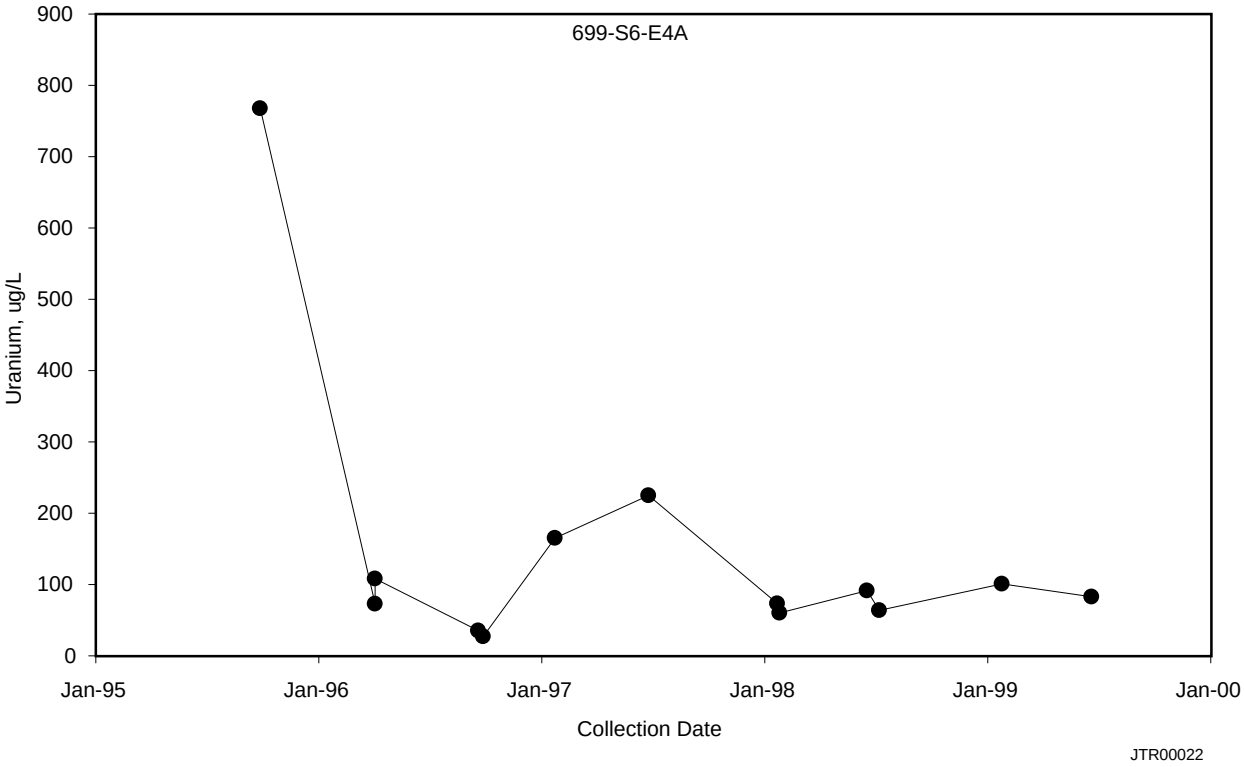


Figure 2.11-3. Uranium in Well 699-S6-E4A Near 618-10 Burial Ground

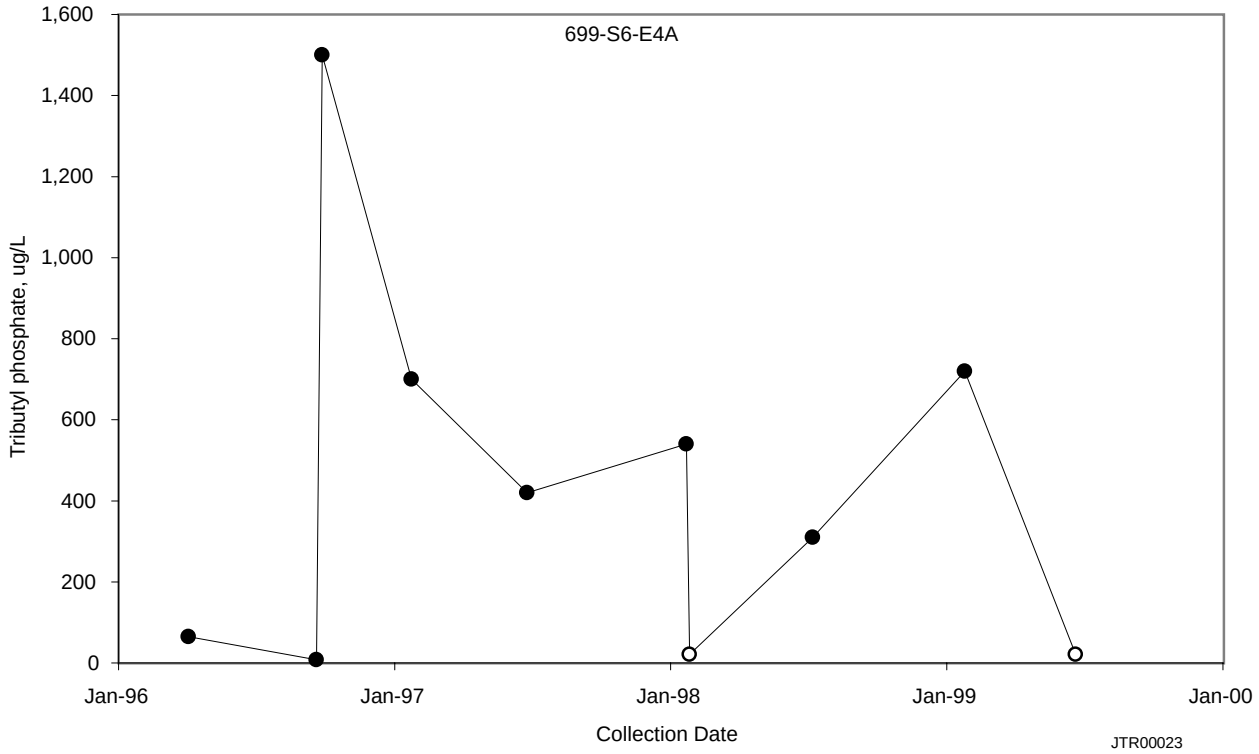


Figure 2.11-4. Tributyl Phosphate in Well 699-S6-E4A Near 618-10 Burial Ground

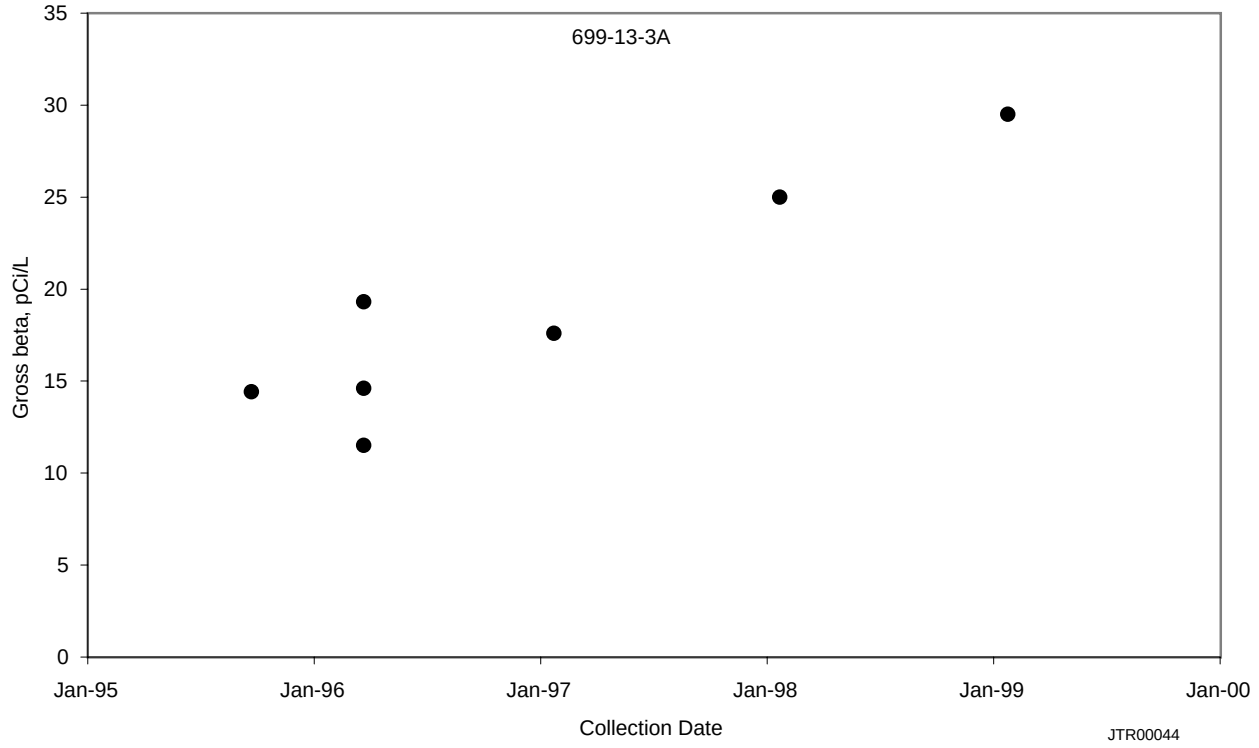


Figure 2.11-5. Gross Beta Concentrations in Well 699-13-3A Near 618-11 Burial Ground

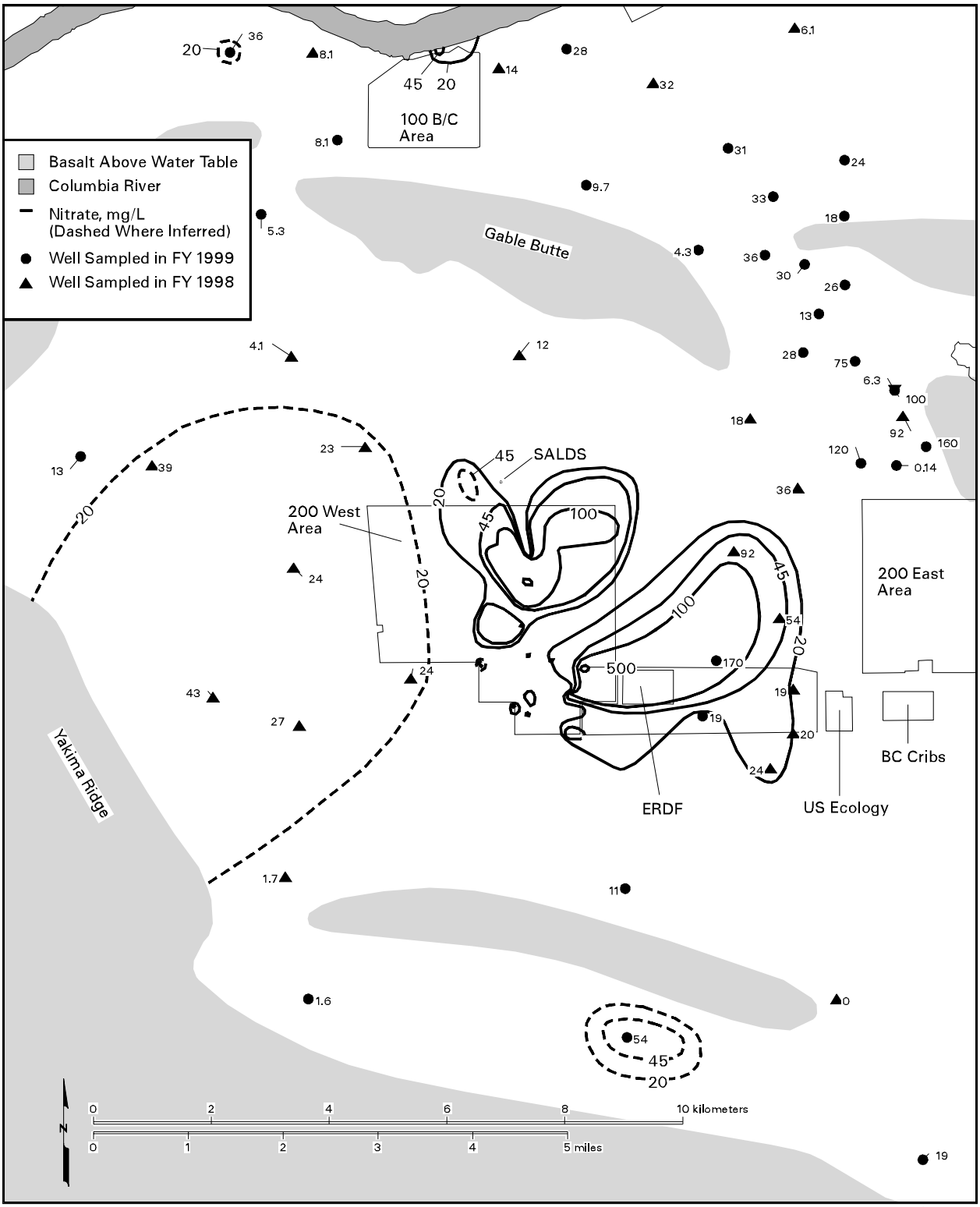


Figure 2.11-6. Average Nitrate Concentrations in Western 600 Area, Top of Unconfined Aquifer