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ENVIRONMENTAL RESTORATION PROGRAM

Waste Area Grouping 2 Phase I Remedial Investigation Seep Task Data Report: Contaminant Source Area Assessment

ENERGY SYSTEMS ER

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Energy Systems Environmental Restoration Program

Waste Area Grouping 2 Remedial Investigation Phase 1 Seep Task Data Report: Contaminant Source Area Assessment

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PREFACE

This report, *Waste Area Grouping 2 Remedial Investigation Phase I Seep Task Data Report: Contaminant Source Area Assessment (ORNL/ER–363)*, was prepared in accordance with requirements under the Comprehensive Environmental Response, Compensation, and Liability Act. This work was performed under Work Breakdown Structure 1.4.12.6.1.02.40.08.03 (Activity Data Sheet 3326). Publication of this document meets a project deliverable of March 29, 1996. This document is one of five reports issued in 1996 that provide follow-up information to the *Phase I Remedial Investigation Report for Waste Area Grouping (WAG) 2 at the Oak Ridge National Laboratory*. This report contains the results from the extensive WAG 2 seep task sampling efforts in 1993 and 1994. The data from the seep task provide useful characterization information for seeps, tributaries, and main streams in the White Oak Creek watershed. Results identify seep and surface water locations with elevated contaminant concentrations as well as key contaminant source areas which contribute to the total off-site contaminant release. This report presents a ranking of the source areas based on their contribution to the potential human health risk at White Oak Dam in order to assist in the prioritization of environmental restoration activities.

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ABBREVIATIONS

ACD	Analytical Chemistry Division
AWQC	ambient water quality criteria
CLP	Contract Laboratory Program (EPA)
CVAA	Cold Vapor Atomic Absorption
DOE	U.S. Department of Energy
EPA	U. S. Environmental Protection Agency
ERMA	Environmental Restoration Monitoring and Assessment
ER	Environmental Restoration (Program)
GFAA	Graphite Furnace Atomic Absorption
HFIR	High-Flux Isotope Reactor
HRT	Homogeneous Reactor Test
ICP	Inductively Coupled Plasma
MB	Melton Branch
NRWTF	Non-Radiological Wastewater Treatment Facility
OECD	Office of Environmental Compliance and Documentation
ORISE	Oak Ridge Institute for Science and Education
ORNL	Oak Ridge National Laboratory
QA	quality assurance
QC	quality control
RI	remedial investigation
SOP	standard operating procedure
TDEC	Tennessee Department of Environment and Conservation
VOC	volatile organic compounds
WAG	Waste Area Grouping
WOC	White Oak Creek
WOCET	White Oak Creek Embayment
WOD	White Oak Dam
WOL	White Oak Lake

EXECUTIVE SUMMARY

This report presents the findings of the Waste Area Grouping (WAG) 2, Phase I Remedial Investigation (RI) Seep Task efforts during 1993 and 1994 at Oak Ridge National Laboratory (ORNL). The results presented here follow results from the first year of sampling, 1992, which are contained in the Phase I RI report for WAG 2 (DOE 1995a). The WAG 2 Seep Task efforts focused on contaminants in seeps, tributaries, and main streams within the White Oak Creek (WOC) watershed. This report is designed primarily as a reference for contaminants and a resource for guiding remedial decisions. Additional in-depth assessments of the Seep Task data may provide clearer understandings of contaminant transport from the different source areas in the WOC watershed.

WAG 2 consists of WOC and its tributaries downstream of the ORNL main plant area, White Oak Lake, the White Oak Creek Embayment of the Clinch River, and the associated flood plains and subsurface environment. The WOC watershed encompasses ORNL and associated WAGs. WAG 2 acts as an integrator for contaminant releases from the contaminated sites at ORNL and as the conduit transporting contaminants to the Clinch River. The RI for WAG 2 was initiated in 1990 (ORNL 1990) as a multimedia environmental monitoring and characterization program. Field investigations began in 1992 and were divided into separate tasks within the WAG 2 RI program to address the different contaminated media. Contaminants associated with the surface water in WAG 2 were addressed primarily by the WAG 2 Seep Task.

The main objectives of the Seep Task were to identify and characterize seeps, tributaries, and source areas that are responsible for the contaminant releases to the main streams in WAG 2 and to quantify their input to the total contaminant release from the watershed at White Oak Dam (WOD). Efforts focused on ^{90}Sr, ^{3}H, and ^{137}Cs because these contaminants pose the greatest potential human health risk from water ingestion at WOD. Bimonthly sampling was conducted throughout the WOC watershed beginning in March 1993 and ending in August 1994. Samples were also collected for metals, anions, alkalinity, organics, and other radionuclides. The extensive data provide useful characterization information for seeps, tributaries, and the main streams. Contaminant concentrations (primarily ^{90}Sr and ^{3}H) were combined with flow measurements to quantify the releases (fluxes) from the different source areas in the watershed. A mass balance approach was used to estimate the flux at different locations as a percentage of the total flux at WOD. These data provide snap-shot pictures of the contributions from the contaminant source areas during different hydrological conditions. Average percent contributions to the total ^{90}Sr and ^{3}H flux at WOD were estimated for each source area. The areas were then ranked using these average percent contributions and the associated human health risk percentage at WOD.

The key findings from the WAG 2 RI Seep Task sampling and assessment efforts are as follows:

- There are elevated levels of ^{90}Sr and ^{3}H throughout the WOC watershed. The highest concentrations of ^{90}Sr are seen in seeps and tributaries in and around WAGs 4, 5, and 9. Likewise, the highest concentrations of ^{3}H are seen in seeps and tributaries in and around WAGs 4 and 5. Tritium levels in the WAG 6 tributaries are also comparatively high.
- Collecting samples along stream transects was a useful means to identify both point source and diffuse areas of ^{90}Sr- or ^{3}H-contaminated groundwater input.
- Elevated levels of ^{137}Cs and ^{60}Co are not as widespread as the ^{3}H or ^{90}Sr contamination. Many of the locations sampled had gamma levels below detection.

- Results of samples from WOC were consistently among the highest ^{137}Cs levels measured. The dissolved ^{137}Cs concentrations (i.e., < 0.45 μm) were greater than that associated with the suspended particulates at WC7500 and decreased downstream to WOD while the amount associated with the particulates generally increased. Discharge from the Non-Radiological Wastewater Treatment Plant in WAG 1 is believed to be the primary source for ^{137}Cs in the WOC watershed.
- Elevated levels of ^{60}Co were exclusively found in seeps and streams in and around WAG 7. The high ^{60}Co concentrations were dominantly in the dissolved phase rather than associated with particulates. The ^{60}Co releases from High-Flux Isotope Reactor (HFIR) that had been observed in the late 1970s are no longer present.
- The highest levels of transuranics were found in seeps in WAG 7. Elevated transuranic contamination was also found in WAG 4.
- Metal concentrations in the surface waters in the WOC watershed are generally not of concern. Most of the seeps or tributaries with metals of concern (notably As, Cr, Cu, and Ni) are in WAGS 4 and 7.
- Samples collected at WOD exceeded the Ambient Water Quality Criterions for chromium and lead during a number of the sampling events.
- Volatile organic compounds in the seeps, tributaries, and main streams in the WOC watershed are also generally not of concern. Elevated levels of trichloroethane and tetrachloroethane were detected in the discharge from the south end of the french drain in WAG 6. Elevated levels of vinyl chloride were detected in a WAG 4 seep (SW4-2), in the WAG 4 tributary at WAG4 T2A, and in the middle drainage in WAG 5.
- The largest, most discrete release of ^{90}Sr in the watershed was in the southern portion of WAG 5 where the seep SW5-4, later known as Seep C, was located. This source area, Seep Area C, had an estimated average contribution ranging from ~20 to 30% of the ^{90}Sr flux at WOD from March 1993 to August 1994. An in situ zeolite treatment unit was completed in late 1994 and now collects and treats contaminated groundwater at the site.
- Other contributors to the ^{90}Sr release at WOD include WAG 4 (~ 11%), Seep Area D (~7%), First Creek (Corehole 8)(~6%), WAG 9 (~6%), the middle drainage in WAG 5 (~2.4%), West Seep (~2%), discharge from the Non-Radiological Wastewater Treatment Facility, the Sewage Treatment Plant, and a combination of other unidentified/diffuse sources.
- Transect sampling along the WAG 4 tributary indicates that most of the ^{90}Sr release is coming from two discrete areas in the western half of WAG 4. Results from transect sampling in the tributary along WAG 9 suggest that the source of ^{90}Sr may not be isolated to the former impoundment in WAG 9.
- Source areas in WAG 5 contributed the most (~75%) to the ^{3}H release at WOD. The single largest ^{3}H source was Seep Area B (~47%), where diffuse tritiated groundwater enters Melton Branch south of WAG 5.
- Other contributors to the ^{3}H release at WOD include: WAG 4 (~13%), the middle drainage in WAG 5 (~9%), Seep Area A in WAG 5 (~9%), and WAG 6 tributaries (~7%).
- Transect sampling along the WAG 4 tributary indicates that most of the ^{3}H release is coming from one discrete area in the upper reach of the tributary.

- Results identify key seeps/source areas which contribute to the total contaminant flux in WAG 2 and that are major contributors to the risk at WOD. The key contaminant source areas were ranked by their contribution to the potential human health risk at WOD. The results are as follows:

Ranking of source areas based on risk at White Oak Dam[a]

		Contribution to risk at WOD from			
	Source areas	^{90}Sr	^{3}H	^{137}Cs	Total percent of risk at WOD
1	Upper WOC[b]	17.6	0.7	7.0	25.4
2	Seep Area C	13.7–21.1			13.7–21.1
3	WAG 4 Trib	7.8–12.4	2.9		10.7–15.3
4	Seep Area B		10.8		10.8
5	Seep Area D	4.7			4.7
6	First Creek (CH 8)[c]	4.1			4.1
7	WAG 9	4.1			4.1
8	WAG 5 Mid. Drain.	1.7	2.1		3.8
9	Seep Area A		2.1		2.1
10	WAG 6 Tribs		1.6		1.6
11	West Seep	1.2			1.2

[a]For the period March 1993–August 1994.
[b]Area above WC-20. Includes discharge from the Non-Radiological Wastewater Treatment Facility, the Sewage Treatment Plant, and other unmonitored discharges.
[c]Attributed to Corehole 8.

1. INTRODUCTION

This report is the first of five reports issued in 1996 that provide follow-up information to the Phase I Remedial Investigation (RI) report for Waste Area Grouping (WAG) 2 at Oak Ridge National Laboratory (ORNL) (DOE 1995a). The five reports address areas of concern that could cause risk to public health at the Clinch River and ecological risk within WAG 2 at ORNL. These reports that complete activities conducted as part of Phase I of the RI for WAG 2 are as follows:

- WAG 2, Phase I Seep Task Data Report: Contaminant Source Area Assessment;
- WAG 2, Phase I Task Data Report: Tributaries Data Assessment;
- WAG 2, Phase I Task Data Report: Ecological Risk Assessment;
- WAG 2, Phase I Task Data Report: Human Health Risk Assessment; and
- WAG 2, Phase I Task Data Report: Sediment Transport Modeling.

1.1 BACKGROUND

Over the last 53 years of operation, ORNL has produced a diverse array of contaminants from both operation and waste disposal activities. The White Oak Creek (WOC) watershed, an area of approximately 16.8 km^2, encompasses ORNL and most of the associated Waste Areas Groupings (WAGs) (Fig. 1.1). WAG 2, in the lower portion of the WOC system, contains WOC, its tributaries downstream of the ORNL main plant area, White Oak Lake (WOL), the WOC Embayment on the Clinch River, and the associated floodplain and subsurface environment. Water, sediment, soil, and biota in WAG 2 are contaminated and continue to receive contaminants from upgradient WAGs. WAG 2 acts as the integrator for contaminant releases from the contributing sources and as the conduit transporting contaminants to the Clinch River.

In December 1990, the *Remedial Investigation Plan for Waste Area Grouping 2 at Oak Ridge National Laboratory* was issued (ORNL 1990). The WAG 2 RI plan was structured with a short-term component to be conducted while upgradient WAGs were investigated and remediated, and a long-term component that will complete the RI process for WAG 2 following remediation of upgradient WAGs. RI activities for the short-term component were initiated with the approval of the U. S. Environmental Protection Agency, Region IV (EPA), and the Tennessee Department of Environment and Conservation (TDEC). The WAG 2 RI plan was not a prototypical RI plan. It was recognized that full implementation of an RI was inappropriate while contaminants continued to enter the system. A phased effort was adopted in response to the need to take initial steps to protect the public and the environment and to characterize and assess risks associated with WAG 2 and the limitations imposed by changing contaminant input. Three phases were initially identified: Phase I was the initial scoping activity to determine the need for early action; Phase II included interim activities during remediation of upgradient WAGs to evaluate potential changes in the contamination status of WAG 2 that would necessitate reevaluation of the need for early action; and Phase III would be completion of the Comprehensive Environmental Response, Compensation, and Liability Act process following remediation of the upgradient WAGs.

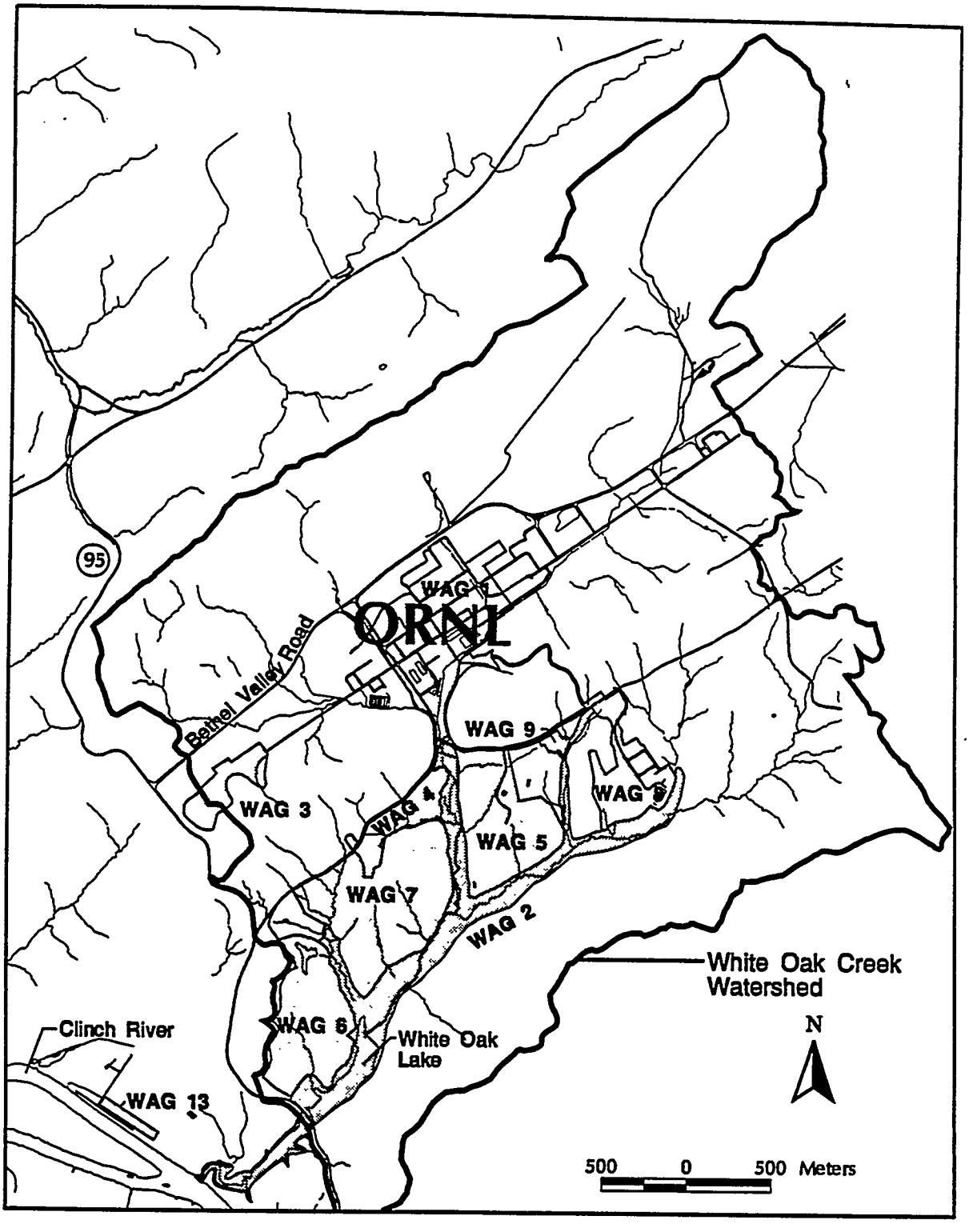


Fig. 1.1. White Oak Creek watershed with the Oak Ridge National Laboratory waste area groupings.

In June 1994, the Federal Facility Agreement managers from EPA, TDEC, and DOE directed that the WAG 2 RI be changed to a two-phase field program by eliminating Phase II activities and transferring needed elements into the newly formed ORNL Environmental Restoration Surface Water Program. A separate FY 1995 WAG 2 RI Work Plan was developed (DOE 1994) to replace previously identified planning and tasking documents.

WAG 2 RI field activities were initiated in 1992. The strategy for the multimedia environmental monitoring and characterization program can be found in the field sampling and analysis plan (ORNL 1992). During the first year, 1992, two extensive screening sampling rounds were conducted—one during a wet-season baseflow condition and one during a dry-season baseflow condition. The results from these two rounds are presented in the Phase I RI report of WAG 2 (DOE 1995a). The results identified some key seeps and contaminant source areas in WAG 5 that spurred focused investigations (Newsom et al. 1993) followed by removal actions. Field investigations were divided into separate tasks within the WAG 2 RI program to address the different contaminated media. Contaminants associated with the surface water in WAG 2 were addressed primarily by the WAG 2 Seep Task. The extensive Seep Task data collected in 1993 and 1994 are presented in this report. The transport of suspended sediments during storms and the associated ^{137}Cs release were addressed by the Sediment Transport Modeling Task. Additional information on the contaminant transport (particularly concentration-discharge relationships) for tributaries draining WAGs 4, 7, and 9 was gathered by the tributary assessment task (Borders et al. 1996). Results from all of these tasks will be included in a human health risk assessment report to be published later this year.

1.2 CONCEPTUAL MODEL

According to the hydrologic framework for the Oak Ridge Reservation, the major pathways for water and contaminant movement in the subsurface are through the stormflow zone and the shallow water table (Solomon et al. 1992). Water that infiltrates the soil surface moves through shallow pathways intercepting and leaching contaminants from primary sources (trenches) and/or secondary sources (downgradient soil matrix) and then emerges at seeps and springs where it discharges to the surface water system. Because of the close link between groundwater and surface water regimes, seeps and springs mark the preferred groundwater and contaminant flow pathways. In addition to visible seeps, groundwater also seeps directly into stream channels. The term seep is used in this report to refer to all contaminated groundwater discharge including diffuse seepage areas, discrete seeps, and springs, whether they discharge to the ground surface or directly into a stream. Tributaries within the WOC watershed serve as spatial integrators of contaminant releases from subbasins adjacent to WAG 2.

1.3 OBJECTIVES

Because surface water is the primary transport pathway for contaminants through and out of the WOC watershed, the Seep Task, a monitoring program for seeps, tributaries, and main streams, was initiated as part of the WAG 2 RI. The primary objectives of the Seep Task were to identify and characterize the seeps, tributaries, and source areas that are responsible for the contaminant releases to the main streams in WAG 2 and to quantify their input to the total contaminant release from the watershed at White Oak Dam (WOD). Efforts focused on the contaminants (notably ^{90}Sr, ^{3}H, and ^{137}Cs) posing the greatest potential human health risk from water ingestion at WOD, and fewer samples were collected for metals, anions, organics, and other radionuclides.

One of the main objectives of the WAG 2 program was to support the efforts of the ORNL Environmental Restoration Program to prioritize and remediate contaminated sites. The Seep Task monitoring activities continued into 1993 and 1994 because additional data were needed to further identify, characterize, and quantify contaminant sources in the WOC watershed. The results from a portion of these data have been summarized in the third and fourth annual environmental restoration monitoring and assessment (ERMA) reports (DOE 1995b and DOE 1995c). This report contains the complete 1993 and 1994 data and a summary of findings that are useful to guide future sampling and source control activities. An in-depth assessment was not possible due to time and resource limitations. Future assessments of these data may provide additional information for understanding contaminant transport in the WOC watershed.

2. METHODS

2.1 SAMPLING STRATEGY

After a review of historic seeps, a site walkover was conducted during the spring of 1992. Visible areas of groundwater discharge were prevalent in WAG 2 and the adjacent areas. The physical features varied from boggy areas to discrete springs. Seep sampling locations were chosen from those discharge areas that were more prominent and that were known or suspected to be contaminated. Downgradient sampling locations on tributaries were chosen to monitor seepage areas that were diffuse. Sampling locations were not limited to the WAG 2 boundary, rather a watershed-wide approach was taken (Fig. 2.1). In addition, two sampling locations outside of the WOC watershed were selected. One (RAC) was on Raccoon Creek Tributary to monitor contaminant release from WAG 3, which in part lies outside of the watershed. The other (WOCET) was on a small tributary near WAG 13, which drains into the WOC embayment. After the 1992 screening effort, most seep locations in and around WAG 5 were not resampled by the Seep Task but were sampled as part of the WAG 5 RI (DOE 1995d). Similarly, many locations in WAG 6 were not resampled because a separate monitoring plan for WAG 6 was being initiated (DOE 1995e).

Sampling along stream reaches (transects) was used to identify areas where contaminated groundwater discharges directly into a stream (Fig. 2.2). Areas of significant contaminant release cause an increase in the contaminant concentration at the downstream location. Transect sampling locations were generally selected below riffles in the streams to ensure better mixing and representation for the reach just above the location. Some transect locations were dropped from later sampling events because significant inputs were not detected between the locations. Likewise, some transect locations were added as the program progressed for greater definition of contaminant input. Transect sampling was used primarily to identify sources of ^{3}H and ^{90}Sr because they are relatively nonparticle reactive and contribute the most to the potential human health risk at WOD.

In order to quantify the input from a seep or source area to the total contaminant release from the WOC watershed, contaminant flux measurements were needed throughout the watershed. Contaminant flux or release referred to in this report may more accurately be termed contaminant mass flow and is the product of the contaminant concentration and stream flow. Main stream and tributary locations where weirs, flumes, or other structures exist that facilitate stream flow measurement were included in the sampling program to obtain contaminant flux measurements (Fig. 2.2). Sampling events were generally carried out in one day during baseflow (relatively steady-state) conditions to provide "snap-shot" pictures of the contaminant flux distributions throughout the watershed. A mass balance approach was then applied to quantify the flux from different source areas as a percentage of the total flux at WOD.

Contaminant transport into, through, and out of WAG 2 is controlled by complex and changing environmental conditions. Because water is the primary mode of contaminant transport, different hydrologic conditions (episodic rainstorm events and seasonal fluctuations) affect contaminant fluxes throughout the watershed. Therefore, samples were collected on a bimonthly (every other month) basis to examine the variability of source areas during different wet and dry seasons as well as to estimate yearly contaminant releases. Table 2.1 provides a list of the Seep Task sampling events, dates, and corresponding flow at WOD. Samples were collected during one poststorm sampling event (March 24, 1993) when stormflow was active to identify any significant changes or new sources that might occur as a result of the enhanced storm flow through the shallow subsurface. In addition, one of the baseflow events (April 19, 1994) occurred during an unusually wet period in the spring of 1994. Soon after the

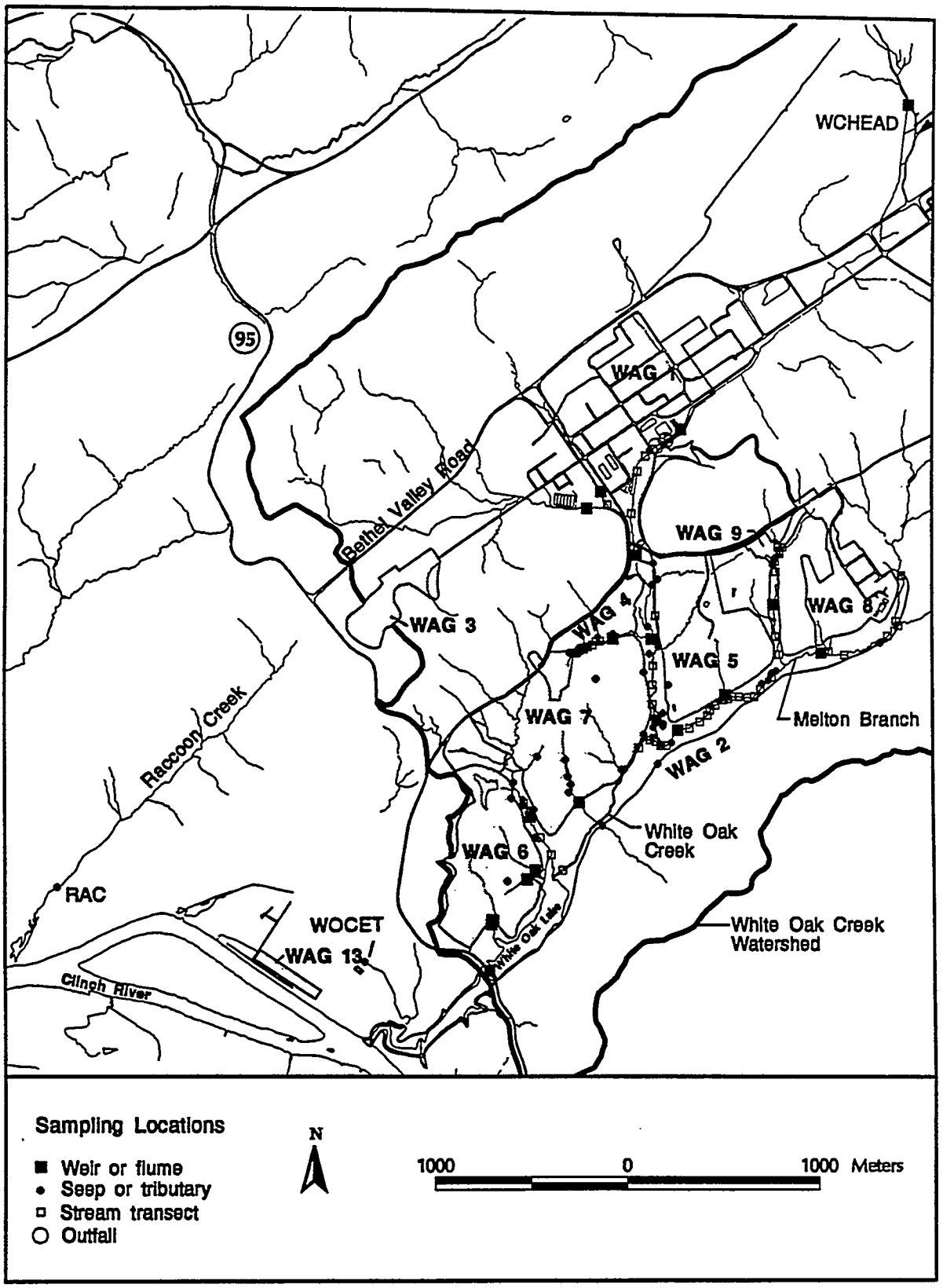


Fig. 2.1. WAG 2 remedial investigation seep task sampling locations.

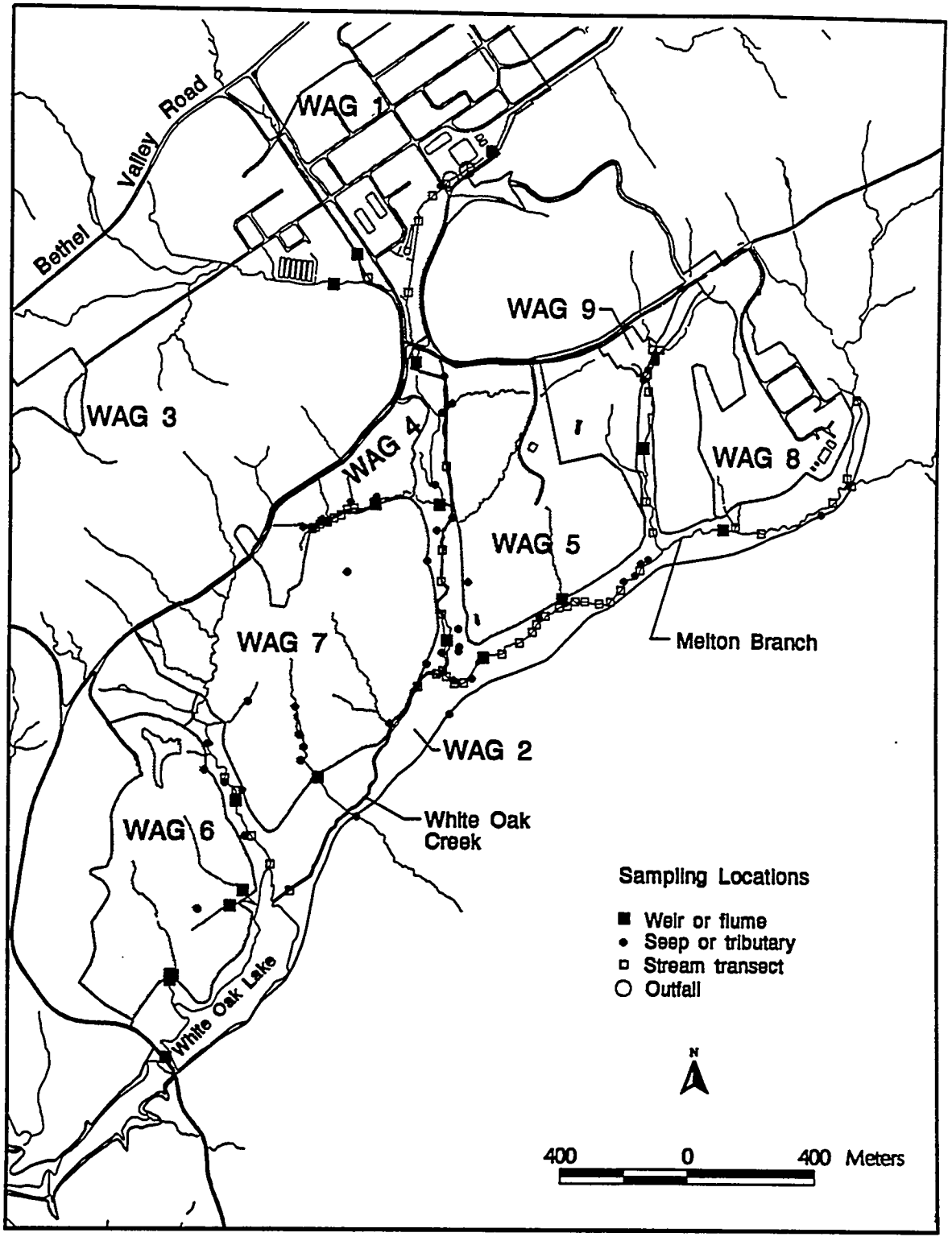


Fig. 2.2. WAG 2 remedial investigation seep task sampling locations in White Oak Creek watershed.

Table 2.1. Sampling events for the WAG 2 seep task

Type of event	Date	Flow at WOD (L/s)[a]	Area sampled[b]	Number of locations
Wet Season Baseflow	March 9, 1993	362	MB Drainage	40
	March 11, 1993	310	Mid/Upper WOC	34
	April 13, 1993	394	Lower WOC/WOL	32
Poststorm	March 24, 1993	1460	WOC Watershed	77
Baseflow for VOCs	April 19, 1993	357[c]	WOC Watershed	29
	April 28, 1993	408[c]	WAGs 4, 6, & 7	27
Bimonthly Baseflow	May 24, 1993	190	WOC Watershed	58
Dry Season Baseflow	July 13, 1993	150	Lower WOC/WOL	20
	July 19, 1993	162	Mid/Upper WOC	29
	July 21, 1993	181	MB Drainage	37
Bimonthly Baseflow	September 30, 1993	143	WOC Watershed	50
Bimonthly Baseflow	December 1, 1993	194	WOC Watershed	66
Bimonthly Baseflow	February 8, 1994	291	WOC Watershed	65
Bimonthly Baseflow	April 19, 1994	604	WOC Watershed	65
Bimonthly Baseflow	June 15, 1994	215	WOC Watershed	40
	June 23, 1994	200	WOC Watershed	36
Bimonthly Baseflow	August 24, 1994	193[c]	WOC Watershed	64

[a]Instantaneous flow at time of sampling unless noted otherwise.
[b]MB = Melton Branch; Mid/Upper WOC = WOC watershed above WCWEIR; Lower WOC/WOL = WOC watershed below WCWEIR.
[c]Daily flow values from Borders et al. 1994, 1995.

February 8, 1994, sampling event, an abnormally large amount of precipitation was received over the following weeks leading up to the April 19 event.

Over the last few years, the off-site contaminant release and the potential human health risk from water ingestion at WOD have been used as ways to assess source areas and evaluate the need for corrective action. Rather than an exhaustive site characterization for all contaminants throughout the watershed, the primary focus of the Seep Task monitoring in 1993 and 1994 was directed towards key source areas and contaminants of greatest concern. General water quality type measurements and analyses were also performed to provide valuable information for understanding the processes controlling contaminant transport. In 1993 samples for volatile organic compounds (VOCs) were collected once from most locations throughout the watershed. Also, samples for transuranic analyses were collected from a few locations that had high gross alpha concentrations during the 1992 screening.

2.2 SAMPLING METHODS AND PROCEDURES

Sample collection activities followed WAG 2 project-specific standard operating procedures (SOPs). Copies of all WAG2 procedures are available from the ER Document Management Center. Seep and surface water samples were collected using WAG2-SOP-3202, "Collection and Processing of Water and Particulate Samples from Seeps, Tributaries, and Streams," and WAG2-SOP-3205, "Collection of Water Samples from Seeps, Tributaries, and Streams for Volatile Organic Compounds Analysis." Most samples were collected using a simple grab method. Labeled and precleaned bottles were taken to the location, opened just prior to sample collection, and dipped below the surface as close to the center of the stream as possible. For many seep locations and some small tributary locations with shallow flow, the grab method was not appropriate because it could stir up the sediments. Instead a small peristaltic pump with silastic tubing was used to slowly pump water into the bottles. The pump was not used for the collection of VOCs. The intake end of the tubing was positioned in the seep or channel away from sediment and debris and the output end of the tubing was placed just inside the mouth of the bottle. New tubing was installed in the pump at each location to prevent cross contamination. Samples for dissolved constituents (excluding transect samples) were field filtered at the time of collection using a peristaltic pump, silastic tubing, and highflow in-line filters (0.45μm). At each location, new tubing and a new filter were installed in the pump. The filter was attached to the output end of the tubing on the other side of the pumphead. The intake end of the tubing was positioned in the seep or channel away from sediment and debris. Sample bottles were opened just prior to sample collection, and the filter tip was placed just inside the mouth of the bottle. After collection, bottles were capped, wiped dry as needed, and stored in a cooler until they were returned to the laboratory. Sample types, precleaned bottle types, and sample identification numbers were confirmed using field forms and sampling plans.

Field parameters (pH, specific conductance, and temperature) were measured using Hydrolab II and III Surveyors and Checkmate Deluxe Field Systems following WAG2-SOP-3204 and WAG2-SOP-3206, respectively. The instruments were placed directly into the seep or stream downstream of the intake tubing so that the site would not be disturbed. For those seeps with very low flow, water was pumped without a filter into a wide-mouth sample container for field parameter measurements with the instruments. Flow measurements were made following WAG2-SOP-3201. For stream locations where weirs or flumes exist, stage measurements were recorded at the time of sample collection. Stream flow data were derived from the stage measurements and the existing stage-discharge rating equations. For those seep or stream locations where the flow discharged from a pipe, small weir, flume, etc., such that a container could be placed to collect the water, timed volume measurements were made at the time of sample collection. All field measurements, sample dates, and location information were recorded on controlled forms.

Samples were transported to the laboratory and processed as described in WAG2-SOP-3202. Transect samples collected for dissolved ^{90}Sr were filtered through 0.45 μm-disposable filters and acidified. All other samples were preserved as required. Laboratory chain-of-custody forms were completed and sample information verified. Samples were then transferred to internal or external laboratories for analysis.

2.3 ANALYTICAL METHODS AND PROCEDURES

A general list of analyses is given in Table 2.2. Many of the samples (especially ^{90}Sr and ^{3}H) were analyzed by the ORNL Environmental Sciences Division using WAG 2 SOPs. During 1993, verification samples were submitted to outside laboratories for ^{3}H and dissolved ^{90}Sr analyses at a

Table 2.2. Analyses and methods for seep task sampling

Parameter	Laboratory	Method	Statement of work #
	Internal	ER/WAG2-SOP-4301 (Cerenkov)	none
^{90}Sr	ORISE	ORISE #13-2	111
	Y-12 Analytical	EPA 905	349
	Internal	ER/WAG2-SOP-4101	none
^{3}H	ORISE	ORISE #7	111
	Y-12 Analytical	EPA 906	349
Gamma Scan (Water & Particulate)	Internal	ER/WAG2-SOP-4201	none
	ORISE	ORISE #6	111
Gross Alpha & Gross Beta	Y-12 Analytical	EPA 900	349
Transuranics	TMA/Eberline		125
Metals	Lockheed	CLP 200 series	119
ICP, GFAA, CVAA	Y-12 Analytical	CLP 200 series	60
Anions	ORNL ACD	EPA 300	110
VOCs	Weston	Superfund methods for Low Concentration Water for Organic Analysis (10/92)	126
Alkalinity	Internal	ER/WAG2-SOP-4401	none

ACD = Analytical Chemistry Division
ORISE = Oak Ridge Institute for Science and Education
ICP = inductively coupled plasma
GFAA = Graphite Furnace Atomic Absorption
CVAA = Cold Vapor Atomic Absorption
CLP = Contract Laboratory Program (EPA)

frequency of 10% of internal analyses. Because the detection limit for the internal (Cerenkov) method for ^{90}Sr is relatively high, samples for total ^{90}Sr from locations where the concentration might be low yet the flux could still be significant because of the stream discharge were submitted to outside laboratories. The minimum detectable activity for the Cerenkov method was ~50–70 pCi/L. In addition, the Cerenkov method for ^{90}Sr was believed to be applicable only for dissolved ^{90}Sr: However, during the June and August 1994 sampling events, samples were collected for both total and dissolved ^{90}Sr and analyzed by the Cerenkov method.

3. QUALITY ASSURANCE/QUALITY CONTROL PROGRAM

Sampling and analytical efforts were supported by the WAG 2 Quality Assurance (QA) Plan (Atwood and Miller 1992). This plan outlines the WAG 2 QA program, including documentation and training requirements, and identifies the data quality objectives process, and field and laboratory quality control (QC) samples. All field activities followed standard record keeping and chain-of-custody procedures.

3.1 QUALITY CONTROL

Field QC sampling was conducted to check sampling and analytical accuracy and precision. Field QC samples had discrete sample numbers and were submitted as "blind" samples to the laboratories. The field QC types used are described below.

Field duplicate. Field duplicates, which indicate whether the field sampling technique is reproducible, consisted of a duplicate sample collected simultaneously from the sampling location. Duplicate samples were obtained at a collection frequency of 10% for all samples.

Field blanks. Field blanks consisted of triple-deionized or reagent grade distilled water and were opened during the collection of 20% of all the metal or VOC samples. Field blanks are used to detect airborne metal or organic contaminants present at the time of sample collection.

Trip blanks. Trip blanks consisted of 40-mL VOC vials that were filled in the laboratory with triple-deionized or reagent grade distilled water. One trip blank for every 10 sampling locations was taken to the field, kept in the coolers with the other VOC samples, but not opened. Trip blanks are used to detect contamination by VOCs during sample collection, shipping, and handling.

Rinsates. A laboratory rinsate consisted of triple-deionized or reagent grade distilled water that was passed through an unused filter and/or silastic tubing and then preserved with the same acid used for the original samples. Rinsates were prepared at a frequency of 10% of all the samples collected using the peristaltic pump. The rinsate served as a check for the presence of contaminants in the new filters, new tubing, and/or preservatives.

Laboratory methods and procedures included appropriate QC samples including calibration standards, method blanks, laboratory duplicates, matrix spike samples, etc. Additional information about the WAG 2 laboratory QC programs and results can be found in the WAG 2 SOPs and the Phase I RI report of WAG 2 (DOE 1995a). Refer to the methods or procedures listed in Table 2.2 for detailed laboratory QC summaries for external laboratories.

3.2 DATA VALIDATION

Data quality objectives in the field sampling and analysis plan (ORNL 1992) specified that the majority of the data would not require more than Level III QA and that 10–25% would meet the requirements of Level IV QA. Most of the WAG 2 RI Seep Task data underwent data validation at these levels. However, because of the large amount of data generated by the WAG 2 RI project and the original intentions of 100% validation, the results of the validation were not available in time to incorporate them into the assessment of the data (i.e., into the text of this report). The validation

qualifiers are provided in the appendixes for those analytical results that received validation. Problems identified during validation (e.g., incomplete Chain of Custody forms) may call into question the legal defensibility of some of the data; however, the author believes the data to be reliable overall and very useful in guiding remedial decisions in the WOC watershed.

4. DISTRIBUTION OF CONTAMINANT CONCENTRATIONS

As mentioned previously, the primary focus of the seep task monitoring was directed toward key source areas and contaminants of greatest concern for human health risk (i.e., primarily ^{90}Sr, ^{3}H, and ^{137}Cs). This chapter presents the results of that effort and is designed primarily as a radiological characterization reference for the different sampling locations throughout the watershed. Concentration changes along stream transects, which identify areas of contaminant releases, are also discussed. Radionuclide results for each seep, tributary, and main stream sampling location (with the exception of the transect locations) are presented in this chapter. The complete radionuclide data set, including uncertainties and validation qualifiers is presented in Appendixes A–D. Because a particular seep may have a high contaminant concentration but little flow, its contribution or importance to off-site contaminant release may be insignificant. The more important issue of actually quantifying the contaminant release at the different locations is dealt with in Chap. 5.

Key metal results are presented in Sect. 5.6 and detailed results are in Appendix E. The key VOC results are presented in Sect. 5.7 and the complete results are in Appendix F. Other water quality-type measurements (anions, alkalinity, pH, specific conductance, and flow) are provided in Appendix G. Detailed assessments of these water quality data were not completed because of the time and resource limitations. However, future assessments of these data in combination with contaminant concentrations and hydrological data may provide additional information for understanding the processes that control contaminant transport in the different source areas.

4.1 DISTRIBUTION IN THE WATERSHED

Figures 4.1 and 4.2 summarize the distribution of ^{90}Sr and ^{3}H concentrations at the seep, tributary, and main stream locations throughout the watershed. Elevated levels were detected throughout the watershed. The highest concentrations of ^{90}Sr were seen in seeps and tributaries in and around WAGs 4, 5, and 9. Similar to ^{90}Sr, the higher concentrations of ^{3}H were seen in seeps and tributaries in and around WAGs 4 and 5 (Fig. 4.2). In addition, the WAG 6 tributaries had fairly high levels of ^{3}H. The remainder of this chapter discusses locations and concentrations of contaminants in detail.

4.2 CONCENTRATIONS IN MIDDLE AND UPPER WOC

Figure 4.3 shows the sampling locations for the Seep Task in the middle and upper (above WC7500) WOC watershed with the exception of WCHEAD, which is shown in Figure 1.2. WCHEAD was selected as a background location. Results from these locations identify contaminant releases from WAGs 1, 3 (from the Northwest Tributary), 4, and 5. The northing and easting coordinates for all the seep task locations are presented in Appendix H.

4.2.1 Concentrations at WC7500 and Above

Table 4.1 gives the radiological results for the key sampling locations in the WOC watershed above the 7500 bridge. The elevated ^{90}Sr concentrations at FIRST CREEK are probably a result of discrete groundwater inputs related to the high ^{90}Sr concentrations detected in the Corehole 8 area in WAG 1. Samples from First Creek were collected at the main weir on the stream, downgradient from the main seepage area. A collection system was installed near this seepage area in early 1995 as part

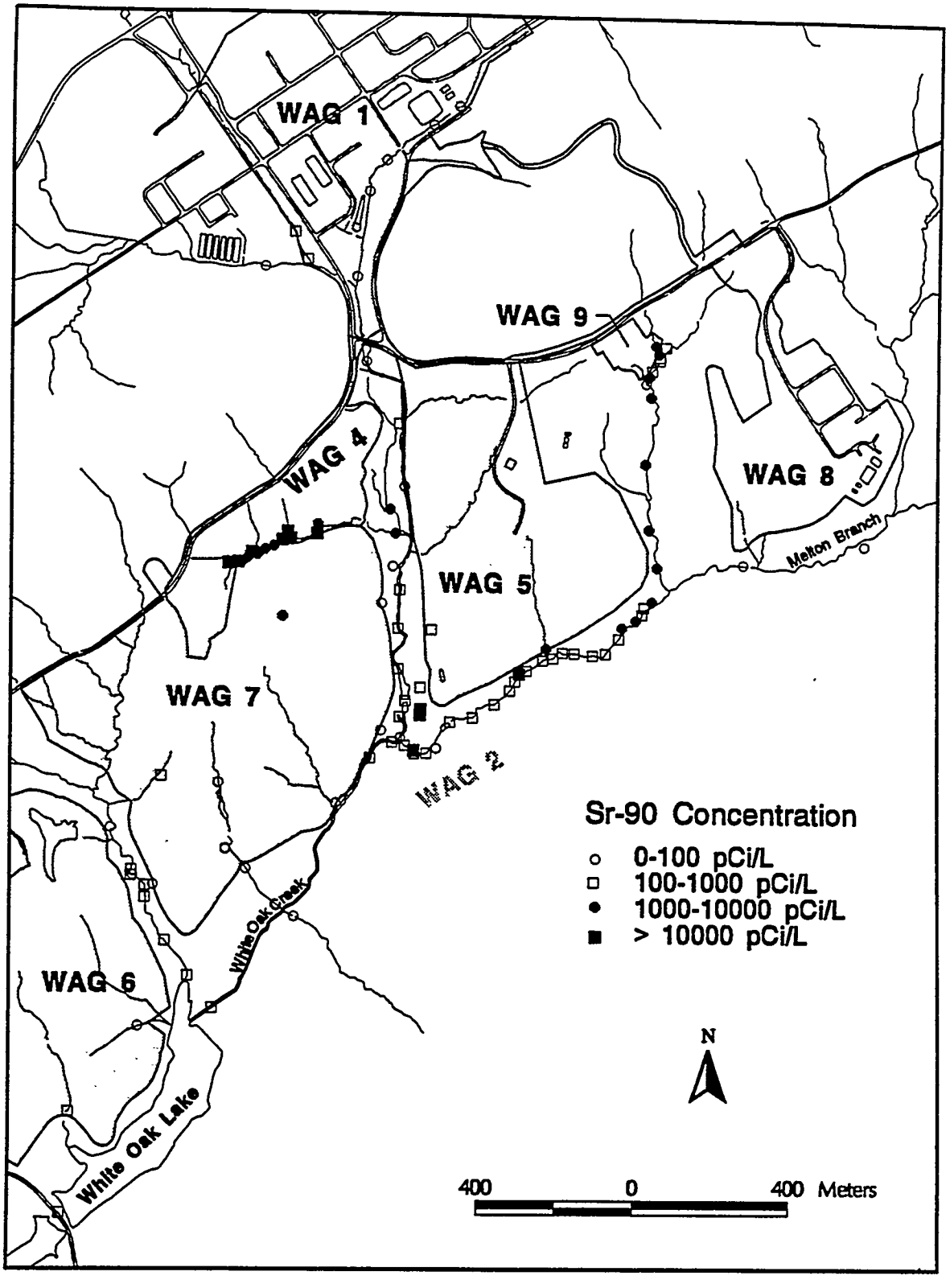


Fig. 4.1. Distribution of ^{90}Sr concentration ranges in the White Oak Creek watershed.

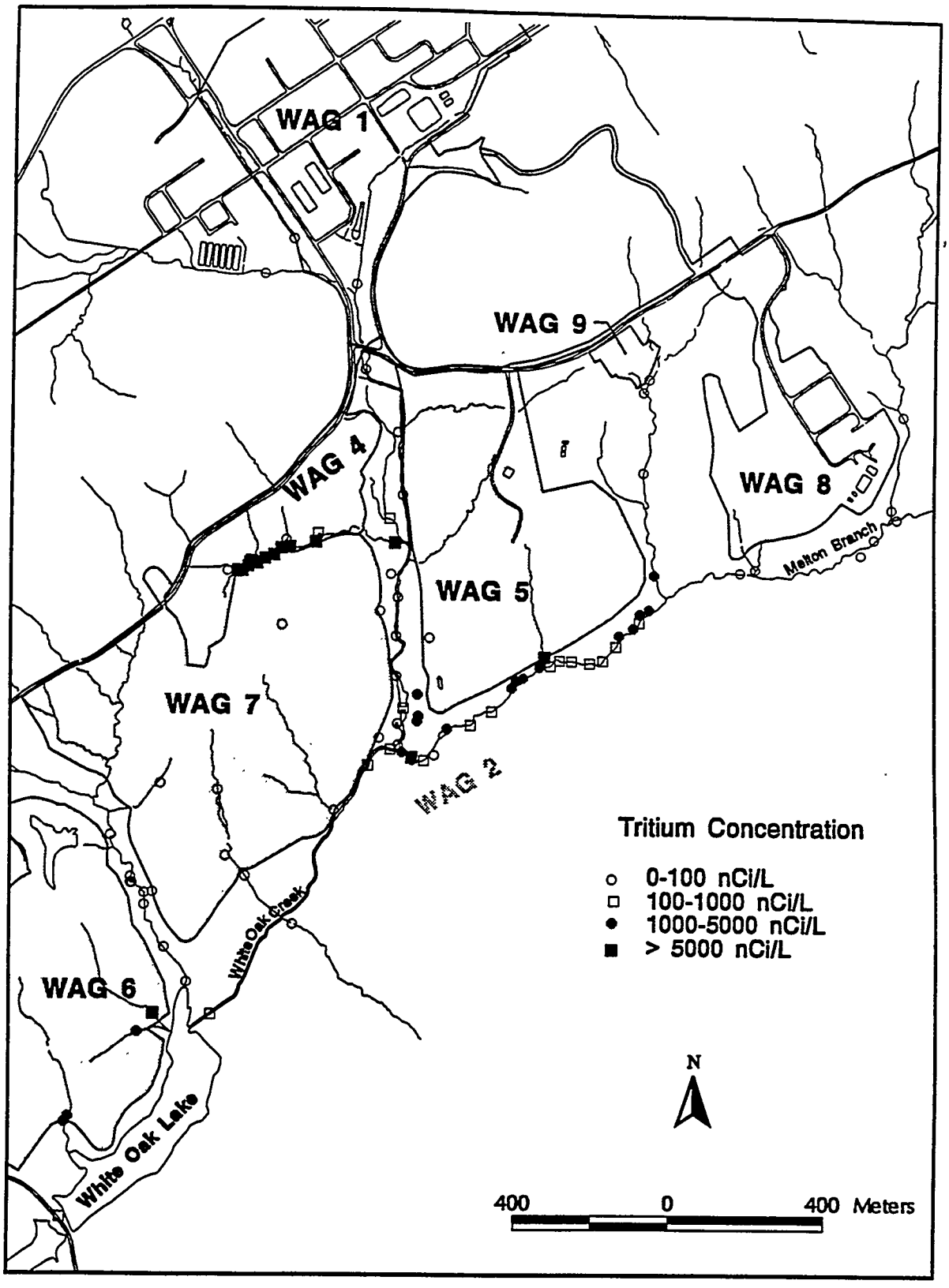


Fig. 4.2. Distribution of ^{3}H concentration ranges in the White Oak Creek watershed.

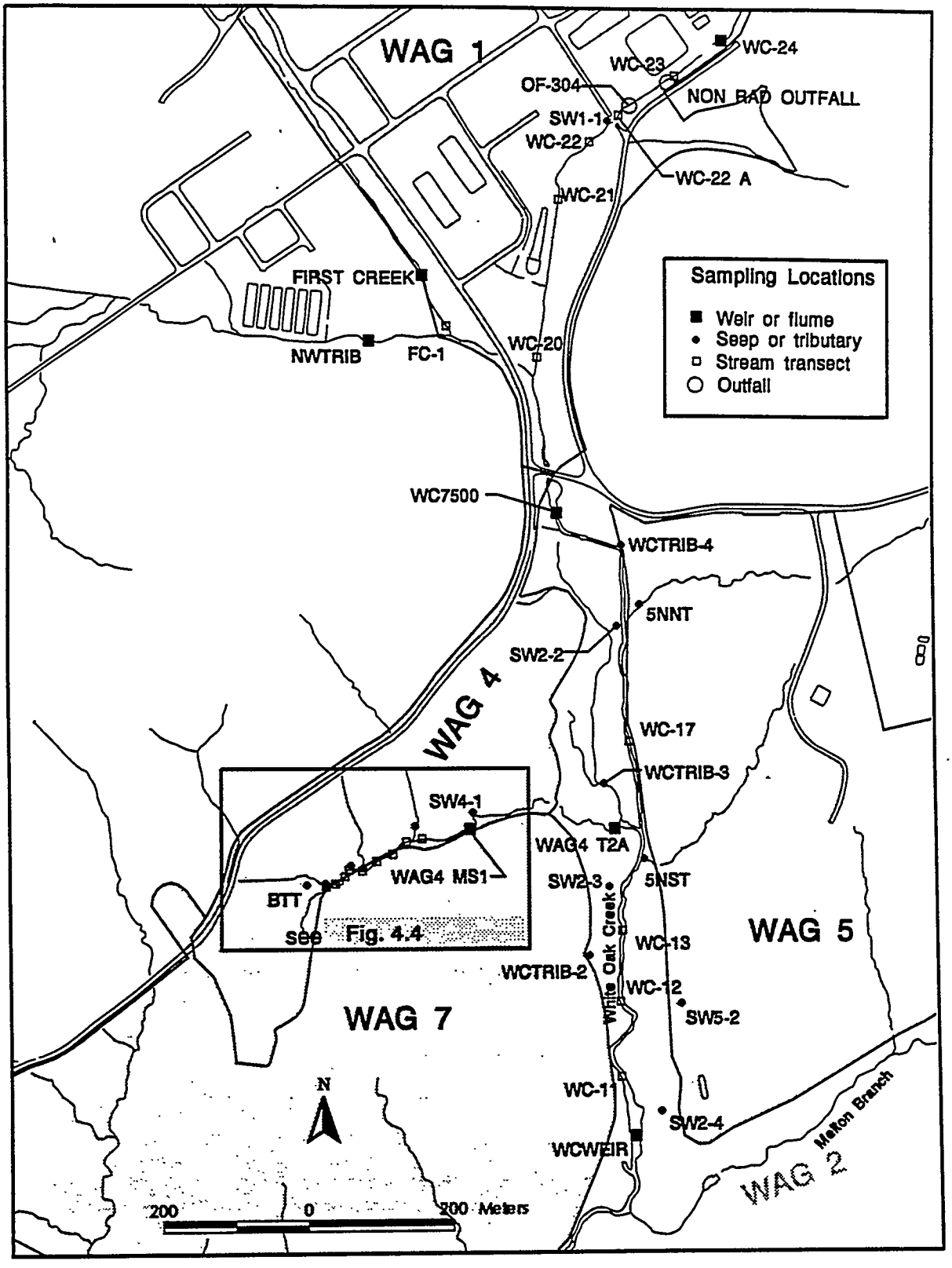


Fig. 4.3. WAG 2 remedial investigation seep task sampling locations in the middle and upper White Oak Creek watershed.

Table 4.1 Radiological results for locations in the upper White Oak Creek watershed including WC7500 and above

Location	Sample date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L	Flow L/s
FC-1	01-Dec-93	4031	409	.	.	.	.	.	.	.	.	.
FIRST CREEK	11-Mar-93	3573	155	135	2.07	< 2.73	< 21.7	< 3.63	< 29.2	8.5	337	26.8
FIRST CREEK	24-Mar-93	3450	16	56	0.80	< 0.78	< 9.4	< 0.97	< 13.9	6.1	138	135
FIRST CREEK	24-May-93	3749	307	426	.	.	.	.	.	.	.	9.1
FIRST CREEK	19-Jul-93	3815	485	482	0.79	< 39	< 19.1	< 50.95	< 32.1	46	1086	7.6
FIRST CREEK	30-Sep-93	3900	392	300	0.55	< 34.1	< 18.9	< 51.3	< 28.1	28	610	7.6
FIRST CREEK	01-Dec-93	3967	417	240	0.79	< 35.7	< 19.2	< 51.5	< 27.2	32	700	14.4
FIRST CREEK	08-Feb-94	4087	.	260	0.21	.	< 5.1	.	< 6.7	18	460	17.8
FIRST CREEK	19-Apr-94	4177	.	110	0.24	< 17.5	.	< 15.9	.	8.2	190	58.7
FIRST CREEK	23-Jun-94	4296	714[c]	540	4.61	< 4.6	.	< 34	.	49	1200	7.1
FIRST CREEK	24-Aug-94	4338	240[c]	180	0.34	< 6	< 5.9	< 5	< 6	14	390	18.7
NON RAD OUTFALL	01-Dec-93	4030	24	.	.	.	.	.	.	.	.	.
NWTRIB	11-Mar-93	3572	80	59	0.04	< 2.28	< 21	< 2.06	< 25.8	0.9	147	12.4
NWTRIB	24-Mar-93	3449	-22	20	0.53	< 2.8	< 19.9	< 2.76	< 29	.	.	123
NWTRIB	19-Jul-93	3814	12	8	0.89	< 35.9	< 22.7	< 44.6	< 28.7	2.6	63	5.5
NWTRIB	30-Sep-93	3935	32	18	.	.	.	.	.	.	.	3.2
NWTRIB	01-Dec-93	3968	20	46	.	.	.	.	.	.	.	~7.5
NWTRIB	08-Feb-94	4088	.	83	.	.	.	.	.	.	.	34
NWTRIB	19-Apr-94	4178	.	77	.	.	.	.	.	.	.	32.6
NWTRIB	23-Jun-94	4297	4[c]	15	.	.	.	.	.	0.1	1.5	6.6
NWTRIB	24-Aug-94	4339	96[c]	40	.	.	.	.	.	.	.	7.8
OF-304	23-Jun-94	4302	.	.	.	.	.	.	.	19	1300	.
SW1-1	23-Jun-94	4304	.	.	.	.	.	.	.	48	2200	.
WC7500	11-Mar-93	3575	96	69	4.89	38.19	12.7	< 3.07	< 14.5	11	333	231
WC7500	24-Mar-93	3452	7	58	3.98	19.4	.	< 2.7	.	8.9	214	950
WC7500	24-May-93	3721	112	138	31.2	154.2	7.2	< 50	< 15.6	9.2	523	153
WC7500	13-Jul-93	3802	45	58	5.45	60.66	< 23.7	<15.52	< 28.9	4.9	203	.
WC7500	19-Jul-93	3822	68	68	20.2	148.3	14.7	< 45.35	< 15.3	9.4	266	142
WC7500	21-Jul-93	3867	36	58	5.87	125.6	< 13	< 51.8	< 15.6	7.6	267	159
WC7500	30-Sep-93	3897	80	42	2.25	104.1	30	< 50.5	< 27.2	-0.7	100	131

Table 4.1 (continued)

Location	Sample date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L	Flow L/s
WC7500	30-Sep-93	3897	80	42	2.25	104.1	30	< 50.5	< 27.2	-0.7	100	131
WC7500	01-Dec-93	3965	60	28	13.0	< 52.8	16.2	< 47.45	< 7.9	4.5	130	159
WC7500	08-Feb-94	4084	.	200	5.83	.	28.2	.	< 6.7	12	360	275
WC7500	19-Apr-94	4160	.	120	1.57	45.7	.	< 12.3	.	11	290	433
WC7500	15-Jun-94	4295	59[c]	71	1.32	66.4	28.2	< 13.8	< 6	3.0	160	165
WC7500	23-Jun-94	4319	51[c]	75	1.73	38.6	.	< 15.1	.	2.5	160	165
WC7500	24-Aug-94	4337	196[c]	120	10.6	79	21.7	< 14.3	< 6.5	5.0	310	171
WCHEAD	13-Apr-93	3518	39	.	0.75	< 2.89	< 30.1	< 1.96	< 28.2	0.1	1.2	59
WCHEAD	19-Jul-93	3817	15	.	2.39	< 36.5	< 19.6	< 51.1	< 30.6	17[d]	496[d]	4.7
WC-24	01-Dec-93	4029	-0.1	.	.	.	.	.	.	.	.	.
WC-24	08-Feb-94	4086	.	4.8	.	.	.	.	.	.	.	169
WC-24	19-Apr-94	4183	.	-0.4	.	.	.	.	.	.	.	250
WC-24	23-Jun-94	4299	-0.4[c]	5.4	.	.	.	.	.	0.0	0.5	82
WC-24	24-Aug-94	4365	44[c]	3.9	.	.	.	.	.	.	.	68.8

[a]Analysis by internal laboratory. Results are for dissolved ^{90}Sr unless noted otherwise.
[b]Analysis by external laboratory. Results are for total ^{90}Sr.
[c]Total ^{90}Sr.
[d]Result is suspect.

of the ER efforts to reduce the ^{90}Sr flux in the watershed. The elevated levels of ^{137}Cs found at WC-20 and WC7500 are apparently a result of the discharge from the Non-Radiologic Wastewater Treatment Plant (NRWTP) (DOE 1995c).

Transect samples for ^{90}Sr were collected just upstream from the confluence of the Northwest Tributary and WOC during the December 1, 1993, sampling event to identify inputs in this upper reach of WOC. Strontium-90 concentrations during this event were very low, and there was no significant input identified. However, results from subsequent sampling events indicated that there was an increase in ^{90}Sr between WC-24 and WC-20 (WC-21, WC-22, and WC-24 were not sampled for ^{90}Sr). Results from the fourth annual ERMA suggest that most of the ^{90}Sr is coming from the NRWTP and the Sewage Treatment Plant (DOE 1995c). In support of the WAG 1 impoundments investigation discharge from NRWTP was suspended ~8 hours before and during sample collection during the June 23, 1994, sampling event. Samples were collected for gross beta along this upper WOC reach to identify other sources of contaminant release. The results indicated that there was contaminant input between WC-24 and WC-22A (Fig. 4.3). Location OF-304 had 1300 pCi/L gross beta and probably contributed to the increase in gross beta in WOC. However, there are other discharges to the reach that were not sampled. It is also not known if the increase in gross beta in WOC was caused by ^{90}Sr or another beta emitter (i.e., ^{137}Cs). Additional sampling for ^{90}Sr is needed to determine if there are other significant sources besides the NRWTP in this reach.

Transect samples for ^{3}H were not collected above WC-20 because the ^{3}H flux from this reach is relatively small. The ^{3}H concentrations were highest at WC-20 and decreased downstream at WC7500 due to dilution from NWTRIB and First Creek, which both had near background ^{3}H concentrations.

4.2.2 Concentrations in Middle WOC Drainage

Table 4.2 gives the radionuclide results for the key sampling locations in the middle WOC watershed between the 7500 Bridge and WCWEIR, including WCWEIR (Fig.4.3). Sample locations WCTRIB-4, 5NNT, and 5NST were only sampled for VOCs in 1993 (see Appendix F for results). Significant radiological contamination was not detected at these locations during the 1992 Seep Task sampling effort (DOE 1995a).

Transect samples for ^{90}Sr were collected along WOC during the wet season of 1993 to identify inputs in this reach of WOC. The only significant increase in concentration was seen between WC-17 and WC-13 as a result of discharge from WAG 4. The WAG 4 tributary and discharge from a small tributary that drains the east edge of WAG 4 and into the old WOC stream channel (WCTRIB-3) contribute to the increase in WOC (Fig. 4.3 and Table 4.2). The ^{90}Sr concentrations and fluxes change very little between the upper flume, WAG4 MS1, and the downstream flume, WAG4 T2A, on the WAG 4 tributary, indicating that most of the contaminated groundwater release occurs above WAG4 MS1. Locations WCTRIB-4, 5NNT, and 5NST were not sampled because results from the 1992 effort indicated that these small tributaries were not significant sources of ^{90}Sr release to this reach. The elevated ^{90}Sr in SW2-2, SW5-2, and SW2-4 suggested that these areas are minor contributors because an increase in ^{90}Sr concentration in the transect samples was not evident from these seeps.

Transect samples for ^{3}H collected along WOC showed a significant increase in concentration between WC-17 and WC-13 as a result of discharge from WAG 4. There was also an increase in ^{3}H between WC-11 and WCWEIR during the summer but not during the spring of 1993. Increases in ^{3}H between these locations were detected during the first screen rounds in 1992, with the more pronounced increase occurring during the dry season (DOE 1995a). The elevated ^{3}H in SW2-4 suggests that groundwater from this area of WAG 5 discharges into WOC.

Table 4.2 Radiological results for locations in the middle WOC watershed excluding those in WAG 4

Location	Sample Date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L	Flow L/s
SW2-2	11-Mar-93	3576	670	562	3.91	< 3.41	< 19.5	< 2.79	< 32.9	22	1476	.
SW2-3	11-Mar-93	3562	20	.	6.08	< 2.55	< 31.4	< 2.88	< 35.6	-0.4	41	.
SW2-4	11-Mar-93	3567	323	.	1130	< 2.95	< 20.7	< 2.87	< 29.1	10	655	.
SW2-4	19-Jul-93	3825	355	.	928	< 38.1	< 19.3	< 49	< 29.3	.	.	.
SW5-2	11-Mar-93	3566	239	.	23.7	< 2.34	< 22.5	< 2.91	< 34.6	4.1	462	.
SW5-2	24-Mar-93	3462	247	.	16.7	< 2.6	< 21.3	< 4.4	< 29.5	7.5	554	~4
WAG4 T2A	11-Mar-93	3563	8894	8235	5141	< 3.43	< 33.3	< 2.49	< 36.8	.	.	1.1
WAG4 T2A	24-Mar-93	3459	7147	6601	3307	< 3.9	398.5	< 3.6	< 25.8	206	15293	5.85
WAG4 T2A	01-Dec-93	3956	6981	5400	12845	< 37	204.2	< 50.3	< 29.6	190	12000	0.42
WAG4 T2A	08-Feb-94	4075	7150	6500	5316	.	138.3	.	< 7.4	230	14000	1.14
WAG4 T2A	19-Apr-94	4151	7581	.	2434	< 15	.	< 18.1	.	210	12000	~1.7
WAG4 T2A	24-Aug-94	4326	9138[c]	.	9671	33.7	240.4	< 15	< 6.9	200	15000	0.3
WCTRIB-2	11-Mar-93	3561	-7	.	2.60	< 2.6	< 24.9	< 2.7	< 27.4	-0.4	4.4	.
WCTRIB-3	11-Mar-93	3565	1612	.	130	< 2.86	< 21.7	< 2.26	< 29.6	71	3328	~3
WCTRIB-3	24-Mar-93	3460	1415	.	76.3	< 2.6	< 23.7	< 2.9	< 26.6	76	3123	~8
WCWEIR	09-Mar-93	3530	149	95	36.1	21.8	18.5	< 3.33	< 14.9	5.8	308	274
WCWEIR	11-Mar-93	3568	127	118	36.3	26.55	13.2	< 3.52	< 9.2	6.1	350	231
WCWEIR	24-Mar-93	3454	86	123	31.2	12.2	14.9	< 3.1	< 12.9	9.1	340	991
WCWEIR	13-Apr-93	3622	123	145	45.8	< 43.8	116.9	< 48.35	< 14.7	8.8	449	310
WCWEIR	24-May-93	3722	152	157	32.7	40.01	13.6	< 48.3	< 15.9	12	618	174
WCWEIR	13-Jul-93	3795	57	30	12.5	48.88	16.7	< 17.35	< 28.3	6.6	225	134
WCWEIR	19-Jul-93	3809	103	71	23.4	51.1	27.3	< 47.7	< 13.8	9.9	288	153
WCWEIR	21-Jul-93	3861	83	58	7.44	68.9	16.1	< 53.55	< 13.1	4.5	165	157
WCWEIR	30-Sep-93	3902	90	51	2.54	32	15.1	< 53.4	< 15.3	4.5	100	138
WCWEIR	01-Dec-93	3976	123	84	62.6	37.4	4.5	< 49.05	< 15.1	9.2	210	170
WCWEIR	08-Feb-94	4095	.	270	46.1	.	8.8	.	< 3.1	13	510	216
WCWEIR	19-Apr-94	4168	.	160	18.5	27.5	.	< 18.3	.	18	320	470
WCWEIR	15-Jun-94	4244	90[c]	74	3.39	53.8	26.6	< 10.6	< 3.1	8.4	190	187
WCWEIR	23-Jun-94	4312	54[c]	69	3.62	29.4	.	< 5	.	1.1	190	141
WCWEIR	24-Aug-94	4354	230[c]	190	25.5	45.6	11.6	< 5.5	< 6.6	5.9	410	174

[a]Analysis by internal laboratory. Results are for dissolved ^{90}Sr unless noted otherwise.
[b]Analysis by external laboratory. Results are for total ^{90}Sr.
[c]Total ^{90}Sr.

The elevated ^{137}Cs at WCWEIR suggests that not a lot of the ^{137}Cs seen upstream at WC7500 is "lost" or adsorbed in this reach. Elevated ^{137}Cs levels were detected at WAG4 T2A during some sampling events. Since the concentrations at WAG4 MS1 were usually below detection, the WAG 4 tributary may be picking up ^{137}Cs from the WOC floodplain in that area, known as the old intermediate pond area.

4.2.3 WAG 4 Tributary

The sampling locations within WAG 4 are shown in Figure 4.4. Table 4.3 gives the radiological results for each sampling event for these locations with the exception of the transect locations along the WAG 4 tributary. As mentioned previously, seep and stream locations within WAG 4 had some of the highest ^{90}Sr and ^{3}H concentrations. Both BTT and SW4-2 had the highest ^{137}Cs concentrations of any locations sampled in the watershed. However, the concentration downstream at WAG4 MS1 was usually below detection, indicating that most of the ^{137}Cs from BTT and SW4-2 is adsorbed to the soil and stream sediment during baseflow conditions. These soils and stream sediments could be a source of ^{137}Cs during rain events when stormflow scours and transports sediments.

Transect sampling was conducted along the WAG 4 tributary to identify discrete sources for the high concentrations of ^{3}H and ^{90}Sr seen in the tributary. The results of the transect sampling are shown in Figures 4.5 through 4.8. The results from the July 1993 event are not shown because the tributary was not flowing and consisted mainly of small pools. Changes in ^{90}Sr concentrations along the tributary suggest that there are two main source areas for ^{90}Sr (Figs. 4.5 and 4.6). The first is in the upper reach of the tributary in the vicinity of BTT. The high concentrations at W4TRIB-12 indicate that the source in part discharges to this uppermost reach of the tributary. The increase in ^{90}Sr concentration before W4TRIB-10 but lack of it and even a slight decrease after W4TRIB-10 suggests that the source is limited to the area upgradient of W4TRIB-10. This source area was also investigated as part of a recent site investigation in WAG 4 (ORNL 1995) and was found to be the most important contributor to the WAG 4 ^{90}Sr release. The other main source for ^{90}Sr discharge is in the area between W4TRIB-3 and W4TRIB-2, where there is a significant increase in ^{90}Sr. The slight increase before W4TRIB-3 also indicates that the source or sources discharge just upstream of W4TRIB-3 as well.

Similar to the ^{90}Sr profiles, the ^{3}H profiles (Figs 4.7 and 4.8) indicate that there is a discrete source area for the high levels of ^{3}H seen in the tributary. Most of the ^{3}H appears to be entering the tributary in the upper reach above W4TRIB-9. Unlike the ^{90}Sr, the ^{3}H concentration at W4TRIB-12 is near background, suggesting that the main source of ^{3}H is east of the seep/drainage of W4TRIB-11. Decreasing ^{3}H concentrations after W4TRIB-6 indicate that groundwater with lower H^{3} levels discharges into the tributary below this area.

Because it was only possible to measure flow at WAG4 MS1 and WAG4 T2A, it was not possible to quantify the ^{90}Sr and ^{3}H releases from the different discrete source areas or to verify that there were no other significant sources. When using concentration profiles as a tool to locate contaminated discharge to a stream, it is important to remember that the lack of an increase in the contaminant concentration along a reach of the stream does not necessarily mean that there is no contaminant release in this area. It means that any groundwater discharge/seepage to this reach has concentrations similar to that of the stream itself. Because the WAG 4 tributary is a very small stream, groundwater discharge can make a significant difference in the amount of flow in the stream from one location to the next. Thus, the actual flux may increase without an obvious increase in contaminant concentration. The addition of new flow-measuring weirs near W4TRIB-9 and W4TRIB-2 in 1996 as part of the ORNL ER Surface Water Program may help clarify the flux distribution along the WAG 4 tributary.

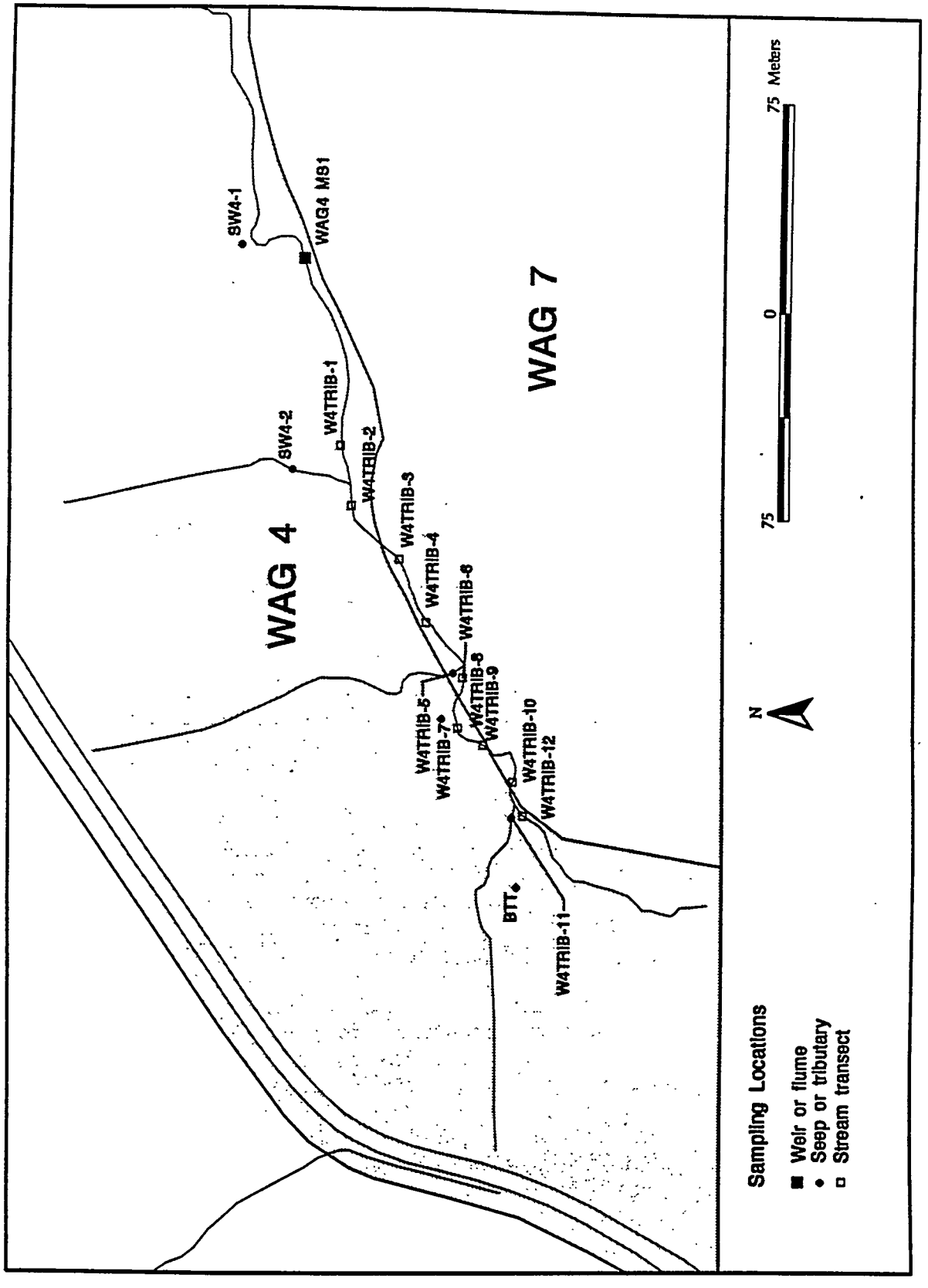


Fig. 4.4. WAG 2 remedial investigation seep task sampling locations within WAG 4.

Table 4.3 Radiological results for key locations in WAG 4

Location	Sample Date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L	Flow L/s
BTT	11-Mar-93	3583	20854	.	28.0	21.6	< 31	< 2.89	< 30.4	751	50382	0.05
BTT	24-Mar-93	3441	24052	.	25.1	796.9	232.8	< 4.5	< 26.9	809	44992	0.71
BTT	24-May-93	3743	11541	.	26.8	89.68	< 23.3	< 52.1	< 25.7	411	23949	0.003
BTT	01-Dec-93	3964	17495	.	51.7	92.55	< 19	< 47.25	< 27.9	1200	39000	0.04
BTT	08-Feb-94	4083	24901	.	31.6	.	4.1	.	< 6.3	1300	44000	0.08
BTT	19-Apr-94	4159	25730	.	15.0	389.7	.	< 15.1	.	930	44000	0.192
BTT	24-Aug-94	4334	19733[c]	.	31.6	75.8	< 2.8	< 15.9	< 3.1	1100	32000	0.001
SW4-1	11-Mar-93	3578	4780	.	20.0	< 2.09	< 20.8	< 2.97	< 29.3	142	11541	.
SW4-1	19-Jul-93	3819	5513	.	389	< 34.5	< 19.1	< 51.9	< 28.3	247	8686	.
SW4-2	11-Mar-93	3579	13711	.	25.1	244.5	< 24.1	< 4.2	< 27.3	467	31665	.
SW4-2	24-Mar-93	3429	11884	10332[d]	18.5	556.5	12	< 4.6	< 12.9	361	25118	.
SW4-2	24-May-93	3739	15490	.	24.6	89.4	< 19.8	< 51.9	< 29.3	363	36626	.
SW4-2	01-Dec-93	3959	8130	.	15.0	21.09	< 27.9	< 50.2	< 42.8	320	16000	.
SW4-2	08-Feb-94	4078	11096	.	13.6	.	77.5	.	< 6.8	540	27000	.
SW4-2	19-Apr-94	4154	11200	.	9.09	335.6	.	9.1	.	280	20000	.
SW4-2	24-Aug-94	4329	13100[c]	.	17.2	209.3	< 6.7	< 16.2	< 6	320	27000	.
W4TRIB-11	11-Mar-93	3582	10440	.	10799	23.45	< 21.4	< 3.19	< 30.1	461	24471	.
W4TRIB-11	24-Mar-93	3439	16382	.	1783	96.6	12.7	< 1	< 27.8	713	33245	.
W4TRIB-11	24-May-93	3742	8987	.	16827	< 36.9	< 22	< 45.4	< 25.3	89	20569	.
W4TRIB-11	19-Jul-93	3820	10789	.	4847	< 40.8	< 18.1	< 46.1	< 31	.	.	.
W4TRIB-11	30-Sep-93	3896	11460	.	21684	< 35.2	< 19.9	< 50.3	< 29.7	460	22000	.
W4TRIB-11	01-Dec-93	3962	8357	.	18792	< 39.7	< 12.7	< 45.6	< 20	390	15000	.
W4TRIB-11	08-Feb-94	4081	10845	.	12608	.	1.6	.	< 3	10	20000	.
W4TRIB-11	19-Apr-94	4157	13094	.	5388	16	.	< 18.2	.	530	26000	.
W4TRIB-11	15-Jun-94	4234	12782[c]	.	19878	< 17.8	< 6.2	< 16.2	< 6.6	470	28000	.
W4TRIB-11	24-Aug-94	4332	12238[c]	.	28100	< 9.6	< 5.2	< 8.1	< 6	330	21000	.
W4TRIB-12	24-Mar-93	3440	1860	.	31.9	.	.	.	.	.	.	.
W4TRIB-12	19-Jul-93	3840	7276	.	250	.	.	.	.	.	.	.
W4TRIB-12	30-Sep-93	3895	5642	.	274	.	.	.	.	.	.	.
W4TRIB-12	01-Dec-93	4024	4530	.	166	.	.	.	.	.	.	.

Table 4.3 (continued)

Location	Sample Date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L	Flow L/s
W4TRIB-12	08-Feb-94	4142	4515	.	86.7	.	.	.	.	.	.	.
W4TRIB-12	19-Apr-94	4219	4104	.	38.3	.	.	.	.	.	.	.
W4TRIB-12	15-Jun-94	4291	7010[c]	.	134	.	.	.	.	.	.	.
W4TRIB-12	24-Aug-94	4378	7346[c]	.	151	.	.	.	.	.	.	.
W4TRIB-5	11-Mar-93	3580	9381	.	7242	< 1.04	< 19.7	< 1.03	< 30.1	259	22422	.
W4TRIB-5	24-Mar-93	3433	8440	.	4259	< 3	< 23.3	< 2.9	< 27.7	275	17385	.
W4TRIB-5	24-May-93	3740	10231	.	5482	< 34.2	< 20.9	< 47.75	< 26.3	265	23728	.
W4TRIB-5	08-Feb-94	4079	7460	.	3864	.	39.5	.	< 1.6	70	15000	.
W4TRIB-5	19-Apr-94	4155	7358	.	1372	< 18.7	.	< 15.1	.	180	13000	.
W4TRIB-7	11-Mar-93	3581	18016	.	24566	< 3.15	< 24.7	< 2.52	< 31.8	408	40659	.
W4TRIB-7	24-Mar-93	3435	13710	.	17537	< 0.9	< 23	< 1	< 27.6	422	28102	.
W4TRIB-7	24-May-93	3741	15397	.	23346	< 35.9	< 20.9	< 45.7	< 30	554	33964	.
W4TRIB-7	01-Dec-93	3961	19723	.	33754	< 42.3	< 24.1	< 44.35	< 36.3	690	36000	.
W4TRIB-7	08-Feb-94	4080	14885	.	22346	.	< 7.4	.	< 5.2	30	29000	.
W4TRIB-7	19-Apr-94	4156	14339	.	13380	< 7.5	.	< 8.81	.	320	23000	.
WAG4 MS1	11-Mar-93	3577	11566	10477	6606	< 1.08	< 24	< 1.03	< 29.1	337	27105	~ 1.1
WAG4 MS1	24-Mar-93	3425	9143	8748	4403	< 4.6	< 10.2	< 2.4	< 13.6	344	19318	6.61
WAG4 MS1	24-May-93	3738	11583	11419	3872	< 38.1	< 19.2	< 46.55	< 27.7	302	26570	0.27
WAG4 MS1	19-Jul-93	3818	10563	.	3833	< 35.5	< 17.8	< 54	< 31.8	.	.	~ 0
WAG4 MS1	30-Sep-93	3936	8203	7600	2912	< 34.8	.	< 47	.	200	14000	~ 0
WAG4 MS1	01-Dec-93	3957	10649	8800	21338	< 36.4	< 19.3	< 39.25	< 26.9	380	20000	0.62
WAG4 MS1	08-Feb-94	4076	10415	8600	7193	.	< 2.7	.	< 2.9	390	18000	1.28
WAG4 MS1	19-Apr-94	4152	10087	.	3184	< 19.3	.	< 18.8	.	280	17000	~ 1.7
WAG4 MS1	15-Jun-94	4229	9432[c]	.	4265	< 5.3	< 5.4	< 5.1	< 6	210	18000	0.015
WAG4 MS1	24-Aug-94	4327	12619[c]	.	16788	< 17.5	< 2.7	< 14.5	< 2.9	270	22000	0.35

[a]Analysis by internal laboratory. Results are for dissolved ^{90}Sr unless noted otherwise.
[b]Analysis by external laboratory. Results are for total ^{90}Sr unless noted otherwise.
[c]Total ^{90}Sr.
[d]Dissolved ^{90}Sr.

Generally, the ^{90}Sr concentrations in the WAG 4 tributary didn't vary much between the different sampling events. There are hints of seasonal differences in the ^{90}Sr profiles (Figs 4.5 and 4.6). Most clearly seen in the 1994 sampling events, the concentrations are slightly higher in the dry seasons and lower in the wet season; however, the wetter of the wet season events (April 19, 1994) had higher concentrations than the dryer February event. Results from the poststorm sampling event on March 24, 1993 (Fig. 4.5), suggest that the discharge between W4TRIB-12 and W4TRIB-10 has a ^{90}Sr source that is storm driven (i.e., susceptible to storm flow) because of the large increase between these two locations. This is consistent with the results from the WAG 4 site investigation that found this source area to contribute significant flow during the wettest months (ORNL 1995).

Seasonal influence on the ^{3}H profiles is complex (Figs 4.7 and 4.8). Two of the dry-season sampling events (December 1, 1993, and August 24, 1994) had ^{3}H concentrations nearly three times the normal range, while both of the very wet events, the poststorm (March 24, 1993) and the April 19, 1994, had lower ^{3}H concentrations. However, there is no obvious pattern in the ^{3}H levels during the other sampling events.

Further assessments of these data in combination with metal, anion, and hydrological data may provide information about the processes that control ^{90}Sr and ^{3}H transport from the WAG 4 sources. Results from intensive storm sampling and the development of concentration-discharge relationships for the WAG 4 tributary can be found in Borders et al. (1996). Results from the recent WAG 4 site investigation have also identified source trenches directly upslope from the two key ^{90}Sr seep areas along the WAG 4 tributary.

4.3 CONCENTRATIONS IN MELTON BRANCH WATERSHED

Figure 4.9 shows the sampling locations for the Seep Task in the Melton Branch (MB) Watershed. Results from these locations identify contaminant releases from WAGs 5, 8, and 9.

4.3.1 WAG 8 and Upper Melton Branch

Table 4.4 gives the radiological results for the sampling locations in the upper Melton Branch watershed near WAG 8. With the exception of ^{3}H, radionuclide concentrations within this reach were below or near detection. The ^{3}H concentrations were only occasionally slightly elevated. The High-Flux Isotope Reactor (HFIR) in WAG 8 is the likely source of the ^{3}H. In the late 1970's the cooling water drainage from HFIR was once a major source of ^{60}Co in the watershed (Cerling and Spalding 1981). It now appears that this is no longer true because ^{60}Co was below detection in the samples collected in MB downstream of HFIR at MB-15 (Table 4.4).

4.3.2 WAG 9, WAG 5, and HRT Tributary

Table 4.5 gives the radiological results for the sampling locations along the eastern edge of WAG 5 and around WAG 9. Elevated concentrations of ^{90}Sr are seen in all of the samples collected from the HRT tributary which in part drains both WAG 9 and the eastern edge of WAG 5. Samples collected from two seeps (SW9-1 and SW9-2) had relatively low ^{90}Sr concentrations, suggesting that the groundwater discharge to these seeps is unrelated to the main source of ^{90}Sr in this area.

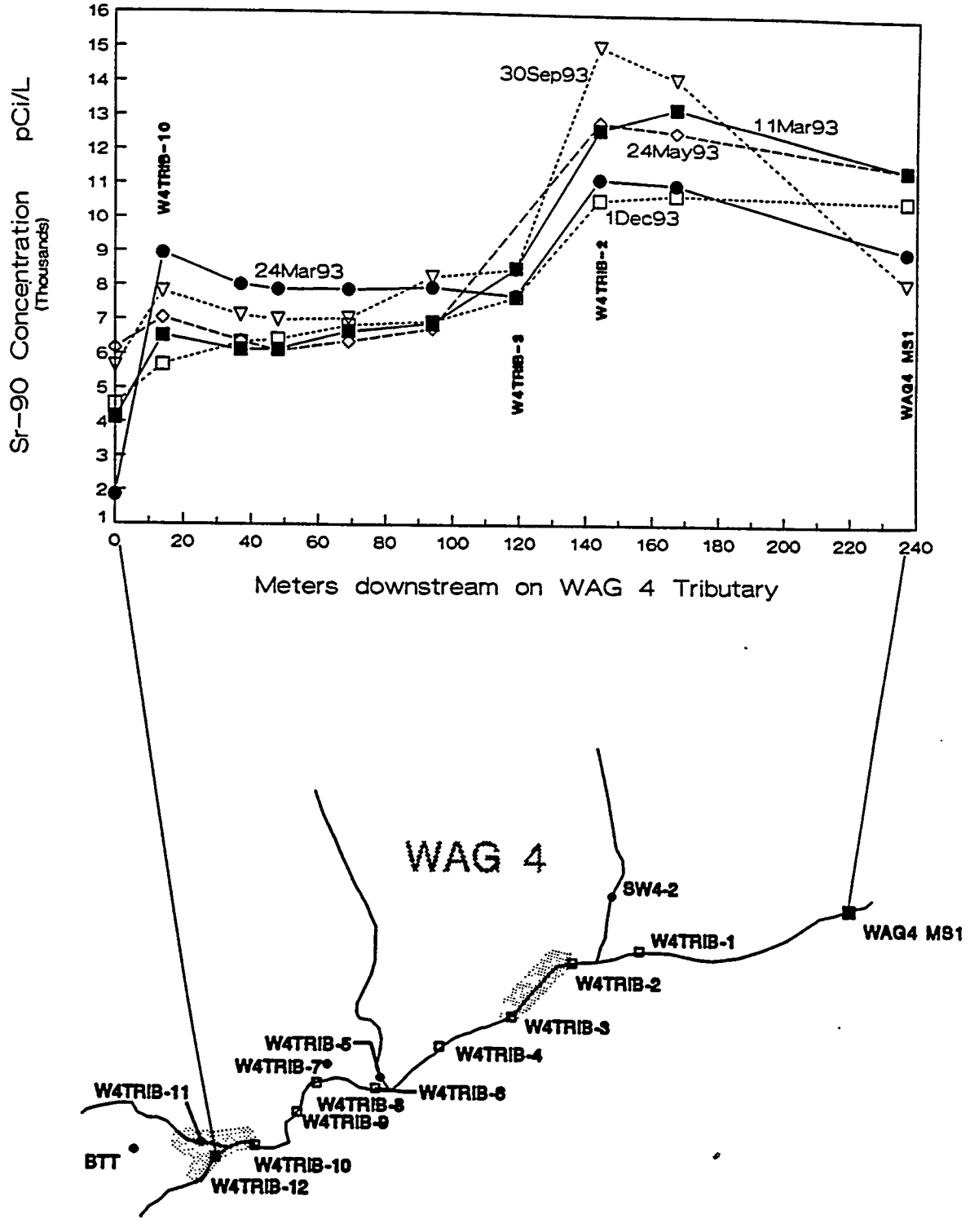


Fig. 4.5. ^{90}Sr concentrations for 1993 in the WAG 4 tributary.

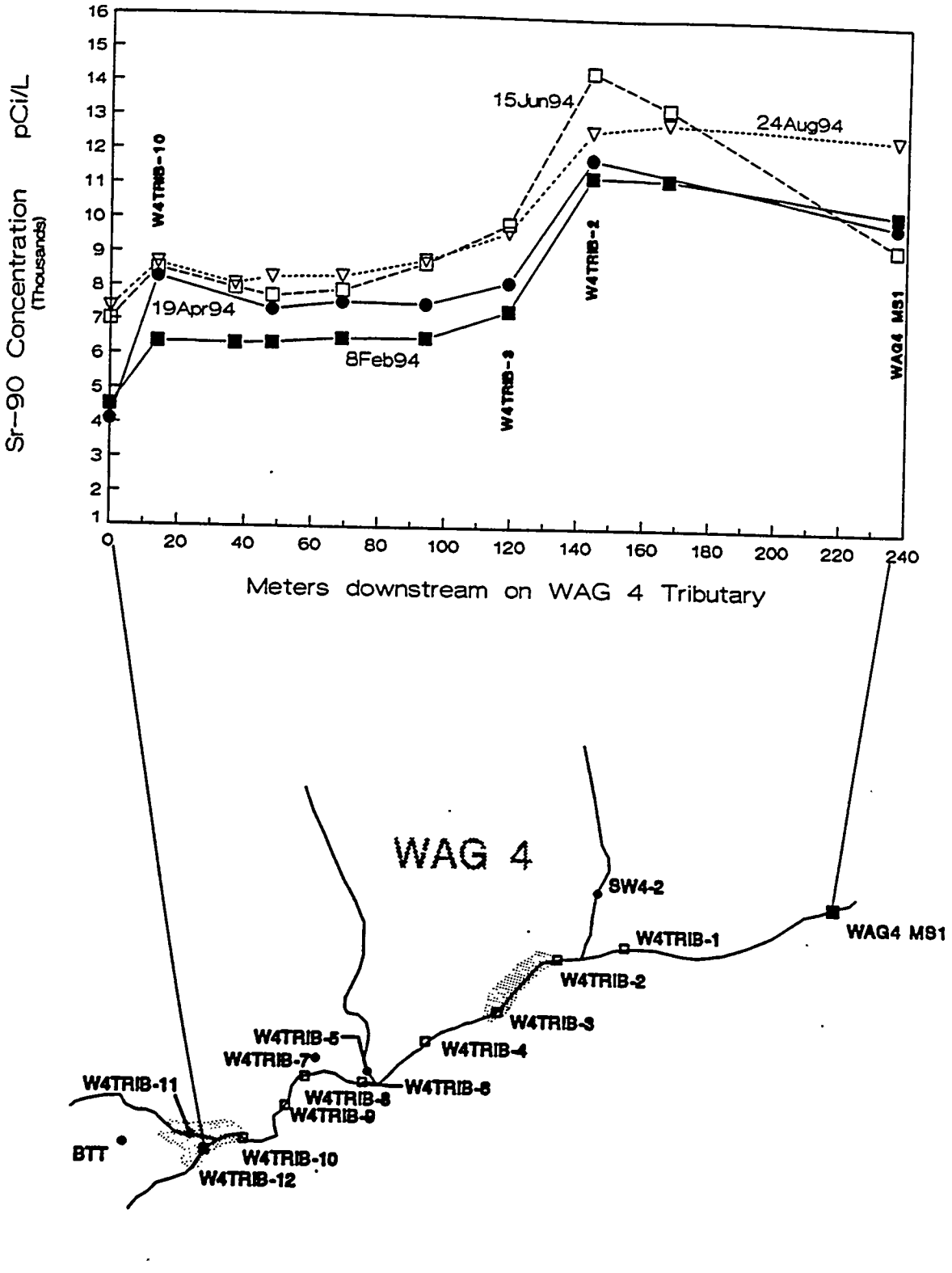


Fig. 4.6. ^{90}Sr concentrations for 1994 in the WAG 4 tributary.

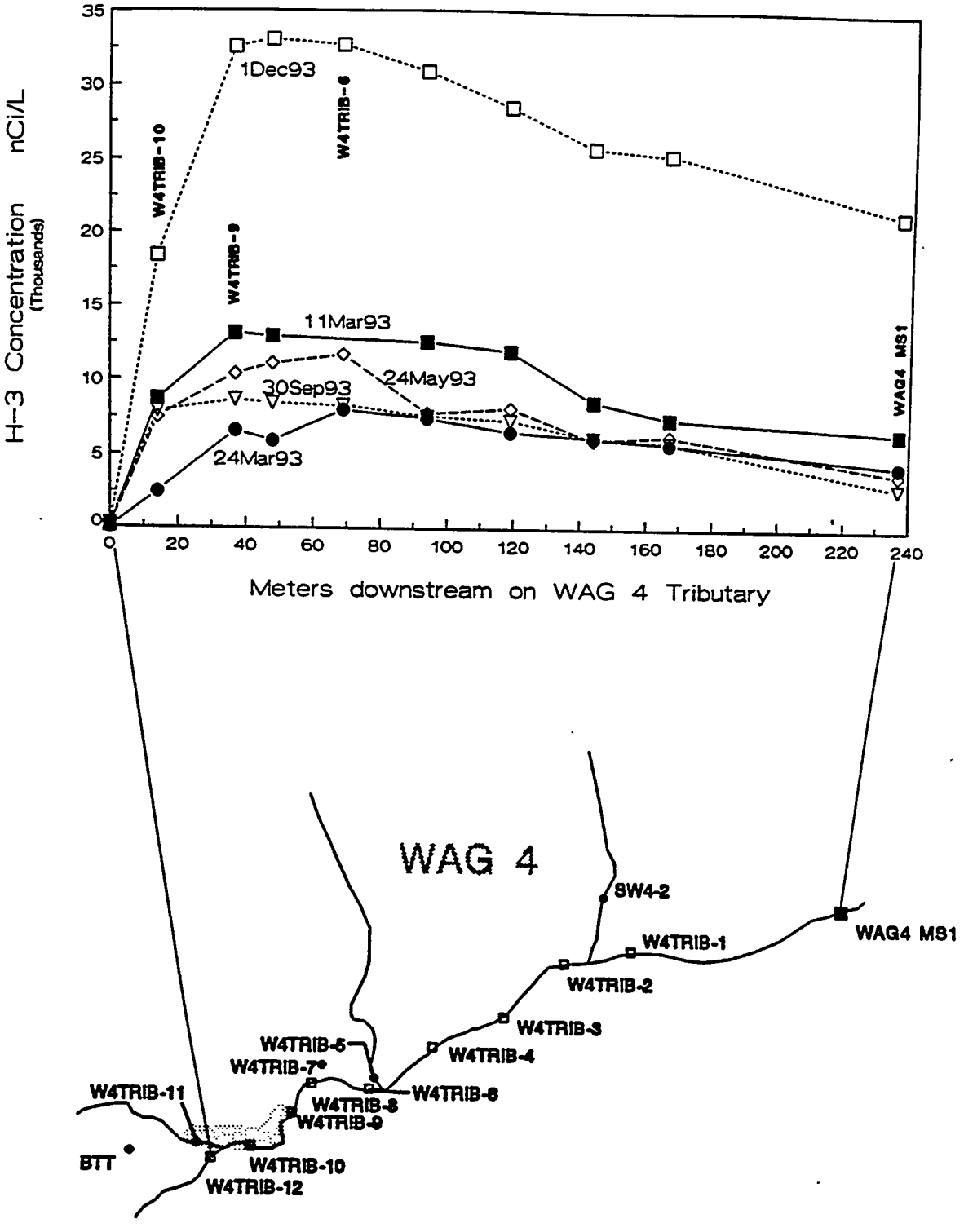


Fig. 4.7. ^{3}H concentrations for 1993 in Melton Branch along the southern boundary of WAG 5.

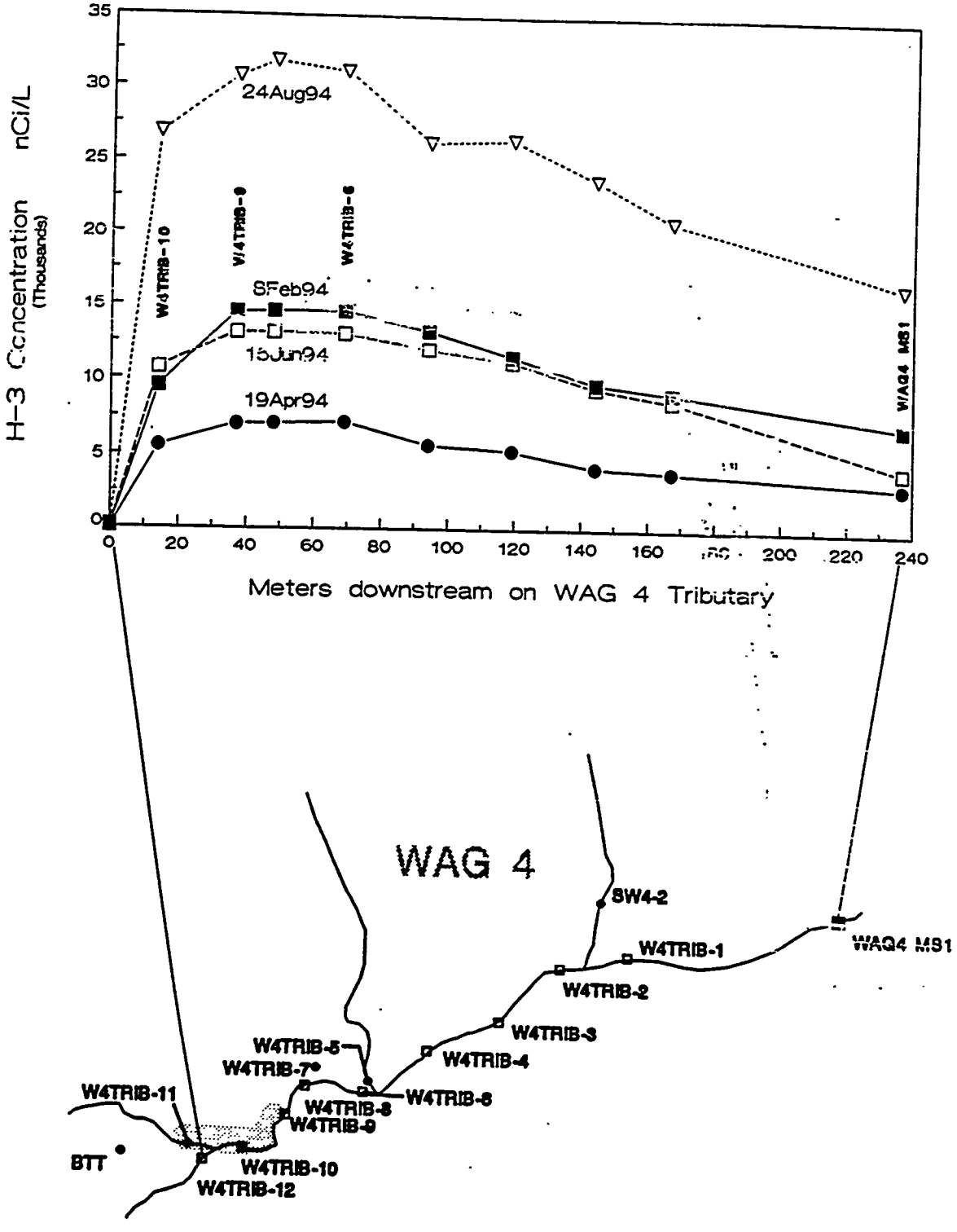


Fig. 4.8. ^{3}H for 1994 in the WAG 4 tributary.

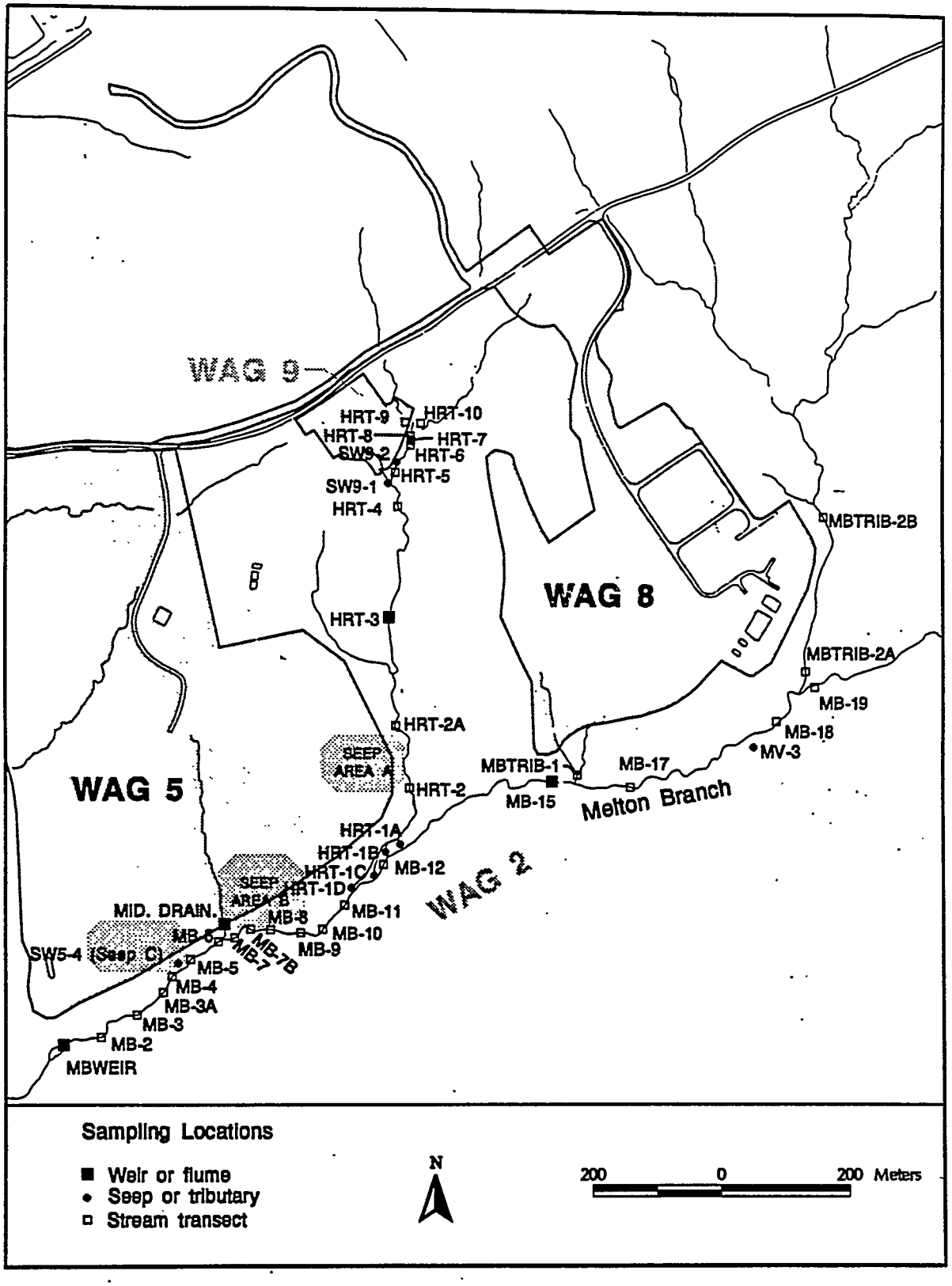


Fig. 4.9. WAG 2 remedial investigation seep task sampling locations in the Melton Branch watershed.

Table 4.4 Radiological results for locations in the upper Melton Branch watershed

Location	Sample Date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L	Flow L/s
MBTRIB-1	09-Mar-93	3557	.	.	1.75	.	.	.	.	.	.	.
MBTRIB-1	21-Jul-93	3886	.	.	0.75	.	.	.	.	.	.	.
MBTRIB-2A	09-Mar-93	3558	.	.	26.4	.	.	.	.	.	.	.
MBTRIB-2A	24-Mar-93	3488	.	.	8.56	.	.	.	.	.	.	.
MBTRIB-2A	21-Jul-93	3847	.	.	135	.	.	.	.	.	.	.
MBTRIB-2B	09-Mar-93	3560	.	.	-0.28	.	.	.	.	.	.	.
MBTRIB-2B	24-Mar-93	3489	.	.	1.23	.	.	.	.	.	.	.
MBTRIB-2B	21-Jul-93	3887	.	.	0.54	.	.	.	.	.	.	.
MB-15	09-Mar-93	3531	12	.	13.1	< 2.17	< 8.7	< 2.82	< 23.8	-0.3	9.9	~33
MB-15	24-Mar-93	3473	0	-0.2	4.15	< 2.8	< 19.6	< 3.1	< 20.5	-0.2	6.6	214
MB-15	21-Jul-93	3846	8	.	28.4	< 37.8	< 16.3	< 47.05	< 25.7	-2.0	6.0	.
MB-15	30-Sep-93	3905	35	1.2	35.6	.	.	.	.	-4.2	-11	~5
MB-15	01-Dec-93	3980	8	0.9	27.3	.	.	.	.	2.6	3.2	~14
MB-15	08-Feb-94	4100	.	-1.4	6.47	.	.	.	.	11	12	~40
MB-15	19-Apr-94	4173	.	6.3	4.58	.	.	.	.	7.5	16	79
MB-15	23-Jun-94	4249	-17[c]	-4.0	8.17	.	.	.	.	-1.7	11	~21
MB-15	24-Aug-94	4350	20[c]	6.5	35.0	.	.	.	.	2.7	10	~6
MB-17	21-Jul-93	3848	.	.	4.39	.	.	.	.	.	.	.
MB-18	09-Mar-93	3555	.	.	12.6	.	.	.	.	.	.	.
MB-18	24-Mar-93	3655	.	.	6.37	.	.	.	.	.	.	.
MB-18	21-Jul-93	3885	.	.	76.6	.	.	.	.	.	.	.
MB-19	09-Mar-93	3556	.	.	0.92	.	.	.	.	.	.	.
MB-19	24-Mar-93	3486	.	.	1.40	.	.	.	.	.	.	.
MV-3	09-Mar-93	3533	16	.	-0.13	2.07	< 8.7	< 2.56	< 24.3	-1.2	1.8	.

[a]Analysis by internal laboratory. Results are for dissolved ^{90}Sr unless noted otherwise.
[b]Analysis by external laboratory. Results are for total ^{90}Sr.
[c]Total ^{90}Sr.

Table 4.5 Radiological results for locations along the east edge of WAG 5 and near WAG 9

Location	Sample Date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L	Flow L/s
HRT-10	08-Feb-94	4132	276	.	.	.	.	.	.	.	.	.
HRT-10	19-Apr-94	4209	367	.	.	.	.	.	.	.	.	.
HRT-10	23-Jun-94	4281	127[c]	.	.	.	.	.	.	.	.	.
HRT-10	24-Aug-94	4400	320[c]	.	.	.	.	.	.	.	.	.
HRT- 7	08-Feb-94	4129	348	.	.	.	.	.	.	.	.	.
HRT- 7	23-Jun-94	4278	501[c]	.	.	.	.	.	.	.	.	.
HRT- 7	24-Aug-94	4397	784[c]	.	.	.	.	.	.	.	.	.
HRT-1A	09-Mar-93	3521	1156	.	1548	< 1.95	< 24	< 2.3	< 26.4	36	2500	.
HRT-1A	24-Mar-93	3483	754	.	703	< 2.4	< 21.3	< 2.7	< 24.9	24	1596	.
HRT-1A	24-May-93	3727	1526	.	3468	.	.	.	.	42	3958	.
HRT-1A	21-Jul-93	3850	1672	.	1922	< 34.9	< 20.3	< 46.35	< 29.6	.	.	.
HRT-1A	30Sep93	3927	1974	.	1497	.	.	.	.	.	.	.
HRT-1A	01-Dec-93	4010	921	.	963	.	.	.	.	.	.	.
HRT-1A	08-Feb-94	4125	889	.	1271	.	.	.	.	.	.	.
HRT-1A	19-Apr-94	4201	1056	.	1609	.	.	.	.	.	.	.
HRT-1A	23-Jun-94	4274	1021[c]	.	1434	.	.	.	.	.	.	.
HRT-1A	24-Aug-94	4393	1160[c]	.	1170	.	.	.	.	.	.	.
HRT-1B	09-Mar-93	3522	445	.	1138	< 3.32	< 28.8	< 3.31	< 24	15	920	.
HRT-1B	24-Mar-93	3482	405	.	843	< 1.1	< 22.7	< 1.1	< 25.1	12	749	.
HRT-1B	24-May-93	3728	469	.	1489	.	.	.	.	18	1238	.
HRT-1B	30-Sep 93	3948	1095	.	1006	.	.	.	.	.	.	.
HRT-1B	01-Dec-93	4012	716	.	1115	.	.	.	.	.	.	.
HRT-1B	08-Feb-94	4126	692	.	1489	.	.	.	.	.	.	.
HRT-1B	19-Apr-94	4203	484	.	1360	.	.	.	.	.	.	.
HRT-1B	24-Aug-94	4394	914[c]	.	2677	.	.	.	.	.	.	.
HRT-1C	09-Mar-93	3523	1853	.	1937	< 3.24	< 8.4	< 3.04	< 22.2	54	4050	.
HRT-1C	24-Mar-93	3481	1822	.	1162	< 2.7	< 20.9	< 3.1	< 28.2	42	2931	.
HRT-1C	24-May-93	3730	3139	.	2545	.	.	.	.	87	8217	.
HRT-1C	01-Dec-93	4008	1266	.	1284	.	.	.	.	.	.	.
HRT-1C	08-Feb-94	4123	2250	.	5972	.	.	.	.	.	.	.

Table 4.5 (continued)

Location	Sample Date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L	Flow L/s
HRT-1C	19-Apr-94	4199	2769	.	1750	.	.	.	.	.	.	.
HRT-1D	09-Mar-93	3524	800	.	4393	< 3.15	< 8.7	< 3.91	< 21.7	28	1705	.
HRT-1D	24-Mar-93	3479	1369	.	5956	< 2.8	< 21.5	< 3	< 30.7	47	3247	.
HRT-1D	24-May-93	3731	1493	.	6943	.	.	.	.	53	4783	.
HRT-1D	01-Dec-93	4007	938	.	4433	.	.	.	.	.	.	.
HRT-1D	08-Feb-94	4122	509	.	2103	.	.	.	.	.	.	.
HRT-1D	19-Apr-94	4198	.	.	3266	.	.	.	.	.	.	.
HRT-1D	23Jun94	4271	2730[c]	.	7490	.	.	.	.	.	.	.
HRT-1D	24-Aug-94	4390	437[c]	.	1702	.	.	.	.	.	.	.
HRT-2	09-Mar-93	3550	1072	.	1693	.	.	.	.	26	2303	.
HRT-2	24-Mar-93	3472	657	.	712	.	.	.	.	21	1474	.
HRT-2	24-May-93	3732	1595	.	2673	.	.	.	.	37	3863	.
HRT-2	21-Jul-93	3851	1764	.	1883	.	.	.	.	.	.	.
HRT-2	30-Sep-93	3906	2137	1430	1572	.	.	.	.	69	3700	.
HRT-2	01-Dec-93	3981	941	530	972	.	.	.	.	23	1500	.
HRT-2	08-Feb-94	4101	946	.	1263	.	.	.	.	2.0	1500	.
HRT-2	19-Apr-94	4174	1072	.	1631	.	.	.	.	32	1900	.
HRT-2	23-Jun-94	4251	1000[c]	.	1452	.	.	.	.	10	1700	.
HRT-2	24-Aug-94	4352	1079[c]	.	1232	.	.	.	.	44	2000	.
HRT-3	09-Mar-93	3532	1072	1032	2.42	< 2.35	< 10.2	< 3.32	< 24.5	38	2360	4.7
HRT-3	24-Mar-93	3471	779	663	1.59	< 2.7	< 14.1	< 3	< 11.2	26	1799	16
HRT-3	24-May-93	3733	1282	1211	0.25	.	.	.	.	41	3520	1.6
HRT-3	21-Jul-93	3852	1384	1493	2.51	< 36.6	< 20	< 54.6	< 26.1	31	1463	1.6
HRT-3	30-Sep-93	3907	2228	2000	0.20	.	.	.	.	67	3700	1
HRT-3	01-Dec-93	3982	885	600	-0.07	.	.	.	.	21	1500	3.8
HRT-3	08-Feb-94	4102	.	.	0.64	.	.	.	.	22	1400	4.6
HRT-3	19-Apr-94	4175	.	880	0.16	.	.	.	.	27	1600	5.6
HRT-3	23-Jun-94	4252	736[c]	250	0.21	.	.	.	.	9.9	1200	3
HRT-3	24-Aug-94	4353	1080[c]	1100	0.63	.	.	.	.	49	1800	3.4

Table 4.5 (continued)

Location	Sample Date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L	Flow L/s
SW9-1	09-Mar-93		1046	.	.	.	.	.	.	.	.	.
SW9-1	21-Jul-93	3853	31	.	2.72	< 36.2	< 17.8	< 49.5	< 29.9	-0.9	26	.
SW9-1	30-Sep-93	3908	63	.	.	.	.	.	.	.	.	.
SW9-1	01-Dec-93	3983	20	.	.	.	.	.	.	.	.	.
SW9-2	09-Mar-93		19	.	.	.	.	.	.	.	.	.
SW9-2	21-Jul-93	3855	207	.	0.90	< 33.5	< 18.7	< 47.65	< 27.5	6.6	370	.
SW9-2	30-Sep-93	3909	67	.	.	.	.	.	.	.	.	.
SW9-2	01-Dec-93	3985	68	.	.	.	.	.	.	.	.	.

[a]Analysis by internal laboratory. Results are for dissolved ^{90}Sr unless noted otherwise.
[b]Analysis by external laboratory. Results are for total ^{90}Sr.
[c]Total ^{90}Sr.

Transect samples were collected in the HRT tributary near WAG 9 to identify the areas of ^{90}Sr input that are responsible for the ^{90}Sr flux in the tributary. The results shown in Figure 4.10 suggest that almost all of the ^{90}Sr enters the tributary upstream from HRT-6. The elevated ^{90}Sr at HRT-9 may be a result of discrete groundwater flow from the former WAG 9 impoundment eastward along-strike to the tributary and/or an upgradient source from the impoundment. Samples were not collected above HRT-9 because that area had been roped off as a contaminated zone, which also suggests that there may be contaminant sources upgradient of the impoundment. The wetness observed in the area between HRT-9 and HRT-8 during field observations suggests that this reach is an area of general groundwater discharge. The increase in ^{90}Sr from HRT-9 to HRT-8 indicates that this is also a discharge point for an important contaminant transport pathway. A small, cleaner tributary from the east joins the HRT drainage between HRT-8 and HRT-6 causing a decrease in the ^{90}Sr. In the late 1970's this now cleaner drainage appeared to be a larger source of ^{90}Sr to the HRT tributary (Cerling and Spalding 1981).

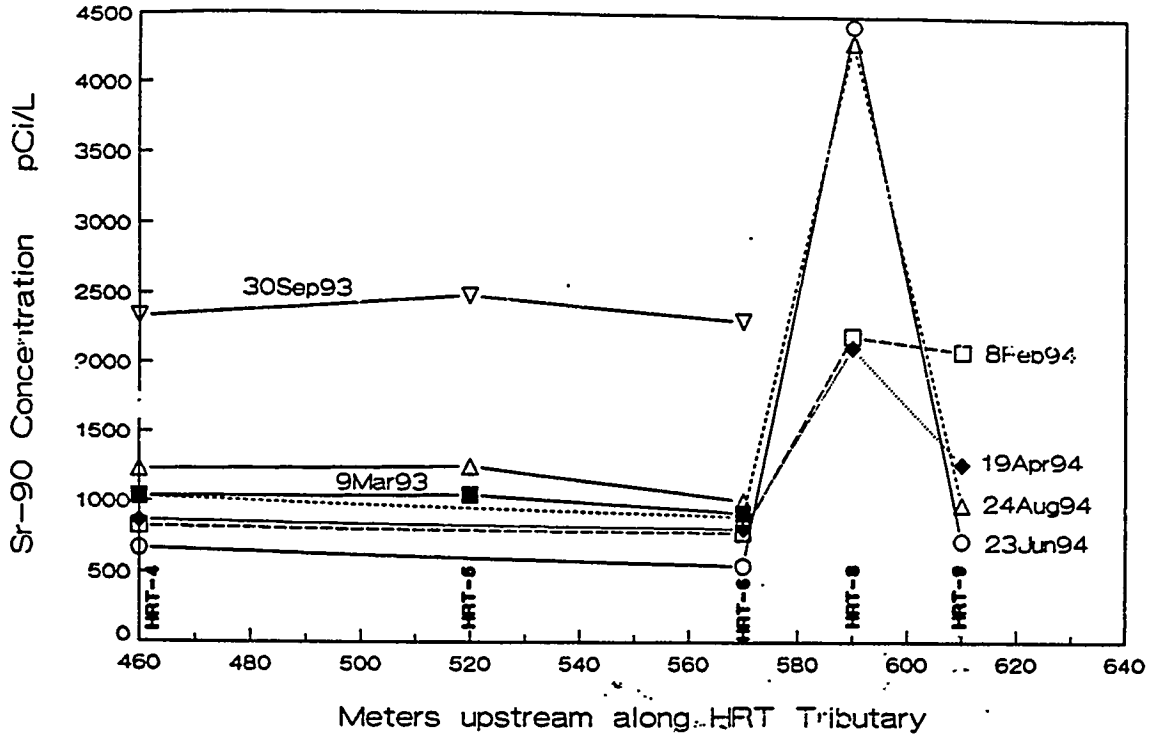
There is a pronounced increase in ^{3}H concentrations in the HRT tributary between HRT-3 and HRT-2. There is a discrete seep along this reach which discharges highly tritiated groundwater. The seep was sampled in 1992 as part of the WAG 2 RI Seep Task and was identified as SW5-7 (DOE 1995a). The seep was later referred to as Seep A in WAG 5 (Newsom et al. 1993). Subsurface contaminant transport in this area of WAG 5 has been studied by Wickliff et al. (1991), Hicks et al. (1992), and Jardine et al. (DOE 1995c).

HRT tributary splits into and meanders among four primary channels right before it enters Melton Branch. The location of these splits are depicted on Figure 4.9 as HRT-1A, HRT-1B, HRT-1C, and HRT-1D. The dominant flow path for HRT during 1993 and 1994 seemed to be along HRT-1A. Both ^{90}Sr and ^{3}H concentrations in HRT-1A were comparable to those upstream at HRT-2. At times, there was a fair amount of flow in HRT-1C that usually had higher ^{90}Sr and ^{3}H concentrations than those at HRT-2. HRT-1B and HRT-1D are old channels that typically had visible seepage in the wet seasons. Concentrations of ^{90}Sr and ^{3}H were usually lower in HRT-1B than at HRT-2. The ^{3}H concentrations were a lot higher in HRT-1D, and the ^{90}Sr concentrations were occasionally higher than those at HRT-2.

4.3.3 WAG 5 and Lower Melton Branch

Table 4.6 gives the radiological results for the key sampling locations along the lower section of Melton Branch and southern edge of WAG 5.

Transect sampling along Melton Branch identified three areas of discernable ^{90}Sr input (Fig 4.11). The first increase in ^{90}Sr concentration was seen between MB-15 and MB-12 where HRT tributary enters. Most of this increase is attributed to the elevated ^{90}Sr levels within the HRT tributary. During some of the sampling events there was a slight increase in ^{90}Sr between MB-12 and MB-11 where discharge from HRT-1C and HRT-1D enters. Contaminated groundwater may be entering this reach of Melton Branch because the ^{90}Sr concentrations in HRT-1C were higher, and those in HRT-1D occasionally higher, than those in HRT-2. The second significant ^{90}Sr input occurred between MB-5 and MB-4. This sharp increase in ^{90}Sr is a result of Seep SW5-4. The ^{90}Sr profiles suggest that there may be additional, but less significant, ^{90}Sr input from groundwater seepage between MB-4 and MBWEIR. The third discrete ^{90}Sr input occurred below MBWEIR, between MB-1A and MB-1, from Seep SW2-5.



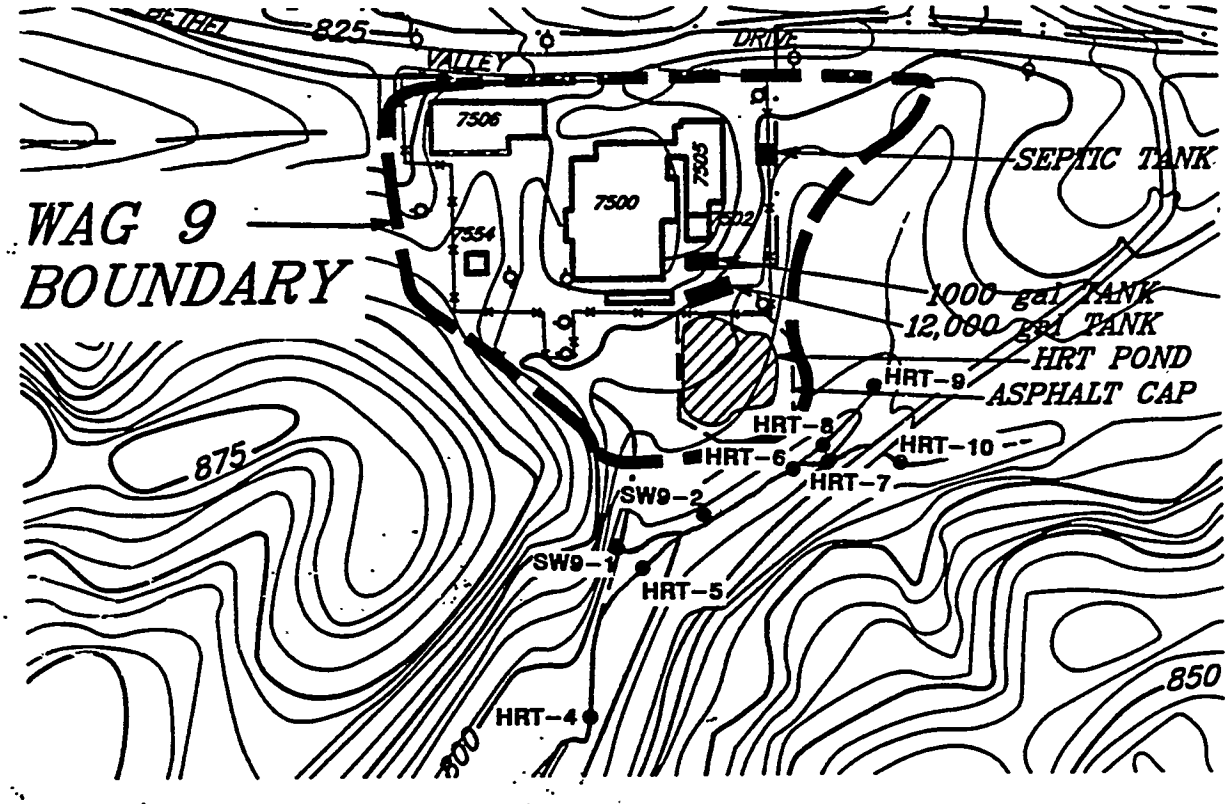


Fig. 4.10. ^{90}Sr concentrations in the upper Homogeneous Reactor Test tributary near WAG 9.

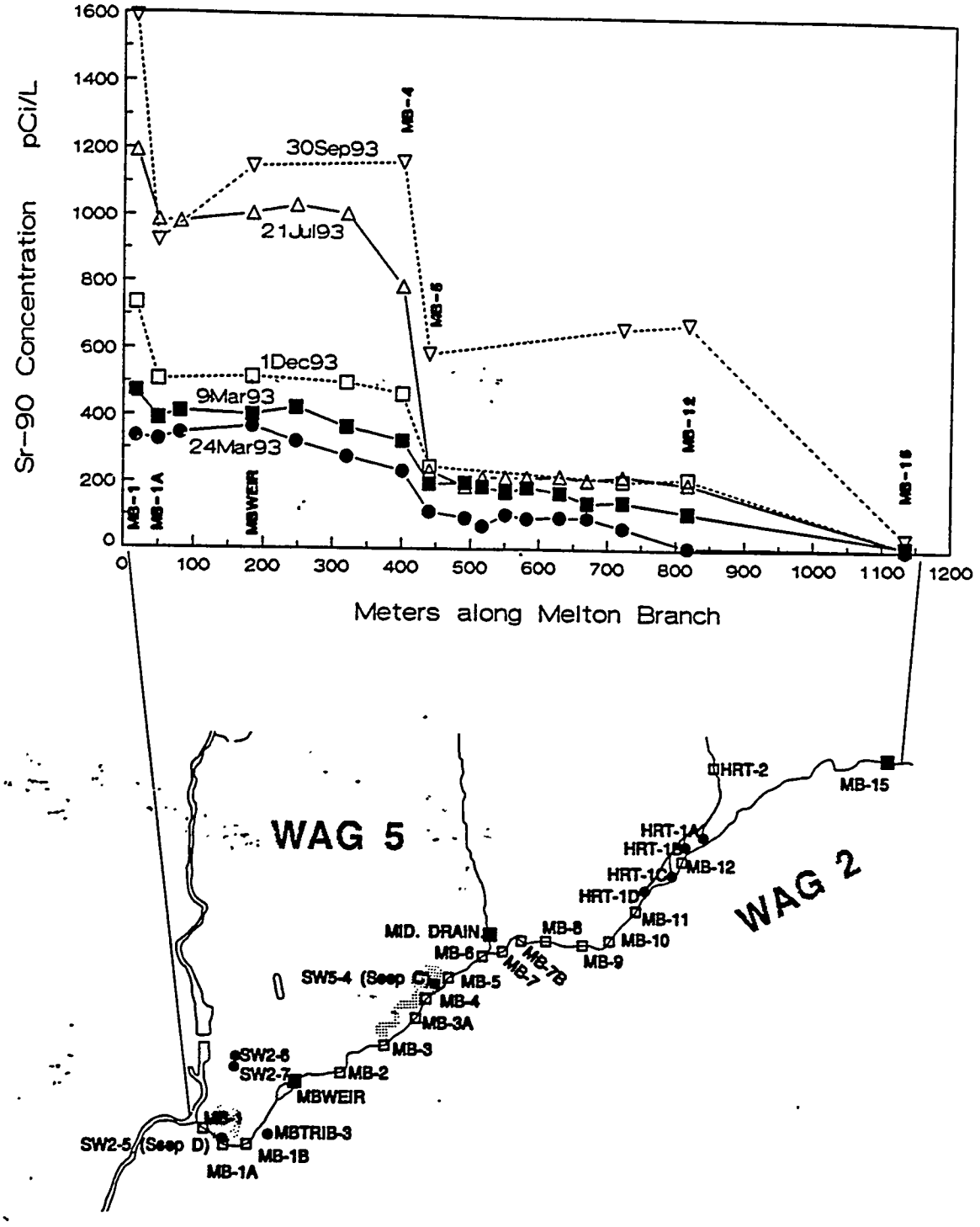


Fig. 4.11. ^{90}Sr concentrations in Melton Branch along the southern boundary of WAG 5.

Table 4.6 Radiological results for samples collected at MID.DRAIN., SW5-4, and MBWEIR

Location	Sample Date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L	Flow L/s
MBWEIR	09-Mar-93	3515	396	394	1107	< 2.6	< 10.8	< 2.46	<14	11	898	60
MBWEIR	11-Mar-93	3569	435	426	1475	< 0.98	< 11.6	< 1.11	< 14.3	15	914	41.8
MBWEIR	24-Mar-93	3475	369	337	529	< 0.98	< 9	< 0.97	< 11.1	11	792	.
MBWEIR	13-Apr-93	3609	502	498[d]	1246	< 1.07	14.8	< 1.1	< 14.6	15	1188	71
MBWEIR	24-May-93	3723	1034	985	2073	< 36.9	< 19.2	< 48.75	< 27.5	19	2154	12.9
MBWEIR	13-Jul-93	3793	1177	83	88.1	< 41.5	< 21.4	< 52.2	< 28.3	361	6040	8
MBWEIR	19-Jul-93	3824	795	810	741	< 34.5	< 9.6	< 49.35	< 14.3	56	1836	21.4
MBWEIR	21-Jul-93	3844	1008	1019	554	< 36.9	< 9.6	< 49.5	< 16.2	76	2317	19.3
MBWEIR	30-Sep-93	3891	1152	1000	1359	< 35.8	< 18.9	< 44	< 25.5	15	1900	3.7
MBWEIR	01-Dec-93	3971	517	280	904	< 33	< 9.5	< 53	< 15.3	15	870	18.3
MBWEIR	08-Feb-94	4091	.	420	1184	.	< 1.8	.	< 2.2	11	630	60.1
MBWEIR	19-Apr-94	4163	395	360	950	< 15.6	.	< 19.3	.	16	630	115.6
MBWEIR	15-Jun-94	4239	489[c]	610	854	< 5	< 5.5	< 5	< 5.7	5.1	860	23.7
MBWEIR	23-Jun-94	4311	506[c]	460	626	< 14.4	.	< 15.8	.	9.3	780	27.3
MBWEIR	24-Aug-94	4356	1128[c]	1000	1746	< 4.5	< 5.9	< 5.2	< 5.8	45	1800	15.5
MID. DRAIN.	09-Mar-93	3529	1897	.	8432	< 1.69	< 21.9	< 1.72	< 27.9	54	3841	1
MID. DRAIN.	24-Mar-93	3478	1617	.	5934	< 2.3	< 21.1	< 4.9	< 27.3	84	3533	3
MID. DRAIN.	24-May-93	3768	2007	.	7248	.	.	.	.	.	.	0.5
MID. DRAIN.	21-Jul-93	3865	2483	.	8143	< 35.6	< 20.9	< 49.4	< 30.9	74	3697	0.09
MID. DRAIN.	30-Sep-93	3904	2359	2100	8034	.	.	.	.	.	.	0.07
MID. DRAIN.	01-Dec-93	3979	2076	1500	8666	.	.	.	.	.	.	0.25
MID. DRAIN.	08-Feb-94	4098	.	1400	8159	.	.	.	.	.	.	0.93
MID. DRAIN.	19-Apr-94	4171	.	1100	4466	.	.	.	.	.	.	2.7
MID. DRAIN.	23-Jun-94	4247	2341[c]	1900	7212	.	.	.	.	.	.	0.54
MID. DRAIN.	24-Aug-94	4348	2284[c]	1700	7631	.	.	.	.	.	.	0.35
SW5-4	09-Mar-93	3528	404294	434279	4472	< 1.53	< 23.1	< 1.07	< 27.4	12984	938384	0.04
SW5-4	24-Mar-93	3477	320059	276073	3152	< 4.2	< 19.8	< 3.3	< 23.3	6593	696418	0.14
SW5-4	13-Apr-93	3638	389932	.	.	.	.	.	.	882	836839	.

Table 4.6 (continued)

Location	Sample Date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L	Flow L/s
SW5-4	24-May-93	3726	481852	.	7214	< 49.4	< 24.4	< 54.1	< 40.9	14196	1091546	.
SW5-4	21-Jul-93	3864	569378	.	6152	< 48.2	< 18.8	< 52.6	< 29.9	.	.	0.002
SW5-4	01-Dec-93	3977	417679	.	4588	.	.	.	.	.	.	.
SW5-4	08-Feb-94	4097	401984	.	3975	.	.	.	.	.	.	0.05
SW5-4	19-Apr-94	4170	388757	.	3982	.	.	.	.	.	.	0.12

[a]Analysis by internal laboratory. Results are for dissolved ^{90}Sr unless noted otherwise.
[b]Analysis by external laboratory. Results are for total ^{90}Sr unless noted otherwise.
[c]Total ^{90}Sr.
[d]Dissolved ^{90}Sr.

Both SW5-4 and SW2-5, later known as Seeps C and D (Newsom et al. 1993), were identified by the Seep Task as major sources of ^{90}Sr to the watershed in 1992. As a result, they became part of the removal actions implemented by the WAG 5 RI. Late in 1994, zeolite treatment units were installed at Seeps C and D and are removing ^{90}Sr from the groundwater seepage in that area to reduce the overall ^{90}Sr release at WOD.

Seasonal influence on the ^{90}Sr concentrations within Melton Branch is evident from the transect profiles. The profiles show that the ^{90}Sr concentrations tend to be lower during wet conditions and higher during dry conditions. Results from 1994 sampling events are not shown because of their similarity to the 1993 events. The February and April 1994 events had profiles very similar to the March 1993 events, while the August 1994 event was similar to the July and September 1993 events.

Tritium results from the transect sampling along Melton Branch identified two areas of discernable ^{3}H input (Figs. 4.12 and 4.13). Similar to the ^{90}Sr profiles, the first increase in ^{3}H is between MB-15 and MB-12 and is primarily a result of discharge from HRT tributary. Additional tritiated groundwater seepage may occur in this area because the ^{3}H in HRT-1D is higher than that in HRT-1A. The largest ^{3}H input occurred along ~170-m reach of Melton Branch from about MB-10 to MB-6. The groundwater seepage in the reach from MB-10 to MB-7 is now called Seep Area B (Newsom et al. 1993) and is more diffuse than that of Seep A between HRT-2 and HRT-3. The tritiated groundwater discharges directly into Melton Branch without any visible discrete seeps along this reach. The continued increase of ^{3}H between MB-6 and MB-7 is primarily a result of discharge from the middle drainage (MID. DRAIN.) in WAG 5.

There seems to be no clear correlation between hydrologic conditions (seasons) and ^{3}H transect profiles (Figs 4.12 and 4.13). Both the September 1993 and the August 1994 events were during dry conditions and have the highest ^{3}H concentrations. However, July 1993 was also during dry conditions and has low concentrations similar to the poststorm event in March 1993. Additional assessment of these data in combination with other water quality and hydrological data may provide a clearer understanding of the processes that control the ^{3}H releases from WAG 5.

4.4 CONCENTRATIONS IN LOWER WOC/WOL DRAINAGE

Figure 4.14 shows the sampling locations for the Seep Task in the lower WOC watershed, with the exception of WOCET. Results from these locations identify contaminant releases from WAGs 5, 6, and 7.

4.4.1 Near the Confluence of WOC and Melton Branch

Radiological results for seep and tributary locations near the confluence of WOC and Melton Branch are given in Table 4.7. As discussed in Sect. 4.3.3, seep SW2-5, also known as Seep D, was a key ^{90}Sr seep and caused a noticeable increase in the ^{90}Sr concentration in Melton Branch. The lower ^{90}Sr concentrations at SW2-5 during the wet season sampling events may be a result of dilution from Melton Branch, because this seep discharged directly into the stream bed gravel bar. The concentrations during the dry months are most representative of the groundwater seepage because the water level in Melton Branch was low and there was a distinct seep pool.

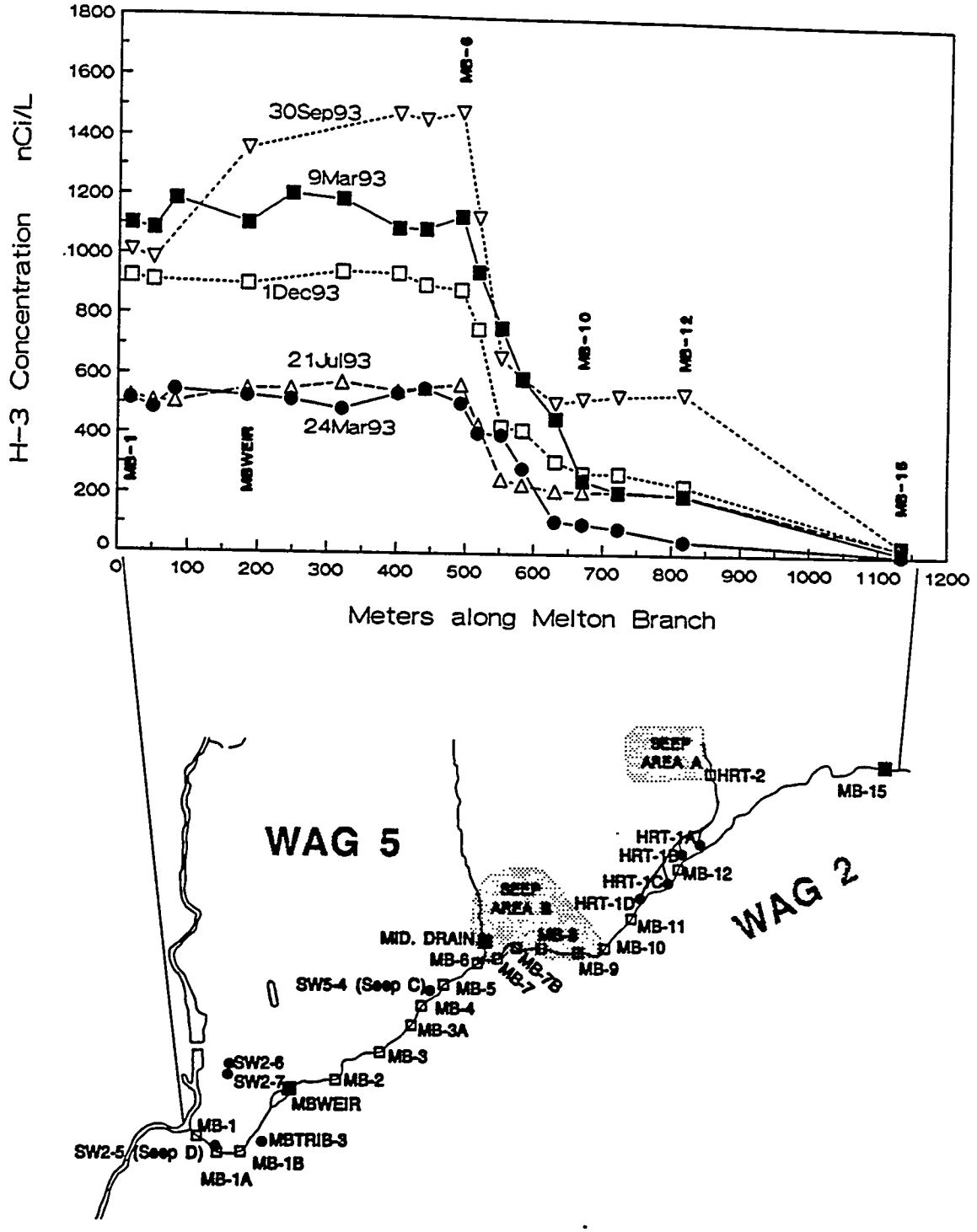


Fig. 4.12. ^{3}H concentrations for 1993 in Melton Branch along the southern boundary of WAG 5

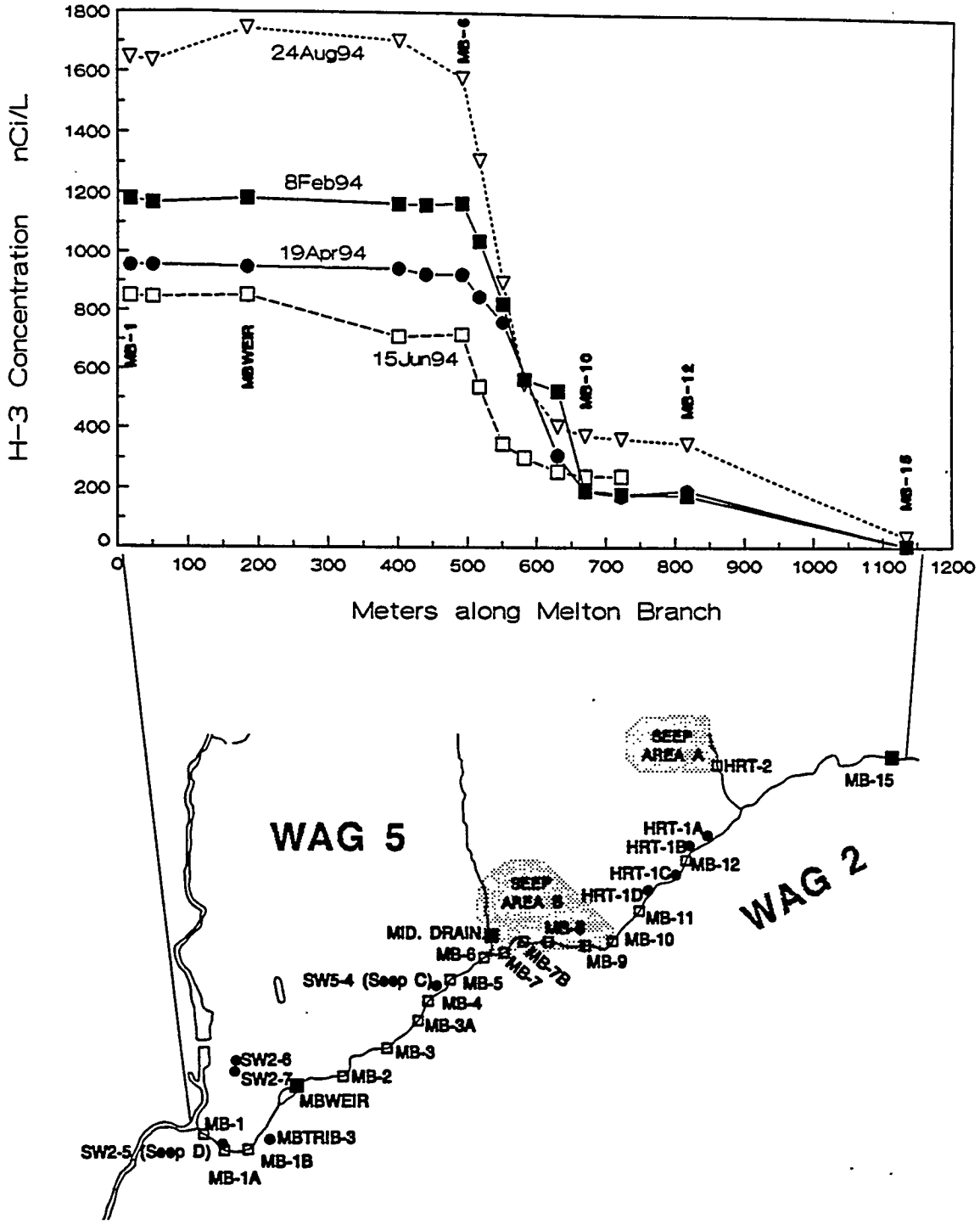


Fig. 4.13. ^{3}H concentrations for 1994 in Melton Branch along the southern boundary of WAG 5.

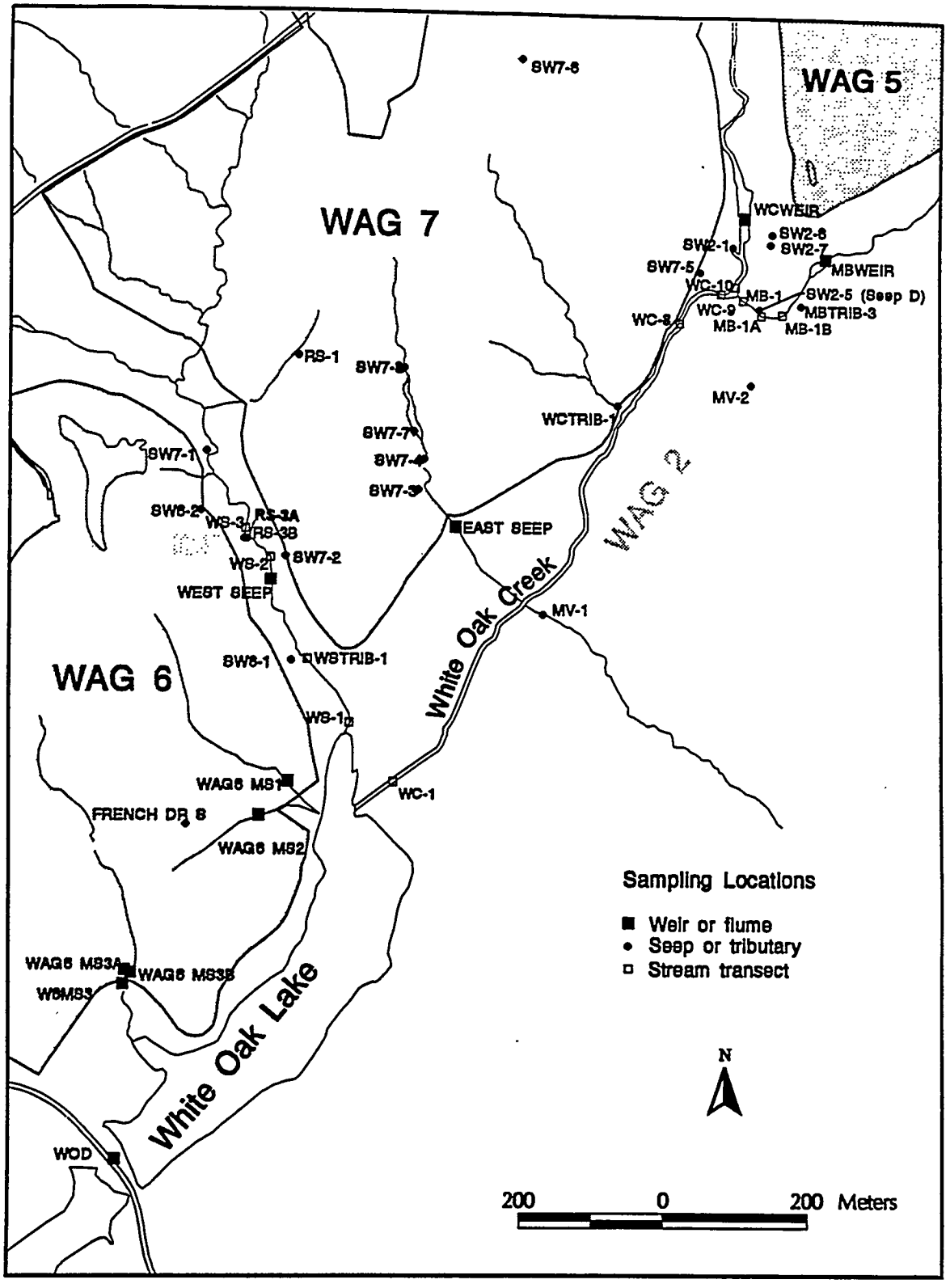


Fig. 4.14. WAG 2 remedial investigation seep task sampling locations in the lower White Oak Creek watershed.

Table 4.7 Radiological results for locations near the confluence of WOC and Melton Branch

Location	Sample Date	Base ID	^{90}Sr internal[a] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L
MBTRIB-3	09-Mar-93	3519	65	2.96	< 2.72	< 21.4	< 3.67	< 31.4	0.1	104
MBTRIB-3	24-Mar-93	3474	76	2.60	< 3	< 23.4	< 2.7	< 27.1	1.6	110
MBTRIB-3	21-Jul-93	3862	36	1.97	< 34.6	< 17.4	< 53.2	< 28.4	-1.7	30
SW2-1	13-Apr-93	3621	314	11.4	< 39.8	< 23.4	< 47.3	< 31.4	6.3	668
SW2-5	09-Mar-93	3520	54291	8511	< 3.12	< 24.1	< 3.76	< 29.9	1484	145385
SW2-5	24-May-93	3724	130508	10419	< 39.4	< 17.1	< 46.85	< 28.9	3020	296795
SW2-5	21-Jul-93	3858	150545	10210	< 41.1	< 19.3	< 53	< 29.9	5562	254202
SW2-5	30-Sep-93	3901	153478	9875	.	.	.	.	.	.
SW2-5	01-Dec-93	3973	122429	8961	.	.	.	.	.	.
SW2-5	08-Feb-94	4092	96579	7696	.	.	.	.	.	.
SW2-5	19-Apr-94	4165	34860	3799	.	.	.	.	.	.
SW2-5	15-Jun-94	4241	158515[b]	10403	.	.	.	.	.	.
SW2-5	23-Jun-94	4310	172238[b]	10623	.	.	.	.	.	.
SW2-5	24-Aug-94	4343	159514[b]	13661	.	.	.	.	.	.
SW2-6	24-May-93	3764	209601	2668	.	.	.	.	.	.
SW2-6	08-Feb-94	4094	251701	2512	.	.	.	.	.	.
SW2-6	19-Apr-94	4167	200294	1758	.	.	.	.	.	.
SW2-6	24-Aug-94	4346	564388[b]	2829	.	.	.	.	.	.
SW2-7	24-May-93	3781	182627	2789	.	.	.	.	.	.
SW2-7	30-Sep-93	3947	219242	2338	.	.	.	.	.	.
SW2-7	01-Dec-93	3974	254347	3019	.	.	.	.	.	.
SW2-7	08-Feb-94	4093	213503	2376	.	.	.	.	.	.
SW2-7	19-Apr-94	4166	219242	1992	.	.	.	.	.	.
SW2-7	15-Jun-94	4242	109372[b]	2498	.	.	.	.	.	.
SW2-7	24-Aug-94	4345	263251[b]	2425	.	.	.	.	.	.

[a]Analysis by internal laboratory. Results are for dissolved ^{90}Sr unless noted otherwise.
[b]Total ^{90}Sr.

Two other highly contaminated ^{90}Sr seeps, SW2-6 and SW2-7, were found in the flood plain area between WOC and Melton Branch. These seeps are generally in a boggy area and are likely interconnected. They are located closer to WOC but have no distinct discharge pathway to either WOC or Melton Branch. It is possible that they are associated with the same source and pathway that feeds SW2-5 because of the similarly high ^{3}H concentrations. Preliminary review of the inorganic data also found similarities in a few metal and anion concentrations and suggested that the seeps may have a deeper groundwater component than the typical seep in the WOC watershed. Some geologic structure (e.g., bedding plains, fractures, and/or faults) in this area is likely controlling the groundwater and contaminant transport from the source to these seeps.

4.4.2 WAG 7

Table 4.8 gives the radiological results for the sampling locations in and around WAG 7. The main radiological contaminants of concern in this area are ^{60}Co and alpha emitters. Specific transuranic radionuclides are discussed in Sect. 5.5. Many of the seep and small stream locations had detectable ^{60}Co levels. Seep SW7-5 has historically been called the cobalt seep and had ^{60}Co concentrations higher than any of the other locations sampled in the watershed. This seep is directly downgradient from trench 7 in the pits and trenches area. Cobalt-60 concentrations in seeps RS-3A and SW7-2, draining the southwest edge of WAG 7, were among the highest. Seeps all along and including EAST SEEP also had elevated ^{60}Co. The high ^{60}Co concentrations in the WAG 7 seeps were dominantly in the dissolved phase rather than associated with particulates.

Relatively high ^{137}Cs concentrations were detected in SW7-6, which is a seep in a drainage below trench 6 in the pits and trenches area in WAG 7. The drainage from this area becomes a small tributary and was sampled at WCTRIB-1, where very little ^{137}Cs was detected. The soils and sediment in this drainage could be a source of ^{137}Cs during rainstorm events.

4.4.3 WAG 6 and WOC Transect

Table 4.9 gives the radiological results for the tributary sampling locations in WAG 6, for WC-1, MV-1, and WOD. WAG 6 seep locations SW6-1 and SW6-2 and the discharge from the French Drain were only sampled for VOCs in 1993. As mentioned earlier ^{3}H concentrations in the WAG 6 tributaries is relatively high. With the exception of the poststorm sampling event, concentrations of ^{3}H at WOD are slightly higher than at WC-1, which is likely the result of discharge from the WAG 6 tributaries.

Transect sampling along the lower reach of WOC was not conducted because previous sampling in 1992 did not identify any significant ^{3}H or ^{90}Sr inputs along this reach (DOE 1995a). Inputs between WC-9 and WC-8 are difficult to identify because of the mixing between WOC and Melton Branch.

4.5 CONCENTRATIONS OUTSIDE OF THE WOC WATERSHED

Samples were collected once during wet-season baseflow conditions and once during dry-season baseflow conditions from Raccoon Creek (RAC) and from a small tributary near WAG 13 which drains into the WOC embayment (WOCET) (Fig. 1.2). All radionuclide concentrations were below detection or near background levels (Table 4.10). Strontium-90 release into Raccoon Creek from WAG 3 was once a concern (Stueber et al. 1981); however, the Seep Task results show that off-site radionuclide transport from Raccoon Creek is insignificant.

Table 4.8 Radiological results for locations in and around WAG 7

Location	Sample Date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L	Flow L/s
EAST SEEP	24-Mar-93	3445	-37	.	11.2	< 2.8	< 15.2	63.2	< 20.3	54	211	4
EAST SEEP	13-Apr-93	3608	41	.	15.9	< 2.3	< 20.8	101	< 33.3	175	496	2
EAST SEEP	13-Jul-93	3791	69	.	33.0	< 34.1	< 22.1	< 52.7	< 32.4	1364	1497	~ 0
EAST SEEP	30-Sep-93	3910	62	3	39.5	< 38.7	< 19.7	180	< 30.2	1100	860	< 1
EAST SEEP	01-Dec-93	3953	-2	7	29.7	< 46	< 20	178	< 29.9	370	730	~ 1
EAST SEEP	08-Feb-94	4073	56	.	15.8	.	< 2.7	.	< 2.9	240	470	1
EAST SEEP	19-Apr-94	4149	20	.	11.0	< 20	.	114	.	260	370	1
EAST SEEP	15-Jun-94	4226	31[c]	.	29.8	< 19.6	< 2.8	279	7.4	880	900	0
EAST SEEP	23-Jun-94	4315	38[c]	.	31.5	< 6.1	.	315	.	1500	1000	0
EAST SEEP	24-Aug-94	4361	68[c]	.	31.7	< 15.9	< 2.4	161	< 2.8	890	750	0
RS-1	13-Apr-93	3600	128	.	15.3	9.49	< 26.4	< 1.1	< 28.4	7.5	367	.
RS-3A	24-Mar-93	3464	307[d]	4	24.0	< 5.6	< 12.1	447	< 14.2	4718	3966	~ 0
RS-3A	13-Apr-93	3601	853[d]	5	45.3	< 5.4	< 16.2	908	< 18.1	7520	6524	.
RS-3A	24-May-93	3744	1048[d]	6	36.2	< 49.4	< 20.1	838	68.5	12537	5060	.
RS-3A	13-Jul-93	3789	982[d]	4	44.8	< 46.9	< 18.8	866	60	38555	12886	.
RS-3A	30-Sep-93	3894	.	.	.	< 48.4	< 19.4	907	23.2	58000	16000	.
RS-3A	01-Dec-93	3951	.	.	.	< 46.5	< 23.7	740	385	36000	9800	.
RS-3A	08-Feb-94	4071	.	.	.	.	< 38.8	.	161	25000	6000	.
RS-3A	19-Apr-94	4147	.	.	.	27.4	.	569	.	37000	11000	.
RS-3A	15-Jun-94	4224	.	.	.	< 9	< 7.5	617	76.7	32000	11000	.
RS-3A	24-Aug-94	4359	.	.	.	< 25.4	< 8.1	646	61	38000	12000	.
RS-3B	24-Mar-93	3465	-4	15	7.96	3.3	< 10	38.5	< 16.2	38	320	~ 1
RS-3B	13-Apr-93	3602	46	43	17.2	< 3.9	< 15.3	124	< 15.4	169	1277	.
RS-3B	24-May-93	3745	.	.	.	.	.	.	.	949	1286	.
RS-3B	19-Apr-94	4148	.	.	.	< 10.9	.	54.5	.	110	520	.
SW7-1	13-Apr-93	3615	70	.	25.5	< 3.04	< 22.4	< 3.54	< 28.6	-0.3	84	.
SW7-2	13-Apr-93	3617	-2	.	8.63	20	< 23.2	839	64.4	27	1375	.
SW7-2	13-Jul-93	3788	-28	.	8.13	< 53.4	< 19.6	1323	118	88	1862	.
SW7-3	24-Mar-93	3447	-27	.	13.0	< 1.2	< 20.5	133	< 29.8	252	457	0

Table 4.8 (continued)

Location	Sample Date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L	Flow L/s
SW7-3	13-Apr-93	3618	71	.	19.9	< 4.2	< 9.8	397	< 17.6	997	959	0
SW7-3	24-May-93	3747	52	.	23.1	< 39.7	< 17.8	507	< 26.8	346	271	0
SW7-3	13-Jul-93	3792	61	.	29.9	< 26.4	< 20.8	620	< 34.1	2570	1967	.
SW7-3	30-Sep-93	3911	.	.	.	< 42.2	< 17.2	456	< 29.7	2700	1200	0
SW7-3	01-Dec-93	3954	.	.	.	< 41.5	< 21.2	313	< 28.4	1400	860	0
SW7-3	08-Feb-94	4074	.	.	.	.	< 6.1	.	5	2100	1000	0
SW7-3	19-Apr-94	4150	.	.	.	< 10.9	.	376	.	1700	1000	.
SW7-3	15-Jun-94	4227	.	.	.	< 22.1	< 5.7	724	11.6	2400	1400	0
SW7-3	24-Aug-94	4362	.	.	.	< 22.7	< 5.3	523	12.4	3000	1200	0
SW7-4	13-Jul-93	3797	.	.	.	5.77	< 22.7	106	73.3	.	.	.
SW7-5	24-Mar-93	3442	-46	.	14.8	< 4.8	< 22.3	693	74.5	26	1346	1
SW7-5	13-Apr-93	3619	-1	.	26.6	< 8.1	< 12.8	12.1	36.7	78	3866	0
SW7-5	24-May-93	3748	-16	.	.	< 39.7	< 17.4	155	< 24.1	39	737	.
SW7-5	13-Jul-93	3796	-210	.	126	< 59.02	< 21.8	7880	269	14	956	.
SW7-5	01-Dec-93	3986	.	.	.	< 63.8	< 7.5	2536	31.5	360	9200	0
SW7-5	08-Feb-94	4103	.	.	.	.	< 5.6	.	31.3	100	2900	0
SW7-5	19-Apr-94	4176	.	.	.	< 14	.	970	.	74	2000	1
SW7-5	15-Jun-94	4253	.	.	.	< 44.9	< 7.7	3268	196	150	6700	0
SW7-5	23-Jun-94	4314	.	.	.	< 43	.	3720	.	220	8300	~ 0
SW7-5	24-Aug-94	4363	.	.	.	< 16	< 2.8	3038	51.1	.	.	0
SW7-6	24-Mar-93	3444	1086	.	3.65	< 2.7	266.2	< 3.3	< 27.8	20	2482	.
SW7-6	13-Apr-93	3614	1150	.	3.50	< 2.89	336.5	< 3.77	< 28.8	26	2273	.
SW7-8	13-Apr-93	3610	35	.	8.26	< 2.75	< 9.3	< 4.77	< 15	65	129	.
WCTRIB-1	24-Mar-93	3443	-26	.	4.45	< 3.2	< 21.1	< 5.1	< 28	1.5	139	~ 7
WCTRIB-1	13-Apr-93	3613	39	.	7.14	2.46	< 26.7	28.3	< 29.7	7.8	397	.
WCTRIB-1	19-Jul-93	3823	34	.	17.0	< 38.7	< 17.8	50.7	< 29.1	30	568	.
WEST SEEP	24-Mar-93	3463	82	89	5.92	< 0.81	< 20.1	4.2	< 27.1	17	268	63
WEST SEEP	13-Apr-93	3607	194	207	9.20	< 3.04	< 25.9	< 4.11	< 29.2	54	448	12

Table 4.8 (continued)

Location	Sample Date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L	Flow L/s
WEST SEEP	13-Jul-93	3785	198	171	29.1	< 39.6	< 19.4	< 54.8	< 26.9	761	736	~ 0
WEST SEEP	30-Sep-93	3893	170	85	13.4	< 36.8	< 18.6	< 61.5	< 30.4	870	470	~ 0
WEST SEEP	01-Dec-93	3950	180	110	16.1	< 37.6	< 30	< 54.35	< 28.4	200	410	2
WEST SEEP	08-Feb-94	4070	.	18	10.8	.	< 6.6	.	< 6.5	99	380	7
WEST SEEP	19-Apr-94	4146	.	150	10.1	15.9	.	< 17.3	.	33	180	21
WEST SEEP	15-Jun-94	4223	166[c]	180	18.7	< 13.9	< 5.5	< 22.3	< 6.5	320	310	2
WEST SEEP	23-Jun-94	4316	-5[c]	12	372	< 16.2	.	< 13.1	.	29	35	~ 8
WEST SEEP	24-Aug-94	4357	207[c]	150	10.4	< 15.9	< 5.9	< 20.5	< 6.7	320	410	2
WSTRIB-1	24-Mar-93	3466	104	92	6.96	< 2.8	< 20	< 2.8	28.1	14	263	.
WSTRIB-1	13-Apr-93	3603	225	165	13.8	< 2.44	< 30.6	< 3.32	< 31.8	66	451	.
WSTRIB-1	13-Jul-93	3783	278	218	40.0	< 43.5	.	< 56.6	.	388	713	.
WS-1	24-Mar-93	3467	108	92	6.94	< 3.4	< 22.3	< 3.1	< 26.7	15	264	.
WS-1	13-Apr-93	3604	154	175	15.0	< 3.38	< 29.1	< 3.5	< 27.9	60	494	.
WS-1	24-Aug-94	4404	196[c]	150	23.7	.	.	.	.	.	.	.
WS-2	13-Apr-93	3605	213	167	11.3	< 3.17	< 26.6	< 3.4	< 29	59	458	.
WS-2	13-Jul-93	3787	638	152	34.7	< 38.7	< 20.1	81	< 30.8	15185	6342	.
WS-3	13-Apr-93	3606	173	165	11.0	< 2.92	< 26.3	< 3.5	< 27.8	3.7	457	.
WS-3	13-Jul-93	3790	213	228	10.3	< 34.1	< 18.4	< 52.7	< 26.8	11	502	.

[a]Analysis by internal laboratory. Results are for dissolved ^{90}Sr unless noted otherwise.
[b]Analysis by external laboratory. Results are for total ^{90}Sr.
[c]Total ^{90}Sr.
[d]Result is suspect.

Table 4.9 Radiological results for locations along WOC and in WAG 6

Location	Sample Date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L	Flow L/s
MV-1	21-Jul-93	3863	40	.	1.82	< 33.9	< 18.3	< 47.5	< 25.2	-1.0	5.5	.
WAG6 MS2	24-Mar-93	3484	20	.	1824	.	.	.	.	.	.	0.42
WAG6 MS2	13-Apr-93	3624	-12	.	2659	.	.	.	.	.	.	0.6
WAG6 MS2	13-Jul-93	3801	-0	.	3056	.	.	.	.	.	.	~ 0
WAG6 MS3B	24-Mar-93	3485	356	283[d]	2232	.	< 21.6	.	< 24.3	.	.	2.85
WAG6 MS3B	13-Apr-93	3626	390	.	2597	.	.	.	.	.	.	0.95
WAG6 MS3B	13-Jul-93	3800	238	.	3025	.	.	.	.	.	.	~ 0
WG6MS3	24-Aug-94	4401	248[c]	280	2314	.	.	.	.	.	.	0.014
WC-1	24-Mar-93	3508	142	167	115	4.08	< 22.2	1.3	< 27.9	8.3	374	.
WC-1	13-Apr-93	3623	211	252	173	< 37	30.1	52.25	< 28.9	8.7	584	.
WC-1	13 July 1993	3793	158	83	88	.	. .	.	.	.	.	.
WC-1	24-Aug-94	4403	326[c]	250	146	.	.	.	.	.	.	.
WOD	09-Mar-93	3527	226	200	207	< 3.54	41.2	< 4.36	< 13.7	10	580	362
WOD	11-Mar-93	3570	207	198	221	< 1.12	59.6	< 1.07	< 15.2	13	512	310
WOD	24-Mar-93	3448	164	149	115	30.8	< 13.4	< 3.6	< 13.8	1.1	77	1460
WOD	13-Apr-93	3599	184	224	212	< 3.14	39.1	< 2.45	< 14.7	15	628	394
WOD	24-May-93	3720	224	261	283	< 33.8	36.1	< 48.9	< 14	11	688	190
WOD	13-Jul-93	3799	141	134	58.6	< 16.37	36	< 17.35	< 27.4	10	549	150
WOD	19-Jul-93	3810	137	167	80.5	< 36.8	36.2	< 48.1	< 13.7	11	436	162
WOD	21-Jul-93	3866	172	205	72.4	< 36.2	56	< 48.5	< 16.7	12	519	181
WOD	30-Sep-93	3892	85	140	50.8	< 37.1	77.2	< 53.5	< 30	-0.7	300	143
WOD	01-Dec-93	3949	195	140	206	< 37.9	18.5	< 50.35	< 14.7	10	390	194
WOD	08-Feb-94	4069	.	220	278	.	37.2	.	< 6.9	20	570	292
WOD	19-Apr-94	4145	206	180	165	16.9	.	< 17.8	.	7.7	360	604
WOD	15-Jun-94	4222	197[c]	200	130	< 18.7	76.8	< 16.9	< 3.2	26	440	215
WOD	23-Jun-94	4317	179[c]	240	109	< 14.4	.	< 15.5	.	14	450	201
WOD	24-Aug-94	4325	296[c]	170	162	< 17.8	44.6	< 16.8	< 3	10	440	~ 190

[a]Analysis by internal laboratory. Results are for dissolved ^{90}Sr unless noted otherwise.
[b]Analysis by external laboratory. Results are for total ^{90}Sr unless noted otherwise.
[c]Total ^{90}Sr.
[d]Dissolved ^{90}Sr.

Table 4.10 Radiological results for RAC and WOCET

Location	Sample Date	Base ID	^{90}Sr internal[a] pCi/L	^{90}Sr external[b] pCi/L	^{3}H nCi/L	^{137}Cs dissolved pCi/L	^{137}Cs particulate pCi/L	^{60}Co dissolved pCi/L	^{60}Co particulate pCi/L	Gross Alpha pCi/L	Gross Beta pCi/L
RAC	09-Mar-93	3525	24	2	0.72	< 2.58	< 10.1	< 3.28	< 13.9	-1.4	3.0
RAC	19-Jul-93	3811	35	.	1.96	< 34.2	< 17	< 45.7	< 28.1	-1.8	8.3
WOCET	09-Mar-93	3526	24	.	1.15	< 3.67	< 23.9	< 2.53	< 23.9	-1.1	2.6
WOCET	19-Jul-93	3812	11	.	0.47	< 34.8	< 19.3	< 44.2	< 27.9	0.4	18

[a]Analysis by internal laboratory. Results are for dissolved ^{90}Sr.
[b]Analysis by external laboratory. Results are for dissolved ^{90}Sr.

5. IDENTIFICATION OF KEY SOURCE AREAS

Being able to quantify the contaminant release, not just knowing the concentration, from areas is the key to identifying the primary contributors to off-site risk. Contaminant fluxes (primarily ^{90}Sr and ^{3}H) were estimated for those locations where stream flow measurements could be made. Fluxes from areas where significant contaminant input (seepage) occurred along a stream reach were estimated by multiplying the difference between the upstream and downstream concentration by the stream flow measured at the nearest weir or flume. This approach assumes that the amount of flow (seepage) into the stream is insignificant compared to the flow of the stream. This approach was used primarily for flux estimates from Seep Areas A, B, C, and D.

To provide snap-shot pictures of the contaminant source areas during the different hydrological conditions, a simple mass balance approach was originally planned to estimate the ^{90}Sr or ^{3}H flux at a particular location as a percentage of the total flux at WOD. However, many of the Seep Task grab samples from WOD were suspect because they were collected just downstream of the weir. Because of the physical structure at WOD, sample collection at or above the weir is difficult. On many events, the sampling team collected samples just below the weir, not knowing that there was a slight potential for dilution from the embayment/Clinch river water. If the samples were diluted this may falsely inflate the percent contributions from source areas and obscure any input from unmonitored sources. Therefore, a more complicated mass balance approach that depended on results from monthly composite sampling at WOD, MBWEIR, and WCWEIR, conducted by the Office of Environmental Compliance and Documentation (OECD), was used for most source areas.

Calculations of a contaminant flux are dependant on reliable concentration and flow measurements. Stream flow measurements made at weirs and flumes are usually considered to have at least a 5% associated error; thus, contaminant flux calculations and resulting percent contributions to WOD should be considered to be estimates.

Because ^{60}Co, transuranics, metals, and VOCs, are not important contributors to the potential risk at WOD, the mass balance approach was not used for these contaminants. Instead, seep, tributary, and main stream locations with elevated concentrations are noted in the following sections.

5.1 KEY ^{90}Sr SOURCE AREAS

The ^{90}Sr concentration and flux results from the different grab sampling events are given in Tables 5.1 and 5.2 for most of the key ^{90}Sr source areas. The OECD monthly composite fluxes derived from OECD concentration data and Environmental Sciences Division flows are also given for WOD, MBWEIR, WCWEIR. Concentrations given for Seep Area C are the difference in ^{90}Sr concentration between the upstream (MB-5) and downstream (MBWEIR) locations. To estimate what percent a source area contributed to the total ^{90}Sr flux at WOD (i.e., percent of WOD), the amount the source area contributed either to MBWEIR's flux (percent of MBW) or to WCWEIR's flux (percent of WCW) was calculated first. For sources above MBWEIR (Table 5.1), the percentage of MBW was calculated for each event by dividing the grab-derived flux for that source area by the grab-derived flux at MBWEIR. The source was then related to WOD by multiplying the percentage of MBW by the percentage contribution of MBWEIR to the flux at WOD (MBW percent of WOD) based on OECD composites. Similarly for sources above WCWEIR, a percentage of WOD was calculated using the grab-derived percent a source area contributed to the flux at WCWEIR (percent of WCW) and the OECD-derived percent that WCWEIR contributed to the flux at WOD (WCW percent of WOD) (Table 5.2).

Table 5.1. ^{90}Sr concentrations and fluxes used to calculate percent contribution to WOD for source areas above MBWEIR

	OECD			MBWEIR		Seep Area C					WAG 5 Mid. Drain.					WAG 9				
Month	Monthly Flux at WOD (mCi)	Monthly Flux at MBWEIR (mCi)	MBW % of WOD	Grab Date	Grab ^{90}Sr (pCi/L)	Grab Flux (mCi/d)	Grab $\Delta^{90}Sr$ (pCi/L)	Grab Flux (mCi/d)	% of MBW	% of WOD	Est. Monthly Flux (mCi)	Grab ^{90}Sr (pCi/L)	Grab Flux (mCi/d)	% of MBW	% of WOD	Est. Monthly Flux (mCi)	Grab ^{90}Sr (pCi/L)	Grab Flux (mCi/d)	% of MBW	% of WOD	Est. Monthly Flux (mCi)
				24-Mar-93	358	9.135	244	6.227	68			1617	0.419	4.6			663	0.917	10.0		
Mar 93	595.2	205.8	35	09-Mar-93	394	2.041	196	1.015	50	17.2	102.4	1897	0.164	8.0	2.8	16.5	1032	0.419	20.5	7.1	42.3
Apr 93	328.1	121.9	37	09-Mar-93	394	2.041	196	1.015	50	18.5	60.6	1897	0.164	8.0	3.0	9.8	1032	0.419	20.5	7.6	25.0
May 93	194.9	63.3	32	24-May-93	1019	1.135	673	0.750	66	21.5	41.8	2007	0.087	7.6	2.5	4.8	1211	0.167	14.8	4.8	9.3
Jun 93	81.3	34.4	42	24-May-93	1019	1.135	673	0.750	66	28.0	22.7	2007	0.087	7.6	3.2	2.6	1211	0.167	14.8	6.2	5.1
Jul 93	66.6	36.1	54	21-Jul-93	1019	1.699	757	1.263	74	40.3	26.8	2483	0.019	1.1	0.6	0.4	1493	0.206	12.1	6.6	4.4
Aug 93	73.1	41.5	57	21-Jul-93	1019	1.699	757	1.263	74	42.2	30.8	2483	0.019	1.1	0.6	0.5	1493	0.206	12.1	6.9	5.0
Sep 93	51	17.1	34	30-Sep-93	1152	0.368	564	0.180	49	16.4	8.4	2359	0.014	3.9	1.3	0.7	2000	0.173	46.9	15.7	8.0
Oct 93	29.4	13	44	30-Sep-93	1152	0.368	564	0.180	49	21.7	6.4	2359	0.014	3.9	1.7	0.5	2000	0.173	46.9	20.8	6.1
Nov 93	89.1	29.7	33	01-Dec-93	430	0.680	300	0.474	70	23.3	20.7	2076	0.045	6.6	2.2	2.0	600	0.197	29.0	9.7	8.6
Dec 93	312.6	106.9	34	01-Dec-93	430	0.680	300	0.474	70	23.9	74.6	2076	0.045	6.6	2.3	7.1	600	0.197	29.0	9.9	31.0
Jan 94	356.7	73.6	21	08-Feb-94	420	2.181	260	1.350	62	12.8	45.6	1400	0.112	5.2	1.1	3.8	825	0.328	15.0	3.1	11.1
Feb 94	643.1	151	23	08-Feb-94	420	2.181	260	1.350	62	14.5	93.5	1400	0.112	5.2	1.2	7.8	825	0.328	15.0	3.5	22.7
Mar 94	665.3	356.6	54	19-Apr-94	370	3.696	180	1.798	49	26.1	173.5	1100	0.257	6.9	3.7	24.8	880	0.426	11.5	6.2	41.1
Apr 94	743.8	238.4	32	19-Apr-94	370	3.696	180	1.798	49	15.6	116.0	1100	0.257	6.9	2.2	16.6	880	0.426	11.5	3.7	27.5
May 94	126.5	58.4	46	19-Apr-94	370	3.696	180	1.798	49	22.5	28.4	1100	0.257	6.9	3.2	4.1	880	0.426	11.5	5.3	6.7
Jun 94	153.2	53	35	23-Jun-94	460	1.085	269	0.634	58	20.2	31.0	2341	0.109	10.1	3.5	5.3	736	0.191	17.6	6.1	9.3
Jul 94	120	50	42	23-Jun-94	460	1.085	269	0.634	58	24.3	29.2	2341	0.109	10.1	4.2	5.0	736	0.191	17.6	7.3	8.8
Aug 94	98.5	22	22	24-Aug-94	1128	1.511	663	0.888	59	13.1	12.9	2284	0.069	4.6	1.0	1.0	1100	0.323	21.4	4.8	4.7
Total =	4728.4	1672.7									925.3					113.2					276.7
% WOD =		35.4					% WOD =			19.6		% WOD =			2.4		% WOD =			5.9	

Table 5.2. ^{90}Sr concentrations and fluxes used to calculate percent contribution to WOD for source areas above WCWEIR

	OECD				WCWEIR		WAG4 MS1					WC7500					FIRST CREEK				
Month	Monthly Flux at WOD (mCi)	Monthly Flux at WCWEIR (mCi)	WCW % of WOD	Grab Date	Grab ^{90}Sr (pCi/L)	Grab Flux (mCi/d)	Grab ^{90}Sr (pCi/L)	Grab Flux (mCi/d)	% of WCW	% of WOD	Est. Monthly Flux (mCi)	Grab ^{90}Sr (pCi/L)	Grab Flux (mCi/d)	% of WCW	% of WOD	Est. Monthly Flux (mCi)	Grab ^{90}Sr (pCi/L)	Grab Flux (mCi/d)	% of WCW	% of WOD	Est. Monthly Flux (mCi)
				24-Mar-93	123	10.549	9143	5.221	49			58	4.76	45			56	0.65	6		
Mar 93	595.2	221.75	37	11-Mar-93	118	2.361	11566	1.099	47	17.3	103.3	69	1.38	58	21.7	129.2	135	0.31	13	4.9	29.5
Apr 93	328.1	103.17	31	11-Mar-93	118	2.361	11566	1.099	47	14.6	48.0	69	1.38	58	18.3	60.1	135	0.31	13	4.2	13.7
May 93	194.9	79.20	41	24-May-93	157	2.356	11583	0.270	11	4.7	9.1	138	1.82	77	31.4	61.2	426	0.33	14	5.8	11.3
Jun 93	81.3	35.01	43	24-May-93	157	2.356	11583	0.270	11	4.9	4.0	138	1.82	77	33.3	27.1	426	0.33	14	6.1	5.0
Jul 93	66.6	21.48	32	19-Jul-93	71	0.944	10563	0	0	0	0	68	0.84	89	28.7	19.1	482	0.32	34	10.8	7.2
Aug 93	73.1	28.05	38	19-Jul-93	71	0.944	10563	0	0	0	0	68	0.84	89	34.1	24.9	482	0.32	34	12.9	9.4
Sep 93	51	17.91	35	30-Sep-93	51	0.606	8203	0	0	0	0	42	0.48	79	27.6	14.1	300	0.20	33	11.4	5.8
Oct 93	29.4	14.46	49	30-Sep-93	51	0.606	8203	0	0	0	0	42	0.48	79	38.6	11.4	300	0.20	33	16.0	4.7
Nov 93	89.1	38.97	44	01-Dec-93	84	1.234	10649	0.570	46	20.2	18.0	28	0.38	31	13.6	12.2	240	0.30	24	10.6	9.4
Dec 93	312.6	158.11	51	01-Dec-93	84	1.234	10649	0.570	46	23.4	73.1	28	0.38	31	15.8	49.3	240	0.30	24	12.2	38.3
Jan 94	356.7	144.90	41	08-Feb-94	270	5.030	10415	1.152	23	9.3	33.2	200	4.75	95	38.4	137.0	260	0.40	8	3.2	11.5
Feb 94	643.1	367.50	57	08-Feb-94	270	5.030	10415	1.152	23	13.1	84.2	200	4.75	95	54.0	347.3	260	0.40	8	4.5	29.2
Mar 94	665.3	295.40	44	19-Apr-94	160	6.499	10087	1.482	23	10.1	67.3	120	4.49	69	30.7	204.1	110	0.56	9	3.8	25.4
Apr 94	743.8	262.20	35	19-Apr-94	160	6.499	10087	1.482	23	8.0	59.8	120	4.49	69	24.4	181.2	110	0.56	9	3.0	22.5
May 94	126.5	66.00	52	19-Apr-94	160	6.499	10087	1.482	23	11.9	15.0	120	4.49	69	36.1	45.6	110	0.56	9	4.5	5.7
Jun 94	153.2	59.50	39	15-Jun-94	74	1.198	9697	0.012	1	0.4	0.6	71	1.01	84	32.8	50.2					
				23-Jun-94	69	0.842															
Jul 94	120	51.10	43	15-Jun-94	74	1.198	9697	0.012	1	0.4	0.5						540	0.33	39	15.3	23.4
				23-Jun-94	69	0.842															
												75	1.07	127	54.0	64.7					
Aug 94	98.5	51.90	53	24-Aug-94	190	2.855	12619	0.382	13	7.0	6.9	120	1.77	62	32.7	32.2	540	0.33	39	16.7	20.1
																	180	0.29	10	5.4	5.3
Total =	4728.4	2016.6									523.1					1470.7					277.3
% WOD =		42.6					% WOD =		11.1			% WOD =			31.1		% WOD =			5.9	

There is quite a difference in ^{90}Sr fluxes during the wet-season months and dry-season months (Tables 5.1 and 5.2). For example, the OECD monthly fluxes at WOD during the wet season are more than a factor of ten greater than the fluxes during the driest months. Contaminant fluxes are greatly dependent on flow (i.e., with an increase in flow, there is an increase in contaminant fluxes). The percentage a source area contributed to the ^{90}Sr flux at WOD (percent of WOD) also varied during the different sampling events. The ^{90}Sr discharge from WAG 4 is highly dependent on hydrologic conditions with a fairly significant flux during the wet seasons and little to no flux during the dry seasons when the tributary often drys up. Differences in percent contributions at one location are largely dependent on the changes in the ^{90}Sr fluxes throughout the whole watershed.

In order to prioritize ^{90}Sr source areas, some sort of average percent contributions at each of the locations are needed. Because a source's contribution varies during different seasons, the percent contribution during the wet period needs to be weighted higher during that period when most of the ^{90}Sr and ^{3}H release occurs. Therefore, the grab sampling data were flux-weighted using the monthly composite fluxes at WOD. The fluxes from the different bimonthly sampling events were spread over the 18 months, March 1993 to August 1994 (Tables 5.1 and 5.2). The percent of WOD for each location was multiplied by the corresponding monthly OECD-derived flux at WOD to obtain an estimated monthly flux at each location. These estimated monthly fluxes were totaled for the period (March 1993 to August 1994) and then divided by the total OECD-derived flux at WOD for the same period to finally derive an average percent contribution from each location/source area to the total ^{90}Sr flux over WOD. This is a fairly rough type of averaging approach, because it assumes that the percent of WOD on a single baseflow grab sampling date for a location/source area is equivalent to the percent contribution from that source for about a 2-month period. The summary of these results is shown in Figure 5.1. The upper WOC (i.e., above WC-20) source of ^{90}Sr is the difference between the amount at WC7500 and that in First Creek and is discussed in Sect. 4.2.1. Results from the fourth annual ERMA suggest that most of the ^{90}Sr in this upper reach is coming from the NRWTP and the Sewage Treatment Plant (STP) (DOE 1995c). Because the ^{90}Sr sources in WAG 4 are storm-driven and the calculations are based on baseflow data, it is likely that the estimated average percent contribution of 11.1% is underestimated for WAG 4. The WAG 2 tributary assessment task developed concentration-discharge relationships from storm sampling at WAG4 MS1 and estimated an annual percent contribution of 17.7% for 1994 (Borders et al. 1996). This estimate may be slightly higher than an average contribution, because 1994 had an above average amount of precipitation.

Estimating the percent contribution from Seep Area C was complicated by the fact that direct measurements of ^{90}Sr flux from SW5-4 were sometimes significantly larger than that estimated using the difference between upstream and downstream concentrations. Some of the ^{90}Sr released from SW5-4 may have been adsorbed onto the stream sediments so that the downstream concentration was not as high as we would have expected. If so, much of this ^{90}Sr would be released during storms when the concentration in Melton Branch drops and the ^{90}Sr re-equilibrates between the stream and stream sediments. An estimated average flux was recalculated for Seep Area C using the previous approach, except that direct flux measurements from SW5-4 were used for the wet-season events. The result was that an estimated 30.1%, rather than 19.6%, of the ^{90}Sr at WOD came from Seep Area C during the March 1993 to August 1994 period.

For sources below WCWEIR and MBWEIR in the lower WOC/WOL watershed, the grab-derived fluxes were compared directly with the grab-derived fluxes at WOD to estimate the percent contribution to WOD (percent of WOD) for each of the different sampling events (Table 5.3). Average percent contributions for the 18-month period (March 1993 to August 1994) were calculated for West Seep and Seep D (SW2-5) similarly to the previous approach using OECD monthly composite fluxes at WOD to estimate a total flux for the time period from each source, which was then divided by the

Table 5.3. ^{90}Sr concentrations and fluxes used to calculate percent contribution to WOD for West Seep and Seep D

Month	OECD Monthly Flux at WOD (mCi)	WOD Grab Date	WOD Grab ^{90}Sr (pCi/L)	WOD Grab Flux (mCi/d)	West Seep Grab ^{90}Sr (pCi/L)	West Seep Grab Flux (mCi/d)	West Seep % of WOD	West Seep Est. Monthly Flux (mCi)	WOD Grab Date	WOD Grab ^{90}Sr (pCi/L)	WOD Grab Flux (mCi/d)	Seep Area D (SW2–5) Grab $\Delta^{90}Sr$ (pCi/L)	Seep Area D (SW2–5) Grab Flux (mCi/d)	Seep Area D (SW2–5) % of WOD	Seep Area D (SW2–5) Est. Monthly Flux (mCi)
		24–Mar–93	149	18.809	89	0.487	2.6		24–Mar–93	149	18.809	11	0.29	1.5	
Mar 93	595.2	13–Apr–93	224	7.615	207	0.207	2.7	16.2	09–Mar–93	200	6.252	61	0.32	5.1	30.2
Apr 93	328.1	13–Apr–93	224	7.615	207	0.207	2.7	8.9	09–Mar–93	200	6.252	61	0.32	5.1	16.6
May 93	194.9	13–Apr–93	224	7.615	207	0.207	2.7	5.3	24–May–93	261	4.286	201	0.22	5.2	10.2
Jun 93	81.3	13–Jul–93	134	1.735	171	0.000	0.0	0.0	24–May–93	261	4.286	201	0.22	5.2	4.2
Jul 93	66.6	13–Jul–93	134	1.735	171	0.000	0.0	0.0	21–Jul–93	205	3.207	265	0.44	13.8	9.2
Aug 93	73.1	13–Jul–93	134	1.735	171	0.000	0.0	0.0	21–Jul–93	205	3.207	265	0.44	13.8	10.1
Sep 93	51	30–Sep–93	140	1.730	85	0.003	0.2	0.1	30–Sep–93	140	1.730	408	0.13	7.5	3.8
Oct 93	29.4	30–Sep–93	140	1.730	85	0.003	0.2	0.1	30–Sep–93	140	1.730	408	0.13	7.5	2.2
Nov 93	89.1	01–Dec–93	190	3.185	110	0.020	0.6	0.6	01–Dec–93	190	3.185	220	0.35	10.9	9.7
Dec 93	312.6	01–Dec–93	190	3.185	110	0.020	0.6	2.0	01–Dec–93	190	3.185	220	0.35	10.9	34.1
Jan 94	356.7	08–Feb–94	220	5.548	18	0.011	0.2	0.7	08–Feb–94	220	5.548		0.31 [a]	5.6	19.9
Feb 94	643.1	08–Feb–94	220	5.548	18	0.011	0.2	1.3	08–Feb–94	220	5.548		0.31 [a]	5.6	35.9
Mar 94	665.3	19–Apr–94	206	10.731	150	0.267	2.5	16.6	19–Apr–94	206	10.731	30	0.30	2.8	18.6
Apr 94	743.8	19–Apr–94	206	10.731	150	0.267	2.5	18.5	19–Apr–94	206	10.731	30	0.30	2.8	20.8
May 94	126.5	19–Apr–94	206	10.731	150	0.267	2.5	3.1	19–Apr–94	206	10.731	30	0.30	2.8	3.5
Jun 94	153.2	15–Jun–94	200	3.719	180	0.023	0.6	1.0	15–Jun–94	200	3.719	134	0.27	7.4	11.3
Jul 94	120	23–Jun–94	205	3.550	12	0.009	0.2	0.3	23–Jun–94	205	3.550	159	0.37	10.5	12.7
Aug 94	98.5	24–Aug–94	296	0.611	150	0.022	3.6	3.6	24–Aug–94	296	0.611	298	0.40	65.3	64.3
Total =	4728.4							78.2							317.4
					% WOD =		1.7					% WOD =		6.7	

[a] Average flux used because $\Delta^{90}Sr$ not valid.

flux at WOD. These calculations assume that the grab samples at WOD were representative (i.e., not diluted by WOC embayment water as mentioned earlier). Therefore, there is the potential that these average percent contributions for West Seep and Seep D could be overestimated.

Even though there are multiple uncertainties associated with the analytical results, flow measurements, and environmental variability, these estimated percent contributions (Fig. 5.1) aid in prioritizing source areas for remedial actions. In summary, the key ^{90}Sr source areas are/were Seep Area C, Upper WOC (the discharge from NRWTP and STP), WAG 4, First Creek (Core Hole 8), WAG 9, Seep D, MID. DRAIN. in WAG 5, and West Seep. Removal actions have been initiated on three of these ^{90}Sr sources (Seep C, Seep D, Core Hole 8), and potential corrective actions are being considered for selected trenches in WAG 4. Limited data for the small tributary (WCTRIB-3) draining the east edge of WAG 4 suggest that it may contribute roughly 5% of the ^{90}Sr flux in the watershed. Fluxes for upper Melton Branch at MB-15, Northwest Tributary, WAG 6 tributaries, etc. are not presented because they were very minor sources of ^{90}Sr to the watershed (generally <1%).

5.2 KEY ^{3}H SOURCE AREAS

The ^{3}H concentration and flux results from the different grab sampling events are given in Tables 5.4 and 5.5 for most of the key ^{3}H source areas. The OECD monthly composite fluxes at WOD, MBWEIR, and WCWEIR are also given. The same method used for the ^{90}Sr source areas was used to calculate the percent contributions to the flux at WOD (percent of WOD) for the ^{3}H locations/source areas. Concentrations given for Seep Area A are the differences between the ^{3}H concentrations at HRT-3 (upstream) and at HRT-2 (downstream). Likewise, the differences in ^{3}H concentrations between MB-10 and MB-7 are given for Seep Area B.

Similar to the ^{90}Sr flux, there is a huge difference in the ^{3}H flux at WOD between wet-season months and dry-season months (Tables 5.4 and 5.5). The percent a source area contributed to the ^{3}H flux at WOD (percent of WOD) also varied during the different sampling events. The percent contribution to the ^{3}H at WOD from Seep Area A appears to be lower during wet conditions, while the percent contribution from Seep Area B is higher during wet conditions (Table 5.4). Tritium discharge from WAG 4 is highly dependent on hydrologic conditions, with a fairly significant flux during the wet seasons and little to no flux during the dry seasons when the tributary often drys up (Table 5.5).

As with the ^{90}Sr data, the grab sampling ^{3}H data were flux-weighted using the monthly composite fluxes at WOD. Estimated monthly fluxes for each location were totaled for the period (March 1993 to August 1994) and then divided by the total OECD-derived flux at WOD for the same period (Tables 5.4 and 5.5). The resulting average percent contribution for each location/source area to the ^{3}H flux over WOD is shown in Figure 5.2.

Concentration and flux data for WAG 6 were too limited to estimate an average percent contribution using the same approach. Results from the 1993 wet season indicated that the WAG 6 tributaries contributed 4-5 of the ^{3}H flux at WOD. The percent contribution of WAG 6 for 1994 ^{3}H at WOD was estimated under the separate WAG 6 monitoring effort to be 9.4% (DOE 1995e).

In summary, based on the preceding analyses, the key ^{3}H source areas are Seep Areas A and B in WAG 5, the upper reach of WAG 4 tributary, MID. DRAIN. in WAG 5, and the WAG 6 tributaries. Fluxes for upper Melton Branch at MB-15, First Creek, Northwest Tributary, West Seep, etc. are not presented because they were very minor sources of ^{3}H to the watershed (generally <2%).

Strontium-90

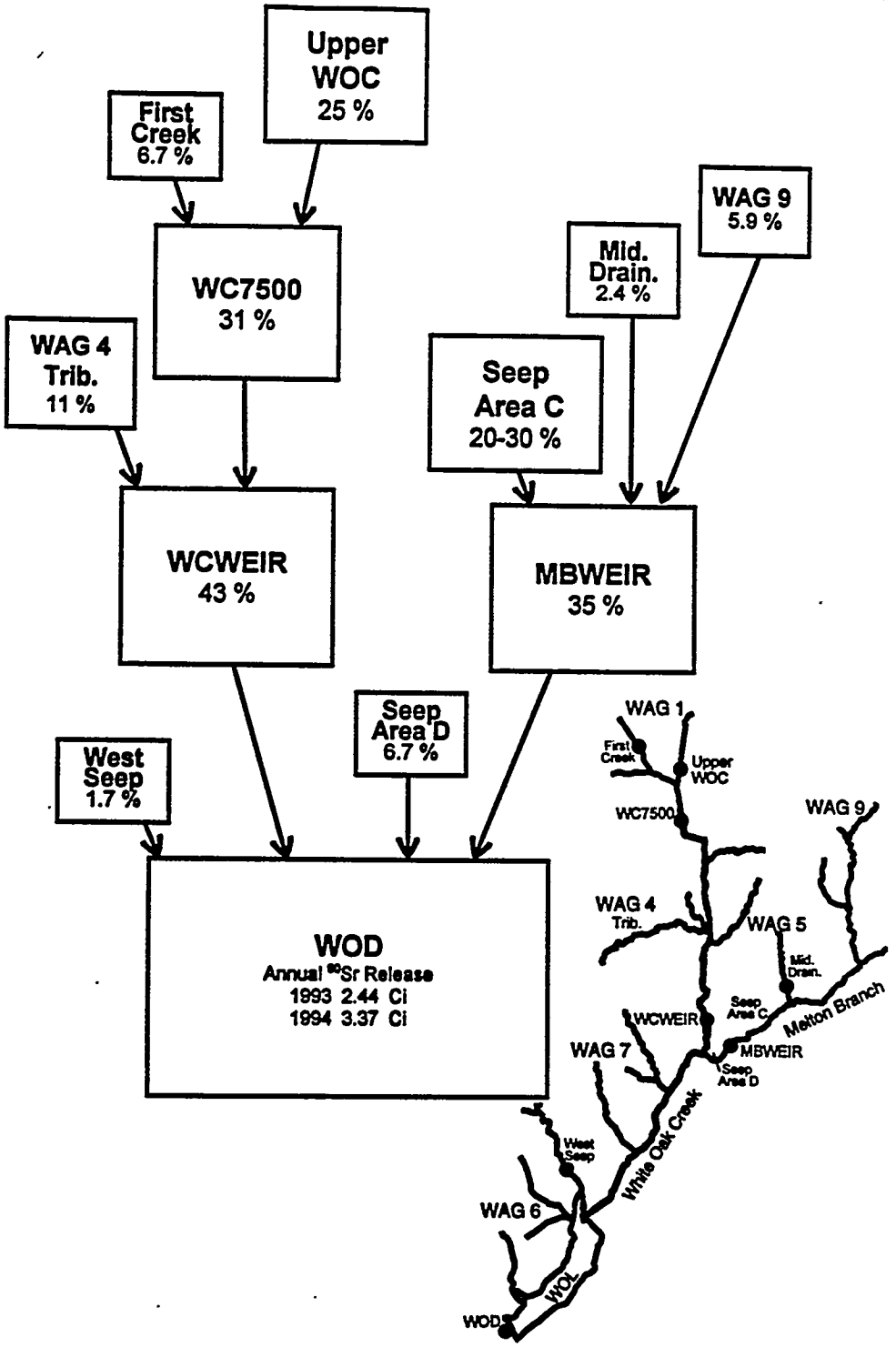


Fig. 5.1. Estimated average percent contribution to ^{90}Sr flux at White Oak Dam from March 1993 to August 1994.

Table 5.4. ^3H concentrations and fluxes used to calculate percent contribution to WOD for source areas above MBWEIR

	OECD				MBWEIR		Seep Area A					Seep Area B					WAG 5 Mid. Drain.				
Month	Monthly Flux at WOD (Ci)	Monthly Flux at MBWEIR (Ci)	MBW % of WOD	Grab Date	Grab ^3H (nCi/L)	Grab Flux (Ci/d)	Grab Δ^3H (nCi/L)	Grab Flux (Ci/d)	% of MBW	% of WOD	Est. Monthly Flux (Ci)	Grab Δ^3H (nCi/L)	Grab Flux (Ci/d)	% of MBW	% of WOD	Est. Monthly Flux (Ci)	Grab ^3H (nCi/L)	Grab Flux (Ci/d)	% of MBW	% of WOD	Est. Monthly Flux (Ci)
				24-Mar-93	529	13.493	710	0.982	7			307	7.75	57			5934	1.538	11		
Mar 93	488.39	411.53	84	09-Mar-93	1107	5.739	1691	0.687	12	10.1	49.2	699	3.56	62	52.3	255.4	8432	0.729	13	10.7	52.2
Apr 93	342.01	235.73	69	09-Mar-93	1107	5.739	1691	0.687	12	8.2	28.2	699	3.56	62	42.8	146.3	8432	0.729	13	8.8	29.9
May 93	142.27	129.45	91	24-May-93	2073	2.310	2673	0.369	16	14.6	20.7	1220	1.31	57	51.5	73.3	7248	0.313	14	12.3	17.5
Jun 93	49.92	42.66	85	24-May-93	2073	2.310	2673	0.369	16	13.7	6.8	1220	1.31	57	48.4	24.1	7248	0.313	14	11.6	5.8
Jul 93	24.70	26.22	106	21-Jul-93	554	0.924	1880	0.260	28	29.9	7.4	225	0.37	40	42.9	10.6	8143	0.063	7	7.3	1.8
Aug 93	29.26	22.22	76	21-Jul-93	554	0.924	1880	0.260	28	21.4	6.2	225	0.37	40	30.7	9.0	8143	0.063	7	5.2	1.5
Sep 93	17.39	14	81	30-Sep-93	1359	0.704	1572	0.136	19	15.5	2.7	603	0.31	44	35.3	6.1	8034	0.049	7	5.6	1.0
Oct 93	22.57	17.18	76	30-Sep-93	1359	0.704	1572	0.136	19	14.7	3.3	603	0.31	44	33.4	7.5	8034	0.049	7	5.3	1.2
Nov 93	70.94	51.44	73	01-Dec-93	904	1.429	972	0.319	22	16.2	11.5	484	0.75	53	38.3	27.1	8666	0.187	13	9.5	6.7
Dec 93	312.64	194.42	62	01-Dec-93	904	1.429	972	0.319	22	13.9	43.4	484	0.75	53	32.8	102.6	8666	0.187	13	8.1	25.5
Jan 94	331.89	184.01	55	08-Feb-94	1184	6.148	1262	0.502	8	4.5	15.0	847	4.33	70	39.0	129.6	8159	0.656	11	5.9	19.6
Feb 94	570.51	360.6	63	08-Feb-94	1184	6.148	1262	0.502	8	5.2	29.4	847	4.33	70	44.5	253.9	8159	0.656	11	6.7	38.5
Mar 94	632.08	557.23	88	19-Apr-94	950	9.493	1630	0.789	8	7.3	46.3	658	6.42	68	59.6	376.8	4466	1.042	11	9.7	61.2
Apr 94	486.34	397.37	82	19-Apr-94	950	9.493	1630	0.789	8	6.8	33.0	658	6.42	68	55.2	268.7	4466	1.042	11	9.0	43.6
May 94	137.99	121.56	88	19-Apr-94	950	9.493	1630	0.789	8	7.3	10.1	658	6.42	68	59.6	82.2	4466	1.042	11	9.7	13.3
Jun 94	95.47	62.97	66	15-Jun-94	854	1.748						301	0.60	35	22.8	21.7					
				23-Jun-94	626	1.476	1452	0.376	25	16.8	16.1						7212	0.336	23	15.0	14.4
Jul 94	92.59	74.14	80	15-Jun-94	854	1.748						301	0.60	35	27.7	25.6					
				23-Jun-94	626	1.476	1452	0.376	25	20.4	18.9						7212	0.336	23	18.3	16.9
Aug 94	86.67	38.86	45	24-Aug-94	1746	2.338	1231	0.362	15	6.9	6.0	934	1.22	52	23.4	20.3	7631	0.231	10	4.4	3.8
Total =	3933.6	2941.6									354.3					1840.9					354.5
% WOD =		74.8						% WOD =		9.0			% WOD =		46.8			% WOD =		9.0	

Table 5.5. ^3H concentrations and fluxes used to calculate percent contribution to WOD for source areas above WCWEIR

	OECD			WCWEIR		WAG 4 MS1					WCWEIR–WC7500				WC7500				
Month	Monthly Flux at WOD (Ci)	Monthly Flux at WCWEIR (Ci)	WCW % of WOD	Grab Date	Grab ^3H (nCi/L)	Grab Flux (Ci/d)	Grab ^3H (nCi/L)	Grab Flux (Ci/d)	% of WCW	% of WOD	Est. Monthly Flux (Ci)	Grab Flux (Ci/d)	% of WCW	% of WOD	Est. Monthly Flux (Ci)	Grab ^3H (nCi/L)	Grab Flux (Ci/d)	% of WCW	% of WOD	Est. Monthly Flux (Ci)
				24–Mar–93	31.2	2.674	4403	2.515	94			2.347	88			4.0	0.327	12		
Mar 93	488.39	69.30	14	11–Mar–93	36.3	0.724	6606	0.628	87	12.3	60.1	0.626	87	12.3	60.0	4.9	0.098	13	1.9	9.3
Apr 93	342.01	36.11	11	11–Mar–93	36.3	0.724	6606	0.628	87	9.2	31.3	0.626	87	9.1	31.2	4.9	0.098	13	1.4	4.9
May 93	142.27	12.34	9	24–May–93	32.7	0.491	3872	0.090	18	1.6	2.3	0.079	16	1.4	2.0	31.2	0.412	84	7.3	10.4
Jun 93	49.92	4.03	8	24–May–93	32.7	0.491	3872	0.090	18	1.5	0.7	0.079	16	1.3	0.6	31.2	0.412	84	6.8	3.4
Jul 93	24.70	3.54	14	19–Jul–93	23.4	0.309	3833					0.061	20	2.9	0.7	20.2	0.248	80	11.5	2.8
Aug 93	29.26	6.01	21	21–Jul–93	7.4	0.101						0.020	20	4.1	1.2	5.9	0.081	80	16.4	4.8
Sep 93	17.39	6.64	38	30–Sep–93	2.5	0.030	2912					0.005	16	5.9	1.0	2.3	0.025	84	32.2	5.6
Oct 93	22.57	4.70	21	30–Sep–93	2.5	0.030	2912					0.005	16	3.2	0.7	2.3	0.025	84	17.6	4.0
Nov 93	70.94	21.65	31	01–Dec–93	62.6	0.919	21338	1.143	124	37.9	26.9	0.741	81	24.6	17.5	13.0	0.178	19	5.9	4.2
Dec 93	312.64	74.89	24	01–Dec–93	62.6	0.919	21338	1.143	124	29.8	93.1	0.741	81	19.3	60.4	13.0	0.178	19	4.6	14.5
Jan 94	331.89	83.6	25	08–Feb–94	46.1	0.858	7193	0.795	93	23.3	77.5	0.720	84	21.1	70.1	5.8	0.138	16	4.1	13.5
Feb 94	570.51	104.13	18	08–Feb–94	46.1	0.858	7193	0.795	93	16.9	96.5	0.720	84	15.3	87.3	5.8	0.138	16	2.9	16.8
Mar 94	632.08	82.44	13	19–Apr–94	18.5	0.751	3184	0.468	62	8.1	51.3	0.693	92	12.0	76.0	1.6	0.059	8	1.0	6.4
Apr 94	486.34	58.27	12	19–Apr–94	18.5	0.751	3184	0.468	62	7.5	36.3	0.693	92	11.0	53.7	1.6	0.059	8	0.9	4.6
May 94	137.99	7.88	6	19–Apr–94	18.5	0.751	3184	0.468	62	3.6	4.9	0.693	92	5.3	7.3	1.6	0.059	8	0.4	0.6
Jun 94	95.47	11.42	12	15–Jun–94	3.4	0.055	4265	0.005	10	1.2	1.1	0.036	66	7.9	7.5	1.3	0.019	34	4.1	3.9
Jul 94	92.59	17.96	19	23–Jun–94	3.6	0.044						0.020	44	8.6	8.0	1.7	0.025	56	10.8	10.0
Aug 94	86.67	14.24	16	24–Aug–94	25.5	0.382	16788	0.508	133	21.8	18.9	0.226	59	9.7	8.4	10.6	0.156	41	6.7	5.8
Total =	3933.6	619.2									501.0				493.6					125.5
% WOD =		15.7					% WOD =			12.7		% WOD =		12.5		% WOD =			3.2	

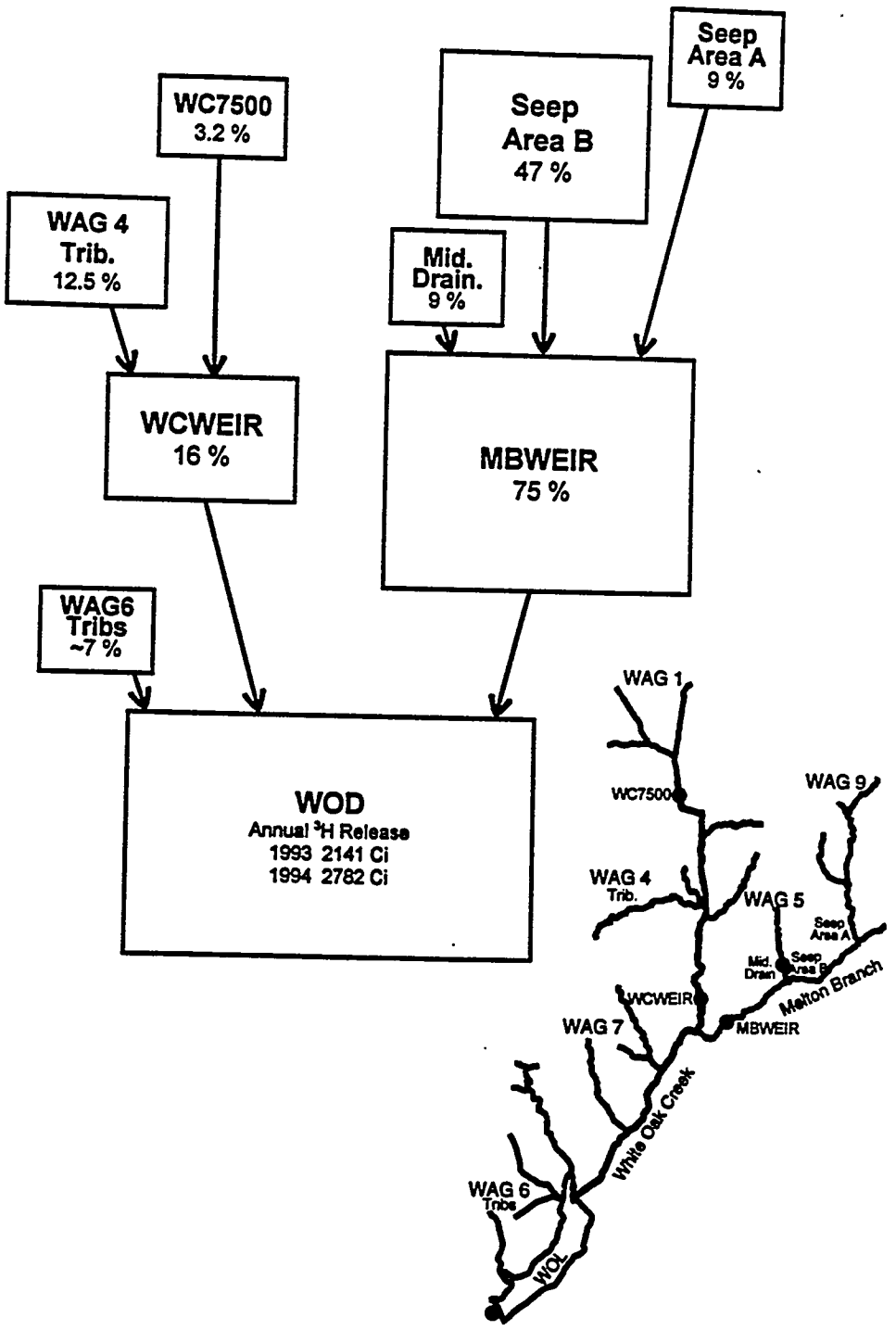


Fig. 5.2. Estimated average percent contribution to ^{3}H at White Oak Dam from March 1993 to August 1994.

5.3 KEY ^{137}Cs SOURCE AREAS

The mass balance approach used to quantify ^{90}Sr and ^{3}H sources is less applicable for ^{137}Cs, because it is a highly particle-reactive contaminant that could be released along one reach but adsorbed onto the sediments along another. In addition, most of the gamma results have fairly large analytical uncertainties and detection limits (Appendix C), which makes it infeasible to reliably quantify ^{137}Cs fluxes throughout the watershed. Many of the locations sampled had ^{137}Cs levels below detection. Detectable concentrations were routinely seen at the main weir locations along WOC and at WOD. The combination of the measurable ^{137}Cs concentrations and flow at WC7500 indicated that the primary source for ^{137}Cs in the WOC watershed is from WAG 1. This is consistent with the findings in the fourth annual ERMA report that identified the main source to be the discharge from the Non-Radiological Wastewater Treatment Plant (DOE 1995c). It is interesting to note, that the amount of ^{137}Cs in the dissolved phase (i.e., < 0.45 μm) was greatest at WC7500 and decreased downstream to WOD, while the amount associated with particulates generally increased.

Seeps BTT and SW4-2 in WAG 4 had the highest ^{137}Cs concentrations of any locations sampled in the watershed (Fig. 4.4). The actual flux from these seeps during baseflow conditions is minor compared to the flux in WOC. Similarly, the flux at WAG4 T2A was small during baseflow conditions compared to the flux in WOC. The soils and sediments in the WAG 4 tributary drainage, as well as the WOC floodplain in the old intermediate pond area may become significant sources of ^{137}Cs during storm events when sediments are suspended and transported more readily. Seep SW7-6 had relatively high ^{137}Cs concentrations but low total ^{137}Cs release, because little ^{137}Cs was detected downstream at WCTRIB-1.

5.4 ^{60}Co SOURCE AREAS

Most of the locations sampled for gamma analysis had ^{60}Co levels below detection (Appendix C). Elevated levels of ^{60}Co were found exclusively in seeps and streams in and around WAG 7 (Fig. 4.14). The cooling water drainage from HFIR was a major source of ^{60}Co in the late 1970s (Cerling and Spalding 1981), but now appears to be insignificant based on ^{60}Co concentrations in Melton Branch. Seep SW7-5 in WAG 7 had both the highest ^{60}Co concentration and flux. The second largest ^{60}Co fluxes were at EAST SEEP on the East Seep Tributary. Much of the flux comes from SW7-3, a discrete seep downgradient from the old seepage pits 2 and 4 in WAG 7. The rest of the ^{60}Co flux is a result of diffuse groundwater seepage into the East Seep Tributary from pits 2, 3, 4 and/or trench 5. Although high ^{60}Co concentrations were detected in seeps RS-3A and SW7-2, their relative flow and, therefore, flux is small because ^{60}Co concentrations downstream at WEST SEEP were generally below detection.

5.5 ALPHA SOURCE AREAS

The complete gross alpha results for 1993 and 1994 are presented in Appendix D. Note that gross alpha results have a potential for being falsely inflated if the sample contains high gross beta activity. Beta cross talk produces false counts (~1% of the gross beta level) in the alpha channel. The alpha values reported in Chap. 4 and Appendix D have not been corrected for beta cross talk.

Gross alpha results from the 1992 sampling efforts were used to select a limited number of sample locations for specific transuranic analyses in 1993 (Appendix I). Those locations that had a transuranic contaminant level significantly different from zero are given in Table 5.6. The highest

Table 5.6. WAG 2 RI seep task transuranic results[a] (pCi/L)

Location[b]	^{241}Am	^{243}Cm	^{238}Pu	^{228}Th	^{230}Th	^{232}Th	^{232}U	^{234}U	^{235}U	^{238}U
SW7-3		2.82		1.1			118	4140	15	51.6
RS-3A	22.04	50.64	0.16		0.21	0.2	71.5	1490	6.22	64.2
RS-3B			0.23				5.63	134		6.64
RS-1				.				3.47		0.18
SW4-1			0.16	1.2				4.78		2.43
SW4-2				1.3				4.18		0.41
BTT			0.35	3.2			3.08	217	6.98	112
WAG4 MS1				3.5				29.1	0.68	13
SW5-4	2.08	17.1	0.52	1				0.04		0.02
MBWEIR			0.12	1.2	0.22					

[a]Results that are significantly different than zero. Complete results are in Appendix I.
[b]Samples collected March and April 1993

levels, particularly of ^{234}U, were found in seeps (SW7-3, RS-3A, and RS-3B) in WAG 7. Elevated transuranic contamination was found also in the WAG 4 locations and seep SW5-4 (Seep C) in WAG 5.

5.6 METAL SOURCE AREAS

Metal concentrations in the seeps, tributaries, and main streams in the WOC watershed are generally not of great concern for human health risk. Three different perspectives were used to evaluate the complete metal data set (Appendix E). The first was from an ecological perspective and compared metal concentrations to Ambient Water Quality Criteria (AWQC). This is generally the most conservative approach for metals and flagged the most locations and metals to be of concern. Locations with metal concentrations exceeding the AWQC are listed in Table 5.7 with the corresponding ratios (concentration to AWQC). Most of the aluminum and iron concentrations are typical of natural surface water in this region and probably don't constitute a concern. The elevated cadmium concentrations are questionable because the rinsate (R-311) had the highest concentration. The other locations listed for cadmium had concentrations near the detection limit (qualified as B). Many of the other locations with elevated metals are in WAGs 4 and 7. Samples collected at WOD exceeded AWQCs for chromium and lead during a number of the sampling events. The source of chromium to WOD is not clear although EAST SEEP, SW7-3, and RS-3A are probable contributors. Even though copper concentrations exceeded AWQC at a number of locations, the concentrations for those copper ratios listed in Table 5.4 were near the detection limit (qualified as B), with the exception of the concentrations at MB-15, RS-3A, SW7-2, and W4TRIB-11.

The metal data were also evaluated using Hazard Index and Human Health Risk criteria. Those locations and metals identified as being of concern based on having a Hazard Index equal to or exceeding 1 are RS-3A for arsenic; HRT-3, MBWEIR, SW4-1, and WCWEIR for antimony; SW7-1 for manganese; and SW4-2 for nickel. The only locations and metal of concern based on human health risk (i.e., risk $\geq 10^{-4}$) are RS-3A and SW4-1 for arsenic.

5.7 AREAS WITH VOCs

VOC concentrations in the seeps, tributaries, and main streams in the WOC watershed are also generally not of concern. The complete VOC results are given in Appendix F. The data were screened to identify any locations where VOCs might be of concern based on the Hazard Index and Human Health Risk criteria. All of the results fell below the Hazard Index of 1. Only two locations had VOC concentrations that would produce a risk of 10^{-4} or greater. These were trichloroethene in the FRENCH DR S in WAG 6 (Fig. 4.14) and vinyl chloride in SW4-2 in WAG 4 (Fig. 4.4). The FRENCH DR S also had a tetrachloroethene concentration that would produce a risk of $>10^{-5}$. Elevated vinyl chloride concentrations (with a risk of $> 10^{-5}$) were detected in MID DRAIN. WAG 5 (MID. DRAIN.) and in the WAG 4 tributary at WAG4 T2A.

Table 5.7. Locations with ratios (metal concentration[a]/AWQC) ≥ 1

	Metals/AWQC (ug/L)								
	Al	Cd	Cr	Cu	Fe	Pb	Ni	Zn	Ag
Location	87	1.1	11	12	1000	3.2	160	110	4.1
EAST SEEP	27.7		3	1.17	1.7	1.25			
FIRST CREEK	11.17				1.14				
HRT-3	3.22								
MBTRIB-2A				1.33					
MBTRIB-3	3.01								
MBWEIR	4.77			1.42					
MB-1	1.83								
MB-15	5.14			2.5				2.59	
MID. DRAIN.	2.51				8.61				
MV-1	2.43				2.11				
MV-3	1.86								
NWTRIB	2.05								
RAC	2.97								
RS-1	3.43								
RS-3A	203.4	1.82	8.73	2.33	13.9	1.88			1.46
RS-3B	16.32				1.08	1.25			
R-311		3.64							1.22
SW2-1	2.14				2.3				
SW2-4						2.5			
SW2-5	1.84				1.54				
SW2-6	1.72				8.52				
SW2-7					17				
SW4-1					28.8				
SW4-2					7.06		59.13		
SW5-4		1.82			1.11	3.44			
SW7-1					6.57				
SW7-2	7.49			2.08					
SW7-3	8.91		8.27						
SW7-5	25.17			1.17	2.73	1.25			
SW7-6	8.75								
SW7-8	4.74								
SW9-2	16.78				3.37			2.62	
W4TRIB-11	2.76	1.82		2.83	1.46				
W4TRIB-5	24.25				2				
WAG4 MS1	11.72				1.12				
WAG4 T2A	11.49		3.18		1.43				
WC7500	11.33			1.42	1.13	1.25			
WCHEAD	2.25					1.25			
WCTRIB-1	11								
WCTRIB-2	2.23								
WCWEIR	2.52			1.5					
WC-1	1.41			1.08					
WC-20	2.55								
WEST SEEP	9.14				2.32				
WOCET	17.24				1.61				
WOD	23.56		3.45	1	2.49	1.25		1.07	

[a]Minimum of the maximum and the upper 95th confidence limit on the mean.

6. PRIORITIZATION OF SOURCE AREAS BASED ON RISK AT WOD

The potential human health risk calculated from water ingestion at WOD is almost entirely a result of the risk associated with ^{90}Sr, ^{3}H, and ^{137}Cs concentrations at WOD (DOE 1995b). The annual risk values for WOD for 1993 and 1994 were 6.9×10^{-4} and 6.3×10^{-4}, respectively, and exceeded the EPA target range of 1×10^{-4} to 1×10^{-6} (DOE 1995c). To help guide remedial efforts, the key contaminant source areas identified in Chap. 5 were ranked by their contribution to the risk at WOD (Table 6.1). The percent of risk at WOD attributed to ^{90}Sr, ^{3}H, and ^{137}Cs for the period, March 1993 to August 1994, was 70%, 23%, and 7%, respectively. Similar annual percentages were calculated for 1993 and 1994 and are discussed in greater detail in the fourth annual ERMA report (DOE 1995c).

The upper WOC source area is a combination of sources that could not be delineated with the WAG 2 Seep Task data. As mentioned earlier, discharge from the NRWTP is a significant source of the ^{90}Sr and most of the ^{137}Cs in this reach (DOE 1995c). The corrective actions conducted at Seep C, Seep D, and Core Hole 8 were aimed to reduce the risk at WOD resulting from ^{90}Sr. Future corrective actions on selected trenches in WAG 4 would also be beneficial. The single largest contributing source to risk at WOD that has not been addressed is Seep Area B, which releases almost half of the ^{3}H in the watershed.

Table 6.1. Ranking of source areas based on risk at WOD

Source area	Contribution to flux at WOD			Contribution to risk at WOD			Total percent of risk at WOD
	^{90}Sr	^{3}H	^{137}Cs	^{90}Sr	^{3}H	^{137}Cs	
Upper WOC	25.2	3.2	100	17.6	0.7	7.0	25.4
Seep Area C	19.6–30.1			13.7–21.1			13.7–21.1
WAG 4 Trib	11.1–17.7	12.7		7.8–12.4	2.9		10.7–15.3
Seep Area B		46.8			10.8		10.8
Seep Area D	6.7			4.7			4.7
First Creek (CH 8)	5.9			4.1			4.1
WAG 9	5.9			4.1			4.1
WAG 5 Mid. Drain.	2.4	9.0		1.7	2.1		3.8
Seep Area A		9.0			2.1		2.1
WAG 6 Tribs		7			1.6		1.6
West Seep	1.7			1.2			1.2
All others	21.5–4.4	12.3		15.1	2.8		17.9–5.9

For the period March 1993–August 1994.

7. DATA ASSESSMENT

As mentioned in Chap. 3, a number of field QC-type samples were collected to help assess the data. Generally, results from field duplicates compare well, and there were only isolated times when contaminant concentrations were detected in the rinsates. A preliminary comparison between internal and external ^{90}Sr results suggested that a higher level of confidence should not be placed on the external ^{90}Sr versus the internal ^{90}Sr. For example, a number of the samples submitted to the external laboratories for both dissolved and total ^{90}Sr had a dissolved concentration significantly greater than the corresponding total concentration. Internal and external ^{3}H results compared fairly well. An extensive data assessment was not completed; however, the data are available in this report, and the assessment could be done in the future if warranted.

8. SUMMARY AND CONCLUSIONS

This report is designed primarily as a contaminant reference and a resource for guiding remedial decisions at ORNL. WAG 2 acts as an integrator for contaminant releases from the contaminated sites at ORNL and as the conduit transporting contaminants to the Clinch River. The primary objectives of the WAG 2 RI Seep Task were to identify and characterize seeps, tributaries, and source areas that are responsible for the contaminant releases to the main streams in WAG 2 and to quantify their input to the total contaminant release from the watershed at WOD. Efforts focused on ^{90}Sr, ^{3}H, and ^{137}Cs because these contaminants pose the greatest potential human health risk from water ingestion at WOD. Samples were also collected for metals, anions, alkalinity, organics, and other radionuclides.

Contaminant concentrations (primarily ^{90}Sr and ^{3}H) were combined with flow measurements to quantify the releases (fluxes) from the different source areas in the watershed. A mass balance approach was used to estimate the flux at different locations as a percent of the total flux at WOD. These data provide snap-shot pictures of the contributions from the contaminant source areas during the different hydrological conditions. Average percent contributions to the total ^{90}Sr and ^{3}H flux at WOD were estimated for each source area. The areas were then prioritized using these average percent contributions and the associated human health risk factor at WOD.

The key findings from the WAG 2 RI Seep Task sampling and assessment efforts are as follows:

- There are elevated levels of ^{90}Sr and ^{3}H throughout the WOC watershed. The highest concentrations of ^{90}Sr are seen in seeps and tributaries in and around WAGs 4, 5, and 9. Likewise, the highest concentrations of ^{3}H are seen in seeps and tributaries in and around WAGs 4 and 5. Tritium levels in the WAG 6 tributaries were also comparatively high.
- Collecting samples along stream transects was a useful means to identify areas of ^{90}Sr or ^{3}H release where contaminated groundwater discharge caused significant increases in the downstream contaminant concentration.
- Elevated levels of ^{137}Cs and ^{60}Co are not as widespread as the ^{3}H or ^{90}Sr contamination. Many of the locations sampled had gamma levels below detection.
- Results of samples from WOC were consistently among the highest ^{137}Cs levels measured. The dissolved ^{137}Cs concentrations (i.e., < 0.45 μm) were greater than that associated with the suspended particulates at WC7500 and decreased downstream to WOD while the amount associated with the particulates generally increased. Discharge from the Non-Radiological Wastewater Treatment Plant in WAG 1 is believed to be the primary source for ^{137}Cs in the WOC watershed.
- Elevated levels of ^{60}Co were exclusively found in seeps and streams in and around WAG 7. The high ^{60}Co concentrations were dominantly in the dissolved phase rather than associated with particulates. The ^{60}Co releases from HFIR that had been observed in the late 1970s are no longer present.
- The highest levels of transuranics were found in seeps in WAG 7. Elevated transuranic contamination was also found in WAG 4.
- Metal concentrations in the surface waters in the WOC watershed are generally not of concern. Most of the seeps or tributaries with metals of concern (notably As, Cr, Cu, and Ni) are in WAGS 4 and 7.

- Samples collected at WOD exceeded the AWQCs for chromium and lead and came near AWQC for copper during a number of the sampling events.
- VOCs in the seeps, tributaries, and main streams in the WOC watershed are also generally not of concern. Elevated levels of trichloroethene and tetrachloroethene were detected in the discharge from the south end of the french drain in WAG6. Elevated levels of vinyl chloride were detected in a WAG 4 seep (SW4-2), in the WAG 4 tributary at WAG4 T2A, and in the middle drainage in WAG 5.
- There is considerable variability in contaminant concentrations and fluxes throughout the watershed as a result of different hydrologic conditions. Contaminant fluxes are greatly dependent on flow (i.e., with an increase in flow there is an increase in contaminant fluxes). Because of the environmental variability and the uncertainties associated with analytical results and flow measurements, the calculated percent contributions to flux at WOD should be considered as estimates.
- The largest, most discrete release of ^{90}Sr in the watershed was in the southern portion of WAG 5 where seep SW5-4, later known as Seep C, was located. This source area, Seep Area C, had an estimated average contribution ranging from ~20 to 30% of the ^{90}Sr flux at WOD from March 1993 to August 1994. An in situ zeolite treatment unit was completed in late 1994 and now collects and treats contaminated groundwater at the site.
- Other contributors to the ^{90}Sr release at WOD include: WAG 4 (~ 11%), Seep Area D (~7%), First Creek (Corehole 8)(~6%), WAG 9 (~6%), the middle drainage in WAG 5 (~2.4%), West Seep (~2%), discharge from NRWTF, the Sewage Treatment Plant, and a combination of other unidentified/diffuse sources.
- Transect sampling along the WAG 4 tributary indicates that most of the ^{90}Sr release is coming from two discrete areas in the western half of WAG 4. Results from transect sampling in the HRT tributary along WAG 9 suggest that the source of ^{90}Sr may not be isolated to the impoundment in WAG 9.
- Source areas in WAG 5 contributed the most (~75%) to the ^{3}H release at WOD. The single largest ^{3}H source was Seep Area B (~47%) where diffuse tritiated groundwater enters Melton Branch south of WAG 5.
- Other contributors to the ^{3}H release at WOD include: WAG 4 (~13%), the middle drainage in WAG 5 (~9%), Seep Area A in WAG 5 (~9%), WAG 6 tributaries (~7%).
- Transect sampling along the WAG 4 tributary indicates that most of the ^{3}H release is coming from one discrete area in the upper reach of the tributary.
- Results identify key seeps/source areas which contribute to the total contaminant flux in WAG 2 and that are major contributors to the risk at WOD. The key contaminant source areas were ranked by their contribution to the potential human health risk at WOD. The results are presented in Table 8.1.

Table. 8.1. Ranking of source areas based on risk at WOD[a]

	Source areas	Contribution to risk at WOD from ^{90}Sr	^{3}H	^{137}Cs	Total percent of risk at WOD
1	Upper WOC[b]	17.6	0.7	7.0	25.4
2	Seep Area C	13.7–21.1			13.7–21.1
3	WAG 4 Trib	7.8–12.4	2.9		10.7–15.3
4	Seep Area B		10.8		10.8
5	Seep Area D	4.7			4.7
6	First Creek (CH 8)[c]	4.1			4.1
7	WAG 9	4.1			4.1
8	WAG 5 Mid. Drain.	1.7	2.1		3.8
9	Seep Area A		2.1		2.1
10	WAG 6 Tribs		1.6		1.6
11	West Seep	1.2			1.2

[a]For the period March 1993–August 1994.
[b]Area above WC-20. Includes discharge from the Non-Radiological Wastewater Treatment Facility, the Sewage Treatment Plant, and other unmonitored discharges.
[c]Attributed to Corehole 8.

The extensive Seep Task data provide useful characterization information for seeps, tributaries, and main streams throughout the WOC watershed. The results support the efforts of the ORNL Environmental Restoration Program to prioritize and remediate contaminated sites. In-depth assessments of the Seep Task data were not possible because of time and resource limitations. However, the data in this report can be utilized by future assessments to provide clearer understandings of contaminant transport in and from the different source areas in the WOC watershed.

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Appendix A

INTERNAL AND EXTERNAL STRONTIUM-90 RESULTS

Table A.1. Internal ^{90}Sr results (pCi/L) from the WAG 2 RI Seep Task

Location	Sample Date	Sample ID[a]	^{90}Sr Result	^{90}Sr Uncertainty	Validation Qualifiers[b]	Validation Comments
BTT	11-Mar-93	3584-6-2	20300	89.3	J - 4 ,20	
BTT	11-Mar-93	3583-6-2	20854	90.4	J - 4 ,20	
BTT	24-Mar-93	3441-3-2	24052	102	J - 4 ,20	
BTT	24-May-93	3743-6-2	11541	70.2	J - 4 ,20,140	See case narrative
BTT	01-Dec-93	3964-6-3	17495	84.3	J - 20	
BTT	08-Feb-94	4083-6-2	24901	100	=	
BTT	19-Apr-94	4159-8-1	25730	106	=	
BTT	24-Aug-94	4334-20-A	19733	89.7		
EAST SEEP	24-Mar-93	3446-3-2	-24	17	UJ - 4 ,20	See case narrative
EAST SEEP	24-Mar-93	3445-3-2	-37	16.8	UJ - 4 ,20	See case narrative
EAST SEEP	13-Apr-93	3608-6-2	40.9	14	UJ - 4 ,20	
EAST SEEP	13-Jul-93	3791-6-3	68.6	16.1	UJ - 4 ,20	
EAST SEEP	30-Sep-93	3910-6-3	62.0	15.4	UJ - 4 ,20	
EAST SEEP	01-Dec-93	3953-6-2	-2	15.4	UJ - 20	
EAST SEEP	08-Feb-94	4073-6-2	56.0	15.4	U	
EAST SEEP	19-Apr-94	4149-8-1	19.5	15.3	U	
EAST SEEP	15-Jun-94	4226-20-1	31.2	15.9	U	
EAST SEEP	23-Jun-94	4315-20-1	38.3	17.7	U	
EAST SEEP	24-Aug-94	4361-20-A	68.0	19		
FC-1	01-Dec-93	4031-8-1	409	20.2	J - 20	
FIRST CREEK	11-Mar-93	3573-6-2	155	16.3	J - 4 ,20	
FIRST CREEK	24-Mar-93	3450-5-2	15.7	17.3	U - 4 ,20	
FIRST CREEK	24-May-93	3749-8-1	307	18.8	J - 4 ,20	
FIRST CREEK	19-Jul-93	3815-6-3	485	19.4	J - 4 ,20	
FIRST CREEK	19-Jul-93	3816-6-3	435	18.9	J - 4 ,20	
FIRST CREEK	30-Sep-93	3900-6-3	392	18.8	J - 4 ,20	
FIRST CREEK	01-Dec-93	3967-6-2	417	20.3	J - 20	
FIRST CREEK	23-Jun-94	4296-20-1	714	24.4	=	
FIRST CREEK	24-Aug-94	4338-20-A	240	20.2		
HRT-10	08-Feb-94	4132-8-1	276	18	=	
HRT-10	19-Apr-94	4209-8-1	367	19.3	=	
HRT-10	23-Jun-94	4281-20-1	127	18.7	=	
HRT-10	24-Aug-94	4400-20-A	320	20.9		
HRT-1A	09-Mar-93	3521-6-2	1156	25.8	J - 4; 20	
HRT-1A	24-Mar-93	3483-2-2	754	22.4	J - 4 ,20	
HRT-1A	24-May-93	3727-8-1	1526	28.8	J - 4 ,20	
HRT-1A	21-Jul-93	3850-6-3	1672	29.5	J - 4 ,20	
HRT-1A	30-Sep-93	3927-8-1	1974	31	J - 4 ,20	
HRT-1A	30-Sep-93	3928-8-1	1951	30.9	J - 4 ,20	
HRT-1A	01-Dec-93	4011-8-2	921	24.3	J - 20	
HRT-1A	01-Dec-93	4010-8-1	921	24.3	J - 20	
HRT-1A	08-Feb-94	4125-8-1	889	23.8	=	
HRT-1A	19-Apr-94	4201-8-1	1056	25.5	=	
HRT-1A	23-Jun-94	4274-20-1	1021	27	=	
HRT-1A	24-Aug-94	4393-20-A	1160	28.1		
HRT-1B	09-Mar-93	3522-6-2	445	19.7	J - 4; 20	
HRT-1B	24-Mar-93	3482-2-2	405	19.2	J - 4 ,20	
HRT-1B	24-May-93	3728-8-1	469	20.4	J - 4 ,20	
HRT-1B	30-Sep-93	3948-8-1	1095	25	J - 4 ,20	
HRT-1B	01-Dec-93	4012-8-2	716	22.5	J - 20	
HRT-1B	08-Feb-94	4126-8-1	692	22.1	=	
HRT-1B	19-Apr-94	4203-8-1	484	20.5	=	
HRT-1B	24-Aug-94	4394-20-A	914	26.3		
HRT-1C	09-Mar-93	3523-6-2	1853	30.6	J - 4; 20	
HRT-1C	24-Mar-93	3481-2-2	1822	30.2	J - 4 ,20	
HRT-1C	24-May-93	3730-8-1	3139	38.1	J - 4 ,20	
HRT-1C	01-Dec-93	4008-8-2	1266	26.9	J - 20	
HRT-1C	08-Feb-94	4123-8-1	2250	33.3	=	
HRT-1C	19-Apr-94	4199-8-1	2769	36.6	=	
HRT-1D	09-Mar-93	3524-6-2	800	22.9	J - 4; 20	
HRT-1D	24-Mar-93	3479-2-2	1369	27.2	J - 4 ,20	
HRT-1D	24-Mar-93	3480-2-2	1379	27.3	J - 4 ,20	
HRT-1D	24-May-93	3731-8-1	1493	28.5	J - 4 ,20	
HRT-1D	01-Dec-93	4007-8-1	938	24.4	J - 20	
HRT-1D	08-Feb-94	4122-8-1	509	20.4	=	
HRT-1D	23-Jun-94	4271-20-1	2730	37.4	=	
HRT-1D	24-Aug-94	4390-20-A	437	22.5		
HRT-2	09-Mar-93	3550-8-2	1072	24.5	J - 4 ,20	
HRT-2	24-Mar-93	3472-2-2	657	18.6	J - 4 ,20	
HRT-2	24-May-93	3732-8-2	1595	29.2	J - 4 ,20	

Table A.1. (continued)

Location	Sample Date	Sample ID[a]	^{90}Sr Result	^{90}Sr Uncertainty	Validation Qualifiers[b]	Validation Comments
HRT-2	21-Jul-93	3851-8-2	1764	30.1	J - 4 ,20	
HRT-2	30-Sep-93	3906-8-2	2137	32	J - 4 ,20	
HRT-2	01-Dec-93	3981-8-2	941	24.4	J - 20	
HRT-2	08-Feb-94	4101-8-1	946	13.5	=	
HRT-2	19-Apr-94	4174-8-1	1072	25.6	=	
HRT-2	23-Jun-94	4251-20-1	1000	26.8	=	
HRT-3	09-Mar-93	3532-6-2	1072	25.1	J - 4; 20	
HRT-3	24-Mar-93	3471-3-2	779	21.7	J - 4 ,20	
HRT-3	24-May-93	3733-8-1	1282	27.1	J - 4 ,20	
HRT-3	21-Jul-93	3852-6-2	1384	27.6	J - 4 ,20	
HRT-3	30-Sep-93	3907-8-2	2228	32.6	J - 4 ,20	
HRT-3	01-Dec-93	3982-8-2	885	24	J - 20	
HRT-3	23-Jun-94	4252-20-1	736	24.6	=	
HRT-3	24-Aug-94	4352-20-A	1079	27.4		
HRT-3	24-Aug-94	4353-20-A	1080	27.2		
HRT-4	09-Mar-93	3552-8-2	983	24.2		
HRT-4	09-Mar-93	3551-8-2	1034	24.6		
HRT-4	24-Mar-93	3470-1-2	866	22.8	J - 4 ,20	
HRT-4	24-May-93	3734-8-1	1279	27	J - 4 ,20	
HRT-4	21-Jul-93	3854-8-1	1228	26.1		
HRT-4	30-Sep-93	3929-8-1	2335	33.2	J - 4 ,20	
HRT-4	01-Dec-93	4013-8-2	869	13.7	J - 20	
HRT-4	08-Feb-94	4127-8-1	825	23.3	=	
HRT-4	19-Apr-94	4204-8-1	862	23.9	=	
HRT-4	23-Jun-94	4276-20-1	668	24	=	
HRT-4	24-Aug-94	4395-20-A	1033	27.2		
HRT-5	09-Mar-93	3553-8-2	1054	24.7		
HRT-5	24-Mar-93	3469-1-3	930	23.6	J - 4 ,20	
HRT-5	24-May-93	3735-8-1	1222	26.6	J - 4 ,20	
HRT-5	21-Jul-93	3856-8-1	1256	26.3		
HRT-5	30-Sep-93	3930-8-1	2490	34.1	J - 4 ,20	
HRT-5	01-Dec-93	4014-8-2	849	23.7	J - 20	
HRT-6	09-Mar-93	3554-8-2	923	23.7		
HRT-6	24-Mar-93	3468-1-2	569	20.6	J - 4 ,20	
HRT-6	24-May-93	3736-8-1	1109	25.8	J - 4 ,20	
HRT-6	21-Jul-93	3857-8-1	1011	24.5		
HRT-6	30-Sep-93	3931-8-1	2304	33.6	J - 4 ,20	
HRT-6	01-Dec-93	4015-8-1	673	22.2	J - 20	
HRT-6	08-Feb-94	4128-8-1	785	22.9	=	
HRT-6	19-Apr-94	4205-8-1	810	23.5	=	
HRT-6	23-Jun-94	4277-20-1	548	23	=	
HRT-6	24-Aug-94	4396-20-A	900	25.8		
HRT-7	08-Feb-94	4129-8-1	348	18.8	=	
HRT-7	23-Jun-94	4278-20-1	501	22.5	=	
HRT-7	24-Aug-94	4397-20-A	784	24.9		
HRT-8	08-Feb-94	4130-8-1	2198	32.9	=	
HRT-8	19-Apr-94	4207-8-1	2117	32.8	=	
HRT-8	23-Jun-94	4279-20-1	4430	46.6	=	
HRT-8	24-Aug-94	4398-8-A	4310	44.9		
HRT-9	08-Feb-94	4131-8-1	2082	32.2	=	
HRT-9	19-Apr-94	4208-8-1	1270	27.1	=	
HRT-9	23-Jun-94	4280-20-1	725	24.5	=	
HRT-9	24-Aug-94	4399-20-A	981	26.8		
MBTRIB-3	09-Mar-93	3519-6-2	64.7	15.5	UJ - 4; 20	
MBTRIB-3	24-Mar-93	3474-2-2	76.2	15.5	J - 4 ,20	
MBTRIB-3	21-Jul-93	3862-6-3	36.3	15.3	UJ - 4 ,20	
MBWEIR	09-Mar-93	3516-6-2	441	20	J - 4 ,20	
MBWEIR	09-Mar-93	3515-6-2	396	19.5	J - 4 ,20	
MBWEIR	11-Mar-93	3569-6-2	435	19.3	J - 4 ,20	
MBWEIR	24-Mar-93	3475-4-2	369	18.8	J - 4 ,20	
MBWEIR	24-Mar-93	3476-2-2	329	18.4	J - 4 ,20	
MBWEIR	13-Apr-93	3609-6-2	502	22	J - 4 ,20,140	See case narrative
MBWEIR	24-May-93	3723-6-2	1034	26.9	J - 4 ,20	
MBWEIR	13-Jul-93	3794-8-2	1409	28	J - 4 ,20	
MBWEIR	19-Jul-93	3824-6-2	795	24.6	J - 4 ,20,140	See case narrative
MBWEIR	21-Jul-93	3845-6-2	1038	21.3	J - 4 ,20	
MBWEIR	21-Jul-93	3844-6-2	1008	27.1	J - 4 ,20	
MBWEIR	30-Sep-93	3891-8-1	1152	29.4	J - 20	
MBWEIR	01-Dec-93	3971-6-2	517	21.8	J - 20	
MBWEIR	01-Dec-93	3972-6-2	493	21.5	J - 20	

Table A.1. (continued)

Location	Sample Date	Sample ID[a]	^{90}Sr Result	^{90}Sr Uncertainty	Validation Qualifiers[b]	Validation Comments
MBWEIR	19-Apr-94	4163-8-1	395	19.6	=	
MBWEIR	15-Jun-94	4239-20-1	489	20.8	=	
MBWEIR	15-Jun-94	4239-8-1	536	21.2	=	
MBWEIR	23-Jun-94	4311-20-1	506	22.6	=	
MBWEIR	23-Jun-94	4311-8-1	457	20.5	=	
MBWEIR	24-Aug-94	4356-20-A	1128	27.5		
MBWEIR	24-Aug-94	4356-8-A	1136	27.6		
MB-1	09-Mar-93	3534-8-2	473	20.3	J - 4,20	
MB-1	24-Mar-93	3490-2-2	337	18.5	J - 4,20	
MB-1	24-May-93	3763-8-1	1177	33.2	J - 4,20	
MB-1	21-Jul-93	3868-8-1	1193	25.9		
MB-1	30-Sep-93	3915-8-1	1588	28.7		
MB-1	01-Dec-93	3991-8-1	739	23.8	J - 20	
MB-1	01-Dec-93	3990-8-1	735	23.7	J - 20	
MB-1	19-Apr-94	4184-8-1	391	19.6	=	
MB-1	15-Jun-94	4257-8-1	670	22.4	=	
MB-1	15-Jun-94	4257-20-1	694	22.6	=	
MB-1	23-Jun-94	4309-20-1	636	23.2	=	
MB-1	23-Jun-94	4309-8-1	619	22	=	
MB-1	24-Aug-94	4340-20-A	1428	29.6		
MB-1	24-Aug-94	4340-8-B	1426	29.9		
MB-10	09-Mar-93	3547-8-2	141	15.8	J - 4,20	
MB-10	24-Mar-93	3503-2-2	96.8	15.2	J - 4,20	
MB-10	21-Jul-93	3881-8-1	186	16.5	J - 4,20	
MB-10	21-Jul-93	3880-8-1	210	16.8	J - 4,20	
MB-11	09-Mar-93	3548-8-2	145	15.8	J - 4,20	
MB-11	24-Mar-93	3504-2-2	66.0	14.8	UJ - 4,20	
MB-11	21-Jul-93	3882-8-2	223	16.9	J - 4,20	
MB-11	30-Sep-93	3925-8-2	665	21.4	J - 4,20	
MB-11	01-Dec-93	4006-8-1	208	17.6	J - 20	
MB-11	08-Feb-94	4121-8-1	136	16.4	=	
MB-11	19-Apr-94	4197-8-1	128	16.7	=	
MB-11	15-Jun-94	4292-20-1	157	17.4	=	
MB-11	23-Jun-94	4321-20-1	111	18	=	
MB-11	24-Aug-94	4389-20-A	364	21.4		
MB-12	09-Mar-93	3549-8-2	114	15.4	J - 4,20	
MB-12	24-Mar-93	3505-2-2	7.8	14.8	UJ - 4,20	
MB-12	21-Jul-93	3883-8-1	202	16.7	J - 4,20	
MB-12	21-Jul-93	3884-8-2	198	16.7	J - 4,20	
MB-12	30-Sep-93	3926-8-1	681	21.5	J - 4,20	
MB-12	01-Dec-93	4009-8-2	216	17.7	J - 20	
MB-12	08-Feb-94	4124-8-1	128	16.3	=	
MB-12	19-Apr-94	4200-8-1	129	16.7	=	
MB-12	23-Jun-94	4273-20-1	136	18.8	=	
MB-12	24-Aug-94	4392-20-A	380	21.5		
MB-15	09-Mar-93	3531-6-2	11.9	14.8	UJ - 4; 20	
MB-15	24-Mar-93	3473-2-2	0	14.5	UJ - 4,20	
MB-15	21-Jul-93	3846-6-2	8.1	15	UJ - 4,20	
MB-15	30-Sep-93	3905-8-2	35.4	14.7	UJ - 4,20	
MB-15	01-Dec-93	3980-8-1	7.9	15.2	UJ - 20	
MB-15	23-Jun-94	4249-20-1	-17	17	UJ	
MB-15	24-Aug-94	4350-20-A	20.0	18.5		
MB-1A	09-Mar-93	3535-8-2	391	19.4	J - 4,20	
MB-1A	24-Mar-93	3491-2-2	328	18.5	J - 4,20	
MB-1A	24-May-93	3765-8-1	926	23.8		
MB-1A	21-Jul-93	3869-8-1	986	24.3		
MB-1A	30-Sep-93	3916-8-1	922	23.8		
MB-1A	01-Dec-93	3992-8-1	509	21.7	J - 20	
MB-1A	08-Feb-94	4105-8-1	420	19.5	=	
MB-1A	08-Feb-94	4106-8-1	416	19.5	=	
MB-1A	19-Apr-94	4186-8-1	355	19.2	=	
MB-1A	19-Apr-94	4185-8-1	343	19.1	=	
MB-1A	15-Jun-94	4258-20-1	532	21.2	=	
MB-1A	15-Jun-94	4259-20-1	529	22.3	=	
MB-1A	24-Aug-94	4342-20-A	1072	27.1		
MB-1A	24-Aug-94	4341-20-A	1076	27.1		
MB-1B	09-Mar-93	3536-8-2	413	19.4	J - 4; 20	
MB-1B	24-Mar-93	3492-2-2	348	18.7	J - 4,20	
MB-1B	21-Jul-93	3870-8-1	982	26	J - 4,20,140	See case narrative

Table A.1. (continued)

Location	Sample Date	Sample ID[a]	^{90}Sr Result	^{90}Sr Uncertainty	Validation Qualifiers[b]	Validation Comments
MB-2	09-Mar-93	3537-8-2	425	19.5	J - 4; 20	
MB-2	24-Mar-93	3493-2-2	324	18.4	J - 4 ,20	
MB-2	21-Jul-93	3871-8-2	1034	25	J - 4 ,20	
MB-3	09-Mar-93	3538-8-2	368	19.2	J - 4 ,20	
MB-3	24-Mar-93	3494-2-2	279	18	J - 4 ,20	
MB-3	21-Jul-93	3872-8-1	1009	24.4		
MB-3	01-Dec-93	3993-8-1	501	21.6	J - 20	
MB-3	08-Feb-94	4107-8-1	324	18.5	=	
MB-3	19-Apr-94	4187-8-1	355	19.2	=	
MB-3	15-Jun-94	4260-20-1	461	20.5	=	
MB-3	24-Aug-94	4379-20-A	1469	30.2		
MB-3A	08-Feb-94	4109-8-1	356	18.9	=	
MB-3A	08-Feb-94	4108-8-1	328	18.6	=	
MB-3A	19-Apr-94	4189-8-1	318	18.8	=	
MB-3A	19-Apr-94	4188-8-1	302	18.6	=	
MB-3A	15-Jun-94	4261-8-1	469	20.6	=	
MB-3A	15-Jun-94	4262-20-1	437	20.3	=	
MB-3A	15-Jun-94	4261-20-1	463	21.6	=	
MB-3A	24-Aug-94	4380-8-B	1231	28.6		
MB-3A	24-Aug-94	4380-20-A	1300	28.7		
MB-3A	24-Aug-94	4381-20-A	1248	28.4		
MB-4	09-Mar-93	3540-8-2	308	18.1		
MB-4	24-Mar-93	3495-2-2	237	17.5	J - 4 ,20	
MB-4	24-May-93	3766-8-1	859	23.2		
MB-4	21-Jul-93	3873-8-1	790	22.7		
MB-4	30-Sep-93	3917-8-1	1167	25.7		
MB-4	01-Dec-93	3997-8-1	460	21.2	J - 20	
MB-4	01-Dec-93	3996-8-1	468	21.3	J - 20	
MB-4	01-Dec-93	3995-8-1	509	21.7	J - 20	
MB-4	01-Dec-93	3998-8-1	500	21.6	J - 20	
MB-4	01-Dec-93	3994-8-1	460	21.2	J - 20	
MB-4	08-Feb-94	4110-8-1	312	18.4	=	
MB-4	19-Apr-94	4190-8-1	257	18.1	=	
MB-4	15-Jun-94	4263-20-1	367	19.6	=	
MB-4	24-Aug-94	4382-20-A	1163	28.1		
MB-5	09-Mar-93	3541-8-2	198	17.1	J - 4; 20	
MB-5	24-Mar-93	3497-2-2	94.5	15.9	J - 4 ,20	
MB-5	24-Mar-93	3496-2-2	114	15.9		
MB-5	24-May-93	3767-8-1	346	18.5		
MB-5	21-Jul-93	3874-8-1	238	17.4		
MB-5	30-Sep-93	3918-8-1	588	20.9		
MB-5	01-Dec-93	3999-8-1	250	19.1	J - 20	
MB-5	19-Apr-94	4221-8-1	222	19.7	=	
MB-5	23-Jun-94	4264-20-1	191	19.4	=	
MB-5	23-Jun-94	4264-8-1	197	17.8	=	
MB-5	24-Aug-94	4347-8-A	508	22.6		
MB-5	24-Aug-94	4347-20-A	465	22.7		
MB-6	09-Mar-93	3542-8-2	202	17.1	J - 4; 20	
MB-6	24-Mar-93	3498-2-2	94.8	15.9	J - 4 ,20	
MB-6	21-Jul-93	3875-8-1	191	19	J - 4 ,20,140	See case narrative
MB-7	09-Mar-93	3543-8-1	191	16.3	J - 4 ,20	
MB-7	24-Mar-93	3499-2-2	71.1	15.6	J - 4 ,20	
MB-7	21-Jul-93	3876-8-1	218	17.5	J - 4 ,20	
MB-7B	09-Mar-93	3544-8-2	174	16.8	J - 4; 20	
MB-7B	24-Mar-93	3500-2-2	106	15.3	J - 4 ,20	
MB-7B	21-Jul-93	3877-8-1	218	17.5	J - 4 ,20	
MB-8	09-Mar-93	3545-8-3	188	16.3	J - 4 ,20	
MB-8	24-Mar-93	3501-2-2	94.0	15.2	J - 4 ,20	
MB-8	21-Jul-93	3878-8-1	218	17.5	J - 4 ,20	
MB-9	09-Mar-93	3546-8-2	173	16.1	J - 4 ,20	
MB-9	24-Mar-93	3502-2-2	98.0	15.2	J - 4 ,20	
MB-9	21-Jul-93	3879-8-1	222	17.5	J - 4 ,20	
MID. DRAIN.	09-Mar-93	3529-6-2	1897	30.9	J - 4; 20	
MID. DRAIN.	24-Mar-93	3478-2-2	1617	28.9	J - 4 ,20	
MID. DRAIN.	24-May-93	3769-8-2	2068	32.2	J - 4 ,20	
MID. DRAIN.	24-May-93	3768-8-2	2007	31.8	J - 4 ,20	
MID. DRAIN.	21-Jul-93	3865-6-2	2483	34.5	J - 4 ,20	
MID. DRAIN.	30-Sep-93	3904-8-2	2359	33.3	J - 4 ,20	
MID. DRAIN.	01-Dec-93	3979-8-1	2076	32.3	J - 20	
MID. DRAIN.	23-Jun-94	4247-20-1	2341	35.9	=	

Table A.1. (continued)

Location	Sample Date	Sample ID[a]	^{90}Sr Result	^{90}Sr Uncertainty	Validation Qualifiers[b]	Validation Comments
MID. DRAIN.	23-Jun-94	4248-20-1	2373	36.1	=	
MID. DRAIN.	24-Aug-94	4348-20-A	2284	35.1		
MID. DRAIN.	24-Aug-94	4349-20-B	2335	35.3		
MV-1	21-Jul-93	3860-6-2	-187	12.2	R - 255	See case narrative
MV-1	21-Jul-93	3863-6-2	40.3	15.4	UJ - 4 ,20	
MV-3	09-Mar-93	3533-6-2	16.1	14.8	UJ - 4; 20	
NON RAD OUTFALL	01-Dec-93	4030-8-1	23.8	16	UJ - 20	
NWTRIB	11-Mar-93	3572-6-2	79.7	15.4	J - 4 ,20	
NWTRIB	24-Mar-93	3449-3-2	-22	16.9	UJ - 4 ,20	See case narrative
NWTRIB	19-Jul-93	3814-6-5	11.5	14.1	UJ - 4 ,20	
NWTRIB	30-Sep-93	3935-8-1	31.7	14.6	UJ - 4 ,20	
NWTRIB	01-Dec-93	3968-8-1	19.6	15.9	UJ - 20	
NWTRIB	23-Jun-94	4297-20-1	4.2	17.2	U	
NWTRIB	24-Aug-94	4339-20-A	96.0	18.7		
R311[c]	15-Jun-94	4237-8-1	-0.4	15.5	U	
R311[c]	15-Jun-94	4237-20-1	-21	12.6	UJ	
R311[c]	23-Jun-94	4322-8-1	7.8	15.6	U	
R311[c]	23-Jun-94	4322-20-1	-13	17	U	
R311[c]	24-Aug-94	4335-20-A	40.0	18.1		
R311[c]	24-Aug-94	4335-8-A	76.0	18.5		
RAC	09-Mar-93	3525-6-2	23.8	14.9	UJ - 4; 20	
RAC	19-Jul-93	3811-6-2	34.6	14.4	UJ - 4 ,20	
RS-1	13-Apr-93	3600-6-2	128	15	J - 4 ,20	
RS-3A	24-Mar-93	3464-4-2	307	18.6	J - 4 ,20	
RS-3A	13-Apr-93	3601-6-2	853	23.1	J - 4 ,20	
RS-3A	24-May-93	3746-6-3	1081	26.6	J - 4 ,20	
RS-3A	24-May-93	3744-6-3	1048	26.4	J - 4 ,20	
RS-3A	13-Jul-93	3789-6-3	982	25.9	J - 4 ,20	
RS-3B	24-Mar-93	3465-4-2	-4	14.4	UJ - 4 ,20	
RS-3B	13-Apr-93	3602-6-2	46.3	14.1	UJ - 4 ,20	
R-227[c]	26-Mar-93	3636-6-2	-24	14.4	UJ - 4 ,20	
R-227[c]	26-Mar-93	3637-6-2	0	14.7	UJ - 4 ,20	
R-227[c]	26-Mar-93	3634-6-2	-20	14.5	UJ - 4 ,20	
R-227[c]	26-Mar-93	3638-6-2	-8	14.6	UJ - 4 ,20	
R-227[c]	26-Mar-93	3633-6-2	-16	14.5	UJ - 4 ,20	
R-227[c]	26-Mar-93	3635-6-2	-16	14.5	UJ - 4 ,20	
R-227[c]	13-Apr-93	3640-6-2	-4	15.2	UJ - 4 ,20	
R-227[c]	13-Apr-93	3641-6-2	-20	15	UJ, -4 ,20	See case narrative
R-227[c]	13-Apr-93	3644-6-2	3.8	15.3	UJ - 4 ,20	See case narrative
R-227[c]	13-Apr-93	3639-6-2	-8	15.2	UJ - 4 ,20	
R-227[c]	13-Apr-93	3643-6-2	-0.4	15.3	UJ - 4 ,20	
R-227[c]	13-Apr-93	3642-6-2	-21	15	UJ, -4 ,20	See case narrative
R-227[c]	24-May-93	3780-6-3	-12	15.1	UJ - 4 ,20	Sample deleted on COC
R-227[c]	24-May-93	3779-6-2	-12	14.3		
R-227[c]	13-Jul-93	3807-6-3	15.4	14.2	UJ - 4 ,20	
R-227[c]	13-Jul-93	3808-6-3	-12	15.1	UJ - 4 ,20	
R-227[c]	19-Jul-93	3842-6-3	-0.1	14.8	UJ - 4 ,20	
R-227[c]	19-Jul-93	3843-6-3	12.1	15	UJ - 4 ,20	
R-227[c]	30-Sep-93	3933-6-2	10.5	11.6	UJ - 4 ,20	
R-227[c]	30-Sep-93	3934-6-2	1215	25.9	J - 4 ,20	
R-227[c]	01-Dec-93	3970-6-2	-4	16.1	UJ - 20	
R-227[c]	01-Dec-93	3969-6-3	15.9	15.3	UJ - 20	
R-227[c]	08-Feb-94	4090-6-2	36.0	15.2	U	
R-227[c]	08-Feb-94	4089-6-2	24.0	15	U	
R-227[c]	08-Feb-94	4144-6-2	62.5	14.7	U	
R-227[c]	19-Apr-94	4161-8-1	11.8	15.2	U	
R-311[c]	21-Jul-93	3890-6-3	19.8	14.5	UJ - 4 ,20	
R-311[c]	21-Jul-93	3889-6-3	30.8	14.6	UJ - 4 ,20	
SPD	15-Jun-94	4294-8-1	65640	189	=	
SPD	24-Aug-94	4344-8-A	59098	171		
SW2-1	13-Apr-93	3621-6-2	314	17.2	J - 4 ,20	
SW2-2	11-Mar-93	3576-6-2	670	21.5	J - 4 ,20	
SW2-3	11-Mar-93	3562-6-2	19.9	14.7	UJ - 4 ,20	
SW2-4	11-Mar-93	3567-6-2	323	18.2	J - 4 ,20	
SW2-4	19-Jul-93	3825-6-3	355	18.9	J - 4 ,20	
SW2-5	09-Mar-93	3520-6-2	54291	155		
SW2-5	09-Mar-93	3520A-8-2	49175	139	J - 4; 20	
SW2-5	09-Mar-93	3520B-8-2	5119	47	J - 4; 20	
SW2-5	24-May-93	3724-6-2	130508	370		
SW2-5	24-May-93	3725-6-3	141834	294	J - 4 ,20	

Table A.1. (continued)

Location	Sample Date	Sample ID[a]	^{90}Sr Result	^{90}Sr Uncertainty	Validation Qualifiers[b]	Validation Comments
SW2-5	21-Jul-93	3858-6-2	150545	297		
SW2-5	30-Sep-93	3901-8-1	153478	441		
SW2-5	01-Dec-93	3973-8-1	122429	350	J - 20	
SW2-5	08-Feb-94	4092-8-1	96579	277	=	
SW2-5	19-Apr-94	4165-8-1	34860	119	=	
SW2-5	15-Jun-94	4241-8-1	163320	469	=	
SW2-5	15-Jun-94	4241-20-1	158515	447	=	
SW2-5	23-Jun-94	4310-8-1	163707	469	=	
SW2-5	23-Jun-94	4310-20-1	172238	487	=	
SW2-5	24-Aug-94	4343-20-A	159514	458		
SW2-5	24-Aug-94	4343-8-A	162569	468		
SW2-6	24-May-93	3764-8-1	209601	578		
SW2-6	08-Feb-94	4094-8-1	251701	716	=	
SW2-6	19-Apr-94	4167-8-1	200294	566	=	
SW2-6	24-Aug-94	4346-20-A	564388	1566		
SW2-7	24-May-93	3781-8-1	182627	501	J - 4,20	
SW2-7	30-Sep-93	3947-8-2	219242	612	J - 4,20	
SW2-7	01-Dec-93	3974-8-1	254347	720	J - 20	
SW2-7	08-Feb-94	4093-8-1	213503	610	=	
SW2-7	19-Apr-94	4166-8-1	219242	618	=	
SW2-7	15-Jun-94	4242-20-1	109372	304	=	
SW2-7	24-Aug-94	4345-20-A	263251	725		
SW4-1	11-Mar-93	3578-6-2	4780	45.1	J - 4,20	
SW4-1	19-Jul-93	3819-6-2	5513	47.4	J - 4,20	
SW4-2	11-Mar-93	3579-6-2	13711	73.8	J - 4,20	
SW4-2	24-Mar-93	3430-2-2	12010	72.8	J - 4,20	
SW4-2	24-Mar-93	3429-4-2	11884	72.4	J - 4,20	
SW4-2	24-May-93	3739-6-3	15490	79.1	J - 4,20	
SW4-2	01-Dec-93	3959-6-3	8130	14.8	J - 20	
SW4-2	08-Feb-94	4078-6-2	11096	67.9	=	
SW4-2	19-Apr-94	4154-8-1	11200	68.7	=	
SW4-2	24-Aug-94	4329-20-A	13100	74		
SW5-2	11-Mar-93	3566-6-2	239	17.3	J - 4,20	
SW5-2	24-Mar-93	3462-3-2	247	19.9	J - 4,20	
SW5-4	09-Mar-93	3528-6-2	404294	1138		
SW5-4	24-Mar-93	3477-2-2	320059	901		
SW5-4	13-Apr-93	3638-9-2	389932	1078	J - 4,20	
SW5-4	24-May-93	3726-6-2	481852	1358		
SW5-4	21-Jul-93	3864-6-2	569378	1605		
SW5-4	01-Dec-93	3978-8-1	422335	1199	J - 20	
SW5-4	01-Dec-93	3977-8-1	417679	1185	J - 20	
SW5-4	08-Feb-94	4097-8-1	401984	1150	=	
SW5-4	19-Apr-94	4170-8-1	388757	1105	=	
SW7-1	13-Apr-93	3615-6-2	69.6	14.3	UJ - 4,20	
SW7-1	13-Apr-93	3616-6-2	54.1	14.1	UJ - 4,20	
SW7-2	13-Apr-93	3617-6-2	-2	14.5	UJ - 4,20	
SW7-2	13-Jul-93	3788-6-3	-28	17.5	UJ - 4,20	
SW7-3	24-Mar-93	3447-3-2	-27	17	UJ - 4,20	See case narrative
SW7-3	13-Apr-93	3618-6-2	71.4	14.9	J - 4,20	
SW7-3	24-May-93	3747-6-3	51.7	16.9	UJ - 4,20	
SW7-3	13-Jul-93	3792-6-3	61.0	16.9	UJ - 4,20	
SW7-5	24-Mar-93	3442-3-2	-46	17.6	UJ - 4,20	See case narrative
SW7-5	13-Apr-93	3619-6-2	-0.5	15.2	UJ - 4,20	
SW7-5	13-Apr-93	3620-6-2	39.8	15.9	UJ - 4,20	
SW7-5	24-May-93	3748-8-3	-16	15.5	UJ - 4,20	
SW7-5	13-Jul-93	3796-6-2	-210	22.3	R - 255	See case narrative
SW7-6	24-Mar-93	3444-3-2	1086	27.3	J - 4,20	
SW7-6	13-Apr-93	3614-6-2	1150	24.6	J - 4,20	
SW7-8	13-Apr-93	3610-6-2	34.8	13.8	UJ - 4,20	
SW9-1	09-Mar-93		1046	24.4	J - 17	Collection date missing
SW9-1	21-Jul-93	3853-6-2	31.3	14.9		
SW9-1	30-Sep-93	3908-8-2	62.9	15	UJ - 4,20	
SW9-1	01-Dec-93	3983-8-2	20.0	15.3	UJ - 20	
SW9-2	09-Mar-93		19.2	14.2	UJ - 17	Collection date missing
SW9-2	21-Jul-93	3855-6-2	207	17		
SW9-2	30-Sep-93	3909-8-2	67.3	15.1	UJ - 4,20	
SW9-2	01-Dec-93	3985-8-1	68.1	15.9	UJ - 20	
W4TRIB-1	11-Mar-93	3589-8-2	13294	72.7	J - 4,20	
W4TRIB-1	24-Mar-93	3427-2-2	11202	70.3	J - 4,20	
W4TRIB-1	24-Mar-93	3426-2-2	11056	70	J - 4,20	

Table A.1. (continued)

Location	Sample Date	Sample ID[a]	^{90}Sr Result	^{90}Sr Uncertainty	Validation Qualifiers[b]	Validation Comments
W4TRIB-1	24-May-93	3754-8-4	12595	71.6	J - 4 ,20	
W4TRIB-1	30-Sep-93	3937-8-1	14163	76	J - 4 ,20	
W4TRIB-1	01-Dec-93	4016-8-1	10760	66.8	J - 20	
W4TRIB-1	08-Feb-94	4133-8-1	11296	68.5	=	
W4TRIB-1	15-Jun-94	4282-20-1	13354	74	=	
W4TRIB-1	24-Aug-94	4369-20-A	12919	73.5		
W4TRIB-10	11-Mar-93	3597-8-2	6533	52.5	J - 4 ,20	
W4TRIB-10	24-Mar-93	3438-2-2	8951	63.3	J - 4 ,20	
W4TRIB-10	24-May-93	3761-8-2	7050	54.6	J - 4 ,20	
W4TRIB-10	19-Jul-93	3839-8-2	6949	54.1	J - 4 ,20	
W4TRIB-10	30-Sep-93	3946-8-1	7818	57.3	J - 4 ,20	
W4TRIB-10	01-Dec-93	4023-8-1	5687	49.6	J - 20	
W4TRIB-10	08-Feb-94	4141-8-1	6370	51.5	=	
W4TRIB-10	19-Apr-94	4218-8-1	8278	61.5	=	
W4TRIB-10	15-Jun-94	4290-20-1	8531	59.9	=	
W4TRIB-10	24-Aug-94	4377-20-A	8676	61.1		
W4TRIB-11	11-Mar-93	3582-6-2	10440	64.8	J - 4 ,20	
W4TRIB-11	24-Mar-93	3439-3-2	16382	84.2	J - 4 ,20	
W4TRIB-11	24-May-93	3742-6-3	8987	61.1	J - 4 ,20	
W4TRIB-11	19-Jul-93	3820-6-2	10789	64.9	J - 4 ,20	
W4TRIB-11	30-Sep-93	3896-6-3	11460	68	J - 4 ,20	
W4TRIB-11	01-Dec-93	3962-6-3	8357	59.2	J - 20	
W4TRIB-11	08-Feb-94	4081-6-2	10845	67.1	=	
W4TRIB-11	19-Apr-94	4157-8-1	13094	74	=	
W4TRIB-11	15-Jun-94	4234-20-1	12782	72.5	=	
W4TRIB-11	24-Aug-94	4332-20-A	12238	71.7		
W4TRIB-12	11-Mar-93	3598-8-2	4123	42.7	J - 4 ,20	
W4TRIB-12	24-Mar-93	3440-2-2	1860	32.7	J - 4 ,20	
W4TRIB-12	24-May-93	3762-8-2	6163	51.3	J - 4 ,20	
W4TRIB-12	19-Jul-93	3840-8-2	7276	55.3	J - 4 ,20	
W4TRIB-12	30-Sep-93	3895-8-2	5642	48.8	J - 4 ,20	
W4TRIB-12	01-Dec-93	4024-8-1	4530	44.8	J - 20	
W4TRIB-12	08-Feb-94	4142-8-1	4515	44	=	
W4TRIB-12	19-Apr-94	4219-8-1	4104	43.2	=	
W4TRIB-12	15-Jun-94	4291-20-1	7010	54.7	=	
W4TRIB-12	24-Aug-94	4378-20-A	7346	56.7		
W4TRIB-2	11-Mar-93	3590-8-2	12668	71.1	J - 4 ,20	
W4TRIB-2	24-Mar-93	3428-2-2	11207	70.3	J - 4 ,20	
W4TRIB-2	24-May-93	3755-8-1	12874	72.4	J - 4 ,20	
W4TRIB-2	30-Sep-93	3939-8-2	15804	80.1	J - 4 ,20	
W4TRIB-2	30-Sep-93	3938-8-1	15086	78.3	J - 4 ,20	
W4TRIB-2	01-Dec-93	4017-8-1	10606	66.3	J - 20	
W4TRIB-2	08-Feb-94	4134-8-1	11337	67.6	=	
W4TRIB-2	19-Apr-94	4211-8-1	11858	70.5	=	
W4TRIB-2	15-Jun-94	4283-20-1	14403	78.7	=	
W4TRIB-2	24-Aug-94	4370-20-A	12665	72.7		
W4TRIB-3	11-Mar-93	3592-8-2	8454	59.2	J - 4 ,20	
W4TRIB-3	11-Mar-93	3591-8-2	8578	59	J - 4 ,20	
W4TRIB-3	24-Mar-93	3431-2-2	7760	59.3	J - 4 ,20	
W4TRIB-3	30-Sep-93	3940-8-2	8546	59.8	J - 4 ,20	
W4TRIB-3	01-Dec-93	4018-8-1	7719	57.1	J - 20	
W4TRIB-3	08-Feb-94	4135-8-1	7392	55.2	=	
W4TRIB-3	19-Apr-94	4212-8-1	8225	59.3	=	
W4TRIB-3	15-Jun-94	4284-20-1	9951	67.2	=	
W4TRIB-3	24-Aug-94	4371-20-A	9711	64.4		
W4TRIB-4	11-Mar-93	3593-8-2	6932	54	J - 4 ,20	
W4TRIB-4	24-Mar-93	3432-3-2	7998	60.1	J - 4 ,20	
W4TRIB-4	24-May-93	3757-8-1	6788	53.6	J - 4 ,20	
W4TRIB-4	30-Sep-93	3941-8-2	8308	59	J - 4 ,20	
W4TRIB-4	01-Dec-93	4019-8-1	6980	54.5	J - 20	
W4TRIB-4	08-Feb-94	4137-8-1	6428	51.7	=	
W4TRIB-4	08-Feb-94	4136-8-1	6552	52.2	=	
W4TRIB-4	19-Apr-94	4213-8-1	7564	57.1	=	
W4TRIB-4	15-Jun-94	4285-20-1	8768	60.6	=	
W4TRIB-4	15-Jun-94	4286-20-1	8785	63.4	=	
W4TRIB-4	24-Aug-94	4372-20-A	8859	61.7		
W4TRIB-4	24-Aug-94	4373-20-A	8789	61.4		
W4TRIB-5	11-Mar-93	3580-6-2	9381	61.6	J - 4 ,20	
W4TRIB-5	24-Mar-93	3433-3-2	8440	61.6	J - 4 ,20	
W4TRIB-5	24-May-93	3740-6-3	10231	64.9	J - 4 ,20	

Table A.1. (continued)

Location	Sample Date	Sample ID[a]	^{90}Sr Result	^{90}Sr Uncertainty	Validation Qualifiers[b]	Validation Comments
W4TRIB-5	08-Feb-94	4079-6-2	7460	56.3	=	
W4TRIB-5	19-Apr-94	4155-8-1	7358	56.3	=	
W4TRIB-6	11-Mar-93	3594-8-2	6690	53.1	J - 4 ,20	
W4TRIB-6	24-Mar-93	3434-2-2	7924	59.9	J - 4 ,20	
W4TRIB-6	24-May-93	3758-8-2	6392	52.2	J - 4 ,20	
W4TRIB-6	30-Sep-93	3943-8-2	7207	55.2	J - 4 ,20	
W4TRIB-6	30-Sep-93	3942-8-2	7059	54.7	J - 4 ,20	
W4TRIB-6	01-Dec-93	4020-8-2	6862	54.1	J - 20	
W4TRIB-6	08-Feb-94	4138-8-1	6510	52	=	
W4TRIB-6	19-Apr-94	4215-8-1	7588	57.2	=	
W4TRIB-6	15-Jun-94	4287-20-1	7935	57.9	=	
W4TRIB-6	24-Aug-94	4374-20-A	8355	59.5		
W4TRIB-7	11-Mar-93	3581-6-2	18016	84.2	J - 4 ,20	
W4TRIB-7	24-Mar-93	3435-3-2	13710	77.4	J - 4 ,20	
W4TRIB-7	24-May-93	3741-6-3	15397	78.9	J - 4 ,20	
W4TRIB-7	01-Dec-93	3961-6-2	19723	89.3	J - 20	
W4TRIB-7	08-Feb-94	4080-6-2	14885	78.2	=	
W4TRIB-7	19-Apr-94	4156-8-1	14339	77.3	=	
W4TRIB-8	11-Mar-93	3595-8-2	6162	51.1	J - 4 ,20	
W4TRIB-8	24-Mar-93	3436-2-2	7913	59.8	J - 4 ,20	
W4TRIB-8	24-May-93	3759-8-2	6131	51.2	J - 4 ,20	
W4TRIB-8	30-Sep-93	3944-8-2	7017	54.5	J - 4 ,20	
W4TRIB-8	01-Dec-93	4021-8-1	6444	52.5	J - 20	
W4TRIB-8	08-Feb-94	4139-8-1	6365	51.5	=	
W4TRIB-8	19-Apr-94	4216-8-1	7353	56.3	=	
W4TRIB-8	15-Jun-94	4288-20-1	7749	57.2	=	
W4TRIB-8	24-Aug-94	4375-20-A	8306	59.9		
W4TRIB-9	11-Mar-93	3596-8-2	6151	51.1	J - 4 ,20	
W4TRIB-9	24-Mar-93	3437-2-2	8045	60.3	J - 4 ,20	
W4TRIB-9	24-May-93	3760-8-1	6398	52.2	J - 4 ,20	
W4TRIB-9	19-Jul-93	3838-8-1	5996	50.6	J - 4 ,20	
W4TRIB-9	30-Sep-93	3945-8-2	7147	55	J - 4 ,20	
W4TRIB-9	01-Dec-93	4022-8-1	6364	52.2	J - 20	
W4TRIB-9	08-Feb-94	4140-8-1	6338	51.4	=	
W4TRIB-9	15-Jun-94	4289-20-1	7964	58	=	
W4TRIB-9	24-Aug-94	4376-20-A	8082	59.1		
WA4 T2A	01-Dec-93	3956-6-2	6981	54.5	J - 20	
WAG4 MS1	11-Mar-93	3577-6-2	11566	68	J - 4 ,20	
WAG4 MS1	24-Mar-93	3425-3-2	9143	66.6	J - 4 ,20	
WAG4 MS1	24-May-93	3738-6-2	11583	70.3	J - 4 ,20,140	See case narrative
WAG4 MS1	19-Jul-93	3818-6-3	10563	64.3	J - 4 ,20	
WAG4 MS1	30-Sep-93	3936-6-3	8203	58	J - 4 ,20	
WAG4 MS1	01-Dec-93	3958-6-2	10512	66	J - 20	
WAG4 MS1	01-Dec-93	3957-6-3	10649	66.4	J - 20	
WAG4 MS1	08-Feb-94	4077-6-2	10528	66.2	=	
WAG4 MS1	08-Feb-94	4076-6-2	10415	65.9	=	
WAG4 MS1	19-Apr-94	4152-8-1	10087	65.3	=	
WAG4 MS1	19-Apr-94	4153-8-1	11092	70.5	=	
WAG4 MS1	15-Jun-94	4230-20-1	9606	63.3	=	
WAG4 MS1	15-Jun-94	4230-8-1	9649	63.4	=	
WAG4 MS1	15-Jun-94	4229-20-1	9432	62.7	=	
WAG4 MS1	15-Jun-94	4229-8-1	9697	63.6	=	
WAG4 MS1	24-Aug-94	4328-20-A	12835	73.3		
WAG4 MS1	24-Aug-94	4327-8-A	12557	72.6		
WAG4 MS1	24-Aug-94	4327-20-A	12619	72.7		
WAG4 T2A	11-Mar-93	3564-6-2	8703	59.5	J - 4 ,20	
WAG4 T2A	11-Mar-93	3563-6-2	8894	60.1	J - 4 ,20	
WAG4 T2A	24-Mar-93	3459-4-2	7147	57.1	J - 4 ,20	
WAG4 T2A	24-May-93	3737-6-2	8476	59.4	J - 4 ,20	
WAG4 T2A	08-Feb-94	4075-6-2	7150	55.2	=	
WAG4 T2A	19-Apr-94	4151-8-1	7581	57.1	=	
WAG4 T2A	24-Aug-94	4326-20-A	9138	62.5		
WAG6 MS2	24-Mar-93	3484-2-2	20.0	14.8	UJ - 4 ,20	
WAG6 MS2	13-Apr-93	3625-8-3	-37	14.8	UJ - 4 ,20	
WAG6 MS2	13-Apr-93	3624-8-3	-12	15.1	UJ - 4 ,20	
WAG6 MS2	13-Jul-93	3801-8-2	-0.1	15.3	UJ - 4 ,20	
WAG6 MS3B	24-Mar-93	3485-2-2	356	18.7	J - 4 ,20	
WAG6 MS3B	13-Apr-93	3626-8-3	390	19.6	J - 4 ,20	
WAG6 MS3B	13-Jul-93	3800-8-2	238	18.1	J - 4 ,20	
WC7500	11-Mar-93	3575-6-2	95.7	15.6	J - 4 ,20	

Table A.1. (continued)

Location	Sample Date	Sample ID[a]	^{90}Sr Result	^{90}Sr Uncertainty	Validation Qualifiers[b]	Validation Comments
WC7500	24-Mar-93	3452-5-2	7.2	17.3	U - 4 ,20	
WC7500	24-May-93	3721-6-2	112	18.2	J - 4 ,20,140	See case narrative
WC7500	13-Jul-93	3802-6-2	45.4	15.9	UJ - 4 ,20	
WC7500	19-Jul-93	3822-6-3	67.8	15.8	UJ - 4 ,20	
WC7500	21-Jul-93	3867-6-2	36.2	15.4	UJ - 4 ,20	
WC7500	30-Sep-93	3898-6-2	87.9	15.4	J - 4 ,20	
WC7500	30-Sep-93	3897-6-3	79.8	15.3	J - 4 ,20	
WC7500	01-Dec-93	3965-6-2	59.6	16.4	UJ - 20	
WC7500	15-Jun-94	4295-20-1	59.0	16.3	U	
WC7500	15-Jun-94	4295-8-1	90.7	16.6	=	
WC7500	23-Jun-94	4319-8-1	82.6	16.5	=	
WC7500	23-Jun-94	4319-20-1	50.9	17.8	U	
WC7500	24-Aug-94	4337-20-A	196	19.7		
WC7500	24-Aug-94	4337-8-A	175	20.1		
WCHEAD	13-Apr-93	3518-6-2	38.7	13.9	UJ - 4 ,20	
WCHEAD	19-Jul-93	3817-6-3	15.4	14.2	UJ - 4 ,20	
WCTRIB-1	24-Mar-93	3443-3-2	-26	16.8	UJ - 4 ,20	See case narrative
WCTRIB-1	13-Apr-93	3613-6-2	39.2	13.9	UJ - 4 ,20	
WCTRIB-1	19-Jul-93	3823-6-2	33.8	14.6	UJ - 4 ,20	
WCTRIB-2	11-Mar-93	3561-6-2	-7	14.3	UJ - 4 ,20	
WCTRIB-3	11-Mar-93	3565-6-2	1612	28.7	J - 4 ,20	
WCTRIB-3	24-Mar-93	3460-3-2	1415	29.7	J - 4 ,20	
WCWEIR	09-Mar-93	3530-6-2	149	16.5	J - 4; 20	
WCWEIR	11-Mar-93	3568-6-2	127	16	J - 4 ,20	
WCWEIR	24-Mar-93	3454-5-2	85.5	18.2	J - 4 ,20	
WCWEIR	13-Apr-93	3622-6-3	123	12.8	J - 4 ,20	
WCWEIR	24-May-93	3722-6-2	152	17.1	J - 4 ,20	
WCWEIR	13-Jul-93	3795-6-3	57.0	16	UJ - 4 ,20	
WCWEIR	19-Jul-93	3809-6-3	103	15.3	J - 4 ,20	
WCWEIR	21-Jul-93	3861-8-1	82.5	15.9	J - 4 ,20	
WCWEIR	30-Sep-93	3902-6-2	89.8	15.4	J - 4 ,20	
WCWEIR	30-Sep-93	3903-6-2	91.0	15.4	J - 4 ,20	
WCWEIR	01-Dec-93	3976-6-2	123	16.6	J - 20	
WCWEIR	15-Jun-94	4244-20-1	90.1	16.6	=	
WCWEIR	15-Jun-94	4245-8-1	126	17	=	
WCWEIR	15-Jun-94	4245-20-1	78.8	16.5	=	
WCWEIR	15-Jun-94	4244-8-1	106	16.8	=	
WCWEIR	23-Jun-94	4312-8-1	98.3	16.7	=	
WCWEIR	23-Jun-94	4312-20-1	53.5	17.3	U	
WCWEIR	24-Aug-94	4355-20-A	217	20.5		
WCWEIR	24-Aug-94	4354-8-A	230	20.6		
WCWEIR	24-Aug-94	4355-8-A	214	20.5		
WCWEIR	24-Aug-94	4354-20-A	230	20.6		
WC-1	24-Mar-93	3509-2-2	153	16.6	J - 4 ,20	
WC-1	24-Mar-93	3508-2-2	142	16.4	J - 4 ,20	
WC-1	13-Apr-93	3623-6-3	211	17.7	J - 4 ,20	
WC-1	13-Jul-93	3793-6-2	158	18.6	J - 4 ,20,140	See case narrative
WC-1	24-Aug-94	4403-20-A	326	21.5		
WC-10	24-Mar-93	3453-2-2	69.1	18	U - 4 ,20	
WC-10	13-Apr-93	3629-8-2	142	17	J - 4 ,20	
WC-10	13-Jul-93	3805-8-2	56.4	16	UJ - 4 ,20	
WC-11	11-Mar-93	3585-8-2	152	16.3	J - 4 ,20	
WC-11	24-Mar-93	3455-2-2	81.1	18.1	J - 4 ,20	
WC-12	11-Mar-93	3586-8-2	148	16.2	J - 4 ,20	
WC-12	24-Mar-93	3456-2-2	94.8	18.3	J - 4 ,20	
WC-13	11-Mar-93	3587-8-2	143	16.2	J - 4 ,20	
WC-13	24-Mar-93	3457-2-2	73.3	18	J - 4 ,20	
WC-13	24-Mar-93	3458-2-3	98.4	18.3	J - 4 ,20	
WC-17	11-Mar-93	3588-8-2	79.7	15.4	J - 4 ,20	
WC-17	24-Mar-93	3461-2-2	42.4	17.7	U - 4 ,20	
WC-20	11-Mar-93	3574-6-2	87.7	15.5	J - 4 ,20	
WC-20	24-Mar-93	3451-5-2	7.4	17.3	U - 4 ,20	
WC-20	24-May-93	3750-8-1	154	17.1	J - 4 ,20	
WC-20	19-Jul-93	3813-6-2	57.0	14.8	UJ - 4 ,20	
WC-20	30-Sep-93	3899-8-1	77.5	15.3	J - 4 ,20	
WC-20	01-Dec-93	3966-8-1	8.8	15.8	UJ - 20	
WC-20	23-Jun-94	4298-20-1	33.6	17.6	U	
WC-20	24-Aug-94	4364-20-A	218	20.5		
WC-21	01-Dec-93	4026-8-1	11.7	15.8	UJ - 20	
WC-22	01-Dec-93	4027-8-1	27.2	16	UJ - 20	

Table A.1. (continued)

Location	Sample Date	Sample ID[a]	^{90}Sr Result	^{90}Sr Uncertainty	Validation Qualifiers[b]	Validation Comments
WC-23	01-Dec-93	4028-8-1	11.9	15.8	UJ - 20	
WC-24	01-Dec-93	4029-8-1	-0.1	15.7	UJ - 20	
WC-24	23-Jun-94	4299-20-1	-0.4	17.2	U	
WC-24	24-Aug-94	4365-20-A	44.0	18.8		
WC-8	24-Mar-93	3507-2-2	166	16.7	J - 4 ,20	
WC-8	13-Apr-93	3627-8-3	215	17.8	J - 4 ,20	
WC-8	13-Jul-93	3803-8-2	173	17.3	J - 4 ,20	
WC-9	24-Mar-93	3506-2-2	3.7	14.8	UJ - 4 ,20	
WC-9	13-Apr-93	3628-8-2	227	17.9	J - 4 ,20	
WC-9	13-Jul-93	3804-8-2	178	17.4	J - 4 ,20	
WEST SEEP	24-Mar-93	3463-4-2	81.6	18.1	J - 4 ,20	
WEST SEEP	13-Apr-93	3607-6-2	194	15.8	J - 4 ,20	
WEST SEEP	13-Jul-93	3785-6-2	198	17.6	J - 4 ,20	
WEST SEEP	13-Jul-93	3786-6-2	202	17.7	J - 4 ,20	
WEST SEEP	30-Sep-93	3893-6-3	170	16.3	J - 4 ,20	
WEST SEEP	01-Dec-93	3950-6-2	180	17.2	J - 20	
WEST SEEP	15-Jun-94	4223-20-1	166	17.5	=	
WEST SEEP	23-Jun-94	4316-20-1	-5	17.1	U	
WEST SEEP	24-Aug-94	4357-20-A	207	20.4		
WG6MS3	24-Aug-94	4401-20-A	248	20.3		
WOCET	09-Mar-93	3526-6-2	23.8	14.9	UJ - 4; 20	
WOCET	19-Jul-93	3812-6-3	10.9	14.1	UJ - 4 ,20	
WOD	09-Mar-93	3527-6-2	204	17.5	J - 4 ,20	
WOD	09-Mar-93	3527-6-2	226	17.7	J - 4 ,20	
WOD	11-Mar-93	3570-6-2	207	16.9	J - 4 ,20	
WOD	24-Mar-93	3448-5-3	164	40.1	J - 4 ,20	
WOD	13-Apr-93	3599-6-2	184	18.9	J - 4 ,20,140	See case narrative
WOD	24-May-93	3720-6-2	224	19.7	J - 4 ,20	
WOD	13-Jul-93	3799-6-2	141	18.4	J - 4 ,20,140	See case narrative
WOD	19-Jul-93	3810-6-3	137	18.4	J - 4 ,20,140	See case narrative
WOD	21-Jul-93	3866-6-2	172	19.1	J - 4 ,20	
WOD	30-Sep-93	3892-8-1	85.4	21.6	J - 20	
WOD	01-Dec-93	3949-6-2	195	18	J - 20	
WOD	19-Apr-94	4145-8-1	206	17.6	=	
WOD	15-Jun-94	4222-20-1	197	17.8	=	
WOD	15-Jun-94	4222-8-1	172	17.6	=	
WOD	23-Jun-94	4317-8-1	205	17.9	=	
WOD	23-Jun-94	4317-20-1	179	19.3	=	
WOD	24-Aug-94	4325-20-A	296	20.7		
WOD	24-Aug-94	4325-8-A	330	21.6		
WSTRIB-1	24-Mar-93	3466-4-2	104	15.7	J - 4 ,20	
WSTRIB-1	13-Apr-93	3603-6-2	225	16.2	J - 4 ,20	
WSTRIB-1	13-Jul-93	3783-6-2	278	18.5	J - 4 ,20	
WSTRIB-1	13-Jul-93	3784-6-2	262	18.3	J - 4 ,20	
WS-1	24-Mar-93	3467-4-2	108	15.8	J - 4 ,20	
WS-1	13-Apr-93	3604-6-2	154	17.1	J - 4 ,20	
WS-1	24-Aug-94	4404-20-A	196	19.7		
WS-2	13-Apr-93	3605-6-2	213	16	J - 4 ,20	
WS-2	13-Jul-93	3787-6-2	638	22.2	J - 4 ,20	
WS-3	13-Apr-93	3606-6-2	173	17.3	J - 4 ,20	
WS-3	13-Jul-93	3790-6-3	213	17.8	J - 4 ,20	

[a] IDs with -20- indicates results are for total ^{90}Sr. All others are for dissolved ^{90}Sr.
[b] Code of 20 indicates validator believed COC to be incomplete.
[c] Rinseate.

Table A.2. External ^{90}Sr results (pCi/L) from the WAG 2 RI Seep Task

Location	Sample Date	Sample ID	Total ^{90}Sr Result	Total ^{90}Sr Uncertainty	Total ^{90}Sr MDA	Dissolved ^{90}Sr Result	Dissolved ^{90}Sr Uncertainty	Dissolved ^{90}Sr MDA	Validation Qualifiers
FIRST CREEK	11-Mar-93	3573-11	135	6.5	3				J 140
FIRST CREEK	24-Mar-93	3450-4	56.1	4.2	3				–
FIRST CREEK	24-Mar-93	3450-6				54.4	4.2	3	–
FIRST CREEK	24-May-93	3749-11	426	12	4				–
FIRST CREEK	19-Jul-93	3815-11	482	12	4				–
FIRST CREEK	19-Jul-93	3816-11	401	10	3				–
FIRST CREEK	19-Apr-94	4177-11	110	17	25				J 140,136,11
FIRST CREEK	23-Jun-94	4296-11	540	62	32				
FIRST CREEK	24-Aug-94	4338-11	180	22	9				–
HRT-3	09-Mar-93	3532-11	1032	28	9				–
HRT-3	24-Mar-93	3471-6				691	14	3	–
HRT-3	24-Mar-93	3471-4	663	13	3				–
HRT-3	24-May-93	3733-11	1211	18	3				–
HRT-3	21-Jul-93	3852-11	1493	36	10				–
HRT-3	19-Apr-94	4175-11	880	100	50				J 140,136,11
HRT-3	23-Jun-94	4252-11	250	32	34				
HRT-3	24-Aug-94	4353-11	1100	110	12				J125
MBWEIR	09-Mar-93	3515-11	394	11	4				–
MBWEIR	09-Mar-93	3515-9				389	12	4	–
MBWEIR	09-Mar-93	3516-11	370	11	4				J 140
MBWEIR	11-Mar-93	3569-11	426	11	3				–
MBWEIR	11-Mar-93	3569-9				448	19	9	–
MBWEIR	24-Mar-93	3475-3				307	9.5	3	–
MBWEIR	24-Mar-93	3475-5	337	11	4				–
MBWEIR	24-Mar-93	3476-3	358	11	4				–
MBWEIR	14-Apr-93	3609-9				498	12	3	–
MBWEIR	24-May-93	3723-9				1019	14	2	–
MBWEIR	24-May-93	3723-11	985	17	3				–
MBWEIR	13-Jul-93	3794-11	720	14	3				–
MBWEIR	13-Jul-93	3794-9				1434	28	5	–
MBWEIR	19-Jul-93	3824-11	810	18	5				–
MBWEIR	19-Jul-93	3824-9				843	17	4	–
MBWEIR	21-Jul-93	3845-11	1044	21	4				–
MBWEIR	21-Jul-93	3844-11	1019	20	4				–
MBWEIR	21-Jul-93	3844-9				858	17	4	–
MBWEIR	19-Apr-94	4163-9				370	43	33	(11,136)
MBWEIR	19-Apr-94	4163-11	360	42	30				(11,136)
MBWEIR	15-Jun-94	4239-11	610	70	33				
MBWEIR	23-Jun-94	4311-11	460	53	28				
MBWEIR	24-Aug-94	4356-11	1000	110	12				–
MB-1	09-Mar-93	3534-11	455	12	4				J 140
MB-1	24-Mar-93	3490-3	370	11	3				–
MB-1	24-May-93	3763-11	1219	19	4				–
MB-1	21-Jul-93	3868-11	1284	25	5				–
MB-1	19-Apr-94	4184-9				450	52	37	(11,136)
MB-1	19-Apr-94	4184-11	400	47	31				J 140,136,11
MB-1	15-Jun-94	4257-11	790	89	37				
MB-1	23-Jun-94	4309-11	650	75	41				
MB-1	24-Aug-94	4340-11	1200	120	8				J238
MB-10	09-Mar-93	3547-11	118	5.6	3				–
MB-10	21-Jul-93	3880-11	189	8.8	4				–
MB-10	21-Jul-93	3881-11	271	12	6				–
MB-15	24-Mar-93	3473-3	-0.19	1.5	3				–
MB-15	19-Apr-94	4173-11	6.3	3.9	7				UJ 140,136,1
MB-15	23-Jun-94	4249-11	-4	13	8				
MB-15	24-Aug-94	4350-11	6.5	4.6	11				U144
MB-3	09-Mar-93	3538-11	364	11	4				J 140
MB-3	24-Mar-93	3494-3	317	9.6	3				–
MB-3	21-Jul-93	3872-11	1111	22	5				–
MB-5	09-Mar-93	3541-11	155	6.5	3				–

Table A.2. (continued)

Location	Sample Date	Sample ID	Total ^{90}Sr Result	Total ^{90}Sr Uncertainty	Total ^{90}Sr MDA	Dissolved ^{90}Sr Result	Dissolved ^{90}Sr Uncertainty	Dissolved ^{90}Sr MDA	Validation Qualifiers
MB-5	21-Jul-93	3874-11	261	9.9	4				-
MB-5	19-Apr-94	4221-9				190	23	22	(11,136)
MB-5	19-Apr-94	4221-11	190	23	20				J 140,136,11
MB-5	23-Jun-94	4264-11	93.0	13	19				
MB-5	24-Aug-94	4347-11	270	35	16				J238
MB-9	09-Mar-93	3546-11	130	5.9	3				-
MB-9	24-Mar-93	3502-3	81.8	5.5	4				-
MB-9	21-Jul-93	3879-11	219	8.7	4				-
MID. DRAIN.	19-Apr-94	4172-11	1500	170	60				(11,136)
MID. DRAIN.	19-Apr-94	4171-11	1100	130	47				(11,136)
MID. DRAIN.	23-Jun-94	4248-11	1400	160	54				
MID. DRAIN.	23-Jun-94	4247-11	1900	210	60				
MID. DRAIN.	24-Aug-94	4349-11	1500	150	10				-
MID. DRAIN.	24-Aug-94	4348-11	1700	180	9				-
NWTRIB	11-Mar-93	3572-11	59.0	4.5	3				J 140
NWTRIB	24-Mar-93	3449-2	20.3	3.0	3				-
NWTRIB	19-Jul-93	3814-11	8.0	2.7	4				-
NWTRIB	19-Apr-94	4178-11	77.0	11	17				J 140,136,11
NWTRIB	23-Jun-94	4297-11	15.0	3.7	7				
NWTRIB	24-Aug-94	4339-11	40.0	8.1	8				
R311[a]	15-Jun-94	4237-11	2.4	3.4	3				-
R311[a]	23-Jun-94	4322-11	-0.1	0.7	3				
R311[a]	24-Aug-94	4335-11	5.3	4.2	11				U144
RAC	09-Mar-93	3525-9				1.8	1.9	3	-
RS-3A	24-Mar-93	3464-3	4.2	2.2	3				-
RS-3A	13-Apr-93	3601-11	5.2	2.3	3				-
RS-3A	24-May-93	3744-11	5.6	2.1	3				-
RS-3A	24-May-93	3746-11	11.7	2.5	3				-
RS-3A	13-Jul-93	3789-11	4.1	2.6	4				-
RS-3B	24-Mar-93	3465-3	14.9	2.6	3				-
RS-3B	13-Apr-93	3602-11	42.5	4.1	4				-
R-227[a]	26-Mar-93	3635-10	0.37	1.9	3				U 153
R-227[a]	26-Mar-93	3636-10	0.13	1.6	3				U 153
R-227[a]	26-Mar-93	3637-10	0.46	2.0	3				U 153
R-227[a]	14-Apr-93	3640-10	0.88	1.8	3				-
R-227[a]	14-Apr-93	3639-10	2.9	2.2	4				-
R-227[a]	14-Apr-93	3641-10	0.52	1.7	3				-
R-227[a]	24-May-93	3779-11	26.7	3.6	4				-
R-227[a]	13-Jul-93	3807-11	1.5	1.9	3				-
R-227[a]	19-Apr-94	4161-11	0.19	0.85	4				U 153,11,136
SW2-2	11-Mar-93	3576-11	562	13	3				J 140
SW2-5	09-Mar-93	3520-9				183	7.6	4	J 140
SW4-2	24-Mar-93	3429-5				10332	202	14	-
SW5-4	09-Mar-93	3528-11	434279	313	3				-
SW5-4	24-Mar-93	3477-3	276073	5341	133				-
W4TRIB-3	24-Mar-93	3431-3	7168	141	13				-
W6MS3	24-Aug-94	4401-11	280	31	7				J238
WAG4 MS1	11-Mar-93	3577-11	10477	205	4				-
WAG4 MS1	24-Mar-93	3425-2	8748	172	14				-
WAG4 MS1	24-May-93	3738-11	11419	71	4				-
WAG4 T2A	11-Mar-93	3563-11	8235	163	37				-
WAG4 T2A	11-Mar-93	3564-11	8382	166	38				-
WAG4 T2A	24-Mar-93	3459-3	6601	130	12				-
WAG4 T2A	24-May-93	3737-11	7536	48	4				-
WAG6 MS3B	24-Mar-93	3485-2-3				283	8.9	3	-
WC7500	11-Mar-93	3575-11	68.9	4.4	3				J 238,140
WC7500	24-Mar-93	3452-6				64.6	4.5	3	-
WC7500	24-Mar-93	3452-4	58.0	4.6	3				J 140
WC7500	24-May-93	3721-11	138	6.5	3				-
WC7500	24-May-93	3721-9				129	6.4	3	-
WC7500	13-Jul-93	3802-11	57.8	4.7	4				-

Table A.2. (continued)

Location	Sample Date	Sample ID	Total ^{90}Sr Result	Total ^{90}Sr Uncertainty	Total ^{90}Sr MDA	Dissolved ^{90}Sr Result	Dissolved ^{90}Sr Uncertainty	Dissolved ^{90}Sr MDA	Validation Qualifiers
WC7500	19-Jul-93	3822-11	68.4	5.1	4				–
WC7500	19-Jul-93	3822-9				74.8	5.3	4	–
WC7500	21-Jul-93	3867-11	58.4	5.2	4				–
WC7500	21-Jul-93	3867-9				47.9	4.0	3	–
WC7500	19-Apr-94	4160-11	120	16	21				J 125,137,11
WC7500	15-Jun-94	4295-11	71.0	9.6	13				
WC7500	23-Jun-94	4319-11	75.0	9.8	12				
WC7500	23-Jun-94	4319-11	82.0	11	13				
WC7500	24-Aug-94	4337-11	120	16	8				J238
WCWEIR	09-Mar-93	3530-9				124	6.3	3	–
WCWEIR	09-Mar-93	3530-11	95.2	7.8	6				J 140
WCWEIR	11-Mar-93	3568-11	118	6.1	3				J 140
WCWEIR	11-Mar-93	3568-9				135	6.6	3	–
WCWEIR	24-Mar-93	3454-6				112	5.6	3	–
WCWEIR	24-Mar-93	3454-4	123	6.9	4				J 140
WCWEIR	13-Apr-93	3622-11	145	6.9	4				–
WCWEIR	13-Apr-93	3622-9				1247	20	4	–
WCWEIR	24-May-93	3722-11	157	7.9	4				–
WCWEIR	24-May-93	3722-9				304	14	7	–
WCWEIR	13-Jul-93	3795-11	29.8	2.3	2				–
WCWEIR	19-Jul-93	3809-9				72.2	5.3	4	–
WCWEIR	19-Jul-93	3809-11	71.4	5.1	4				–
WCWEIR	21-Jul-93	3861-9				52.9	4.3	3	–
WCWEIR	21-Jul-93	3861-11	58.0	5.2	4				–
WCWEIR	19-Apr-94	4169-11	110	15	21				J 238,11,136
WCWEIR	19-Apr-94	4168-11	160	21	26				(11,136)
WCWEIR	15-Jun-94	4244-11	74.0	9.7	12				
WCWEIR	15-Jun-94	4245-11	48.0	7.4	12				
WCWEIR	23-Jun-94	4312-11	69.0	9.3	12				
WCWEIR	24-Aug-94	4355-11	190	21	6				–
WCWEIR	24-Aug-94	4354-11	190	22	6				J125
WC-1	24-Mar-93	3509-4	171	7.4	3				–
WC-1	24-Mar-93	3508-3	167	7.1	3				–
WC-1	13-Apr-93	3623-11	252	9.5	4				–
WC-1	13-Jul-93	3793-11	82.7	3.6	2				–
WC-1	24-Aug-94	4403-11	250	29	10				
WC-10	24-Mar-93	3453-3	113	6.0	3				J 140
WC-10	13-Apr-93	3629-11	123	5.9	3				–
WC-10	13-Jul-93	3805-11	40.4	2.9	2				–
WC-11	11-Mar-93	3585-11	136	6.7	4				J 140
WC-11	24-Mar-93	3455-3	110	5.8	3				J 140
WC-11	19-Jul-93	3827-11	70.5	5.7	4				–
WC-12	11-Mar-93	3586-11	141	11	8				–
WC-12	24-Mar-93	3456-3	132	7.3	4				J 140
WC-12	19-Jul-93	3828-11	68.5	5.6	4				–
WC-13	11-Mar-93	3587-11	147	6.8	3				–
WC-13	24-Mar-93	3457-3	120	6.3	3				J 140
WC-13	24-Mar-93	3458-3	122	6.5	4				–
WC-13	19-Jul-93	3829-11	75.6	6.2	5				–
WC-17	11-Mar-93	3588-11	85.3	5.4	3				–
WC-17	24-Mar-93	3461-3	59.8	4.5	3				–
WC-17	19-Jul-93	3830-11	68.2	5.9	5				–
WC-20	11-Mar-93	3574-11	96.9	6.3	4				J 140
WC-20	24-Mar-93	3451-6				85.6	5.2	3	–
WC-20	24-Mar-93	3451-3	74.5	5.2	4				J 140
WC-20	24-May-93	3750-11	184	7.6	3				–
WC-20	19-Jul-93	3813-11	43.0	3.9	3				–
WC-20	19-Apr-94	4182-11	140	20	27				J 140,136,11
WC-20	23-Jun-94	4298-11	41.0	6.5	10				
WC-20	24-Aug-94	4364-11	180	21	7				–

Table A.2. (continued)

Location	Sample Date	Sample ID	Total ^{90}Sr Result	Total ^{90}Sr Uncertainty	Total ^{90}Sr MDA	Dissolved ^{90}Sr Result	Dissolved ^{90}Sr Uncertainty	Dissolved ^{90}Sr MDA	Validation Qualifiers
WC-24	19-Apr-94	4183-11	-0.42	2.1	7				UJ 140,136,1
WC-24	23-Jun-94	4299-11	5.4	2.9	5				
WC-24	24-Aug-94	4365-11	3.9	3.6	10				U144
WC-8	24-Mar-93	3507-3	180	7.8	4				-
WC-8	13-Apr-93	3627-11	179	7.0	3				-
WC-8	13-Jul-93	3803-11	178	7.5	3				-
WC-9	24-Mar-93	3506-3	3.4	2.2	4				U 153
WC-9	13-Apr-93	3628-11	182	6.9	3				-
WC-9	13-Jul-93	3804-11	225	8.4	3				-
WEST SEEP	24-Mar-93	3463-3	89.5	5.5	3				-
WEST SEEP	13-Apr-93	3607-11	207	8.4	4				-
WEST SEEP	13-Jul-93	3786-11	153	7.2	4				-
WEST SEEP	13-Jul-93	3785-11	171	8.2	4				-
WEST SEEP	19-Apr-94	4146-11	150	20	23				J 137,11,136
WEST SEEP	15-Jun-94	4223-11	180	22	19				
WEST SEEP	23-Jun-94	4316-11	12.0	2.9	6				
WEST SEEP	24-Aug-94	4357-11	150	18	7				-
WOD	09-Mar-93	3527-9				211	9.3	4	-
WOD	09-Mar-93	3527-11	200	7.9	3				J 140
WOD	11-Mar-93	3570-9				90.1	5.3	3	-
WOD	11-Mar-93	3570-11	198	7.9	3				-
WOD	24-Mar-93	3448-6				117	5.7	3	-
WOD	24-Mar-93	3448-3	149	7.4	4				-
WOD	13-Apr-93	3599-2				178	6.4	3	-
WOD	13-Apr-93	3599-11	224	7.6	3				-
WOD	24-May-93	3720-11	261	7.3	2				-
WOD	24-May-93	3720-9				302	8.1	2	-
WOD	13-Jul-93	3799-11	134	5.3	2				-
WOD	19-Jul-93	3810-11	167	7.4	4				-
WOD	19-Jul-93	3810-9				176	7.9	4	-
WOD	21-Jul-93	3866-9				168	7.2	3	-
WOD	21-Jul-93	3866-11	205	10	5				-
WOD	19-Apr-94	4145-11	180	24	31				J 238,11,136
WOD	19-Apr-94	4145-9				220	28	29	(11,136)
WOD	15-Jun-94	4222-11	200	24	20				
WOD	23-Jun-94	4317-11	240	28	22				
WOD	24-Aug-94	4325-11	170	20	7				J238
WSTRIB-1	24-Mar-93	3466-3	92.1	5.2	3				-
WSTRIB-1	13-Apr-93	3603-11	165	7.5	4				-
WSTRIB-1	13-Jul-93	3783-11	218	7.8	3				-
WSTRIB-1	13-Jul-93	3784-11	205	7.6	3				-
WS-1	24-Mar-93	3467-3	91.9	5.2	3				-
WS-1	13-Apr-93	3604-11	175	7.3	3				-
WS-1	24-Aug-94	4404-11	150	18	7				-
WS-2	13-Apr-93	3605-11	167	7.1	3				-
WS-2	13-Jul-93	3787-11	152	7.2	4				-
WS-3	13-Apr-93	3606-11	165	6.7	3				-
WS-3	13-Jul-93	3790-11	228	8.7	4				-

* Rinseate

Appendix B

INTERNAL AND EXTERNAL TRITIUM RESULTS

Table B.1. Internal ^{3}H results (nCi/L) from the WAG 2 RI Seep Task

Location	Sample Date	Sample ID	^{3}H Result	^{3}H Uncertainty	Validation Qualifier	QC Level
BTT	11-Mar-93	3584-1	28.17	0.33		
BTT	11-Mar-93	3583-1	28.02	0.34		
BTT	24-Mar-93	3441-1	25.13	0.34	-	C
BTT	24-May-93	3743-1	26.78	0.35	-	C
BTT	01-Dec-93	3964-1	51.73	0.46	-	C
BTT	08-Feb-94	4083-1	31.56	0.36	-	C
BTT	19-Apr-94	4159-1	14.97	0.24	-	C
BTT	24-Aug-94	4334-1	31.58	0.35	J 125	C
EAST SEEP	24-Mar-93	3446-1	9.75	0.22		C
EAST SEEP	24-Mar-93	3445-1	11.17	0.24	-	C
EAST SEEP	13-Apr-93	3608-1	15.90	0.27		
EAST SEEP	13-Jul-93	3791-1	33.01	0.40		
EAST SEEP	30-Sep-93	3910-1-1	39.45	0.38	-	C
EAST SEEP	01-Dec-93	3953-1-1	29.68	0.35	-	C
EAST SEEP	08-Feb-94	4073-1	15.81	0.26	-	C
EAST SEEP	19-Apr-94	4149 -1	10.95	0.21	-	C
EAST SEEP	15-Jun-94	4226-1	29.76	0.33	J 125	C
EAST SEEP	23-Jun-94	4315-1	31.45	0.34		C
EAST SEEP	24-Aug-94	4361-1	31.67	0.35	J 125	C
FIRST CREEK	11-Mar-93	3573-1	2.07	0.13		
FIRST CREEK	24-Mar-93	3450-1	0.80	0.17	-	C
FIRST CREEK	19-Jul-93	3816-1	0.68	0.12		
FIRST CREEK	19-Jul-93	3815-1	0.79	0.12		
FIRST CREEK	30-Sep-93	3900-1	0.55	0.11	-	C
FIRST CREEK	01-Dec-93	3967-1	0.79	0.11	-	C
FIRST CREEK	08-Feb-94	4087-1-1	0.21	0.10	-	C
FIRST CREEK	19-Apr-94	4177-1	0.24	0.09	-	C
FIRST CREEK	23-Jun-94	4296-1	4.61	0.15	-	C
FIRST CREEK	24-Aug-94	4338-1	0.34	0.09	J 125	C
HRT-1A	09-Mar-93	3521-1-1	1548	2.46		
HRT-1A	24-Mar-93	3483-1	702.9	1.68	-	C
HRT-1A	24-May-93	3727-1	3468	3.73	-	C
HRT-1A	21-Jul-93	3850-1	1922	2.53		
HRT-1A	01-Dec-93	4010-1	963.1	1.93	-	C
HRT-1A	01-Dec-93	4011-1	963.8	1.93	-	C
HRT-1A	08-Feb-94	4125-1	1271	2.23	-	C
HRT-1A	19-Apr-94	4201-1	1609	2.34	-	C
HRT-1A	23-Jun-94	4274-1	1434	2.23	-	C
HRT-1A	24-Aug-94	4393-1	1170	2.05	J 125	C
HRT-1B	09-Mar-93	3522-1	1138	2.15		
HRT-1B	24-Mar-93	3482-1	843.1	1.85	-	C
HRT-1B	24-May-93	3728-1	1489	2.38	-	C
HRT-1B	30-Sep-93	3948-1	1006	1.82	-	C
HRT-1B	01-Dec-93	4012-1	1115	2.07	-	C
HRT-1B	08-Feb-94	4126-1	1489	2.39	-	C
HRT-1B	19-Apr-94	4203-1	1360	2.18	-	C
HRT-1B	24-Aug-94	4394-1	2677	3.08	J 125	C
HRT-1C	09-Mar-93	3523-1	1937	2.83		
HRT-1C	24-Mar-93	3481-1	1162	2.15	-	C
HRT-1C	24-May-93	3730-1	2545	3.32	J 140,125	C
HRT-1C	24-May-93	3729-1-1	2824	3.15	-	C
HRT-1C	01-Dec-93	4008-1	1284	2.19	-	C
HRT-1C	08-Feb-94	4123-1	5972	4.78	-	C
HRT-1C	19-Apr-94	4199-1	1750	2.45	-	C
HRT-1D	09-Mar-93	3524-1-1	4393	4.28		
HRT-1D	24-Mar-93	3479-1	5956	4.92	-	C
HRT-1D	24-Mar-93	3480-1-1	5826	0.19	-	C
HRT-1D	24-May-93	3731-1	6943	5.43	-	C
HRT-1D	01-Dec-93	4007-1	4433	3.99	-	C
HRT-1D	08-Feb-94	4122-1	2103	2.84	-	C
HRT-1D	19-Apr-94	4198-1	3266	3.28	-	C
HRT-1D	23-Jun-94	4271-1	7490	4.87	-	C
HRT-1D	24-Aug-94	4390-1	1702	2.47	J 125	C

Table B.1. (continued)

Location	Sample Date	Sample ID	^3H Result	^3H Uncertainty	Validation Qualifier	QC Level
HRT-2	09-Mar-93	3550-1	1693	2.63		
HRT-2	24-Mar-93	3472-1	712.0	1.70	_	C
HRT-2	24-May-93	3732-1	2673	3.48	J 140,125	C
HRT-2	21-Jul-93	3851-1-1	1883	2.48		
HRT-2	30-Sep-93	3906-1	1572	2.31	_	C
HRT-2	01-Dec-93	3981-1-1	971.7	1.90	_	C
HRT-2	08-Feb-94	4101-1-1	1263	2.21	_	C
HRT-2	19-Apr-94	4174-1-2	1631	2.37		C
HRT-2	23-Jun-94	4251-1	1452	8.95	J 125	C
HRT-2	24-Aug-94	4352-1-2	1232	2.10	J 125	C
HRT-2A	30-Sep-93	3928-1	1527	2.24	_	C
HRT-2A	30-Sep-93	3927-1	1497	2.20		C
HRT-3	23-Jun-94	4252-1-2	0.21	0.09	J 125	C
HRT-3	09-Mar-93	3532-1	2.42	0.14		
HRT-3	24-Mar-93	3471-1	1.59	0.13	_	C
HRT-3	24-May-93	3733-1-1	0.25	0.12	_	C
HRT-3	21-Jul-93	3852-1-1	2.51	0.13		
HRT-3	30-Sep-93	3907-1-1	0.20	0.10	_	C
HRT-3	01-Dec-93	3982-1-1	-0.07	0.10	U	C
HRT-3	08-Feb-94	4102-1	0.64	0.10	_	C
HRT-3	19-Apr-94	4175-1-2	0.16	0.09		C
HRT-3	24-Aug-94	4353-1-2	0.63	0.10	J 125	C
MBTRIB-1	09-Mar-93	3557-1-1	1.75	0.13		
MBTRIB-1	21-Jul-93	3886-1	0.75	0.10		
MBTRIB-2A	09-Mar-93	3558-1	26.42	0.34		
MBTRIB-2A	09-Mar-93	3559-1	24.47	0.31		
MBTRIB-2A	24-Mar-93	3488-1	8.56	0.21	_	C
MBTRIB-2A	21-Jul-93	3847-1	134.6	0.68		
MBTRIB-2B	09-Mar-93	3560-1	-0.28	0.09		
MBTRIB-2B	24-Mar-93	3489-1	1.23	0.12	_	C
MBTRIB-2B	21-Jul-93	3887-1	0.54	0.10		
MBTRIB-3	09-Mar-93	3519-1	2.96	0.15		
MBTRIB-3	24-Mar-93	3474-1	2.60	0.14	_	C
MBTRIB-3	21-Jul-93	3862-1	1.97	0.12		
MBWEIR	09-Mar-93	3516-1	1103	2.00		
MBWEIR	09-Mar-93	3515-1	1107	2.01		
MBWEIR	11-Mar-93	3569-1	1475	2.31		
MBWEIR	24-Mar-93	3476-1	590.0	1.55	_	C
MBWEIR	24-Mar-93	3475-1	529.4	1.47	_	C
MBWEIR	13-Apr-93	3609-1	1246	2.25		
MBWEIR	24-May-93	3723-1-1	2073	2.74	J 125	C
MBWEIR	13-Jul-93	3794-1	1052	2.13		
MBWEIR	19-Jul-93	3824-1	740.6	1.75		
MBWEIR	21-Jul-93	3845-1	553.1	1.33		
MBWEIR	21-Jul-93	3844-1	554.3	1.33		
MBWEIR	30-Sep-93	3891-1	1359	2.13	_	C
MBWEIR	01-Dec-93	3971-1	904.0	1.77	_	C
MBWEIR	01-Dec-93	3972-1	899.8	1.76	_	C
MBWEIR	08-Feb-94	4091-1-1	1184	2.14	_	C
MBWEIR	19-Apr-94	4163-1-2	950.4	1.81		C
MBWEIR	15-Jun-94	4239-1-2	853.6	1.71	J 125	C
MBWEIR	23-Jun-94	4311-1-2	625.8	1.48		C
MBWEIR	24-Aug-94	4356-1	1746	2.45	J 125	C
MB-1	09-Mar-93	3534-1	1099	1.99		
MB-1	24-Mar-93	3490-1	515.6	1.46	_	C
MB-1	24-May-93	3763-1	2334	2.93	_	C
MB-1	21-Jul-93	3868-1	524.8	1.34		
MB-1	30-Sep-93	3915-1	1008	1.83	_	C
MB-1	01-Dec-93	3990-1	921.8	1.80	_	C
MB-1	01-Dec-93	3991-1	913.3	1.78	_	C
MB-1	08-Feb-94	4104-1	1180	2.13	_	C
MB-1	19-Apr-94	4184-1	954.6	1.82		C
MB-1	15-Jun-94	4257-1	850.1	1.70	J 125	C

Table B.1. (continued)

Location	Sample Date	Sample ID	^{3}H Result	^{3}H Uncertainty	Validation Qualifier	QC Level
MB-1	23-Jun-94	4309-1	633.0	1.49		C
MB-1	24-Aug-94	4340-1	1647	2.39	J 125	C
MB-10	09-Mar-93	3547-1	250.8	1.02		
MB-10	24-Mar-93	3503-1	103.5	0.67		C
MB-10	24-May-93	3776-1	572.3	1.63	J 125	C
MB-10	21-Jul-93	3880-1	213.7	0.85		
MB-10	21-Jul-93	3881-1	214.6	0.85		
MB-10	30-Sep-93	3924-1	527.8	1.32		C
MB-10	01-Dec-93	4005-1	275.7	1.03	-	C
MB-10	08-Feb-94	4120-1	192.3	0.86	-	C
MB-10	19-Apr-94	4196-1	190.6	0.81	-	C
MB-10	15-Jun-94	4270-1	239.7	0.92	-	C
MB-10	23-Jun-94	4320-1	198.6	0.84	-	C
MB-10	24-Aug-94	4388-1	374.6	1.15	J 125	C
MB-11	09-Mar-93	3548-1	213.6	0.89		
MB-11	24-Mar-93	3504-1	88.19	0.63		C
MB-11	24-May-93	3777-1	554.5	1.50	J 140,125	C
MB-11	21-Jul-93	3882-1	212.4	0.84		
MB-11	30-Sep-93	3925-1	538.5	1.35		C
MB-11	01-Dec-93	4006-1	275.7	1.03	-	C
MB-11	08-Feb-94	4121-1-1	181.3	0.84	-	C
MB-11	19-Apr-94	4197-1	174.5	0.78	-	C
MB-11	15-Jun-94	4292-1	240.7	0.92	-	C
MB-11	23-Jun-94	4321-1	210.5	0.86	-	C
MB-11	24-Aug-94	4389-1	364.4	1.14	J 125	C
MB-12	09-Mar-93	3549-1	202.7	0.86		
MB-12	24-Mar-93	3505-1	46.19	0.46		C
MB-12	24-May-93	3778-1	626.1	1.52	-	C
MB-12	21-Jul-93	3883-1	203.8	0.83		
MB-12	21-Jul-93	3884-1	208.7	0.84		
MB-12	30-Sep-93	3926-1	547.8	1.35		C
MB-12	01-Dec-93	4009-1	234.8	0.96	-	C
MB-12	08-Feb-94	4124-1	177.6	0.84	-	C
MB-12	19-Apr-94	4200-1	192.1	0.83	-	C
MB-12	23-Jun-94	4273-1	210.0	0.86	-	C
MB-12	24-Aug-94	4392-1	347.9	1.12	J 125	C
MB-15	09-Mar-93	3531-1	13.12	0.25		
MB-15	24-Mar-93	3473-1	4.15	0.17	-	C
MB-15	21-Jul-93	3846-1-1	28.39	0.36		
MB-15	30-Sep-93	3905-1	35.56	0.36		C
MB-15	01-Dec-93	3980-1-1	27.26	0.33	-	C
MB-15	08-Feb-94	4100-1	6.47	0.02	-	C
MB-15	19-Apr-94	4173-1	4.58	0.15	-	C
MB-15	23-Jun-94	4249-1	8.17	2.18	J 125	C
MB-15	24-Aug-94	4350-1	34.98	0.36	J 125	C
MB-17	21-Jul-93	3848-1	4.39	0.16		
MB-18	09-Mar-93	3555-1	12.59	0.23		
MB-18	24-Mar-93	3655-1	6.37	0.19	-	C
MB-18	21-Jul-93	3885-1	76.61	0.51		
MB-19	09-Mar-93	3556-1-1	0.92	0.11		
MB-19	24-Mar-93	3487-1-1	0.16	0.11	-	C
MB-19	24-Mar-93	3486-1	1.40	0.12	-	C
MB-1A	09-Mar-93	3535-1	1085	1.97		
MB-1A	24-Mar-93	3491-1	485.9	1.45		C
MB-1A	24-May-93	3765-1-1	1907	2.94	J 140,125	C
MB-1A	21-Jul-93	3869-1	508.4	1.29		
MB-1A	30-Sep-93	3916-1	982.8	1.83		C
MB-1A	01-Dec-93	3992-1	911.1	1.83	-	C
MB-1A	08-Feb-94	4106-1	1179	2.13	-	C
MB-1A	08-Feb-94	4105-1	1167	2.10	-	C
MB-1A	19-Apr-94	4186-1	951.8	1.76	-	C
MB-1A	19-Apr-94	4185-1	955.9	1.77	-	C
MB-1A	15-Jun-94	4259-1	845.2	1.69	-	C

Table B.1. (continued)

Location	Sample Date	Sample ID	^3H Result	^3H Uncertainty	Validation Qualifier	QC Level
MB-1A	15-Jun-94	4258-1	847.5	1.70		C
MB-1A	24-Aug-94	4341-1	1636	2.37	J 125	C
MB-1A	24-Aug-94	4342-1	1632	2.37	J 125	C
MB-1B	09-Mar-93	3536-1	1187	2.20		
MB-1B	24-Mar-93	3492-1	547.1	1.50	-	C
MB-1B	21-Jul-93	3870-1	507.1	1.29		
MB-2	09-Mar-93	3537-1	1208	2.23		
MB-2	24-Mar-93	3493-1	519.2	1.50	-	C
MB-2	21-Jul-93	3871-1-1	556.4	1.36		
MB-3	09-Mar-93	3538-1	1191	2.21		
MB-3	24-Mar-93	3494-1	489.2	1.46	-	C
MB-3	21-Jul-93	3872-1	578.0	1.39		
MB-3	01-Dec-93	3993-1	946.4	1.90	-	C
MB-4	09-Mar-93	3539-1	1094	1.98		
MB-4	24-Mar-93	3495-1-1	542.2	1.51	-	C
MB-4	21-Jul-93	3873-1	550.1	1.35		
MB-4	30-Sep-93	3917-1	1479	2.24		C
MB-4	01-Dec-93	3994-1	942.6	1.89	-	C
MB-4	08-Feb-94	4110-1	1164	2.10	-	C
MB-4	19-Apr-94	4190-1	944.9	1.80	-	C
MB-4	15-Jun-94	4263-1	711.2	1.57	-	C
MB-4	24-Aug-94	4382-1	1705	2.47	J 125	C
MB-5	09-Mar-93	3541-1	1210	2.23		
MB-5	09-Mar-93	3540-1	1092	1.98		
MB-5	24-Mar-93	3496-1-1	559.3	0.19	-	C
MB-5	24-Mar-93	3497-1	552.8	1.54	-	C
MB-5	24-May-93	3767-1	2279	3.01	-	C
MB-5	21-Jul-93	3874-1	561.6	1.37		
MB-5	30-Sep-93	3918-1	1462	2.22	-	C
MB-5	01-Dec-93	3999-1	903.8	1.86	-	C
MB-5	08-Feb-94	4111-1	1160	0.09	-	C
MB-5	19-Apr-94	4221-1	924.8	1.81	-	C
MB-5	23-Jun-94	4264-1	578.2	1.42	-	C
MB-5	24-Aug-94	4347-1	1298	2.14	J 125	C
MB-6	09-Mar-93	3542-1	1134	2.15		
MB-6	24-Mar-93	3498-1-1	511.4	0.19	-	C
MB-6	24-May-93	3771-1	1865	2.86	J 140,125	C
MB-6	24-May-93	3770-1	1853	2.87	J 125	C
MB-6	21-Jul-93	3875-1	574.0	1.37		
MB-6	30-Sep-93	3919-1	1487	2.18	-	C
MB-6	01-Dec-93	4000-1	889.3	1.83	-	C
MB-6	08-Feb-94	4115-1	1165	2.10	-	C
MB-6	19-Apr-94	4191-1	923.5	1.76	-	C
MB-6	15-Jun-94	4265-1	718.7	1.59	-	C
MB-6	24-Aug-94	4383-1	1583	2.38	J 125	C
MB-7	09-Mar-93	3543-1-1	949.4	1.86		
MB-7	24-Mar-93	3499-1	410.5	1.35	-	C
MB-7	24-May-93	3772-1	1793	2.51	-	C
MB-7	21-Jul-93	3876-1-1	439.0	1.21		
MB-7	30-Sep-93	3920-1	1131	1.94	-	C
MB-7	01-Dec-93	4001-1	759.4	1.68	-	C
MB-7	08-Feb-94	4116-1	1039	1.98	-	C
MB-7	19-Apr-94	4192-1	848.6	1.70	-	C
MB-7	15-Jun-94	4266-1	540.8	1.38	-	C
MB-7	24-Aug-94	4384-1	1309	2.16	J 125	C
MB-7B	09-Mar-93	3544-1	763.7	1.79		
MB-7B	24-Mar-93	3500-1	404.7	1.33	-	C
MB-7B	24-May-93	3773-1	629.9	1.64	J 125	C
MB-7B	21-Jul-93	3877-1	253.7	0.92		
MB-7B	30-Sep-93	3921-1	664.3	1.50	-	C
MB-7B	01-Dec-93	4002-1	431.7	1.28	-	C
MB-7B	08-Feb-94	4117-1	825.4	1.78	-	C
MB-7B	19-Apr-94	4193-1	761.9	1.60	-	C

Table B.1. (continued)

Location	Sample Date	Sample ID	^3H Result	^3H Uncertainty	Validation Qualifier	QC Level
MB-7B	15-Jun-94	4267-1	348.1	1.10		C
MB-7B	24-Aug-94	4385-1	897.2	1.80	J 125	C
MB-8	09-Mar-93	3545-1-1	594.6	1.49		
MB-8	24-Mar-93	3501-1	289.9	1.14		
MB-8	24-May-93	3774-1	933.9	1.86	-	C
MB-8	21-Jul-93	3878-1	235.6	0.89	-	C
MB-8	30-Sep-93	3922-1	596.5	1.41		
MB-8	01-Dec-93	4003-1	421.3	1.25	-	C
MB-8	08-Feb-94	4118-1	565.6	1.48	-	C
MB-8	19-Apr-94	4194-1	833.3	1.67	-	C
MB-8	15-Jun-94	4268-1	302.8	1.04	-	C
MB-8	24-Aug-94	4386-1	547.4	1.40	J 125	C
MB-9	09-Mar-93	3546-1	462.0	1.37		
MB-9	24-Mar-93	3502-1	112.1	0.70		
MB-9	24-May-93	3775-1	665.0	1.77	J 140,125	C
MB-9	21-Jul-93	3879-1	216.2	0.85		C
MB-9	30-Sep-93	3923-1	512.7	1.31		
MB-9	01-Dec-93	4004-1	314.9	1.11	-	C
MB-9	08-Feb-94	4119-1	525.6	1.40	-	C
MB-9	19-Apr-94	4195-1	309.7	1.03	-	C
MB-9	15-Jun-94	4269-1	257.5	0.95	-	C
MB-9	24-Aug-94	4387-1	406.2	1.20	J 125	C
MID. DRAIN.	09-Mar-93	3529-1	8432	5.36		
MID. DRAIN.	24-Mar-93	3478-1	5934	4.90		C
MID. DRAIN.	24-May-93	3768-1	7248	5.75	J 140,125	C
MID. DRAIN.	24-May-93	3769-1	7203	5.72	J 140,125	C
MID. DRAIN.	21-Jul-93	3865-1	8143	5.16		
MID. DRAIN.	30-Sep-93	3904-1-1	8034	5.11		C
MID. DRAIN.	01-Dec-93	3979-1-1	8666	5.63	-	C
MID. DRAIN.	08-Feb-94	4098-1	8159	5.30	-	C
MID. DRAIN.	08-Feb-94	4099-1	8163	5.31	-	C
MID. DRAIN.	19-Apr-94	4171-1	4466	3.80	-	C
MID. DRAIN.	19-Apr-94	4172-1	4442	3.78	-	C
MID. DRAIN.	23-Jun-94	4247-1	7212	4.64	J 125	C
MID. DRAIN.	23-Jun-94	4248-1	7144	0.19	J 125	C
MID. DRAIN.	24-Aug-94	4349-1	7670	4.99	J 125	C
MID. DRAIN.	24-Aug-94	4348-1	7631	4.96	J 125	C
MV-1	21-Jul-93	3860-1	1.77	0.12		
MV-1	21-Jul-93	3863-1	1.82	0.12		
MV-3	09-Mar-93	3533-1	-0.13	0.10		
NWTRIB	11-Mar-93	3572-1	0.04	0.10		
NWTRIB	24-Mar-93	3449-1	0.53	0.11		
NWTRIB	19-Jul-93	3814-1-1	0.89	0.14	-	C
R227[a]	26-Mar-93	3636-1	0.00	0.09		C
R227[a]	26-Mar-93	3635-1	0.35	0.10	-	C
R227[a]	26-Mar-93	3637-1	0.23	0.10	-	C
R227[a]	14-Apr-93	3641-1	1.71	0.12	-	
R227[a]	14-Apr-93	3642-1	0.85	0.11		
R227[a]	14-Apr-93	3640-1	0.76	0.11		
R227[a]	14-Apr-93	3643-1	0.98	0.11		
R227[a]	14-Apr-93	3639-1	0.74	0.11		
R227[a]	14-Apr-93	3644-1	11.70	0.24		
R227[a]	24-May-93	3779-1	4.04	0.17		
R227[a]	19-Apr-94	4161-1	0.08	0.09	-	C
R227[a]	26-Mar-93	3638-1	0.44	0.10	-	C
R311[a]	15-Jun-94	4237-1	-0.02	5.72	UJ 125	C
R311[a]	23-Jun-94	4322-1	2.15	0.12		C
R311[a]	24-Aug-94	4335-1	2.08	0.12	J 125	C
RAC	09-Mar-93	3525-1	0.72	0.10		C
RAC	19-Jul-93	3811-1	1.96	0.14		
RS-1	13-Apr-93	3600-1	15.27	0.27		

Table B.1. (continued)

Location	Sample Date	Sample ID	^3H Result	^3H Uncertainty	Validation Qualifier	QC Level
RS-3A	24-Mar-93	3464-1-1	23.99	0.33	–	C
RS-3A	13-Apr-93	3601-1	45.25	0.45		
RS-3A	24-May-93	3744-1	36.23	0.35	J 125	C
RS-3A	24-May-93	3746-1	39.53	0.45	J 125	C
RS-3A	13-Jul-93	3789-1	44.81	0.45		
RS-3B	24-Mar-93	3465-1	7.96	0.21	–	C
RS-3B	13-Apr-93	3602-1	17.17	0.30		
R-227[a]	13-Jul-93	3807-1	-0.19	0.11		
R-227[a]	30-Sep-93	3933-1	-0.05	0.10	U	C
R-227[a]	01-Dec-93	3969-1	0.11	0.09	–	C
R-227[a]	08-Feb-94	4089-1	-0.38	0.09	U	C
SPD	15-Jun-94	4294-1	9580	5.75	–	C
SPD	24-Aug-94	4344-1	11329	6.23	J 125	C
SW2-1	13-Apr-93	3621-1	11.38	0.24		
SW2-2	11-Mar-93	3576-1	3.91	0.15		
SW2-3	11-Mar-93	3562-1-1	6.08	0.17		
SW2-4	11-Mar-93	3567-1	1130	2.05		
SW2-4	19-Jul-93	3825-1	927.7	1.97		
SW2-5	09-Mar-93	3520-1	8511	5.77		
SW2-5	24-May-93	3724-1	10419	6.50	J 140,125	C
SW2-5	24-May-93	3725-1	10506	6.55	J 140,125	C
SW2-5	21-Jul-93	3858-1	10210	5.47		
SW2-5	30-Sep-93	3901-1	9875	5.80	–	C
SW2-5	01-Dec-93	3973-1	8961	5.38	–	C
SW2-5	08-Feb-94	4092-1	7696	5.39	–	C
SW2-5	19-Apr-94	4165-1	3799	3.61	–	C
SW2-5	15-Jun-94	4241-1	10403	2.88	J 125	C
SW2-5	23-Jun-94	4310-1	10623	5.84	–	C
SW2-5	24-Aug-94	4343-1	13661	6.83	J 125	C
SW2-6	24-May-93	3764-1	2668	3.34	J 125	C
SW2-6	08-Feb-94	4094-1	2512	3.02	–	C
SW2-6	19-Apr-94	4167-1	1758	2.46	–	C
SW2-6	24-Aug-94	4346-1	2829	3.11	J 125	C
SW2-7	24-May-93	3781-1	2789	3.56	J 125	C
SW2-7	30-Sep-93	3947-1	2338	2.74	–	C
SW2-7	01-Dec-93	3974-1	3019	3.32	–	C
SW2-7	08-Feb-94	4093-1	2376	2.97	–	C
SW2-7	19-Apr-94	4166-1	1992	2.59	–	C
SW2-7	15-Jun-94	4242-1	2498	0.14	J 125	C
SW2-7	24-Aug-94	4345-1	2425	2.91	J 125	C
SW4-1	11-Mar-93	3578-1	19.95	0.28		
SW4-1	19-Jul-93	3819-1	389.4	1.27		
SW4-2	11-Mar-93	3579-1-1	25.13	0.35		
SW4-2	24-Mar-93	3430-1	17.11	0.28	–	C
SW4-2	24-Mar-93	3429-1	18.50	0.29	–	C
SW4-2	24-May-93	3739-1	24.59	0.35	–	C
SW4-2	01-Dec-93	3959-1	14.98	0.26	–	C
SW4-2	08-Feb-94	4078-1	13.55	0.25	–	C
SW4-2	19-Apr-94	4154-1	9.09	0.20	–	C
SW4-2	24-Aug-94	4329-1	17.18	0.26	J 125	C
SW5-2	11-Mar-93	3566-1	23.72	0.31		
SW5-2	24-Mar-93	3462-1-1	16.68	0.28	–	C
SW5-4	09-Mar-93	3528-1	4472	4.12		
SW5-4	24-Mar-93	3477-1	3152	3.53	–	C
SW5-4	24-May-93	3726-1	7214	5.29	–	C
SW5-4	21-Jul-93	3864-1	6152	4.50		
SW5-4	01-Dec-93	3977-1	4588	4.13	–	C
SW5-4	01-Dec-93	3978-1	4616	4.16	–	C
SW5-4	08-Feb-94	4097-1	3975	3.78	–	C
SW5-4	19-Apr-94	4170-1	3982	3.59	–	C
SW7-1	13-Apr-93	3615-1	25.50	0.35		
SW7-1	13-Apr-93	3616-1	27.10	0.34		
SW7-2	13-Apr-93	3617-1-1	8.63	0.21		
SW7-2	13-Jul-93	3788-1-1	8.13	0.22		

Table B.1. (continued)

Location	Sample Date	Sample ID	^3H Result	^3H Uncertainty	Validation Qualifier	QC Level
SW7-3	24-Mar-93	3447-1	13.00	0.26	-	C
SW7-3	13-Apr-93	3618-1	19.85	0.30		
SW7-3	24-May-93	3747-1	23.09	0.34	J 125	C
SW7-3	13-Jul-93	3792-1	29.90	0.38		
SW7-5	24-Mar-93	3442-1	14.77	0.26	-	C
SW7-5	13-Apr-93	3620-1	25.82	0.34		
SW7-5	13-Apr-93	3619-1	26.61	0.35		
SW7-5	13-Jul-93	3796-1	126.2	0.74		
SW7-6	24-Mar-93	3444-1	3.65	0.16	-	C
SW7-6	13-Apr-93	3614-1	3.50	0.16		
SW7-8	13-Apr-93	3610-1	8.26	0.22		
SW9-1	21-Jul-93	3853-1	2.72	0.14		
SW9-2	21-Jul-93	3855-1	0.90	0.11		
W4TRIB-1	11-Mar-93	3589-1	7480	5.12		
W4TRIB-1	24-Mar-93	3426-1	5802	4.79	-	C
W4TRIB-1	24-Mar-93	3427-1	5861	4.84	-	C
W4TRIB-1	24-May-93	3754-1-1	6366	4.90	-	C
W4TRIB-1	30-Sep-93	3937-1	5911	4.33	-	C
W4TRIB-1	01-Dec-93	4016-1-1	25398	11.4	-	C
W4TRIB-1	08-Feb-94	4133-1	9199	5.98	-	C
W4TRIB-1	19-Apr-94	4210-1	3962	3.57	-	C
W4TRIB-1	15-Jun-94	4282-1	8709	5.23	-	C
W4TRIB-1	24-Aug-94	4369-1	21011	0.46	J 125	C
W4TRIB-10	11-Mar-93	3597-1	8688	5.53		
W4TRIB-10	24-Mar-93	3438-1	2477	3.13	-	C
W4TRIB-10	24-May-93	3761-1	7469	5.05	-	C
W4TRIB-10	19-Jul-93	3839-1	3511	3.26		
W4TRIB-10	30-Sep-93	3946-1	7872	5.00	-	C
W4TRIB-10	01-Dec-93	4023-1-1	18415	8.29	-	C
W4TRIB-10	08-Feb-94	4141-1	9526	6.19	-	C
W4TRIB-10	19-Apr-94	4218-1	5560	4.17	-	C
W4TRIB-10	15-Jun-94	4290-1	10716	5.90	-	C
W4TRIB-10	24-Aug-94	4377-1	26834	12.1	J 125	C
W4TRIB-11	11-Mar-93	3582-1	10799	5.81		
W4TRIB-11	24-Mar-93	3439-1	1783	2.69	-	C
W4TRIB-11	24-May-93	3742-1	16827	8.22	-	C
W4TRIB-11	19-Jul-93	3820-1	4847	4.29		
W4TRIB-11	19-Jul-93	3821-1	4623	4.32		
W4TRIB-11	30-Sep-93	3896-1-1	21684	9.55	-	C
W4TRIB-11	01-Dec-93	3962-1	18792	8.46	-	C
W4TRIB-11	08-Feb-94	4081-1	12608	6.94	-	C
W4TRIB-11	19-Apr-94	4157-1	5388	4.31	-	C
W4TRIB-11	15-Jun-94	4234-1	19878	0.85	J 125	C
W4TRIB-11	24-Aug-94	4332-1	28100	12.7	J 125	C
W4TRIB-12	11-Mar-93	3598-1	111.5	0.69		
W4TRIB-12	24-Mar-93	3440-1	31.87	0.38	-	C
W4TRIB-12	24-May-93	3762-1-1	128.3	0.70	-	C
W4TRIB-12	19-Jul-93	3840-1	250.0	0.91		
W4TRIB-12	30-Sep-93	3895-1	274.5	0.96	-	C
W4TRIB-12	01-Dec-93	4025-1	157.6	0.78	-	C
W4TRIB-12	01-Dec-93	4024-1	165.9	0.81	-	C
W4TRIB-12	08-Feb-94	4142-1	86.70	0.60	-	C
W4TRIB-12	19-Apr-94	4219-1	38.26	0.38	-	C
W4TRIB-12	15-Jun-94	4291-1	134.0	0.69	-	C
W4TRIB-12	24-Aug-94	4378-1	151.4	0.74	J 125	C
W4TRIB-2	11-Mar-93	3590-1-2	8589	5.46		
W4TRIB-2	24-Mar-93	3428-1	6202	4.82	-	C
W4TRIB-2	24-May-93	3755-1-1	6037	5.13	J 140,125	C
W4TRIB-2	19-Jul-93	3832-1-1	3173	3.59		
W4TRIB-2	30-Sep-93	3938-1	6171	4.52	-	C
W4TRIB-2	30-Sep-93	3939-1	6265	4.59	-	C
W4TRIB-2	01-Dec-93	4017-1	25820	11.6	-	C
W4TRIB-2	08-Feb-94	4134-1	9797	5.88	-	C

Table B.1. (continued)

Location	Sample Date	Sample ID	^3H Result	^3H Uncertainty	Validation Qualifier	QC Level
W4TRIB-2	19-Apr-94	4211-1	4206	3.79		C
W4TRIB-2	15-Jun-94	4283-1	9515	5.71		C
W4TRIB-2	24-Aug-94	4370-1	23869	10.7	J 125	C
W4TRIB-3	11-Mar-93	3591-1	11963	6.93		
W4TRIB-3	11-Mar-93	3592-1	10266	6.03		
W4TRIB-3	24-Mar-93	3431-1	6564	5.10		C
W4TRIB-3	24-May-93	3756-1	8159	5.88	J 125	C
W4TRIB-3	19-Jul-93	3833-1	6629	4.53		
W4TRIB-3	30-Sep-93	3940-1	7330	4.66		C
W4TRIB-3	01-Dec-93	4018-1	28508	12.8		C
W4TRIB-3	08-Feb-94	4135-1	11599	6.38		C
W4TRIB-3	19-Apr-94	4212-1	5309	4.25		C
W4TRIB-3	15-Jun-94	4284-1	11246	6.19		C
W4TRIB-3	24-Aug-94	4371-1	26552	12.0	J 125	C
W4TRIB-4	11-Mar-93	3593-1	12548	6.75		
W4TRIB-4	24-Mar-93	3432-1	7480	5.45		C
W4TRIB-4	24-May-93	3757-1	7779	5.70		C
W4TRIB-4	19-Jul-93	3834-1	9610	5.63		
W4TRIB-4	30-Sep-93	3941-1	7591	4.82		C
W4TRIB-4	01-Dec-93	4019-1	30849	13.9		C
W4TRIB-4	08-Feb-94	4136-1	13286	7.31		C
W4TRIB-4	08-Feb-94	4137-1	13260	7.29		C
W4TRIB-4	19-Apr-94	4214-1	4985	3.99		C
W4TRIB-4	19-Apr-94	4213-1	5644	4.23		C
W4TRIB-4	15-Jun-94	4286-1	12037	6.02		C
W4TRIB-4	15-Jun-94	4285-1	7347	4.78		C
W4TRIB-4	24-Aug-94	4373-1	26854	12.1	J 125	C
W4TRIB-4	24-Aug-94	4372-1	26301	11.8	J 125	C
W4TRIB-5	11-Mar-93	3580-1	7242	4.96		
W4TRIB-5	24-Mar-93	3433-1	4259	4.14		C
W4TRIB-5	24-May-93	3740-1	5482	4.82		C
W4TRIB-5	08-Feb-94	4079-1	3864	3.87		C
W4TRIB-5	19-Apr-94	4155-1	1372	2.13		C
W4TRIB-6	30-Sep-93	3943-1	8321	5.28		C
W4TRIB-6	11-Mar-93	3594-8	5145	3.87		C
W4TRIB-6	24-Mar-93	3434-1	8002	5.44		C
W4TRIB-6	24-May-93	3758-1	11686	6.85		C
W4TRIB-6	19-Jul-93	3835-1	6477	4.42		
W4TRIB-6	30-Sep-93	3942-1-1	8288	5.26		C
W4TRIB-6	01-Dec-93	4020-1	32655	14.7		C
W4TRIB-6	08-Feb-94	4138-1	14587	7.29		C
W4TRIB-6	19-Apr-94	4215-1	7152	5.01		C
W4TRIB-6	15-Jun-94	4287-1-2	13053	6.53		C
W4TRIB-6	24-Aug-94	4374-1-2	31106	14.0	J 125	C
W4TRIB-7	11-Mar-93	3581-1-1	24566	10.8		
W4TRIB-7	24-Mar-93	3435-1	17537	8.52		C
W4TRIB-7	24-May-93	3741-1	23346	10.3		C
W4TRIB-7	01-Dec-93	3961-1	33754	15.2		C
W4TRIB-7	08-Feb-94	4080-1	22346	10.1		C
W4TRIB-7	19-Apr-94	4156-1	13380	6.69		C
W4TRIB-8	11-Mar-93	3595-1	12919	6.32		
W4TRIB-8	24-Mar-93	3436-1	5931	4.90		C
W4TRIB-8	24-May-93	3759-1	11095	6.51		C
W4TRIB-8	19-Jul-93	3836-1	8883	5.20		
W4TRIB-8	19-Jul-93	3837-1	8865	5.19		
W4TRIB-8	30-Sep-93	3944-1	8432	4.94		C
W4TRIB-8	01-Dec-93	4021-1	33041	14.9		C
W4TRIB-8	08-Feb-94	4139-1	14598	7.30		C
W4TRIB-8	19-Apr-94	4216-1	7056	4.94		C
W4TRIB-8	15-Jun-94	4288-1	13138	6.57		C
W4TRIB-8	24-Aug-94	4375-1	31775	14.3	J 125	C

Table B.1. (continued)

Location	Sample Date	Sample ID	^{3}H Result	^{3}H Uncertainty	Validation Qualifier	QC Level
W4TRIB-9	11-Mar-93	3596-1-1	13100	6.89		
W4TRIB-9	24-Mar-93	3437-1-1	6616	0.19		C
W4TRIB-9	24-May-93	3760-1	10382	6.60	-	C
W4TRIB-9	19-Jul-93	3838-1-1	6560	4.48	-	
W4TRIB-9	30-Sep-93	3945-1	8638	5.06		C
W4TRIB-9	01-Dec-93	4022-1	32545	14.7	-	C
W4TRIB-9	08-Feb-94	4140-1	14534	7.27	-	C
W4TRIB-9	19-Apr-94	4217-1	7012	4.91	-	C
W4TRIB-9	15-Jun-94	4289-1	13137	6.57	-	C
W4TRIB-9	24-Aug-94	4376-1	30709	13.8	J 125	C
W6MS3	24-Aug-94	4401-1	2314	2.78	J 125	C
WAG4 MS1	11-Mar-93	3577-1	6606	4.85		
WAG4 MS1	24-Mar-93	3425-1	4403	4.28		C
WAG4 MS1	24-May-93	3738-1	3872	3.95	J 140,125	C
WAG4 MS1	19-Jul-93	3818-1	3833	3.96		
WAG4 MS1	30-Sep-93	3936-1	2912	3.13		C
WAG4 MS1	01-Dec-93	3958-1	21267	9.57	-	C
WAG4 MS1	01-Dec-93	3957-1	21338	9.60	-	C
WAG4 MS1	08-Feb-94	4076-1	7193	5.04	-	C
WAG4 MS1	08-Feb-94	4077-1	7217	5.05	-	C
WAG4 MS1	19-Apr-94	4152-1	3184	3.19	-	C
WAG4 MS1	19-Apr-94	4153-1	3211	3.21	-	C
WAG4 MS1	15-Jun-94	4229-1	4265	3.63	J 125	C
WAG4 MS1	15-Jun-94	4230-1	4249	3.83	J 125	C
WAG4 MS1	24-Aug-94	4328-1	16963	7.63	J 125	C
WAG4 MS1	24-Aug-94	4327-1	16788	7.56	J 125	C
WAG4 T2A	11-Mar-93	3563-1	5141	4.28		
WAG4 T2A	11-Mar-93	3564-1	5271	4.39		
WAG4 T2A	24-Mar-93	3459-1	3307	3.54		C
WAG4 T2A	24-May-93	3737-1-1	3600	3.41	J 125	C
WAG4 T2A	01-Dec-93	3956-1	12845	6.42		C
WAG4 T2A	08-Feb-94	4075-1-1	5316	4.52	-	C
WAG4 T2A	19-Apr-94	4151-1-2	2434	2.80	-	C
WAG4 T2A	24-Aug-94	4326-1-2	9671	5.81	J 125	C
WAG6 MS2	24-Mar-93	3484-1	1824	2.75	-	C
WAG6 MS2	13-Apr-93	3624-1	2659	3.26		
WAG6 MS2	13-Apr-93	3625-1	2812	3.45		
WAG6 MS2	13-Jul-93	3801-1	3056	3.46		
WAG6 MS3B	24-Mar-93	3485-1-1	2232	0.19	-	C
WAG6 MS3B	13-Apr-93	3626-1	2597	3.31		
WAG6 MS3B	13-Jul-93	3800-1	3025	3.43		
WC7500	11-Mar-93	3575-1	4.89	0.16		
WC7500	24-Mar-93	3452-1	3.98	0.17		C
WC7500	24-May-93	3721-1	31.16	0.36	-	C
WC7500	13-Jul-93	3802-1	5.45	0.19	-	
WC7500	19-Jul-93	3822-1	20.20	0.31		
WC7500	21-Jul-93	3867-1	5.87	0.17		
WC7500	30-Sep-93	3898-1	2.37	0.13		C
WC7500	30-Sep-93	3897-1	2.25	0.13	-	C
WC7500	01-Dec-93	3965-1	12.97	0.24	-	C
WC7500	08-Feb-94	4084-1-1	5.83	0.17	-	C
WC7500	19-Apr-94	4160-1-2	1.57	0.11	-	C
WC7500	15-Jun-94	4295-1-2	1.32	0.11	-	C
WC7500	23-Jun-94	4319-1	1.73	0.12	-	C
WC7500	24-Aug-94	4337-1-2	10.60	0.21	J 125	C
WCHEAD	13-Apr-93	3518-1	0.75	0.12		
WCHEAD	19-Jul-93	3817-1	2.39	0.15		
WCTRIB-1	24-Mar-93	3443-1	4.45	0.16	-	C
WCTRIB-1	13-Apr-93	3613-1	7.14	0.20		
WCTRIB-1	19-Jul-93	3823-1	17.00	0.29		
WCTRIB-2	11-Mar-93	3561-1	2.60	0.14		
WCTRIB-3	11-Mar-93	3565-1	130.1	0.70		
WCTRIB-3	24-Mar-93	3460-1	76.27	0.57	-	C

Table B.1. (continued)

Location	Sample Date	Sample ID	^3H Result	^3H Uncertainty	Validation Qualifier	QC Level
WCWEIR	09-Mar-93	3530-1	36.12	0.37		
WCWEIR	11-Mar-93	3568-1	36.28	0.37		
WCWEIR	24-Mar-93	3454-1-1	31.23	0.37	_	C
WCWEIR	13-Apr-93	3622-1-1	45.75	0.45		
WCWEIR	24-May-93	3722-1	32.65	0.39	_	C
WCWEIR	13-Jul-93	3795-1	12.47	0.25		
WCWEIR	19-Jul-93	3809-1	23.40	0.33		
WCWEIR	21-Jul-93	3861-1-1	7.44	0.18		
WCWEIR	30-Sep-93	3903-1	2.30	0.13	_	C
WCWEIR	30-Sep-93	3902-1	2.54	0.13	_	C
WCWEIR	01-Dec-93	3976-1	62.59	0.49	_	C
WCWEIR	08-Feb-94	4096-1	45.89	0.43	_	C
WCWEIR	08-Feb-94	4095-1	46.08	0.43	_	C
WCWEIR	19-Apr-94	4169-1	18.57	0.27	_	C
WCWEIR	19-Apr-94	4168-1	18.50	0.27	_	C
WCWEIR	15-Jun-94	4244-1	3.39	0.14	J 125	C
WCWEIR	15-Jun-94	4245-1	3.74	4.69	J 125	C
WCWEIR	23-Jun-94	4312-1	3.62	0.14	_	C
WCWEIR	24-Aug-94	4355-1	27.08	0.32	J 125	C
WCWEIR	24-Aug-94	4354-1	25.45	0.32	J 125	C
WC-1	24-Mar-93	3508-1	115.2	0.72	_	C
WC-1	24-Mar-93	3509-1	115.6	0.71	_	C
WC-1	13-Apr-93	3623-1	173.4	0.84		
WC-1	13-Jul-93	3793-1	88.09	0.62		
WC-1	24-Aug-94	4403-1	145.5	0.72	J 125	C
WC-10	24-Mar-93	3453-1	32.93	0.39	_	C
WC-10	13-Apr-93	3629-1	43.68	0.43		
WC-10	24-May-93	3753-1	43.10	0.42	_	C
WC-10	13-Jul-93	3805-1	7.71	0.21		
WC-10	30-Sep-93	3914-1	4.22	0.15	_	C
WC-10	01-Dec-93	3989-1	65.68	0.50	_	C
WC-10	08-Feb-94	4114-1	47.06	0.43	_	C
WC-10	19-Apr-94	4181-1	19.57	0.27	_	C
WC-10	15-Jun-94	4256-1	5.69	0.16	J 125	C
WC-10	24-Aug-94	4368-1	26.86	0.32	J 125	C
WC-11	11-Mar-93	3585-1	38.50	0.39		
WC-11	24-Mar-93	3455-1	31.58	0.39	_	C
WC-11	19-Jul-93	3827-1	21.40	0.32		
WC-12	11-Mar-93	3586-1	39.06	0.38		
WC-12	24-Mar-93	3456-1	35.32	0.41	_	C
WC-12	19-Jul-93	3828-1	21.21	0.32		
WC-13	11-Mar-93	3587-1	38.49	0.38		
WC-13	24-Mar-93	3458-1	33.84	0.40	_	C
WC-13	24-Mar-93	3457-1	30.65	0.38	_	C
WC-13	19-Jul-93	3829-1	20.74	0.31		
WC-17	11-Mar-93	3588-1	5.85	0.18		
WC-17	24-Mar-93	3461-1	2.48	0.14	_	C
WC-17	19-Jul-93	3830-1	19.84	0.27		
WC-20	11-Mar-93	3574-1	6.87	0.18		
WC-20	24-Mar-93	3451-1	5.18	0.18	_	C
WC-20	19-Jul-93	3813-1-1	22.57	0.32		
WC-8	24-Mar-93	3507-1-1	143.3	0.77	_	C
WC-8	13-Apr-93	3627-1	237.4	1.01		
WC-8	24-May-93	3751-1	205.8	0.98	J 125	C
WC-8	13-Jul-93	3803-1	88.34	0.61		
WC-8	30-Sep-93	3912-1	34.65	0.35	_	C
WC-8	01-Dec-93	3987-1	162.5	0.79	_	C
WC-8	08-Feb-94	4112-1	284.9	1.05	_	C
WC-8	19-Apr-94	4179-1	198.3	0.83	_	C
WC-8	15-Jun-94	4254-1	117.2	0.64	J 125	C
WC-8	24-Aug-94	4366-1	138.9	0.71	J 125	C

Table B.1. (continued)

Location	Sample Date	Sample ID	^3H Result	^3H Uncertainty	Validation Qualifier	QC Level
WC-9	24-Mar-93	3506-1	11.34	0.24	–	C
WC-9	13-Apr-93	3628-1-1	209.4	0.93		
WC-9	24-May-93	3752-1	142.8	0.81	J 140,125	C
WC-9	13-Jul-93	3804-1	87.90	0.61		
WC-9	30-Sep-93	3913-1	7.18	0.18	–	C
WC-9	01-Dec-93	3988-1	106.5	0.64	–	C
WC-9	08-Feb-94	4113-1	164.2	0.80	–	C
WC-9	19-Apr-94	4180-1	113.0	0.63	–	C
WC-9	15-Jun-94	4255-1	65.95	0.48	J 125	C
WC-9	24-Aug-94	4367-1	148.7	0.73	J 125	C
WEST SEEP	24-Mar-93	3463-1-1	5.92	0.19	–	C
WEST SEEP	13-Apr-93	3607-1	9.20	0.22		
WEST SEEP	13-Jul-93	3786-1	28.03	0.37		
WEST SEEP	13-Jul-93	3785-1	29.10	0.37		
WEST SEEP	30-Sep-93	3893-1-1	13.38	0.23	–	C
WEST SEEP	01-Dec-93	3950-1-1	16.09	0.26	–	C
WEST SEEP	08-Feb-94	4070-1	10.84	0.23	–	C
WEST SEEP	19-Apr-94	4146-1	10.11	0.21	–	C
WEST SEEP	15-Jun-94	4223-1	18.71	0.27	J 125	C
WEST SEEP	23-Jun-94	4316-1	371.8	1.14		C
WEST SEEP	24-Aug-94	4358-1	11.25	0.22	J 125	C
WEST SEEP	24-Aug-94	4357-1	10.42	0.21	J 125	C
WOCET	09-Mar-93	3526-1	1.15	0.12		
WOCET	19-Jul-93	3812-1	0.47	0.12		
WOD	09-Mar-93	3527-1-1	206.7	0.87		
WOD	11-Mar-93	3570-1	220.7	0.89		
WOD	24-Mar-93	3448-1	114.9	0.70	–	C
WOD	13-Apr-93	3599-1	211.6	0.94		
WOD	24-May-93	3720-1	283.1	1.04	–	C
WOD	13-Jul-93	3799-1	58.60	0.50		
WOD	19-Jul-93	3810-1	80.45	0.59		
WOD	21-Jul-93	3866-1	72.42	0.50		
WOD	30-Sep-93	3892-1	50.80	0.43	–	C
WOD	01-Dec-93	3949-1	205.7	0.88	–	C
WOD	08-Feb-94	4069-1	278.5	1.04	–	C
WOD	19-Apr-94	4145-1-2	165.2	0.75	–	C
WOD	15-Jun-94	4222-1-2	129.6	0.68	–	C
WOD	23-Jun-94	4317-1	108.7	0.63	–	C
WOD	24-Aug-94	4325-1-2	162.3	0.76	J 125	C
WSTRIB-1	24-Mar-93	3466-1	6.96	0.19	–	C
WSTRIB-1	13-Apr-93	3603-1	13.83	0.26		
WSTRIB-1	13-Jul-93	3783-1-1	40.02	0.42		
WSTRIB-1	13-Jul-93	3784-1	41.83	0.44		
WS-1	24-Mar-93	3467-1	6.94	0.19	–	C
WS-1	13-Apr-93	3604-1-1	15.04	0.28		
WS-1	24-Aug-94	4404-1	23.69	0.30	J 125	C
WS-2	13-Apr-93	3605-1	11.25	0.26		
WS-2	13-Jul-93	3787-1	34.71	0.40		
WS-3	13-Apr-93	3606-1	10.96	0.23		
WS-3	13-Jul-93	3790-1	10.33	0.25		

[a] Rinseate

Table B.2. External ^{3}H results (nCi/L) from the WAG 2 RI Seep Task

Location	Sample Date	Sample ID	^{3}H Result	^{3}H Uncertainty	^{3}H MDA	Validation Qualifiers
FIRST CREEK	24-Mar-93	3450-2	1.68	0.30	0.49	J 295,140
HRT-3	24-Mar-93	3471-5	1.88	0.30	0.49	J 295,140
MBWEIR	11-Mar-93	3569-10	1365	3.88	0.39	-
MBWEIR	24-Mar-93	3475-2	513.5	2.56	0.46	-
MBWEIR	14-Apr-93	3609-10	1144	3.75	0.43	-
MBWEIR	24-May-93	3723-10	2334	5.35	0.43	-
MBWEIR	19-Jul-93	3824-10	662.5	3.02	0.48	-
MBWEIR	21-Jul-93	3844-10	580.7	2.83	0.48	-
MBWEIR	30-Sep-93	3891-10	1400	140	0.47	
MBWEIR	01-Dec-93	3971-10	890.0	89.0	0.44	
RAC	09-Mar-93	3525-10	0.81	0.26	0.41	-
SW4-2	24-Mar-93	3429-2	17.77	0.53	0.49	J 140
WAG4 MS1	24-May-93	3738-10	5134	11.2	18.9	-
WAG4 MS1	30-Sep-93	3936-10	2900	290	0.47	
WAG4 MS1	01-Dec-93	3957-10	20000	2000	0.47	
WAG4 T2A	01-Dec-93	3956-10	12000	1200	0.47	
WC7500	11-Mar-93	3575-10	5.12	0.34	0.41	-
WC7500	24-Mar-93	3452-2	3.51	0.33	0.49	J 295,140
WC7500	24-May-93	3721-10	27.48	0.63	0.43	-
WC7500	21-Jul-93	3867-10	6.24	0.40	0.48	-
WC7500	30-Sep-93	3897-10	5.70	0.67	0.47	
WC7500	01-Dec-93	3965-10	12.00	1.30	0.47	
WCWEIR	09-Mar-93	3530-10	36.03	0.68	0.41	-
WCWEIR	11-Mar-93	3568-10	35.99	0.68	0.41	-
WCWEIR	24-Mar-93	3454-2	30.01	0.65	0.49	J 140
WCWEIR	13-Apr-93	3622-10	47.60	0.80	0.43	-
WCWEIR	24-May-93	3722-10	33.46	0.69	0.43	-
WCWEIR	19-Jul-93	3809-10	19.80	0.59	0.48	-
WCWEIR	21-Jul-93	3861-10	7.39	0.42	0.48	-
WCWEIR	30-Sep-93	3902-10	8.60	0.95	0.47	
WCWEIR	01-Dec-93	3976-10	58.00	0.59	0.44	
WC-10	13-Jul-93	3805-10	6.55	0.41	0.48	-
WC-20	24-Mar-93	3451-2	4.94	0.36	0.49	J 295,140
WOD	09-Mar-93	3527-10	193.1	1.47	0.39	-
WOD	11-Mar-93	3570-10	208.0	1.53	0.39	-
WOD	24-Mar-93	3448-2	100.4	1.16	0.46	-
WOD	13-Apr-93	3599-10	194.6	1.56	0.43	-
WOD	24-May-93	3720-10	276.7	1.86	0.43	-
WOD	19-Jul-93	3810-10	69.13	1.01	0.48	-
WOD	21-Jul-93	3866-10	78.12	1.07	0.48	-
WOD	30-Sep-93	3892-10	52.00	5.20	0.47	
WOD	01-Dec-93	3949-10	190.0	19.0	0.47	
WS-3	13-Jul-93	3790-10	6.57	0.41	0.48	-

Appendix C

CESIUM-137 AND COBALT-60 RESULTS

Table C.1. ^{137}Cs and ^{60}Co results (pCi/L) from the WAG 2 RI Seep Task

Location	Sample Date	Sample ID	^{137}Cs Dissolved Result	^{137}Cs Dissolved Uncer.	^{137}Cs Particulate Result	^{137}Cs Particulate Uncer.	^{60}Co Dissolved Result	^{60}Co Dissolved Uncer.	^{60}Co Particulate Result	^{60}Co Particulate Uncer.
BTT	11-Mar-93	3584	257	16.7	26.9	15.4	< 3.7		<30.7	
BTT	11-Mar-93	3583	21.6	14.1	<31.0		< 2.9		<30.4	
BTT	24-Mar-93	3441	797	34.2	233	21.3	< 4.5		<26.9	
BTT	24-May-93	3743	89.7	22.4	<23.3		< 52.1		<25.7	
BTT	01-Dec-93	3964	92.6	25.2	<19.0		< 47.3		<27.9	
BTT	08-Feb-94	4083	.	.	4.1	2.0	.	.	< 6.3	
BTT	19-Apr-94	4159	390	16.5	.	.	< 15.1		.	.
BTT	24-Aug-94	4334	75.8	7.7	< 2.8		< 15.9		< 3.1	
EAST SEEP	24-Mar-93	3446	< 2.7		<23.3		63.8	10.5	<15.7	
EAST SEEP	24-Mar-93	3445	< 2.8		<15.2		63.2	10.1	<20.3	
EAST SEEP	14-Apr-93	3608	< 2.3		<20.8		101	10.5	<33.3	
EAST SEEP	13-Jul-93	3791	<34.1		<22.1		< 52.7		<32.4	
EAST SEEP	30-Sep-93	3910	<38.7		<19.7		180	36.0	<30.2	
EAST SEEP	01-Dec-93	3953	<46.0		<20.0		178	34.2	<29.9	
EAST SEEP	08-Feb-94	4073	.	.	< 2.7		.	.	< 2.9	
EAST SEEP	19-Apr-94	4149	<20.0		.	.	114	4.2	.	.
EAST SEEP	15-Jun-94	4226	<19.6		< 2.8		279	11.1	7.4	0.6
EAST SEEP	23-Jun-94	4315	< 6.1		.	.	315	4.3	.	.
EAST SEEP	24-Aug-94	4361	<15.9		< 2.4		161	8.3	< 2.8	
FIRST CREEK	11-Mar-93	3573	< 2.7		<21.7		< 3.6		<29.2	
FIRST CREEK	24-Mar-93	3450	< 0.8		< 9.4		< 1.0		<13.9	
FIRST CREEK	19-Jul-93	3816	<34.2		<20.2		< 50.8		<27.5	
FIRST CREEK	19-Jul-93	3815	<39.0		<19.1		< 51.0		<32.1	
FIRST CREEK	30-Sep-93	3900	<34.1		<18.9		< 51.3		<28.1	
FIRST CREEK	01-Dec-93	3967	<35.7		<19.2		< 51.5		<27.2	
FIRST CREEK	08-Feb-94	4087	.	.	< 5.1		.	.	< 6.7	
FIRST CREEK	19-Apr-94	4177	<17.5		.	.	< 15.9		.	.
FIRST CREEK	23-Jun-94	4296	< 4.6		.	.	< 34.0		.	.
FIRST CREEK	24-Aug-94	4338	< 6.0		< 5.9		< 5.0		< 6.0	
HRT-1A	09-Mar-93	3521	< 2.0		<24.0		< 2.3		<26.4	
HRT-1A	24-Mar-93	3483	< 2.4		<21.3		< 2.7		<24.9	
HRT-1A	21-Jul-93	3850	<34.9		<20.3		< 46.4		<29.6	
HRT-1B	09-Mar-93	3522	< 3.3		<28.8		< 3.3		<24.0	
HRT-1B	24-Mar-93	3482	< 1.1		<22.7		< 1.1		<25.1	
HRT-1C	09-Mar-93	3523	< 3.2		< 8.4		< 3.0		<22.2	
HRT-1C	24-Mar-93	3481	< 2.7		<20.9		< 3.1		<28.2	
HRT-1D	09-Mar-93	3524	< 3.2		< 8.7		< 3.9		<21.7	
HRT-1D	24-Mar-93	3480	< 1.9		<24.6		< 2.3		<25.1	
HRT-1D	24-Mar-93	3479	< 2.8		<21.5		< 3.0		<30.7	
HRT-3	09-Mar-93	3532	< 2.4		<10.2		< 3.3		<24.5	
HRT-3	24-Mar-93	3471	< 2.7		<14.1		< 3.0		<11.2	
HRT-3	21-Jul-93	3852	<36.6		<20.0		< 54.6		<26.1	
MBTRIB-3	09-Mar-93	3519	< 2.7		<21.4		< 3.7		<31.4	
MBTRIB-3	24-Mar-93	3474	< 3.0		<23.4		< 2.7		<27.1	
MBTRIB-3	21-Jul-93	3862	<34.6		<17.4		< 53.2		<28.4	
MBWEIR	09-Mar-93	3516	< 3.2		<20.8		< 2.2		<29.3	
MBWEIR	09-Mar-93	3515	< 2.6		<10.8		< 2.5		<14.0	
MBWEIR	11-Mar-93	3569	< 1.0		<11.6		< 1.1		<14.3	
MBWEIR	24-Mar-93	3475	< 1.0		< 9.0		< 1.0		<11.1	
MBWEIR	24-Mar-93	3476	< 1.0		<21.6		< 1.0		<28.0	
MBWEIR	14-Apr-93	3609	< 1.1		14.8	6.0	< 1.1		<14.6	
MBWEIR	24-May-93	3723	<36.9		<19.2		< 48.8		<27.5	
MBWEIR	13-Jul-93	3794	<11.6		< 9.5		< 18.2		<14.4	
MBWEIR	19-Jul-93	3824	<34.5		< 9.6		< 49.4		<14.3	
MBWEIR	21-Jul-93	3845	<36.2		<19.8		< 50.8		<27.4	
MBWEIR	21-Jul-93	3844	<36.9		< 9.6		< 49.5		<16.2	
MBWEIR	30-Sep-93	3891	<35.8		<18.9		< 44.0		<25.5	
MBWEIR	01-Dec-93	3972	<36.0		<18.2		< 50.9		<30.1	
MBWEIR	01-Dec-93	3971	<33.0		< 9.5		< 53.0		<15.3	
MBWEIR	08-Feb-94	4091	.	.	< 1.8		.	.	< 2.2	
MBWEIR	19-Apr-94	4163	<15.6		.	.	< 19.3		.	.
MBWEIR	15-Jun-94	4239	< 5.0		< 5.5		< 5.0		< 5.7	
MBWEIR	23-Jun-94	4311	<14.4		.	.	< 15.8		.	.
MBWEIR	24-Aug-94	4356	< 4.5		< 5.9		< 5.2		< 5.8	

Table C.1. (continued)

Location	Sample Date	Sample ID	^{137}Cs Dissolved Result	Uncer.	^{137}Cs Particulate Result	Uncer.	^{60}Co Dissolved Result	Uncer.	^{60}Co Particulate Result	Uncer.
MB-15	09-Mar-93	3531	< 2.2	.	< 8.7	.	< 2.8	.	<23.8	.
MB-15	24-Mar-93	3473	< 2.8		<19.6	.	< 3.1		<20.5	.
MB-15	21-Jul-93	3846	<37.8	.	<16.3	.	< 47.1	.	<25.7	.
MID. DRAIN.	09-Mar-93	3529	< 1.7	.	<21.9	.	< 1.7	.	<27.9	.
MID. DRAIN.	24-Mar-93	3478	< 2.3		<21.1	.	< 4.9		<27.3	.
MID. DRAIN.	21-Jul-93	3865	<35.6	.	<20.9	.	< 49.4	.	<30.9	.
MV-1	21-Jul-93	3863	<33.9	.	<18.3	.	< 47.5	.	<25.2	.
MV-1	21-Jul-93	3860	<37.8	.	<30.1	.	< 45.7	.	<27.7	.
MV-3	09-Mar-93	3533	< 2.1	.	< 8.7	.	< 2.6	.	<24.3	.
NWTRIB	11-Mar-93	3572	< 2.3	.	<21.0	.	< 2.1	.	<25.8	.
NWTRIB	24-Mar-93	3449	< 2.8		<19.9	.	< 2.8		<29.0	.
NWTRIB	19-Jul-93	3814	<35.9	.	<22.7	.	< 44.6	.	<28.7	.
R311[a]	15-Jun-94	4238	<13.7	.	< 6.0	.	< 15.4	.	< 6.2	.
R311[a]	15-Jun-94	4237	<14.9	.	< 1.1	.	< 14.6	.	< 1.2	.
R311[a]	15-Jun-94	4308	<14.2	.	< 5.7	.	< 15.8	.	< 5.9	.
R311[a]	23-Jun-94	4323	<13.0	.	.	.	< 14.8	.	.	.
R311[a]	23-Jun-94	4324	< 4.0	.	.	.	< 4.5	.	.	.
R311[a]	23-Jun-94	4322	< 4.6	.	.	.	< 5.1	.	.	.
R311[a]	24-Aug-94	4335	<14.8	.	< 2.4	.	< 13.0	.	< 2.7	.
R311[a]	24-Aug-94	4336	<21.4	.	< 5.1	.	< 23.1	.	< 5.4	.
RAC	09-Mar-93	3525	< 2.6	.	<10.1	.	< 3.3	.	<13.9	.
RAC	19-Jul-93	3811	<34.2	.	<17.0	.	< 45.7	.	<28.1	.
RS-1	13-Apr-93	3600	9.5	2.6	<26.4	.	< 1.1	.	<28.4	.
RS-3A	24-Mar-93	3464	< 5.6		<12.1	.	447	29.5	<14.2	.
RS-3A	13-Apr-93	3601	< 5.4	.	<16.2	.	908	39.3	<18.1	.
RS-3A	24-May-93	3746	<53.7	.	<20.4	.	874	68.8	52.6	19.7
RS-3A	24-May-93	3744	<49.4	.	<20.1	.	838	71.3	68.5	20.4
RS-3A	13-Jul-93	3789	<46.9	.	<18.8	.	866	68.4	60.0	17.6
RS-3A	30-Sep-93	3894	<48.4	.	<19.4	.	907	69.1	23.2	22.6
RS-3A	01-Dec-93	3951	<46.5	.	<23.7	.	740	61.8	385	33.9
RS-3A	08-Feb-94	4071	.	.	<38.8	.	.	.	161	13.5
RS-3A	19-Apr-94	4147	27.4	.	.	.	569	16.1	.	.
RS-3A	15-Jun-94	4224	< 9.0	.	< 7.5	.	617	7.4	76.7	3.4
RS-3A	24-Aug-94	4359	<25.4	.	< 8.1	.	646	16.8	61.0	3.8
RS-3B	24-Mar-93	3465	3.3	3.0	<10.0	.	38.5	8.2	<16.2	.
RS-3B	13-Apr-93	3602	< 3.9	.	<15.3	.	124	13.8	<15.4	.
RS-3B	19-Apr-94	4148	<10.9	.	.	.	54.5	3.8	.	.
R-227[a]	26-Mar-93	3634	< 2.7	.	<43.3	.	< 3.2	.	<50.5	.
R-227[a]	26-Mar-93	3636	< 3.1	.	<42.0	.	< 2.7	.	<51.1	.
R-227[a]	26-Mar-93	3635	< 3.0	.	<37.6	.	< 3.4	.	<52.2	.
R-227[a]	26-Mar-93	3637	< 2.7	.	<38.3	.	< 2.6	.	<53.7	.
R-227[a]	26-Mar-93	3633	< 2.7	.	< 8.4	.	< 2.4	.	<11.2	.
R-227[a]	14-Apr-93	3640	.	.	<30.4	.	.	.	<27.6	.
R-227[a]	14-Apr-93	3641	< 2.9	.	<30.7	.	< 3.0	.	<27.8	.
R-227[a]	14-Apr-93	3639	.	.	<26.5	.	.	.	<28.0	.
R-227[a]	14-Apr-93	3643	.	.	<28.9	.	.	.	<30.1	.
R-227[a]	14-Apr-93	3644	< 2.2	.	<27.1	.	< 2.0	.	<29.5	.
R-227[a]	14-Apr-93	3642	.	.	<29.2	.	.	.	<31.5	.
R-227[a]	13-Jul-93	3808	<14.2	.	<19.4	.	< 16.5	.	<30.1	.
R-227[a]	13-Jul-93	3807	.	.	<18.8	.	.	.	<28.4	.
R-227[a]	19-Jul-93	3843	<37.2	.	<19.0	.	< 51.1	.	<27.8	.
R-227[a]	19-Jul-93	3842	<35.5	.	<19.0	.	< 45.3	.	<28.1	.
R-227[a]	30-Sep-93	3934	<36.5	.	<19.1	.	< 52.3	.	<28.7	.
R-227[a]	30-Sep-93	3933	<37.1	.	<19.1	.	< 47.3	.	<32.1	.
R-227[a]	01-Dec-93	3969	<35.0	.	< 2.4		< 45.6	.	< 7.0	.
R-227[a]	01-Dec-93	3970	<35.7	.	<19.5		< 44.4	.	28.9	.
R-227[a]	08-Feb-94	4144	.	.	< 4.6	.	.	.	< 6.3	.
R-227[a]	08-Feb-94	4090	.	.	< 2.7	.	.	.	< 3.1	.
R-227[a]	08-Feb-94	4089	.	.	< 5.6	.	.	.	< 6.2	.
R-227[a]	19-Apr-94	4161	< 6.7	.	.	.	< 7.3	.	.	.
R-227[a]	19-Apr-94	4162	<14.3	.	.	.	< 16.0	.	.	.
R-311[a]	21-Jul-93	3890	<33.1	.	<18.3	.	< 42.6	.	<26.2	.
R-311[a]	21-Jul-93	3889	<36.2	.	<17.4	.	< 54.2	.	<27.0	.
SW2-1	13-Apr-93	3621	<39.8	.	<23.4	.	< 47.3	.	<31.4	.
SW2-2	11-Mar-93	3576	< 3.4	.	<19.5	.	< 2.8	.	<32.9	.

Table C.1. (continued)

Location	Sample Date	Sample ID	^{137}Cs Dissolved Result	^{137}Cs Dissolved Uncer.	^{137}Cs Particulate Result	^{137}Cs Particulate Uncer.	^{60}Co Dissolved Result	^{60}Co Dissolved Uncer.	^{60}Co Particulate Result	^{60}Co Particulate Uncer.
SW2-3	11-Mar-93	3562	< 2.6	.	<31.4	.	< 2.9	.	<35.6	.
SW2-4	11-Mar-93	3567	< 3.0	.	<20.7	.	< 2.9	.	<29.1	.
SW2-4	19-Jul-93	3825	<38.1	.	<19.3	.	< 49.0	.	<29.3	.
SW2-5	09-Mar-93	3520	< 3.1	.	<24.1	.	< 3.8	.	<29.9	.
SW2-5	24-May-93	3725	<39.1	.	<18.8	.	< 48.4	.	<29.2	.
SW2-5	24-May-93	3724	<39.4	.	<17.1	.	< 46.9	.	<28.9	.
SW2-5	21-Jul-93	3858	<41.1	.	<19.3	.	< 53.0	.	<29.9	.
SW2-7	24-May-93	3779	<38.8	.	.	.	< 44.9	.	.	.
SW2-8	24-May-93	3780	<38.5	.	<18.3	.	< 46.7	.	<28.4	.
SW4-1	11-Mar-93	3578	< 2.1	.	<20.8	.	< 3.0	.	<29.3	.
SW4-1	19-Jul-93	3819	<34.5	.	<19.1	.	< 51.9	.	<28.3	.
SW4-2	11-Mar-93	3579	245	14.8	<24.1	.	< 4.2	.	<27.3	.
SW4-2	24-Mar-93	3429	557	24.2	12.0	5.9	< 4.6		<12.9	.
SW4-2	24-Mar-93	3430	599	27.9	<23.9	.	< 5.8		<25.9	.
SW4-2	24-May-93	3739	89.4	24.3	<19.8	.	< 51.9	.	<29.3	.
SW4-2	01-Dec-93	3959	21.1	2.3	<27.9	.	< 50.2	.	<42.8	.
SW4-2	08-Feb-94	4078	.	.	77.5	4.1	.	.	< 6.8	.
SW4-2	19-Apr-94	4154	336	9.5	.	.	9.1	1.7	.	.
SW4-2	24-Aug-94	4329	209	11.5	< 6.7	.	< 16.2	.	< 6.0	.
SW5-2	11-Mar-93	3566	< 2.3	.	<22.5	.	< 2.9	.	<34.6	.
SW5-2	24-Mar-93	3462	< 2.6		<21.3	.	< 4.4		<29.5	.
SW5-4	09-Mar-93	3528	< 1.5	.	<23.1	.	< 1.1	.	<27.4	.
SW5-4	24-Mar-93	3477	< 4.2		<19.8	.	< 3.3		<23.3	.
SW5-4	13-Apr-93	3638	< 1.0	.	< 9.3	.	< 0.9	.	<20.3	.
SW5-4	24-May-93	3726	<49.4	.	<24.4	.	< 54.1	.	<40.9	.
SW5-4	21-Jul-93	3864	<48.2	.	<18.8	.	< 52.6	.	<29.9	.
SW7-1	13-Apr-93	3616	< 1.1	.	<29.0	.	< 1.1	.	<27.5	.
SW7-1	13-Apr-93	3615	< 3.0	.	<22.4	.	< 3.5	.	<28.6	.
SW7-2	13-Apr-93	3617	20.0	9.4	<23.2	.	839	35.4	64.4	19.5
SW7-2	13-Jul-93	3788	<53.4	.	<19.6	.	1323	84.9	118	22.5
SW7-3	24-Mar-93	3447	< 1.2		<20.5	.	133	5.2	<29.8	.
SW7-3	13-Apr-93	3618	< 4.2	.	< 9.8	.	397	24.9	<17.6	.
SW7-3	24-May-93	3747	<39.7	.	<17.8	.	507	55.2	<26.8	.
SW7-3	13-Jul-93	3792	<26.4	.	<20.8	.	620	32.4	<34.1	.
SW7-3	30-Sep-93	3911	<42.2	.	<17.2	.	456	52.3	<29.7	.
SW7-3	01-Dec-93	3954	<41.5	.	<21.2	.	313	45.7	<28.4	.
SW7-3	08-Feb-94	4074	.	.	< 6.1	.	.	.	5.0	1.5
SW7-3	19-Apr-94	4150	<10.9	.	.	.	376	6.9	.	.
SW7-3	15-Jun-94	4253	<44.9	.	< 7.7	.	3268	42.6	196	5.3
SW7-3	15-Jun-94	4227	<22.1	.	< 5.7	.	724	17.7	11.6	1.7
SW7-3	24-Aug-94	4362	<22.7	.	< 5.3	.	523	14.7	12.4	1.4
SW7-4	13-Jul-93	3797	5.8	4.6	<22.7	.	106	15.3	73.3	18.5
SW7-5	24-Mar-93	3442	< 4.8		<22.3	.	693	31.1	74.5	17.3
SW7-5	13-Apr-93	3620	<50.3	.	<16.1	.	1028	76.0	23.4	9.0
SW7-5	13-Apr-93	3619	< 8.1	.	<12.8	.	12.1	52.5	36.7	9.6
SW7-5	24-May-93	3748	<39.7	.	<17.4	.	155	36.0	<24.1	.
SW7-5	13-Jul-93	3796	<59.0	.	<21.8	.	7880	106	269	29.7
SW7-5	01-Dec-93	3986	<63.8	.	< 7.5		2536	110	31.5	6.6
SW7-5	08-Feb-94	4103	.	.	< 5.6	.	.	.	31.3	2.3
SW7-5	19-Apr-94	4176	<14.0	.	.	.	970	12.3	.	.
SW7-5	23-Jun-94	4314	<43.0	.	.	.	3720	39.2	.	.
SW7-5	24-Aug-94	4363	<16.0	.	< 2.8	.	3038	23.7	51.1	1.4
SW7-6	24-Mar-93	3444	< 2.7		266	22.8	< 3.3		<27.8	.
SW7-6	13-Apr-93	3614	< 2.9	.	337	26.3	< 3.8	.	<28.8	.
SW7-8	13-Apr-93	3610	< 2.8	.	< 9.3	.	< 4.8	.	<15.0	.
SW9-1	21-Jul-93	3853	<36.2	.	<17.8	.	< 49.5	.	<29.9	.
SW9-2	21-Jul-93	3855	<33.5	.	<18.7	.	< 47.7	.	<27.5	.
W4TRIB-1	30-Sep-93	3937	.	.	<18.9	.	.	.	<31.9	.
W4TRIB-11	11-Mar-93	3582	23.5	9.5	<21.4	.	< 3.2	.	<30.1	.
W4TRIB-11	24-Mar-93	3439	96.6	3.9	12.7	8.4	< 1.0		<27.8	.
W4TRIB-11	24-May-93	3742	<36.9	.	<22.0	.	< 45.4	.	<25.3	.
W4TRIB-11	19-Jul-93	3820	<40.8	.	<18.1	.	< 46.1	.	<31.0	.
W4TRIB-11	19-Jul-93	3821	<41.9	.	<18.6	.	< 44.0	.	<27.4	.
W4TRIB-11	30-Sep-93	3896	<35.2	.	<19.9	.	< 50.3	.	<29.7	.
W4TRIB-11	01-Dec-93	3962	<39.7	.	<12.7	.	< 45.6	.	<20.0	.
W4TRIB-11	08-Feb-94	4081	.	.	1.6	0.7	.	.	< 3.0	.

Table C.1. (continued)

Location	Sample Date	Sample ID	^{137}Cs Dissolved Result	^{137}Cs Dissolved Uncer.	^{137}Cs Particulate Result	^{137}Cs Particulate Uncer.	^{60}Co Dissolved Result	^{60}Co Dissolved Uncer.	^{60}Co Particulate Result	^{60}Co Particulate Uncer.
W4TRIB-11	19-Apr-94	4157	16.0	4.5	.	.	< 18.2	.	.	.
W4TRIB-11	15-Jun-94	4234	<17.8	.	< 6.2	.	< 16.2	.	< 6.6	.
W4TRIB-11	24-Aug-94	4332	< 9.6	.	< 5.2	.	< 8.1	.	< 6.0	.
W4TRIB-4	24-Mar-93	3432	14.5	7.5	<19.9	.	< 3.1		<26.6	.
W4TRIB-4	24-Mar-93	3432			<27.7	.			<23.3	.
W4TRIB-5	11-Mar-93	3580	< 1.0	.	<19.7	.	< 1.0	.	<30.1	.
W4TRIB-5	24-Mar-93	3433	< 3.0		<23.3	.	< 2.9		<27.7	.
W4TRIB-5	24-May-93	3740	<34.2	.	<20.9	.	< 47.8	.	<26.3	.
W4TRIB-5	08-Feb-94	4079	.	.	39.5	1.0	.	.	< 1.6	.
W4TRIB-5	19-Apr-94	4155	<18.7	.	.	.	< 15.1	.	.	.
W4TRIB-7	11-Mar-93	3581	< 3.2	.	<24.7	.	< 2.5	.	<31.8	.
W4TRIB-7	24-Mar-93	3435	< 0.9		<23.0	.	< 1.0		<27.6	.
W4TRIB-7	24-May-93	3741	<35.9	.	<20.9	.	< 45.7	.	<30.0	.
W4TRIB-7	01-Dec-93	3961	<42.3	.	<24.1	.	< 44.4	.	<36.3	.
W4TRIB-7	08-Feb-94	4080	.	.	< 7.4	.	.	.	< 5.2	.
W4TRIB-7	19-Apr-94	4156	< 7.5	.	.	.	< 8.8	.	.	.
WAG4 MS1	11-Mar-93	3577	< 1.1	.	<24.0	.	< 1.0	.	<29.1	.
WAG4 MS1	24-Mar-93	3425	< 4.6		<10.2	.	< 2.4		<13.6	.
WAG4 MS1	24-May-93	3738	<38.1	.	<19.2	.	< 46.6	.	<27.7	.
WAG4 MS1	19-Jul-93	3818	<35.5	.	<17.8	.	< 54.0	.	<31.8	.
WAG4 MS1	30-Sep-93	3936	<34.8	.	.	.	< 47.0	.	.	.
WAG4 MS1	01-Dec-93	3958	<33.3	.	<21.9	.	< 48.9	.	<30.0	.
WAG4 MS1	01-Dec-93	3957	<36.4	.	<19.3	.	< 39.3	.	<26.9	.
WAG4 MS1	08-Feb-94	4077	.	.	< 6.0	.	.	.	< 6.7	.
WAG4 MS1	08-Feb-94	4076	.	.	< 2.7	.	.	.	< 2.9	.
WAG4 MS1	19-Apr-94	4153	< 8.1	.	.	.	< 8.5	.	.	.
WAG4 MS1	19-Apr-94	4152	<19.3	.	.	.	< 18.8	.	.	.
WAG4 MS1	15-Jun-94	4229	< 5.3	.	< 5.4	.	< 5.1	.	< 6.0	.
WAG4 MS1	15-Jun-94	4230	<18.0	.	< 5.7	.	< 15.8	.	< 7.0	.
WAG4 MS1	24-Aug-94	4327	<17.5	.	< 2.7	.	< 14.5	.	< 2.9	.
WAG4 MS1	24-Aug-94	4328	<15.5	.	< 5.7	.	< 14.7	.	< 6.0	.
WAG4 T2A	11-Mar-93	3563	< 3.4	.	<33.3	.	< 2.5	.	<36.8	.
WAG4 T2A	11-Mar-93	3564	14.0	4.3	147	18.5	< 2.3	.	<27.1	.
WAG4 T2A	24-Mar-93	3459	< 3.9		399	26.6	< 3.6		<25.8	.
WAG4 T2A	24-May-93	3737	<43.9	.	.	.	< 49.2	.	.	.
WAG4 T2A	01-Dec-93	3956	<37.0	.	204	19.3	< 50.3	.	<29.6	.
WAG4 T2A	08-Feb-94	4075	.	.	138	5.5	.	.	< 7.4	.
WAG4 T2A	19-Apr-94	4151	<15.0	.	.	.	< 18.1	.	.	.
WAG4 T2A	24-Aug-94	4326	33.7	5.7	240	7.8	< 15.0	.	< 6.9	.
WAG6 MS3B	24-Mar-93	3485			<21.6	.			<24.3	.
WC7500	24-Mar-93	3452	19.4	8.0			< 2.7			
WC7500	11-Mar-93	3575	38.2	9.4	12.7	5.6	< 3.1	.	<14.5	.
WC7500	24-May-93	3721	154	25.2	7.2	5.8	< 50.0	.	<15.6	.
WC7500	13-Jul-93	3802	60.7	8.7	<23.7	.	< 15.5	.	<28.9	.
WC7500	19-Jul-93	3822	148	26.2	14.7	5.0	< 45.4	.	<15.3	.
WC7500	21-Jul-93	3867	126	25.2	<13.0	.	< 51.8	.	<15.6	.
WC7500	30-Sep-93	3897	104	24.0	30.0	10.1	< 50.5	.	<27.2	.
WC7500	30-Sep-93	3898	96.5	22.5	<22.2	.	< 48.4	.	<26.9	.
WC7500	01-Dec-93	3965	<52.8	.	16.2	3.4	< 47.5	.	< 7.9	.
WC7500	08-Feb-94	4084	.	.	28.2	2.6	.	.	< 6.7	.
WC7500	19-Apr-94	4160	45.7	4.6	.	.	< 12.3	.	.	.
WC7500	15-Jun-94	4295	66.4	6.8	28.2	2.8	< 13.8	.	< 6.0	.
WC7500	23-Jun-94	4319	38.6	5.5	.	.	< 15.1	.	.	.
WC7500	24-Aug-94	4337	79.0	7.7	21.7	2.3	< 14.3	.	< 6.5	.
WCHEAD	13-Apr-93	3518	< 2.9	.	<30.1	.	< 2.0	.	<28.2	.
WCHEAD	19-Jul-93	3817	<36.5	.	<19.6	.	< 51.1	.	<30.6	.
WCTRIB-1	24-Mar-93	3443	< 3.2		<21.1	.	< 5.1		<28.0	.
WCTRIB-1	13-Apr-93	3613	2.5	1.8	<26.7	.	28.3	3.0	<29.7	.
WCTRIB-1	19-Jul-93	3823	<38.7	.	<17.8	.	50.7	26.7	<29.1	.
WCTRIB-2	11-Mar-93	3561	< 2.6	.	<24.9	.	< 2.7	.	<27.4	.
WCTRIB-3	11-Mar-93	3565	< 2.9	.	<21.7	.	< 2.3	.	<29.6	.
WCTRIB-3	24-Mar-93	3460	< 2.6		<23.7	.	< 2.9		<26.6	.
WCWEIR	09-Mar-93	3530	21.8	9.2	18.5	6.6	< 3.3	.	<14.9	.
WCWEIR	11-Mar-93	3568	26.6	11.2	13.2	5.1	< 3.5	.	< 9.2	.
WCWEIR	24-Mar-93	3454	12.2	10.6	14.9	6.0	< 3.1		<12.9	.
WCWEIR	13-Apr-93	3622	<43.8	.	117	11.0	< 48.4	.	<14.7	.

Table C.1. (continued)

Location	Sample Date	Sample ID	^{137}Cs Dissolved Result	^{137}Cs Dissolved Uncer.	^{137}Cs Particulate Result	^{137}Cs Particulate Uncer.	^{60}Co Dissolved Result	^{60}Co Dissolved Uncer.	^{60}Co Particulate Result	^{60}Co Particulate Uncer.
WCWEIR	24-May-93	3722	40.0	17.1	13.6	5.4	< 48.3	.	<15.9	.
WCWEIR	13-Jul-93	3795	48.9	6.3	16.7	9.2	< 17.4	.	<28.3	.
WCWEIR	19-Jul-93	3809	51.1	18.7	27.3	6.3	< 47.7	.	<13.8	.
WCWEIR	21-Jul-93	3861	68.9	19.7	16.1	5.0	< 53.6	.	<13.1	.
WCWEIR	30-Sep-93	3902	32.0	16.0	15.1	5.4	< 53.4	.	<15.3	.
WCWEIR	30-Sep-93	3903	59.9	18.4	<20.9	.	< 53.2	.	<30.4	.
WCWEIR	01-Dec-93	3976	37.4	18.0	4.5	4.0	< 49.1	.	<15.1	.
WCWEIR	08-Feb-94	4095	.	.	8.8	0.9	.	.	< 3.1	.
WCWEIR	08-Feb-94	4096	.	.	4.8	1.6	.	.	< 6.2	.
WCWEIR	19-Apr-94	4168	27.5	6.1	.	.	< 18.3	.	.	.
WCWEIR	19-Apr-94	4169	32.5	2.9	.	.	< 8.3	.	.	.
WCWEIR	15-Jun-94	4244	53.8	6.1	26.6	1.3	< 10.6	.	< 3.1	.
WCWEIR	15-Jun-94	4245	60.4	2.9	34.2	2.6	< 5.4	.	< 6.3	.
WCWEIR	23-Jun-94	4312	29.4	2.1	.	.	< 5.0	.	.	.
WCWEIR	24-Aug-94	4354	45.6	2.5	11.6	2.2	< 5.5	.	< 6.6	.
WCWEIR	24-Aug-94	4355	47.5	2.7	14.3	2.2	< 4.9	.	< 6.6	.
WC-1	24-Mar-93	3508	4.1	1.9	<22.2	.	< 1.3		<27.9	.
WC-1	24-Mar-93	3509	< 1.0		<25.9	.	< 1.1		<26.4	.
WC-1	13-Apr-93	3623	<37.0	.	30.1	14.5	< 52.3	.	<28.9	.
WC-1	13-Jul-93	3793	<41.5	.	<21.4	.	< 52.2	.	<28.3	.
WC-20	11-Mar-93	3574	63.3	8.4	<21.9	.	< 2.8	.	<31.4	.
WC-20	24-Mar-93	3451	15.8	8.9	17.4	5.2	< 3.7		<12.7	.
WC-20	19-Jul-93	3813	150	28.5	<27.5	.	< 47.1	.	<30.8	.
WC-20	30-Sep-93	3899	169	25.9	<25.5	.	< 48.1	.	<32.1	.
WC-20	01-Dec-93	3966	66.2	21.6	6.5	4.9	< 44.7	.	<24.4	.
WEST SEEP	24-Mar-93	3463	< 0.8		<20.1	.	4.2	2.0	<27.1	.
WEST SEEP	13-Apr-93	3607	< 3.0	.	<25.9	.	< 4.1	.	<29.2	.
WEST SEEP	13-Jul-93	3785	<39.6	.	<19.4	.	< 54.8	.	<26.9	.
WEST SEEP	13-Jul-93	3786	<36.2	.	<17.6	.	< 60.4	.	<30.8	.
WEST SEEP	30-Sep-93	3893	<36.8	.	<18.6	.	< 61.5	.	<30.4	.
WEST SEEP	01-Dec-93	3950	<37.6	.	<30.0	.	< 54.4	.	<28.4	.
WEST SEEP	08-Feb-94	4070	.	.	< 6.6	.	.	.	< 6.5	.
WEST SEEP	19-Apr-94	4146	15.9	.	.	.	< 17.3	.	.	.
WEST SEEP	15-Jun-94	4301	<15.0	.	< 5.0	.	< 19.0	.	< 5.5	.
WEST SEEP	15-Jun-94	4223	<13.9	.	< 5.5	.	< 22.3	.	< 6.5	.
WEST SEEP	23-Jun-94	4316	<16.2	.	.	.	< 13.1	.	.	.
WEST SEEP	24-Aug-94	4357	<15.9	.	< 5.9	.	< 20.5	.	< 6.7	.
WOCET	09-Mar-93	3526	< 3.7	.	<23.9	.	< 2.5	.	<23.9	.
WOCET	19-Jul-93	3812	<34.8	.	<19.3	.	< 44.2	.	<27.9	.
WOD	09-Mar-93	3527	< 3.5	.	41.2	7.3	< 4.4	.	<13.7	.
WOD	11-Mar-93	3570	< 1.1	.	59.6	8.2	< 1.1	.	<15.2	.
WOD	24-Mar-93	3448	30.8	6.4	<13.4	.	< 3.6		<13.8	.
WOD	13-Apr-93	3599	< 3.1	.	39.1	8.5	< 2.5	.	<14.7	.
WOD	24-May-93	3720	<33.8	.	36.1	7.0	< 48.9	.	<14.0	.
WOD	13-Jul-93	3799	<16.4	.	36.0	10.1	< 17.4	.	<27.4	.
WOD	19-Jul-93	3810	<36.8	.	36.2	6.8	< 48.1	.	<13.7	.
WOD	21-Jul-93	3866	<36.2	.	56.0	7.6	< 48.5	.	<16.7	.
WOD	30-Sep-93	3892	<37.1	.	77.2	12.6	< 53.5	.	<30.0	.
WOD	01-Dec-93	3949	<37.9	.	18.5	5.2	< 50.4	.	<14.7	.
WOD	08-Feb-94	4069	.	.	37.2	2.9	.	.	< 6.9	.
WOD	19-Apr-94	4145	16.9	.	.	.	< 17.8	.	.	.
WOD	15-Jun-94	4222	<18.7	.	76.8	2.4	< 16.9	.	< 3.2	.
WOD	23-Jun-94	4317	<14.4	.	.	.	< 15.5	.	.	.
WOD	24-Aug-94	4325	<17.8	.	44.6	1.7	< 16.8	.	< 3.0	.
WSTRIB-1	24-Mar-93	3466	< 2.8		<20.0	.	< 2.8		<28.1	.
WSTRIB-1	13-Apr-93	3603	< 2.4	.	<30.6	.	< 3.3	.	<31.8	.
WSTRIB-1	13-Jul-93	3784	<36.5	.	<19.0	.	< 59.0	.	<31.1	.
WSTRIB-1	13-Jul-93	3783	<43.5	.	.	.	< 56.6	.	.	.
WS-1	24-Mar-93	3467	< 3.4		<22.3	.	< 3.1		<26.7	.
WS-1	13-Apr-93	3604	< 3.4	.	<29.1	.	< 3.5	.	<27.9	.
WS-2	13-Apr-93	3605	< 3.2	.	<26.6	.	< 3.4	.	<29.0	.
WS-2	13-Jul-93	3787	<38.7	.	<20.1	.	81.0	46.3	<30.8	.
WS-3	13-Apr-93	3606	< 2.9	.	<26.3	.	< 3.5	.	<27.8	.
WS-3	13-Jul-93	3790	<34.1	.	<18.4	.	< 52.7	.	<26.8	.

[a] Rinseates

Appendix D

GROSS ALPHA AND GROSS BETA RESULTS

Table D.1. Gross alpha results[a] (pCi/L) from the WAG 2 RI Seep Task

Location	Sample Date	Sample ID[b]	Gross alpha Result	Gross alpha Uncertainty	Gross alpha MDA	Validation Qualifiers
BTT	11-Mar-93	3584-14	733	160	45	J 140
BTT	11-Mar-93	3584-2	602	12	2	J 140
BTT	11-Mar-93	3583-2	751	155	50	J 140
BTT	11-Mar-93	3583-14	836	172	45	J 140
BTT	24-Mar-93	3441-2	809	23	6	J 140
BTT	24-May-93	3743-2	411	25	8	-
BTT	01-Dec-93	3964-2	1200	150	15	
BTT	08-Feb-94	4083-2	1300	160	14	
EAST SEEP	24-Mar-93	3445-2	53.9	2.7	1	J 140
EAST SEEP	24-Mar-93	3446-2	41.8	2.5	1	J 140
EAST SEEP	14-Apr-93	3608-2	175	5.9	2	R 140
EAST SEEP	13-Jul-93	3791-2	1364	28	6	-
EAST SEEP	30-Sep-93	3910-2	1100	140	21	
EAST SEEP	01-Dec-93	3953-2	370	56	19	
EAST SEEP	08-Feb-94	4073-2	240	38	14	
EAST SEEP	15-Jun-94	4226-2	880	120	19	J 136,11,140
EAST SEEP	23-Jun-94	4315-2	1500	190	19	J 136,11,140
FIRST CREEK	11-Mar-93	3573-2	8.5	4.6	7	J 140
FIRST CREEK	24-Mar-93	3450-3	6.1	1.1	1	J 140
FIRST CREEK	19-Jul-93	3816-2	40.6	2.9	2	-
FIRST CREEK	19-Jul-93	3815-2	45.9	3.2	2	-
FIRST CREEK	30-Sep-93	3900-2	28.0	11	12	
FIRST CREEK	01-Dec-93	3967-2	32.0	12	14	
FIRST CREEK	08-Feb-94	4087-2	18.0	9.5	13	
FIRST CREEK	19-Apr-94	4177-2	8.2	6.7	10	U 136,11,153
FIRST CREEK	23-Jun-94	4296-2	49.0	14	14	J 136,11,140
FIRST CREEK	23-Jun-94	4296-2	49.0	14	14	
HRT-1A	09-Mar-93	3521-2	36.0	7.8	5	-
HRT-1A	24-Mar-93	3483-3	23.8	1.9	1	J 140
HRT-1A	24-May-93	3727-2	42.0	4.3	4	-
HRT-1B	09-Mar-93	3522-2	15.4	3.3	3	-
HRT-1B	24-Mar-93	3482-3	11.8	1.4	1	J 140
HRT-1B	24-May-93	3728-2	17.9	3.1	3	-
HRT-1C	09-Mar-93	3523-2	53.9	12	7	-
HRT-1C	24-Mar-93	3481-3	42.4	2.8	1	J 140
HRT-1C	24-May-93	3729-2	86.4	7.2	5	-
HRT-1C	24-May-93	3730-2	87.5	7.3	5	-
HRT-1D	09-Mar-93	3524-2	27.5	5.9	4	-
HRT-1D	24-Mar-93	3479-4	46.7	3.3	2	-
HRT-1D	24-Mar-93	3480-3	40.8	2.9	1	-
HRT-1D	24-May-93	3731-2	53.0	4.6	4	-
HRT-2	09-Mar-93	3550-2	26.1	6.4	5	-
HRT-2	24-Mar-93	3472-2	20.5	1.7	1	-
HRT-2	24-May-93	3732-2	37.1	4.1	4	-
HRT-2	30-Sep-93	3906-2	69.0	19	19	
HRT-2	01-Dec-93	3981-2	23.0	11	14	
HRT-2	08-Feb-94	4101-2	2.0	11	12	
HRT-2	19-Apr-94	4174-2	32.0	10	10	- 136,11,153
HRT-2	23-Jun-94	4251-2	10.0	9.2	14	UJ 136,11,14
HRT-3	09-Mar-93	3532-2	38.1	7.7	5	J 140
HRT-3	24-Mar-93	3471-2	26.0	1.9	1	J 140
HRT-3	24-May-93	3733-2	41.1	4.7	4	-
HRT-3	21-Jul-93	3852-2	30.8	2.2	1	-
HRT-3	30-Sep-93	3907-2	67.0	17	14	
HRT-3	01-Dec-93	3982-2	21.0	9.6	12	
HRT-3	08-Feb-94	4102-2	22.0	9.6	11	
HRT-3	19-Apr-94	4175-2	27.0	9.9	10	- 136,11,153
HRT-3	23-Jun-94	4252-2	9.9	9.0	14	UJ 136,11,14
MBTRIB-3	09-Mar-93	3519-2	0.1	0.8	2	UJ 140
MBTRIB-3	24-Mar-93	3474-3	1.6	0.8	1	J 140
MBTRIB-3	21-Jul-93	3862-2	-1.7	1.0	2	-

Table D.1. (continued)

Location	Sample Date	Sample ID[b]	Gross alpha Result	Uncertainty	MDA	Validation Qualifiers
MBWEIR	09-Mar-93	3516-2	11.2	2.9	3	-
MBWEIR	09-Mar-93	3515-2	11.1	2.9	3	-
MBWEIR	11-Mar-93	3569-2	15.0	3.3	3	J 140
MBWEIR	24-Mar-93	3475-6	10.9	1.4	1	-
MBWEIR	24-Mar-93	3476-4	12.1	1.4	1	-
MBWEIR	14-Apr-93	3609-2	14.8	3.9	4	-
MBWEIR	24-May-93	3723-2	18.9	6.6	8	-
MBWEIR	13-Jul-93	3794-2	71.0	4.2	2	-
MBWEIR	19-Jul-93	3824-2	56.5	4.2	3	-
MBWEIR	21-Jul-93	3844-2	75.5	5.0	3	-
MBWEIR	21-Jul-93	3845-2	31.1	2.7	2	-
MBWEIR	30-Sep-93	3891-2	15.0	13	20	
MBWEIR	01-Dec-93	3971-2	15.0	9.9	14	
MBWEIR	01-Dec-93	3972-2	14.0	10	15	
MBWEIR	08-Feb-94	4091-2	11.0	8.4	12	
MBWEIR	15-Jun-94	4239-2	5.1	7.7	13	UJ 136,11,14
MBWEIR	23-Jun-94	4311-2	9.3	9.0	14	UJ 136,11,14
MB-1	09-Mar-93	3534-2	15.8	3.6	3	-
MB-1	21-Jul-93	3868-2	56.6	4.1	3	-
MB-10	09-Mar-93	3547-2	4.6	1.2	1	-
MB-10	21-Jul-93	3881-2	8319	2.0	3	-
MB-10	21-Jul-93	3880-2	5.5	1.7	2	-
MB-15	09-Mar-93	3531-2	-0.3	0.6	2	UJ 140
MB-15	24-Mar-93	3473-3	-0.2	0.6	1	UJ 140
MB-15	21-Jul-93	3846-2	-2.0	1.2	2	-
MB-15	30-Sep-93	3905-2	-4.2	7.2	14	
MB-15	01-Dec-93	3980-2	2.6	6.4	11	
MB-15	08-Feb-94	4100-2	11.0	8.7	13	
MB-15	19-Apr-94	4173-2	7.5	6.8	10	U 136,11,153
MB-15	23-Jun-94	4249-2	-1.7	7.5	14	UJ 136,11,14
MB-6	09-Mar-93	3542-2	6.4	1.6	2	-
MB-6	21-Jul-93	3875-2	5.8	1.6	2	-
MB-9	09-Mar-93	3546-2	7.4	1.5	2	-
MB-9	21-Jul-93	3879-2	9.772	2.2	3	-
MID. DRAIN.	09-Mar-93	3529-2	53.6	12	7	-
MID. DRAIN.	24-Mar-93	3478-3	84.0	4.4	2	-
MID. DRAIN.	21-Jul-93	3865-2	74.1	5.1	3	-
MV-1	21-Jul-93	3860-2	0.4	1.2	2	-
MV-1	21-Jul-93	3863-2	-1.0	1.1	2	-
MV-3	09-Mar-93	3533-2	-1.2	0.6	1	UJ 140
NWTRIB	11-Mar-93	3572-2	0.9	0.8	1	UJ 140
NWTRIB	19-Jul-93	3814-2	2.6	1.2	2	-
OF-304	23-Jun-94	4302-2	19.0	10	14	J 136,11,140
R311[c]	15-Jun-94	4237-2	-0.9	6.0	12	UJ 136,11,14
R311[c]	23-Jun-94	4322-2	-0.9	5.7	11	UJ 136,11,14
RAC	09-Mar-93	3525-2	-1.4	0.6	1	UJ 140
RAC	19-Jul-93	3811-2 FB	-1.8	1.3	3	-
RS-1	13-Apr-93	3600-2	7.5	1.6	2	-
RS-3A	24-Mar-93	3464-5	4610	102	7	J 140
RS-3A	24-Mar-93	3464-2	4718	112	9	J 140
RS-3A	13-Apr-93	3601-14	8974	190	13	-
RS-3A	13-Apr-93	3601-2	7520	179	14	-
RS-3A	24-May-93	3744-2	12537	105	9	-
RS-3A	24-May-93	3746-2	17809	127	9	-
RS-3A	13-Jul-93	3789-2	38555	230	14	-
RS-3A	30-Sep-93	3894-2	58000	7000	70	
RS-3A	01-Dec-93	3951-2	36000	4200	47	
RS-3A	08-Feb-94	4071-2	25000	3000	29	
RS-3A	15-Jun-94	4224-2	32000	3900	52	J 136,11,140

Table D.1. (continued)

Location	Sample Date	Sample ID[b]	Gross alpha Result	Gross alpha Uncertainty	Gross alpha MDA	Validation Qualifiers
RS-3B	24-Mar-93	3465-2	37.9	2.9	2	J 140
RS-3B	24-Mar-93	3465-5	23.8	1.9	1	J 140
RS-3B	13-Apr-93	3602-2	169	12	5	–
RS-3B	13-Apr-93	3602-14	65.0	4.8	2	–
RS-3B	24-May-93	3745-2	949	26	7	–
R-227[c]	26-Mar-93	3633-14	-0.6	0.5	1	UJ 140
R-227[c]	26-Mar-93	3637-2	-0.4	0.6	1	UJ 140
R-227[c]	26-Mar-93	3636-2	-0.3	0.6	1	UJ 140
R-227[c]	26-Mar-93	3635-2	0.1	0.6	1	UJ 140
R-227[c]	13-Apr-93	3638-2	882	214	71	J 140
R-227[c]	13-Apr-93	3638-2	-0.7	0.5	1	UJ 140
R-227[c]	13-Apr-93	3638-14	11765	3111	720	–
R-227[c]	14-Apr-93	3640-14	-0.6	0.7	1	U
R-227[c]	14-Apr-93	3639-2	-0.4	0.7	1	U
R-227[c]	14-Apr-93	3642-2	-1.2	0.7	1	U
R-227[c]	14-Apr-93	3644-2	-0.7	0.5	1	U
R-227[c]	14-Apr-93	3641-2	-0.8	0.7	1	U
R-227[c]	14-Apr-93	3639-14	-0.3	0.7	1	U
R-227[c]	14-Apr-93	3643-2	-0.6	0.7	1	U
R-227[c]	14-Apr-93	3640-2	0.0	0.7	1	U
R-227[c]	14-Apr-93	3641-14	-1.2	0.6	1	U
R-227[c]	24-May-93	3779-2	-0.4	1.5	3	–
R-227[c]	13-Jul-93	3807-2	-0.0	0.7	1	–
R-227[c]	19-Jul-93	3842-2	-0.4	0.6	1	–
R-227[c]	30-Sep-93	3933-2	-6.0	6.2	13	
R-227[c]	01-Dec-93	3969-2	0.0	0.2	13	
R-227[c]	08-Feb-94	4089-2	-1.5	5.2	10	
SW1-1	23-Jun-94	4304-2	48.0	16	18	J 136,11,140
SW2-1	13-Apr-93	3621-2	6.3	3.5	5	–
SW2-2	11-Mar-93	3576-2	21.9	4.9	4	J 140
SW2-3	11-Mar-93	3562-2	-0.4	0.6	1	UJ 140
SW2-4	11-Mar-93	3567-2	10.0	2.5	3	J 140
SW2-5	09-Mar-93	3520-2	1484	118	22	–
SW2-5	24-May-93	3724-2	3020	242	36	–
SW2-5	24-May-93	3725-2	3235	255	38	–
SW2-5	21-Jul-93	3858-2	5562	373	43	–
SW4-1	11-Mar-93	3578-14	138	31	17	J 140
SW4-1	11-Mar-93	3578-2	142	33	15	J 140
SW4-1	19-Jul-93	3819-2	247	14	4	–
SW4-2	11-Mar-93	3579-2	467	99	29	J 140
SW4-2	11-Mar-93	3579-14	401	87	34	J 140
SW4-2	24-Mar-93	3429-3	361	7.2	1	J 140
SW4-2	24-Mar-93	3430-2	341	7.0	1	J 140
SW4-2	24-May-93	3739-2	363	29	10	–
SW4-2	01-Dec-93	3959-2	320	48	16	
SW4-2	08-Feb-94	4078-2	540	76	18	
SW5-2	11-Mar-93	3566-2	4.1	1.8	3	J 140
SW5-2	24-Mar-93	3462-2	7.5	1.2	1	J 140
SW5-4	09-Mar-93	3528-2	12984	2690	868	–
SW5-4	24-Mar-93	3477-4	6593	535	62	–
SW5-4	24-Mar-93	3477-5	7067	550	62	–
SW5-4	24-May-93	3726-2	14196	3080	1008	–
SW7-1	13-Apr-93	3616-2	0.3	0.9	2	R 140
SW7-1	13-Apr-93	3615-2	-0.3	0.9	2	R 140
SW7-2	13-Apr-93	3617-2	27.0	3.6	4	–
SW7-2	13-Jul-93	3788-2 LD	88.5	4.7	2	–
SW7-3	24-Mar-93	3447-2	252	6.6	2	J 140
SW7-3	13-Apr-93	3618-2	997	21	4	–
SW7-3	13-Apr-93	3618-14	893	19	4	–
SW7-3	24-May-93	3747-2	346	11	4	–
SW7-3	13-Jul-93	3792-2	2570	37	6	–

Table D.1. (continued)

Location	Sample Date	Sample ID[b]	Gross alpha Result	Uncertainty	MDA	Validation Qualifiers
SW7-3	30-Sep-93	3911-2	2700	340	21	
SW7-3	01-Dec-93	3955-2	1400	180	20	
SW7-3	01-Dec-93	3954-2	1400	170	20	
SW7-3	08-Feb-94	4074-2	2100	260	18	
SW7-3	15-Jun-94	4253-2	150	29	17	J 136,11,140
SW7-3	15-Jun-94	4227-2	2400	300	24	J 136,11,140
SW7-5	24-Mar-93	3442-2	25.6	2.0	1	J 140
SW7-5	13-Apr-93	3620-2	96.6	6.5	4	–
SW7-5	13-Apr-93	3619-2	78.2	6.0	4	–
SW7-5	13-Apr-93	3620-14	81.3	6.0	4	–
SW7-5	13-Apr-93	3619-14	34.9	4.0	4	–
SW7-5	24-May-93	3748-2	38.5	5.9	6	–
SW7-5	13-Jul-93	3796-2	14.2	3.7	5	–
SW7-5	01-Dec-93	3986-2	360	53	15	
SW7-5	08-Feb-94	4103-2	100	21	13	
SW7-5	19-Apr-94	4176-2	74.0	17	11	– 136,11,153
SW7-5	23-Jun-94	4314-2	220	38	17	J 136,11,140
SW7-5	23-Jun-94	4314-2	220	38	17	
SW7-6	24-Mar-93	3444-2	20.4	1.7	1	J 140
SW7-6	13-Apr-93	3614-2	26.1	2.0	1	R 140
SW7-8	13-Apr-93	3610-2	65.3	3.2	2	R 140
SW7-8	13-Apr-93	3610-14	65.1	3.2	2	R 140
SW9-1	21-Jul-93	3853-2	−0.8	0.8	2	–
SW9-2	21-Jul-93	3855-2	6.6	1.8	2	–
W4TRIB-11	11-Mar-93	3582-2	461	84	35	–
W4TRIB-11	24-Mar-93	3439-2	713	38	7	–
W4TRIB-11	24-May-93	3742-2	89.4	22	6	–
W4TRIB-11	30-Sep-93	3896-2	460	66	18	
W4TRIB-11	01-Dec-93	3962-2	390	56	15	
W4TRIB-11	08-Feb-94	4081-2	10.0	70	13	
W4TRIB-11	15-Jun-94	4234-2	470	67	15	J 136,11,140
W4TRIB-4	11-Mar-93	3593-2	272	50	18	R 140
W4TRIB-4	24-Mar-93	3432-2	342	19	4	–
W4TRIB-4	24-May-93	3757-2	278	16	5	–
W4TRIB-4	30-Sep-93	3941-2	330	51	23	
W4TRIB-4	01-Dec-93	4019-2	250	39	15	
W4TRIB-4	08-Feb-94	4136-2	10.0	46	13	
W4TRIB-4	08-Feb-94	4137-2	0.0	45	13	
W4TRIB-4	19-Apr-94	4214-2	290	44	11	– 136,11,153
W4TRIB-4	19-Apr-94	4213-2	280	43	11	– 136,11,153
W4TRIB-4	15-Jun-94	4285-2	190	33	14	
W4TRIB-4	15-Jun-94	4286-2	220	36	14	
W4TRIB-4	15-Jun-94	4286-2	220	36	14	J 136,11,140
W4TRIB-4	15-Jun-94	4285-2	190	33	14	J 136,11,140
W4TRIB-5	11-Mar-93	3580-2	259	60	33	–
W4TRIB-5	24-Mar-93	3433-2	275	17	4	–
W4TRIB-5	24-May-93	3740-2	265	21	8	–
W4TRIB-5	08-Feb-94	4079-2	70.0	43	15	
W4TRIB-7	11-Mar-93	3581-2	408	101	49	–
W4TRIB-7	24-Mar-93	3435-2	422	27	5	–
W4TRIB-7	24-May-93	3741-2	554	34	11	–
W4TRIB-7	01-Dec-93	3961-2	690	92	15	
W4TRIB-7	08-Feb-94	4080-2	30.0	61	13	
WAG4 MS1	11-Mar-93	3577-14	357	79	26	–
WAG4 MS1	11-Mar-93	3577-2	337	76	31	J 140
WAG4 MS1	24-Mar-93	3425-4	344	20	4	–
WAG4 MS1	24-May-93	3738-2	302	24	9	–
WAG4 MS1	30-Sep-93	3936-2	200	35	21	
WAG4 MS1	01-Dec-93	3957-2	380	55	15	
WAG4 MS1	01-Dec-93	3958-2	350	51	15	
WAG4 MS1	08-Feb-94	4076-2	390	55	12	

Table D.1. (continued)

Location	Sample Date	Sample ID[b]	Gross alpha Result	Uncertainty	MDA	Validation Qualifiers
WAG4 MS1	08-Feb-94	4077-2	360	52	12	
WAG4 MS1	15-Jun-94	4230-2	230	37	13	J 136,11,140
WAG4 MS1	15-Jun-94	4229-2	210	35	14	J 136,11,140
WAG4 T2A	11-Mar-93	3563-3	244	50	27	-
WAG4 T2A	11-Mar-93	3564-2	258	54	29	-
WAG4 T2A	24-Mar-93	3459-2	206	14	4	-
WAG4 T2A	24-May-93	3737-2	265	20	9	-
WAG4 T2A	01-Dec-93	3956-2	190	32	15	
WAG4 T2A	08-Feb-94	4075-2	230	37	12	
WC7500	11-Mar-93	3575-2	10.7	1.7	2	J 140
WC7500	24-Mar-93	3452-3	8.9	1.3	1	J 140
WC7500	24-May-93	3721-2	9.2	2.4	3	-
WC7500	13-Jul-93	3802-2	4.9	1.5	2	-
WC7500	19-Jul-93	3822-2	9.358	1.7	2	-
WC7500	21-Jul-93	3867-2	7.6	1.6	2	-
WC7500	30-Sep-93	3898-2	-4.9	10	20	
WC7500	30-Sep-93	3897-2	-0.7	11	20	
WC7500	01-Dec-93	3965-2	4.5	8.7	15	
WC7500	08-Feb-94	4084-2	12.0	8.9	13	
WC7500	15-Jun-94	4295-2	3.0	7.1	12	UJ 136,11,14
WC7500	23-Jun-94	4319-2	2.5	7.4	13	
WC7500	23-Jun-94	4319-2	0.7	7.1	13	UJ 136,11,14
WCHEAD	13-Apr-93	3518-2	0.1	0.7	1	U
WCHEAD	19-Jul-93	3817-2	17.0	2.7	3	-
WCTRIB-1	24-Mar-93	3443-2	1.5	0.8	1	J 140
WCTRIB-1	13-Apr-93	3613-2	7.8	1.4	2	R 140
WCTRIB-1	19-Jul-93	3823-2	30.2	2.9	2	-
WCTRIB-2	11-Mar-93	3561-2	-0.4	0.6	1	UJ 140
WCTRIB-3	11-Mar-93	3565-2	70.5	13	8	-
WCTRIB-3	11-Mar-93	3565-14	55.7	12	7	-
WCTRIB-3	24-Mar-93	3460-2	76.0	4.0	2	-
WCWEIR	09-Mar-93	3530-2	5.8	1.1	1	J 140
WCWEIR	11-Mar-93	3568-2	6.1	1.4	2	J 140
WCWEIR	24-Mar-93	3454-3	9.1	1.3	1	J 140
WCWEIR	13-Apr-93	3622-2	8.8	2.0	2	-
WCWEIR	24-May-93	3722-2	11.9	2.6	3	-
WCWEIR	13-Jul-93	3795-2	6.6	1.7	2	-
WCWEIR	19-Jul-93	3809-2	9.942	1.9	2	-
WCWEIR	21-Jul-93	3861-2	4.5	1.3	2	-
WCWEIR	30-Sep-93	3902-2	4.5	8.4	14	
WCWEIR	30-Sep-93	3903-2	-2.4	7.3	14	
WCWEIR	01-Dec-93	3976-2	9.2	8.0	12	
WCWEIR	08-Feb-94	4096-2	9.8	8.1	12	
WCWEIR	08-Feb-94	4095-2	13.0	8.6	12	
WCWEIR	15-Jun-94	4244-2	8.4	8.2	13	UJ 136,11,14
WCWEIR	15-Jun-94	4245-2	9.3	8.5	13	UJ 136,11,14
WCWEIR	23-Jun-94	4312-2	1.1	7.2	13	
WCWEIR	23-Jun-94	4312-2	1.1	7.2	13	UJ 136,11,14
WC-1	24-Mar-93	3508-3	8.3	1.2	1	J 140
WC-1	24-Mar-93	3509-3	9.4	1.4	1	J 140
WC-1	13-Apr-93	3623-2	8.7	2.3	3	-
WC-1	13-Jul-93	3793-2	361	14	4	-
WC-10	13-Apr-93	3629-2	12.6	2.5	3	J 140
WC-10	13-Jul-93	3805-2	5.5	1.7	2	-
WC-11	11-Mar-93	3585-2A	5.1	1.3	2	J 140
WC-11	11-Mar-93	3585-2B	6.6	1.5	2	J 140
WC-11	19-Jul-93	3827-2	6.1	1.6	2	-
WC-12	11-Mar-93	3586-2	6.8	1.5	2	J 140
WC-12	19-Jul-93	3828-2	7.6	1.6	2	-

Table D.2. Gross beta results (pCi/L) from the WAG 2 RI Seep Task

Location	Sample Date	Sample ID[a]	Gross beta Result	Gross beta Uncertainty	Gross beta MDA	Validation Qualifiers
BTT	11-Mar-93	3584-2	42377	76	3	J 140
BTT	11-Mar-93	3583-14	52639	1032	42	J 140
BTT	11-Mar-93	3583-2	50382	986	55	J 140
BTT	11-Mar-93	3584-14	52089	1018	42	J 140
BTT	24-Mar-93	3441-2	44992	135	8	-
BTT	24-May-93	3743-2	23949	149	10	-
BTT	01-Dec-93	3964-2	39000	2900	28	
BTT	08-Feb-94	4083-2	44000	4400	15	
EAST SEEP	24-Mar-93	3446-2	299	5.3	2	J 140
EAST SEEP	24-Mar-93	3445-2	211	4.4	2	J 140
EAST SEEP	14-Apr-93	3608-2	496	6.9	2	R 140
EAST SEEP	13-Jul-93	3791-2	1497	19	5	-
EAST SEEP	30-Sep-93	3910-2	860	95	22	
EAST SEEP	01-Dec-93	3953-2	730	81	19	
EAST SEEP	08-Feb-94	4073-2	470	54	15	
EAST SEEP	15-Jun-94	4226-2	900	110	20	- 136,11
EAST SEEP	23-Jun-94	4315-2	1000	130	18	U 136,11,153
FIRST CREEK	11-Mar-93	3573-2	337	14	10	J 140
FIRST CREEK	24-Mar-93	3450-3	138	3.5	2	J 140
FIRST CREEK	19-Jul-93	3815-2	1086	10	2	-
FIRST CREEK	19-Jul-93	3816-2	977	9.5	2	-
FIRST CREEK	30-Sep-93	3900-2	610	68	17	
FIRST CREEK	01-Dec-93	3967-2	700	77	16	
FIRST CREEK	08-Feb-94	4087-2	460	52	14	
FIRST CREEK	19-Apr-94	4177-2	190	28	13	- 136,11
FIRST CREEK	23-Jun-94	4296-2	1200	150	14	U 136,11,153
HRT-1A	09-Mar-93	3521-2	2500	49	6	-
HRT-1A	24-Mar-93	3483-3	1596	11	2	J 140
HRT-1A	24-May-93	3727-2	3958	29	5	-
HRT-1B	09-Mar-93	3522-2	920	18	4	-
HRT-1B	24-Mar-93	3482-3	749	7.9	2	J 140
HRT-1B	24-May-93	3728-2	1238	16	5	-
HRT-1C	09-Mar-93	3523-2	4050	80	8	-
HRT-1C	24-Mar-93	3481-3	2931	18	2	J 140
HRT-1C	24-May-93	3730-2	8217	51	6	-
HRT-1C	24-May-93	3729-2	8271	51	6	-
HRT-1D	09-Mar-93	3524-2	1705	34	5	-
HRT-1D	24-Mar-93	3480-3	3001	19	2	J 140
HRT-1D	24-Mar-93	3479-4	3247	20	2	J 140
HRT-1D	24-May-93	3731-2	4783	32	5	-
HRT-2	09-Mar-93	3550-2	2303	45	6	-
HRT-2	24-Mar-93	3472-2	1474	11	2	J 140
HRT-2	24-May-93	3732-2	3863	29	5	-
HRT-2	30-Sep-93	3906-2	3700	380	25	
HRT-2	01-Dec-93	3981-2	1500	150	27	
HRT-2	08-Feb-94	4101-2	1500	160	15	
HRT-2	19-Apr-94	4174-2	1900	230	13	- 136,11
HRT-2	23-Jun-94	4251-2	1700	200	14	U 136,11,153
HRT-3	09-Mar-93	3532-2	2360	46	6	J 140
HRT-3	24-Mar-93	3471-2	1799	12	2	-
HRT-3	24-May-93	3733-2	3520	28	5	-
HRT-3	21-Jul-93	3852-2	1463	11	2	-
HRT-3	30-Sep-93	3907-2	3700	370	18	
HRT-3	01-Dec-93	3982-2	1500	160	15	
HRT-3	08-Feb-94	4102-2	1400	150	15	
HRT-3	19-Apr-94	4175-2	1600	200	13	- 136,11
HRT-3	23-Jun-94	4252-2	1200	150	13	U 136,11,153
MBTRIB-3	09-Mar-93	3519-2	104	3.4	2	J 140
MBTRIB-3	24-Mar-93	3474-3	110	3.2	2	J 140
MBTRIB-3	21-Jul-93	3862-2	30	2.1	2	-
MBWEIR	09-Mar-93	3515-2	898	18	4	-
MBWEIR	09-Mar-93	3516-2	909	18	4	-
MBWEIR	11-Mar-93	3569-2	914	18	5	R 140

Table D.2. (continued)

Location	Sample Date	Sample ID[a]	Gross beta Result	Gross beta Uncertainty	Gross beta MDA	Validation Qualifiers
MBWEIR	24-Mar-93	3476-4	793	8.2	2	J 140
MBWEIR	24-Mar-93	3475-6	792	8.1	2	J 140
MBWEIR	14-Apr-93	3609-2	1188	24	5	–
MBWEIR	24-May-93	3723-2	2154	43	12	–
MBWEIR	13-Jul-93	3794-2	2879	18	2	–
MBWEIR	19-Jul-93	3824-2	1836	14	2	–
MBWEIR	21-Jul-93	3844-2	2317	16	2	–
MBWEIR	21-Jul-93	3845-2	1160	10	2	–
MBWEIR	30-Sep-93	3891-2	1900	190	25	
MBWEIR	01-Dec-93	3971-2	870	94	16	
MBWEIR	01-Dec-93	3972-2	870	94	17	
MBWEIR	08-Feb-94	4091-2	630	70	15	
MBWEIR	15-Jun-94	4239-2	860	110	16	– 136,11,153
MBWEIR	23-Jun-94	4311-2	780	99	14	U 136,11,153
MB-1	09-Mar-93	3534-2	1093	22	4	–
MB-1	21-Jul-93	3868-2	2335	15	2	–
MB-10	09-Mar-93	3547-2	313	6.3	2	–
MB-10	21-Jul-93	3880-2	284	5.4	2	–
MB-10	21-Jul-93	3881-2	359	6.1	2	–
MB-15	09-Mar-93	3531-2	9.9	1.3	2	J 140
MB-15	24-Mar-93	3473-3	6.6	1.2	2	–
MB-15	21-Jul-93	3846-2	6.0	1.5	2	–
MB-15	30-Sep-93	3905-2	-11	10	19	
MB-15	01-Dec-93	3980-2	3.2	8.5	14	
MB-15	08-Feb-94	4100-2	12	9.8	15	
MB-15	19-Apr-94	4173-2	16	9.1	14	– 136,11
MB-15	23-Jun-94	4249-2	11	8.7	14	U 136,11,153
MB-6	09-Mar-93	3542-2	422	8.5	2	–
MB-6	21-Jul-93	3875-2	285	5.3	2	–
MB-9	09-Mar-93	3546-2	362	7.3	2	–
MB-9	21-Jul-93	3879-2	410	6.6	2	–
MID. DRAIN.	09-Mar-93	3529-2	3841	75	9	–
MID. DRAIN.	24-Mar-93	3478-3	3533	22	2	J 140
MID. DRAIN.	21-Jul-93	3865-2	3697	23	3	–
MV-1	21-Jul-93	3863-2	5.5	1.4	2	–
MV-1	21-Jul-93	3860-2	106	3.4	2	–
MV-3	09-Mar-93	3533-2	1.8	1.2	2	UJ 140
NWTRIB	11-Mar-93	3572-2	147	3.7	2	J 140
NWTRIB	19-Jul-93	3814-2	63	2.6	2	–
OF-304	23-Jun-94	4302-2	1300	160	14	U 136,11,153
R311[b]	15-Jun-94	4237-2	3.3	9.5	16	U 136,11,153
R311[b]	23-Jun-94	4322-2	5.0	8.4	14	U 136,11,153
RAC	09-Mar-93	3525-2	3.0	1.2	2	J 140
RAC	19-Jul-93	3811-2 FB	8.3	1.6	2	–
RS-1	13-Apr-93	3600-2	367	7.4	2	–
RS-3A	24-Mar-93	3464-2	3966	78	11	–
RS-3A	24-Mar-93	3464-5	3313	65	9	–
RS-3A	13-Apr-93	3601-2	6524	128	17	–
RS-3A	13-Apr-93	3601-14	6302	124	16	–
RS-3A	24-May-93	3744-2	5060	48	10	–
RS-3A	24-May-93	3746-2	6302	54	10	–
RS-3A	13-Jul-93	3789-2	12886	85	12	–
RS-3A	30-Sep-93	3894-2	16000	1600	56	
RS-3A	01-Dec-93	3951-2	9800	990	33	
RS-3A	08-Feb-94	4071-2	6000	610	22	
RS-3A	15-Jun-94	4224-2	11000	1400	42	– 136,11
RS-3B	24-Mar-93	3465-5	140	3.6	2	–
RS-3B	24-Mar-93	3465-2	320	6.4	2	–
RS-3B	13-Apr-93	3602-2	1277	25	7	–
RS-3B	13-Apr-93	3602-14	540	11	3	–
RS-3B	24-May-93	3745-2	1286	24	9	–

Table D.2. (continued)

Location	Sample Date	Sample ID[a]	Gross beta Result	Gross beta Uncertainty	Gross beta MDA	Validation Qualifiers
R-227[b]	26-Mar-93	3636-2	0.8	1.0	2	UJ 140
R-227[b]	26-Mar-93	3635-2	1.0	1.0	2	UJ 140
R-227[b]	26-Mar-93	3637-2	0.9	1.0	2	UJ 140
R-227[b]	26-Mar-93	3633-14	1.0	1.0	2	U
R-227[b]	13-Apr-93	3638-2	836839	5181	75	J 140
R-227[b]	13-Apr-93	3638-2	-0.3	0.9	2	UJ 140
R-227[b]	13-Apr-93	3638-14	964428	17956	359	J 140
R-227[b]	14-Apr-93	3643-2	0.5	1.1	2	UJ 160
R-227[b]	14-Apr-93	3641-14	-1.1	1.0	2	UJ 140
R-227[b]	14-Apr-93	3640-2	34	2.0	2	J 140
R-227[b]	14-Apr-93	3644-2	0.1	1.0	2	UJ 160
R-227[b]	14-Apr-93	3639-14	50	2.3	2	J 140
R-227[b]	14-Apr-93	3642-2	-0.1	1.1	2	UJ 140
R-227[b]	14-Apr-93	3639-2	7.2	1.3	2	J 140
R-227[b]	14-Apr-93	3640-14	1.5	1.1	2	UJ 140
R-227[b]	14-Apr-93	3641-2	-0.6	1.0	2	UJ 140
R-227[b]	24-May-93	3779-2	70	4.4	4	-
R-227[b]	13-Jul-93	3807-2	2.5	1.1	2	-
R-227[b]	19-Jul-93	3842-2	1.6	1.1	2	-
R-227[b]	30-Sep-93	3933-2	-9.4	8.7	16	
R-227[b]	01-Dec-93	3969-2	12	9.8	16	
R-227[b]	08-Feb-94	4089-2	-1.5	8.0	14	
SW1-1	23-Jun-94	4304-2	2200	270	15	U 136,11,153
SW2-1	13-Apr-93	3621-2	668	13	5	J 140
SW2-2	11-Mar-93	3576-2	1476	29	6	R 140
SW2-3	11-Mar-93	3562-2	41	2.1	2	J 140
SW2-4	11-Mar-93	3567-2	655	13	4	R 140
SW2-5	09-Mar-93	3520-2	145385	901	26	-
SW2-5	24-May-93	3725-2	302694	1875	41	-
SW2-5	24-May-93	3724-2	296795	1839	40	-
SW2-5	21-Jul-93	3858-2	254202	1572	28	-
SW4-1	11-Mar-93	3578-2	11541	226	16	J 140
SW4-1	11-Mar-93	3578-14	10927	215	22	J 140
SW4-1	19-Jul-93	3819-2	8686	54	4	-
SW4-2	11-Mar-93	3579-14	29490	578	39	J 140
SW4-2	11-Mar-93	3579-2	31665	620	30	J 140
SW4-2	24-Mar-93	3429-3	25118	47	2	-
SW4-2	24-Mar-93	3430-2	25374	47	2	-
SW4-2	24-May-93	3739-2	36626	227	13	-
SW4-2	01-Dec-93	3959-2	16000	1600	17	
SW4-2	08-Feb-94	4078-2	27000	2700	17	
SW5-2	11-Mar-93	3566-2	462	9.4	4	J 140
SW5-2	24-Mar-93	3462-2	554	6.9	2	-
SW5-4	09-Mar-93	3528-2	938384	18350	1011	-
SW5-4	24-Mar-93	3477-4	696418	4315	67	-
SW5-4	24-Mar-93	3477-5	681282	4220	66	-
SW5-4	24-May-93	3726-2	1091546	21355	1128	-
SW7-1	13-Apr-93	3615-2	84	2.9	2	R 140
SW7-1	13-Apr-93	3616-2	88	3.0	2	R 140
SW7-2	13-Apr-93	3617-2	1375	17	5	J 140
SW7-2	13-Jul-93	3788-2 LD	1862	14	2	-
SW7-3	24-Mar-93	3447-2	457	6.7	2	J 140
SW7-3	13-Apr-93	3618-2	959	15	5	J 140
SW7-3	13-Apr-93	3618-14	900	14	5	J 140
SW7-3	24-May-93	3747-2	271	8.0	5	-
SW7-3	13-Jul-93	3792-2	1967	21	5	-
SW7-3	30-Sep-93	3911-2	1200	130	22	
SW7-3	01-Dec-93	3955-2	880	96	19	
SW7-3	01-Dec-93	3954-2	860	94	19	
SW7-3	08-Feb-94	4074-2	1000	110	17	
SW7-3	15-Jun-94	4227-2	1400	170	23	- 136,11
SW7-3	15-Jun-94	4253-2	6700	810	18	(136,153)

Table D.2. (continued)

Location	Sample Date	Sample ID[a]	Gross beta Result	Gross beta Uncertainty	Gross beta MDA	Validation Qualifiers
SW7-5	24-Mar-93	3442-2	1346	11	2	J 140
SW7-5	13-Apr-93	3619-2	3866	29	5	J 140
SW7-5	13-Apr-93	3619-14	1841	20	5	J 140
SW7-5	13-Apr-93	3620-2	3890	29	5	J 140
SW7-5	13-Apr-93	3620-14	3438	28	5	J 140
SW7-5	24-May-93	3748-2	737	18	9	–
SW7-5	13-Jul-93	3796-2	956	16	5	–
SW7-5	01-Dec-93	3986-2	9200	920	16	
SW7-5	08-Feb-94	4103-2	2900	290	16	
SW7-5	19-Apr-94	4176-2	2000	240	14	– 136,11
SW7-5	23-Jun-94	4314-2	8300	1000	17	U 136,11,153
SW7-6	24-Mar-93	3444-2	2482	15	2	J 140
SW7-6	13-Apr-93	3614-2	2273	14	2	R 140
SW7-8	13-Apr-93	3610-2	129	3.5	2	R 140
SW7-8	13-Apr-93	3610-14	125	3.5	2	R 140
SW9-1	21-Jul-93	3853-2	26	1.9	2	–
SW9-2	21-Jul-93	3855-2	370	6.1	2	–
W4TRIB-11	11-Mar-93	3582-2	24471	480	46	–
W4TRIB-11	24-Mar-93	3439-2	33245	206	9	–
W4TRIB-11	24-May-93	3742-2	20569	128	9	–
W4TRIB-11	30-Sep-93	3896-2	22000	2200	18	
W4TRIB-11	01-Dec-93	3962-2	15000	1500	28	
W4TRIB-11	08-Feb-94	4081-2	20000	2000	15	
W4TRIB-11	15-Jun-94	4234-2	28000	3400	18	– 136,11
W4TRIB-4	11-Mar-93	3593-2	14959	293	22	–
W4TRIB-4	24-Mar-93	3432-2	16512	102	5	–
W4TRIB-4	24-May-93	3757-2	14916	93	7	–
W4TRIB-4	30-Sep-93	3941-2	15000	1500	27	
W4TRIB-4	01-Dec-93	4019-2	12000	1200	28	
W4TRIB-4	08-Feb-94	4137-2	12000	1200	15	
W4TRIB-4	08-Feb-94	4136-2	12000	1200	15	
W4TRIB-4	19-Apr-94	4213-2	14000	1700	14	– 136,11
W4TRIB-4	19-Apr-94	4214-2	14000	1700	14	– 136,11
W4TRIB-4	15-Jun-94	4286-2	15000	1800	17	– 136,11,153
W4TRIB-4	15-Jun-94	4285-2	17000	2000	17	– 136,11,153
W4TRIB-5	11-Mar-93	3580-2	22422	440	43	–
W4TRIB-5	24-Mar-93	3433-2	17385	108	5	–
W4TRIB-5	24-May-93	3740-2	23728	147	10	–
W4TRIB-5	08-Feb-94	4079-2	15000	1500	16	
W4TRIB-7	11-Mar-93	3581-2	40659	797	61	–
W4TRIB-7	24-Mar-93	3435-2	28102	174	7	–
W4TRIB-7	24-May-93	3741-2	33964	211	15	–
W4TRIB-7	01-Dec-93	3961-2	36000	3700	28	
W4TRIB-7	08-Feb-94	4080-2	29000	2900	15	
WAG4 MS1	11-Mar-93	3577-14	26179	513	27	–
WAG4 MS1	11-Mar-93	3577-2	27105	532	37	J 140
WAG4 MS1	24-Mar-93	3425-4	19318	120	6	–
WAG4 MS1	24-May-93	3738-2	26570	165	11	–
WAG4 MS1	30-Sep-93	3936-2	14000	1400	26	
WAG4 MS1	01-Dec-93	3957-2	20000	2000	28	
WAG4 MS1	01-Dec-93	3958-2	18000	1800	28	
WAG4 MS1	08-Feb-94	4077-2	20000	2000	15	
WAG4 MS1	08-Feb-94	4076-2	18000	1800	15	
WAG4 MS1	15-Jun-94	4230-2	17000	2100	17	– 136,11
WAG4 MS1	15-Jun-94	4229-2	18000	2200	17	– 136,11
WAG4 T2A	11-Mar-93	3563-3	16347	321	36	–
WAG4 T2A	11-Mar-93	3564-2	17622	346	38	–
WAG4 T2A	24-Mar-93	3459-2	15293	95	5	–
WAG4 T2A	24-May-93	3737-2	19564	121	9	–
WAG4 T2A	01-Dec-93	3956-2	12000	1200	28	
WAG4 T2A	08-Feb-94	4075-2	14000	1400	15	

Table D.2. (continued)

Location	Sample Date	Sample ID[a]	Gross beta Result	Uncertainty	MDA	Validation Qualifiers
WC7500	11-Mar-93	3575-2	333	6.7	2	J 140
WC7500	24-Mar-93	3452-3	214	4.4	2	–
WC7500	24-May-93	3721-2	523	11	4	–
WC7500	13-Jul-93	3802-2	203	4.5	2	–
WC7500	19-Jul-93	3822-2	266	5.1	2	–
WC7500	21-Jul-93	3867-2	267	5.1	2	–
WC7500	30-Sep-93	3898-2	110	22	25	
WC7500	30-Sep-93	3897-2	100	21	25	
WC7500	01-Dec-93	3965-2	130	21	17	
WC7500	08-Feb-94	4084-2	360	43	14	
WC7500	15-Jun-94	4295-2	160	25	15	– 136,11,153
WC7500	23-Jun-94	4319-2	150	24	15	U 136,11,153
WC7500	23-Jun-94	4319-2	160	25	15	
WCHEAD	13-Apr-93	3518-2	1.2	1.0	2	UJ 160
WCHEAD	19-Jul-93	3817-2	496	9.2	4	–
WCTRIB-1	24-Mar-93	3443-2	139	3.6	2	J 140
WCTRIB-1	13-Apr-93	3613-2	397	5.9	2	R 140
WCTRIB-1	19-Jul-93	3823-2	568	7.5	2	–
WCTRIB-2	11-Mar-93	3561-2	4.4	1.2	2	J 140
WCTRIB-3	11-Mar-93	3565-2	3328	66	11	–
WCTRIB-3	11-Mar-93	3565-14	3594	71	8	–
WCTRIB-3	24-Mar-93	3460-2	3123	19	2	J 140
WCWEIR	09-Mar-93	3530-2	308	5.2	2	J 140
WCWEIR	11-Mar-93	3568-2	350	7.0	2	J 140
WCWEIR	24-Mar-93	3454-3	340	5.4	2	–
WCWEIR	13-Apr-93	3622-2	449	9.0	3	–
WCWEIR	24-May-93	3722-2	618	12	4	–
WCWEIR	13-Jul-93	3795-2	225	4.8	2	–
WCWEIR	19-Jul-93	3809-2	288	5.4	2	–
WCWEIR	21-Jul-93	3861-2	165	4.0	2	–
WCWEIR	30-Sep-93	3902-2	100	19	18	
WCWEIR	30-Sep-93	3903-2	100	19	18	
WCWEIR	01-Dec-93	3976-2	210	28	15	
WCWEIR	08-Feb-94	4095-2	510	58	15	
WCWEIR	08-Feb-94	4096-2	500	57	15	
WCWEIR	15-Jun-94	4244-2	190	30	16	– 136,11,153
WCWEIR	15-Jun-94	4245-2	190	30	16	– 136,11,153
WCWEIR	23-Jun-94	4312-2	190	29	15	U 136,11,153
WC-1	24-Mar-93	3508-3	374	5.6	2	J 140
WC-1	24-Mar-93	3509-3	343	5.5	2	J 140
WC-1	13-Apr-93	3623-2	584	12	3	–
WC-1	13-Jul-93	3793-2	6040	38	3	–
WC-10	13-Apr-93	3629-2	580	11	4	J 140
WC-10	13-Jul-93	3805-2	229	4.9	2	–
WC-11	11-Mar-93	3585-2B	369	7.4	2	J 140
WC-11	11-Mar-93	3585-2A	339	6.8	2	J 140
WC-11	19-Jul-93	3827-2	233	4.8	2	–
WC-12	11-Mar-93	3586-2	362	7.3	2	J 140
WC-12	19-Jul-93	3828-2	242	4.9	2	–
WC-13	11-Mar-93	3587-2	372	7.5	2	J 140
WC-13	19-Jul-93	3829-2	800	12	4	–
WC-13	19-Jul-93	3829-2	246	4.9	2	–
WC-17	11-Mar-93	3588-2	229	4.7	2	J 140
WC-17	19-Jul-93	3830-2	234	4.8	2	–
WC-20	11-Mar-93	3574-2	225	4.6	2	J 140
WC-20	24-Mar-93	3451-4	258	4.7	2	–
WC-20	19-Jul-93	3813-2	307	5.4	2	–
WC-21	23-Jun-94	4306-2	110	19	13	U 136,11,153
WC-22	23-Jun-94	4305-2	96	18	13	U 136,11,153
WC-22 A	23-Jun-94	4303-2	48	12	13	U 136,11,153
WC-8	13-Apr-93	3627-2	623	12	4	J 140
WC-8	13-Jul-93	3803-2	466	6.8	2	–
WC-9	13-Apr-93	3628-2	617	11	4	J 140

WC-9	13-Jul-93	3804-2	415	6.4	2	-
WEST SEEP	24-Mar-93	3463-2	268	4.8	2	J 140
WEST SEEP	13-Apr-93	3607-2	448	6.2	2	R 140
WEST SEEP	13-Jul-93	3785-2	736	10	3	-
WEST SEEP	13-Jul-93	3786-2 FD	733	10	3	-
WEST SEEP	30-Sep-93	3893-2	470	55	25	
WEST SEEP	01-Dec-93	3950-2	410	48	18	
WEST SEEP	08-Feb-94	4070-2	380	45	14	
WEST SEEP	15-Jun-94	4223-2	310	44	17	- 136,11
WEST SEEP	23-Jun-94	4316-2	35	11	14	U 136,11,153
WOCET	09-Mar-93	3526-2	2.6	1.1	2	J 140
WOCET	19-Jul-93	3812-2	18	1.7	2	-
WOD	09-Mar-93	3527-2	580	12	3	-
WOD	11-Mar-93	3570-2	512	10	3	R 140
WOD	24-Mar-93	3448-4	77	2.7	2	-
WOD	13-Apr-93	3599-2	628	13	3	-
WOD	24-May-93	3720-2	688	17	8	-
WOD	13-Jul-93	3799-2	549	7.3	2	-
WOD	19-Jul-93	3810-2	436	6.4	2	-
WOD	21-Jul-93	3866-2	519	7.0	2	-
WOD	30-Sep-93	3892-2	300	39	26	
WOD	01-Dec-93	3949-2	390	46	18	
WOD	08-Feb-94	4069-2	570	63	14	
WOD	15-Jun-94	4222-2	360	49	17	
WOD	15-Jun-94	4222-2	440	59	17	- 136,11
WOD	23-Jun-94	4317-2	450	59	15	U 136,11,153
WSTRIB-1	24-Mar-93	3466-2	263	5.3	2	-
WSTRIB-1	13-Apr-93	3603-2	451	9.8	4	J 140
WSTRIB-1	13-Jul-93	3783-2	713	10	3	-
WSTRIB-1	13-Jul-93	3784-2 FD	744	10	3	-
WS-1	24-Mar-93	3467-2	264	5.4	2	-
WS-1	13-Apr-93	3604-2	494	10	4	J 140
WS-2	13-Apr-93	3605-2	458	9.9	4	J 140
WS-2	13-Jul-93	3787-2	6342	43	6	-
WS-3	13-Apr-93	3606-2	457	9.8	4	J 140
WS-3	13-Jul-93	3790-2	502	7.0	2	-

[a] ID of -14 indicates that the results are for dissolved concentrations. All others are for total gross beta.
[b] Rinseate.

Appendix E

METAL RESULTS

Table E.1. Metal results[a] (ug/L) from the WAG 2 RI Seep Task

Location	Sample ID	Sample Date	Aluminum	Antimony	Arsenic	Boron	Barium	Beryllium	Cadmium
BTT	3583-3	11MAR93	36 U -	31 U -	2 UW-	84.7 B U30,32	337 -	1 U -	1 U -
BTT	3584-3	11MAR93	36 U -	31 U -	2 UWUJ49	83.3 B U30,32	330 -	1 U -	1 U -
BTT	3743-3	24MAY93	28.8 B -	27 U -	. -	173 U32	274 -	1 U -	. -
BTT	3964-3	01DEC93	51.1 B -	49 U -	3 UWUJ50	150 U30,32	243 -	1 U -	1 UWUJ50
BTT	4083-3	08FEB94	34 BEJ48	49 U -	51 U -	109 U32	277 -	1 U -	2 U -
BTT	4159-3	19APR94	49 U -	34 U -	. -	113 -	242 -	1 U -	4 U -
BTT	4334-3	24AUG94	29.3 B	19.1 U	0.5 UW	75.3	260	0.2 B	0.1 B
EAST SEEP	3608-3	14APR93	1460 -	31 U -	2 U -	46.2 B U30,32	29 U -	1 U -	1 U -
EAST SEEP	3791-3	13JUL93	2410 -	36 U -	4.4 B -	283 U30,32	42 B -	1 U -	1 U -
EAST SEEP	3910-3	30SEP93	603 -	36 U -	3 U -	55.5 B U32	46.2 B -	1 U -	3 U -
EAST SEEP	3953-3	01DEC93	369 -	36 U -	3 U -	66 B U30,32	28.1 B -	1 U -	3 U -
EAST SEEP	4073-3	08FEB94	479 EJ48	49 U -	51 U -	58.8 B U30,32	25.1 B -	1 U -	2 U -
EAST SEEP	4149-3	19APR94	830 -	34 U -	. -	33.3 B -	37 U -	1 U -	4 U -
EAST SEEP	4226-3	15JUN94	666 -	46 U -	78 U -	140 -	29.6 B -	1 U -	3 U -
EAST SEEP	4315-3	23JUN94	416 -	46 U -	78 U -	66.4 B -	30.4 B -	1 U -	3 U -
EAST SEEP	4361-3	24AUG94	305	19.1 U	0.9 B	39.1	25.6	0.17 B	0.05 U
FIRST CREEK	3573-3	11MAR93	36 U -	31 U -	2 U -	22.4 B U30,32	30.5 B -	1 U -	1 U -
FIRST CREEK	3815-3	19JUL93	469 -	36 U -	2 UWUJ50	24 U -	40.9 B -	1 U -	1 U -
FIRST CREEK	3816-3	19JUL93	448 -	36 U -	2 UWUJ50	28.1 B U30,32	40.1 B -	1 U -	1 U -
FIRST CREEK	3900-3	30SEP93	304 -	36 U -	3 U -	31.4 B U32	50.7 B -	1 U -	3 U -
FIRST CREEK	3967-3	01DEC93	141 B U32	36 U -	3 UWUJ50	44.1 B U30,32	44.5 B -	1 U -	3 U -
FIRST CREEK	4087-3	08FEB94	972 EJ48	49 U -	51 U -	51 B U30,32	44.8 B -	1 U -	2 U -
FIRST CREEK	4177-3	19APR94	167 B -	34 U -	. -	62.7 B -	37 U -	1 U -	4 U -
FIRST CREEK	4296-3	23JUN94	185 B -	46 U -	78 U -	40 B -	38.4 B -	1 U -	3 U -
FIRST CREEK	4338-3	24AUG94	144 B	19.1 U	0.5 U	12.2 B	48.6	0.13 B	0.05 U
HRT-3	3532-3	09MAR93	85.9 B -	31 U -	2 U -	13 U -	45.5 B -	1 U -	1 U -
HRT-3	3852-3	21JUL93	200 B U32	36 U -	2 UWUJ50	25.9 B U32	67.6 B -	1 U -	1 U -
HRT-3	3907-3	30SEP93	123 B U32	36 U -	3 U -	59.9 B U32	68.8 B -	1 U -	3 U -
HRT-3	3982-3	01DEC93	122 B U30,32	36 U -	3 U -	52.2 B U30,32	53.9 B -	1 U -	3 U -
HRT-3	4102-3	08FEB94	207 -	49 U -	51 U -	42.4 B U30,32	52.7 B -	1 U -	2 U -
HRT-3	4175-3	19APR94	280 -	34 U -	. -	56.3 B -	60.4 B -	1 U -	4 U -
HRT-3	4252-3	23JUN94	83.5 B -	46 U -	78 U -	38 U -	55.2 B -	1 U -	3 U -
HRT-3	4353-3	24AUG94	85.9 B	19.1 B	0.55 B	32.3	58.6	0.28 B	0.05 U
MBTRIB-2A	3847-3	21JUL93	186 B U32	36 U -	2 UWUJ50	34.2 B U32	50.3 B -	1 U -	1 U -
MBTRIB-3	3519-3	09MAR93	84 B -	31 U -	2 U -	13 U -	44.5 B -	1 U -	1 U -
MBTRIB-3	3862-3	21JUL93	262 -	36 U -	2 UWUJ50	25.4 B U30,32	68.9 B -	1 U -	1 U -
MBWEIR	3515-3	09MAR93	301 -	31 U -	2 U -	14.8 B U30,32	40.3 B -	1 U -	1 U -
MBWEIR	3516-3	09MAR93	278 -	31 U -	2 U -	13 U -	42.3 B -	1 U -	1 U -
MBWEIR	3569-3	11MAR93	152 B -	31 U -	2 U -	37.9 B U30,32	39.6 B -	1 U -	1 U -
MBWEIR	3609-3	14APR93	335 -	31 U -	2 U -	42.3 B U30,32	36.1 B -	1 U -	1 U -
MBWEIR	3630-15	13APR93	36 U -	31 U -	2 U	14.8 B -	29 U -	1 U -	1 U R34
MBWEIR	3794-3	13JUL93	234 U32	36 U -	3.1 B -	431 U30,32	51.6 B -	1 U -	1 U -
MBWEIR	3824-3	19JUL93	342 U32	36 U -	2.6 BWUJ50	76.3 B U32	90.4 B -	1 U -	1 U -
MBWEIR	3844-3	21JUL93	287 U32	36 U -	2 UWUJ50	44.5 B U32	106 B -	1 U -	1 U -
MBWEIR	3845-3	21JUL93	283 U32	36 U -	2.4 BWUJ50	45.6 B U32	104 B -	1 U -	1 U -
MBWEIR	3891-3	30SEP93	60 B U32	36 U -	3 U -	71.3 B U32	53.6 B -	1 U -	3 U -
MBWEIR	3971-3	01DEC93	110 B U32	36 U -	3 UWUJ50	61 B U30,32	43 B -	1 U -	3 U -
MBWEIR	3972-3	01DEC93	64 B U32	36 U -	3 UWUJ50	49 B U30,32	40.7 B -	1 U -	3 U -
MBWEIR	4091-3	08FEB94	228 EJ48	49 U -	51 U -	62.5 B U30,32	54.5 B -	1 U -	2 U -
MBWEIR	4143-3	08FEB94	28.5 BEJ48	49 U -	51 U -	49.7 B U30,32	23 U -	1 U -	2 U -
MBWEIR	4163-15	19APR94	49 U -	34 U -	. -	49.5 B -	45.7 B -	1 U -	4 U -
MBWEIR	4163-3	19APR94	415 -	34 U -	. -	67.9 B -	49.8 B -	1 U -	4 U -
MBWEIR	4164-3	19APR94	49 U -	34 U -	. -	43.9 B -	37 U -	1 U -	4 U -
MBWEIR	4239-3	15JUN94	137 B -	46 U -	78 U -	38 U -	41.8 B -	1 U -	3 U -
MBWEIR	4311-3	23JUN94	118 B -	46 U -	78 U -	62.3 B -	38.2 B -	1 U -	3 U -
MBWEIR	4356-3	24AUG94	130 B	19.1 B	1.2 B	48.9	56.4	0.49 B	0.05 U
MB-1	4184-15	19APR94	49 U -	34 U -	. -	61 B -	46 B -	1 U -	4 U -
MB-1	4257-15	15JUN94	31 U -	46 U -	78 U -	83.3 B -	39.9 B -	1 U -	3 U -
MB-1	4257-3	15JUN94	118 B -	46 U -	78 U -	47.3 B -	45.4 B -	1 U -	3 U -
MB-1	4309-15	23JUN94	31 U -	46 U -	78 U -	38 U -	38.2 B -	1 U -	3 U -
MB-1	4309-3	23JUN94	159 B -	46 U -	78 U -	38 U -	38.4 B -	1 U -	3 U -
MB-1	4340-15	24AUG94	32.5 B	19.1 U	1.8 B	49.2	55.7	1.5 B	0.13 B
MB-1	4340-3	24AUG94	129 B	19.1 U	1.2 B	42.1	57.2	0.16 B	0.05 U
MB-15	3531-3	09MAR93	221 -	31 U -	2 U -	13 U -	34 B -	1 U -	1 U -
MB-15	3846-3	21JUL93	288 U32	36 U -	2.2 BWJ50	52.7 B U32	100 B -	1 U -	1 U -
MB-15	3905-3	30SEP93	148 B U32	36 U -	3 U -	40.7 B U32	46.3 B -	1 U -	3 U -
MB-15	3980-3	01DEC93	153 B U30,32	36 U -	3 UWUJ50	36.9 B U30,32	38.6 B -	1 U -	3 U -

Table E.1. (continued)

Location	Sample ID	Calcium	Chromium	Copper	Cobalt	Lead	Iron	Magnesium
BTT	3583-3	121000 -	3 U -	4 U -	8 U -	2 U -	173 U32	19500 -
BTT	3584-3	116000 -	3.6 B U30,32	4 U -	8 U -	2 U -	166 U32	19000 -
BTT	3743-3	76500 -	4 U -	4 U -	6 U -	. -	202 -	16500 -
BTT	3964-3	92800 -	4 U -	4 U -	6 U -	2 B -	60.8 B U31	13600 -
BTT	4083-3-	107000 -	4 U -	4 U -	6 U -	40 U -	154 -	15800 -
BTT	4159-3	106000 -	5 U -	5.7 B -	11 U -	.	128 -	13400 -
BTT	4334-3	91800	3 B	2.3 B	2.8 B	0.59 U	106	18500
EAST SEEP	3608-3	39400 -	4.2 B U30	5 U -	9 U -	2.4 B -	1090 -	6350 -
EAST SEEP	3791-3	46400 -	32.8 -	13.8 B -	8.8 B -	4.2 -	1700 -	7790 -
EAST SEEP	3910-3	74300 -	12.3 -	8.4 B -	6 B -	1 U -	446 EJ48	12200 -
EAST SEEP	3953-3	57200 -	3 U -	4 U -	5.9 B -	1 U -	337 -	8880 -
EAST SEEP	4073-3-	40600 -	9.1 B U30	7.1 B -	6 U -	40 U -	443 -	6460 -
EAST SEEP	4149-3	37700 -	12.9 -	5 U -	11 U -	.	664 -	5890 -
EAST SEEP	4226-3	51400 -	23.4 -	3.4 B -	13.2 B -	55 U -	495 -	7840 -
EAST SEEP	4315-3	52400 -	27.5 -	6 B -	16.8 B -	55 U -	354 -	7840 -
EAST SEEP	4361-3	56500	12.7	3.9 B	7.7 B	.	272	8790
FIRST CREEK	3573-3	35500 -	4.7 B U30,32	4 U -	8 U -	2 U -	81.3 B U32	8110 -
FIRST CREEK	3815-3	46600 -	3 U -	3.7 B U30,32	5 U -	2 U -	600 -	10700 -
FIRST CREEK	3816-3	46000 -	3.2 B U30,32	5.3 B U30,32	5 U -	2 U -	491 -	10700 -
FIRST CREEK	3900-3	49500 -	3 U -	5.3 B -	5 U -	1.6 BWJ50	326 EJ48	11200 -
FIRST CREEK	3967-3	52000 -	3 U -	4 U -	5 U -	1 UWUJ50	184 -	10400 -
FIRST CREEK	4087-3-	46900 -	4.4 B U30	4.3 B -	6 U -	40 U -	1140 -	8990 -
FIRST CREEK	4177-3	28400 -	5 U -	5 U -	11 U -	.	173 -	5900 -
FIRST CREEK	4296-3	47600 -	4 U -	5.2 B -	8 U -	55 U -	213 -	7550 -
FIRST CREEK	4338-3	42000	2.3 U	1.3 B	1.9 U	0.59 U	232	11000
HRT-3	3532-3	34200 -	4.2 B U30,32	4 U -	8 U -	2.4 B U30,32	192 -	7250 -
HRT-3	3852-3	50400 -	3 U -	2.7 B U30	5 U -	2 U -	286 J33	12000 -
HRT-3	3907-3	59500 -	3 U -	4 U -	5 U -	1 U -	188 EJ48	12300 -
HRT-3	3982-3	44500 -	3 U -	4 U -	5 U -	1 U -	209 -	9640 -
HRT-3	4102-3-	36400 -	6.4 B U30	4 U -	6 U -	40 U -	333 -	8110 -
HRT-3	4175-3	29400 -	5 U -	5 U -	11 U -	.	412 -	6760 -
HRT-3	4252-3	37600 -	4 U -	2 U -	8 U -	55 U -	177 -	8700 -
HRT-3	4353-3	42000	3 B	2.2 B	1.9 B	.	161	9140
MBTRIB-2A	3847-3	73400 -	3 U -	15.7 B -	5 U -	2 U -	218 J33	17500 -
MBTRIB-3	3519-3	72900 -	3.7 B U30,32	4 U -	8 U -	2 U -	175 -	9080 -
MBTRIB-3	3862-3	70900 -	4.3 B U30,32	3.7 B U30,32	5 U -	2 U -	414 -	12200 -
MBWEIR	3515-3	51700 -	3 U -	4 U -	8 U -	2.8 B U30,32	317 -	7380 -
MBWEIR	3516-3	55500 -	4.5 B U30,32	4 U -	8 U -	2.7 B U30,32	387 -	7830 -
MBWEIR	3569-3	56800 -	4.2 B U30,32	4 U -	8 U -	2.3 B U30,32	215 -	7830 -
MBWEIR	3609-3	45200 -	3 U -	5 U -	9 U -	3 -	333 -	6340 -
MBWEIR	3630-15	490 U -	3 U -	5 U -	9 U -	2 U -	12 U -	680 U -
MBWEIR	3794-3	62600 -	3 U -	9.8 B -	5 U -	2 U -	353 -	13900 -
MBWEIR	3824-3	111000 -	3 U -	12.7 B -	5 U -	2 U -	401 J33	27000 -
MBWEIR	3844-3	132000 -	3 U -	14.4 B -	5 U -	2 U -	409 J33	34000 -
MBWEIR	3845-3	131000 -	3 U -	16.5 B -	5 U -	2 U -	399 J33	33100 -
MBWEIR	3891-3	69500 -	3 U -	4 U -	5 U -	1 U -	111 EJ48	14100 -
MBWEIR	3971-3	51700 -	3 U -	4 U -	5 U -	1 U -	124 -	8940 -
MBWEIR	3972-3	49900 -	3 U -	4 U -	5 U -	1 U -	95.8 B -	8530 -
MBWEIR	4091-3-	60000 -	4 U -	12.1 B -	6 U -	40 U -	268 -	11300 -
MBWEIR	4143-3-	42.8 B U32	4 U -	4 U -	6 U -	40 U -	35 B U30,32	54 U -
MBWEIR	4163-15	47900 -	5 U -	5.2 B -	11 U -	.	36.4 B -	7600 -
MBWEIR	4163-3	48900 -	7.2 B -	5.5 B -	11 U -	.	410 -	7750 -
MBWEIR	4164-3	88 U -	5 U -	5 U -	11 U -	.	18 U -	89 U -
MBWEIR	4239-3	42700 -	4 U -	3.6 B -	8 U -	55 U -	188 -	8990 -
MBWEIR	4311-3	38700 -	4 U -	2.4 B -	8 U -	55 U -	164 -	8370 -
MBWEIR	4356-3	61500	2.3 U	5.1 B	1.9 U	.	216	11900
MB-1	4184-15	47700 -	5 U -	5 U -	11 U -	.	35.5 B -	7630 -
MB-1	4257-15	41400 -	4 U -	2 U -	8 U -	55 U -	12.9 B -	8780 -
MB-1	4257-3	45000 -	4 U -	4.1 B -	8 U -	55 U -	163 -	9700 -
MB-1	4309-15	38800 -	4 U -	4 B -	8 U -	55 U -	11.2 B -	8430 -
MB-1	4309-3	38700 -	4 U -	2.9 B -	8 U -	55 U -	189 -	8200 -
MB-1	4340-15	61800	2.3 U	3.2 B	1.9 U	2.4 BW	25.2 B	11900
MB-1	4340-3	62200	2.3 U	2.9 B	1.9 U	0.59 U	218	11900
MB-15	3531-3	47200 -	3 U -	4 U -	8 U -	2.9 B U30,32	254 -	5620 -
MB-15	3846-3	138000 -	7.8 B -	29.8 -	5.3 B -	2 U -	386 J33	35400 -
MB-15	3905-3	64600 -	3 U -	4 U -	5 U -	1 U -	136 EJ48	13100 -
MB-15	3980-3	46800 -	3 U -	4 U -	5 U -	1 UWUJ49	189 -	8250 -

Table E.1. (continued)

Location	Sample ID	Manganese	Mercury	Molybdenun	Sodium	Nickel	Potassium	Selenium
BTT	3583-3	10.4 B -	0.2 U -	15 U -	21500 -	37.6 B -	2820 B -	2 UWUJ49
BTT	3584-3	9.6 B -	0.2 U -	17 B -	21300 -	44.7 -	3140 B -	2 UWUJ49
BTT	3743-3	12.7 B U30	. -	20.5 B -	23000 -	46.7 U30	1330 B -	. -
BTT	3964-3	2 U -	0.2 U UJ4	26.3 B -	25700 -	48.6 -	5230 -	3 U -
BTT	4083-3-	4.1 B U30	0.2 U -	65.6 B U30	20600 -	37.4 B -	3410 B -	61 U -
BTT	4159-3	15.6 -	. -	171 B -	11700 -	21.1 B -	2500 B -	.
BTT	4334-3	4.7 B	0.05 U	156	22900	50.9	3000	0.51 U
EAST SEEP	3608-3	232 -	0.2 U -	15 U -	45800 -	31 U -	1330 B -	2 U -
EAST SEEP	3791-3	552 -	0.2 U -	14.8 B -	216000 -	26.9 B -	1670 B U31	2 U -
EAST SEEP	3910-3	412 -	0.2 U UJ4	15 U -	172000 -	39.6 B -	2100 B -	3 U -
EAST SEEP	3953-3	149 -	0.2 U -	15 U -	96500 -	33.9 B -	971 B -	3 UWUJ49
EAST SEEP	4073-3-	52.2 -	0.2 U -	13 U -	62000 -	16.8 B -	859 B -	61 U -
EAST SEEP	4149-3	114 -	. -	26 U -	53300 -	16.4 B -	836 B -	.
EAST SEEP	4226-3	370 -	. -	14 U -	157000 -	28.2 B -	906 B -	83 U -
EAST SEEP	4315-3	214 -	. -	14 U -	187000 -	27.7 B -	1330 B -	83 U -
EAST SEEP	4361-3	239	0.05 U	5.2 U	143000	28.2 B	1430 B	0.65 B
FIRST CREEK	3573-3	10.4 B -	0.2 U -	15 U -	2140 B -	31 U -	820 U -	2 U -
FIRST CREEK	3815-3	42.9 -	0.2 U UJ4	11 U -	4760 -	14 U -	1060 B -	2 U -
FIRST CREEK	3816-3	37.4 -	0.2 U UJ4	11 U -	4790 -	14 U -	1170 B -	2 U -
FIRST CREEK	3900-3	21.1 -	0.2 U UJ4	15 U -	5780 -	10 U -	1040 B -	3 U -
FIRST CREEK	3967-3	16.6 -	0.2 U -	15 U -	3820 B -	10 U -	1140 B -	3 U -
FIRST CREEK	4087-3-	46.2 -	0.2 U -	13 U -	10300 -	11 U -	955 B -	61 U -
FIRST CREEK	4177-3	13.8 B -	. -	26 U -	1410 B -	13 U -	674 B -	.
FIRST CREEK	4296-3	24.6 -	. -	14 U -	5160 -	8 U -	1040 B -	83 U -
FIRST CREEK	4338-3	18.5	0.05 U	5.2 U	2380	4.8 U	695 U	0.51 U
HRT-3	3532-3	43.8 -	0.2 U -	15 U -	3910 B -	31 U -	1440 B -	2 U -
HRT-3	3852-3	51.5 -	0.2 U UJ4	11 U -	6590 -	14 U -	1990 B -	2 U -
HRT-3	3907-3	44.5 -	0.2 U UJ4	15 U -	5530 -	10 U -	1940 B -	3 U -
HRT-3	3982-3	52.3 -	0.2 U -	15 U -	5150 -	10 U -	1940 B -	3 U -
HRT-3	4102-3-	53.4 -	0.2 U -	13 U -	6090 -	11 U -	1670 B -	61 U -
HRT-3	4175-3	34.4 -	. -	26 U -	3650 B -	13 U -	1910 B -	.
HRT-3	4252-3	25.5 -	. -	14 U -	4600 B -	8 U -	1600 B -	83 U -
HRT-3	4353-3	48.9	0.05 U	5.2 U	4510	4.8 U	2560 B	0.51 U
MBTRIB-2A	3847-3	142 -	0.2 U UJ4	11 U -	11700 -	14 U -	2740 B -	2 U -
MBTRIB-3	3519-3	338 -	0.2 U -	15 U -	4080 B -	31 U -	1430 B -	2 U -
MBTRIB-3	3862-3	399 -	0.2 U UJ4	11 U -	5090 -	14 U -	2430 -	2 U -
MBWEIR	3515-3	89.4 -	0.2 U -	15 U -	4310 B -	31 U -	1430 B -	2 U -
MBWEIR	3516-3	91.4 -	0.2 U -	15 U -	4580 B -	31 U -	1430 B -	2 U -
MBWEIR	3569-3	106 -	0.2 U -	15 U -	4670 B -	31 U -	1700 B -	2 U -
MBWEIR	3609-3	73.7 -	0.2 U -	15 U -	3750 B -	31 U -	1710 B -	2 U -
MBWEIR	3630-15	2 U -	0.2 U -	15 U -	740 U -	31 U -	820 U -	2 UWUJ49
MBWEIR	3794-3	237 -	0.2 U -	11 U -	13200 -	14 U -	2540 B U31	2 U -
MBWEIR	3824-3	197 -	0.2 U UJ4	11 U -	17100 -	14 U -	3870 B -	2 U -
MBWEIR	3844-3	273 -	0.2 U UJ4	11 U -	20900 -	14 U -	3850 B -	2 U -
MBWEIR	3845-3	273 -	0.2 U UJ4	11 U -	20300 -	14 U -	4450 B -	2 U -
MBWEIR	3891-3	201 -	0.2 U UJ4	15 U -	9150 -	10 U -	2630 B -	3 U -
MBWEIR	3971-3	96.2 -	0.2 U -	15 U -	6030 -	10 U -	1500 B -	3 U -
MBWEIR	3972-3	90.8 -	0.2 U -	15 U -	5740 -	10 U -	1410 B -	3 U -
MBWEIR	4091-3-	68 -	0.2 U -	13 U -	8160 -	11 U -	2130 B -	61 U -
MBWEIR	4143-3-	2 U -	0.2 U -	13 U -	99.3 B U32	11 U -	578 U -	61 U -
MBWEIR	4163-15	52.4 -	. -	26 U -	3860 B -	13 U -	1980 B -	.
MBWEIR	4163-3	62.6 -	. -	26 U -	3940 B -	13 U -	1750 B -	.
MBWEIR	4164-3	3 U -	. -	26 U -	137 U -	13 U -	483 U -	.
MBWEIR	4239-3	93.4 -	. -	14 U -	5480 -	8 U -	1760 B -	83 U -
MBWEIR	4311-3	90.4 -	. -	14 U -	5140 -	8 U -	1200 B -	83 U -
MBWEIR	4356-3	194	0.05 U	5.2 U	7720	4.8 U	2390 B	0.51 UW
MB-1	4184-15	50 -	. -	26 U -	3920 B -	13 U -	1430 B -	.
MB-1	4257-15	57.4 -	. -	14 U -	5560 -	8 U -	1570 B -	83 U -
MB-1	4257-3	81.8 -	. -	14 U -	6000 -	8 U -	1390 B -	83 U -
MB-1	4309-15	48.6 -	. -	14 U -	5180 -	8 U -	1570 B -	83 U -
MB-1	4309-3	78.1 -	. -	14 U -	4970 B -	8 U -	1510 B -	83 U -
MB-1	4340-15	132	0.05 B	5.2 U	7840	4.8 U	2760 B	0.51 U
MB-1	4340-3	156	0.05 U	5.2 U	7740	4.8 U	2370 B	0.51 U
MB-15	3531-3	42 -	0.2 U -	15 U -	2710 B -	31 U -	1200 B -	2 U -
MB-15	3846-3	112 -	0.2 U UJ4	11 U -	21600 -	14 U -	6300 -	2 U -
MB-15	3905-3	68 -	0.2 U UJ4	15 U -	7930 -	10 U -	2100 B -	3 U -
MB-15	3980-3	52.6 -	0.2 U -	15 U -	5540 -	10 U -	1640 B -	3 U -

Table E.1. (continued)

Location	Sample ID	Silicon	Silver	Strontium	Thallium	Vanadium	Zinc
BTT	3583-3	4900 -	3 U -	266 -	3 U -	7 U -	9.1 B U30,32
BTT	3584-3	4960 -	3 U -	261 -	3 U -	7 U -	9 B U30,32
BTT	3743-3	4390 -	5 U -	215 -	500 U -	4 U -	16.1 B U32
BTT	3964-3	2970 -	4 U -	201 -	500 U -	6 U -	28.2 U32
BTT	4083-3-	4450 EJ48	4 U -	224 -	500 U -	6 U -	20.6 U32
BTT	4159-3	4310 -	5 U -	220 -	.	10 U -	21 -
BTT	4334-3		3.2 U	256	22.5 U	2.3 U	9.8 B
EAST SEEP	3608-3	5450 -	3 U -	78.9 B -	3 U -	7 U -	16 B U30,32
EAST SEEP	3791-3	7490 -	3 U -	125 B -	4 UWUJ49	5 U -	51.5 R135,136,137
EAST SEEP	3910-3	4540 J35	4 U -	181 B -	3 UWUJ49	5 U -	23.1 -
EAST SEEP	3953-3	3060 -	4 U -	119 B -	3 UWUJ49	5 U -	10.2 B U32
EAST SEEP	4073-3-	3430 EJ48	4 U -	84.8 -	500 U -	6 U -	17.4 B U30,32
EAST SEEP	4149-3	4360 -	5 U -	78.2 -	.	10 U -	9.7 B -
EAST SEEP	4226-3	3870 -	4 U -	110 B -	500 U -	4 U -	8.8 B -
EAST SEEP	4315-3	3570 -	4 U -	115 B -	500 U -	4 U -	14.2 B -
EAST SEEP	4361-3		3.2 U	122	22.5 U	2.3 U	5.8 B
FIRST CREEK	3573-3	2900 -	3 U -	58.4 -	3 U -	7 U -	11.6 B U30,32
FIRST CREEK	3815-3	3820 EN35,37,48R	3 U -	97.3 -	4 U -	5 U	51 U32
FIRST CREEK	3816-3	3800 EN35,37,48R	3 U -	97.9 -	4 U -	5 U -	37 U32
FIRST CREEK	3900-3	3920 J35	4 U -	92.1 B -	3 U -	5 U -	43 -
FIRST CREEK	3967-3	3160 -	4 U -	96.8 B -	3 U -	5 U -	18 B U32
FIRST CREEK	4087-3-	3660 EJ48	4 U -	84.7 -	500 U -	6 U -	34.7 U32
FIRST CREEK	4177-3	3730 -	5 U -	43.8 B -	.	10 U -	12.5 B -
FIRST CREEK	4296-3	2900 -	4 U -	99.1 B -	500 U -	4 U -	30.4 -
FIRST CREEK	4338-3		3.2 U	76.1	22.5 U	2.3 U	11.5 B
HRT-3	3532-3	3060 -	3 U -	74.9 -	3 U -	7 U -	7 B U32
HRT-3	3852-3	4030 J33	3 U -	122 -	4 U -	5 U -	11.9 B U32
HRT-3	3907-3	3940 J35	4 U -	124 B -	3 U -	5 U -	3 U -
HRT-3	3982-3	2870 -	4 U -	98.4 B -	3 U -	5 U -	4.8 B U30,32
HRT-3	4102-3-	3020 -	4 U -	82.3 -	500 U -	6 U -	9.8 B U30,32
HRT-3	4175-3	4330 -	5 U -	71.6 -	.	10 U -	9 B -
HRT-3	4252-3	2910 -	4 U -	88.2 B -	500 U -	4 U -	5.3 B -
HRT-3	4353-3		3.2 U	91.6	22.5 U	2.3 U	3.1 B
MBTRIB-2A	3847-3	5660 J33	3 U -	188 -	4 U -	5 U -	75.6 U32
MBTRIB-3	3519-3	2580 -	3.9 B U30	146 -	3 U -	7 U -	5.1 B U32
MBTRIB-3	3862-3	3760 EN35,37,48R	3 U -	168 -	4 U -	5 U -	40.7 U32
MBWEIR	3515-3	3750 -	3 U -	104 -	3 U -	7 U -	16.6 B U32
MBWEIR	3516-3	4540 -	3 U -	110 -	3 U -	7 U -	16.2 B U32
MBWEIR	3569-3	3620 -	3 U -	111 -	3 U -	7 U -	13.4 B U32
MBWEIR	3609-3	3880 -	3 U -	93.4 B -	3 U -	7 U -	16.3 B U30,32
MBWEIR	3630-15	73.6 BEUJ32,35,48	3 U -	2 U -	3 U -	7 U -	13 B U32
MBWEIR	3794-3	4880 -	3 U -	158 B -	4 U -	5 U -	30.2 R135,136,137
MBWEIR	3824-3	7740 J33	3 U -	282 -	4 U -	5 U -	120 U32
MBWEIR	3844-3	8680 J33	3 U -	346 -	4 U -	5 U -	159 U32
MBWEIR	3845-3	8680 J33	3 U -	338 -	4 U -	5 U -	157 U32
MBWEIR	3891-3	4610 J35	4 U -	158 B -	3 U -	5 U -	7 B -
MBWEIR	3971-3	2940 -	4 U -	112 B -	3 U -	5 U -	6.9 B U32
MBWEIR	3972-3	2810 -	4 U -	107 B -	3 U -	5 U -	6.7 B U32
MBWEIR	4091-3-	4350 EJ48	4 U -	140 -	500 U -	6 U -	56.1 U32
MBWEIR	4143-3-	316 EUJ32,48	4 U -	1 U -	500 U -	6 U -	19.5 B U30,32
MBWEIR	4163-15	4260 -	5 U -	99.6 -	.	10 U -	19.3 B -
MBWEIR	4163-3	4970 -	5 U -	102 -	.	10 U -	21.2 -
MBWEIR	4164-3	69.9 B -	5 U -	2 U -	.	10 U -	7.2 B -
MBWEIR	4239-3	3040 -	4 U -	96.6 B -	500 U -	4 U -	14.5 B -
MBWEIR	4311-3	2890 -	4 U -	90.9 B -	500 U -	4 U -	12.3 B -
MBWEIR	4356-3		3.2 U	135	22.5 U	2.3 U	12.6 B
MB-1	4184-15	4180 -	5 U -	99.8 -	.	10 U -	17.3 B -
MB-1	4257-15	2900 -	4 U -	96.3 B -	500 U -	4 U -	6.6 B -
MB-1	4257-3	3410 -	4 U -	105 B -	500 U -	4 U -	16.3 B -
MB-1	4309-15	2730 -	4 U -	92.3 B -	500 U -	4 U -	11.9 B -
MB-1	4309-3	2850 -	4 U -	89.3 B -	500 U -	4 U -	20.2 -
MB-1	4340-15		3.2 U	137	22.5 U	2.3 U	15.3 B
MB-1	4340-3		3.2 U	137	22.5 U	2.3 U	13.9 B
MB-15	3531-3	3600 -	3 U -	90.4 -	3 U -	7 U -	8.8 B U32
MB-15	3846-3	9480 J33	3 U -	362 -	4 U -	5 U -	285 -
MB-15	3905-3	4220 J35	4 U -	149 B -	3 U -	5 U -	9 B -
MB-15	3980-3	2840 -	4 U -	104 B -	3 U -	5 U -	5.3 B U30,32

Table E.1. (continued)

Location	Sample ID	Sample Date	Aluminum	Antimony	Arsenic	Boron	Barium	Beryllium	Cadmium
MB-15	4100-3	08FEB94	348 EJ48	49 U -	51 U -	132 U32	56.2 B -	1 U -	2 U -
MB-15	4173-3	19APR94	447 -	34 U -	. -	83.5 B -	49.1 B -	1 U -	4 U -
MB-15	4249-3	23JUN94	163 B -	46 U -	78 U -	38 U -	32.2 B -	1 U -	3 U -
MB-15	4350-3	24AUG94	169 B	19.1 U	1.6 B	33	61.7	0.18 B	0.05 U
MB-15	4351-3	24AUG94	10.7 B	19.1 U	0.5 U	7.5 U	0.6 U	0.18 B	0.05 U
MB-17	3848-3	21JUL93	974 U32	36 U -	2 UWUJ50	41.1 B U32	55.4 B -	1 U -	1 U -
MB-5	4264-15	23JUN94	31 U -	46 U -	78 U -	59.4 B -	35.6 B -	1 U -	3 U -
MB-5	4264-3	23JUN94	85.5 B -	46 U -	78 U -	46.2 B -	35.5 B -	1 U -	3 U -
MB-5	4300-15	23JUN94	31 U -	46 U -	78 U -	86.4 B -	38.7 B -	1 U -	3 U -
MB-5	4347-15	24AUG94	26.3 B	19.1 U	2 B	44.4	58.2	0.19 B	0.05 U
MB-5	4347-3	24AUG94	81.2 B	19.1 U	1 B	41.7	59.4	0.11 B	0.05 U
MID. DRAIN.	4349-3	24AUG94	65 B	19.1 U	0.8 B	182	128	0.29 B	0.05 U
MID. DRAIN.	3529-3	09MAR93	139 B -	31 U -	2 U -	108 B -	59.4 B -	1 U -	1 U -
MID. DRAIN.	3865-3	21JUL93	33.6 B -	36 U -	2 UWUJ50	274 -	129 B -	1 U -	1 U -
MID. DRAIN.	3904-3	30SEP93	71.5 B -	49 U -	. -	316 U32	129 B -	1 U -	. -
MID. DRAIN.	3979-3	01DEC93	27 U -	49 U -	3 UWUJ50	217 U32	105 B -	1 U -	1 U -
MID. DRAIN.	4098-3	08FEB94	27 U -	49 U -	51 U -	156 U32	51.8 B -	1 U -	2 U -
MID. DRAIN.	4099-3	08FEB94	44.1 B -	49 U -	51 U -	166 U32	52.3 B -	1 U -	2 U -
MID. DRAIN.	4171-3	19APR94	49 U -	34 U -	. -	145 -	61.7 B -	1 U -	4 U -
MID. DRAIN.	4172-3	19APR94	49 U -	34 U -	. -	190 -	63.1 B -	1 U -	4 U -
MID. DRAIN.	4348-3	24AUG94	218	19.1 U	0.5 BW	185	135	0.14 B	0.06 B
MV-1	3860-3	21JUL93	187 B -	36 U -	2.3 BWJ50	30.1 B U30,32	152 B -	1 U -	1 U -
MV-1	3863-3	21JUL93	211 -	36 U -	2 UWUJ50	24 U -	149 B -	1 U -	1 U -
MV-3	3533-3	09MAR93	162 B -	31 U -	2 U -	13 U -	48.6 B -	1 U -	1 U -
NWTRIB	3572-3	11MAR93	64.4 B -	31 U -	2 UWUJ49	51.7 B U30,32	29 U -	1 U -	1 U -
NWTRIB	3814-3	19JUL93	178 B -	36 U -	2 UWUJ50	24 U -	43.6 B -	1 U -	1 U -
R311 [b]	4237-15	15JUN94	31 U -	46 U -	78 U -	38 U -	14 U -	1 U -	3 U -
R311 [b]	4237-3	15JUN94	31 U -	46 U -	78 U -	53.7 B -	14 U -	1 U -	3 U -
R311 [b]	4322-15	23JUN94	31 U -	46 U -	78 U -	38 U -	14 U -	1 U -	3 U -
R311 [b]	4322-3	23JUN94	31 U -	46 U -	78 U -	38 U -	14 U -	1 U -	4 B -
R311 [b]	4335-15	24AUG94	12.4 B	19.1 U	0.5 UW	7.5 U	0.6 U	0.15 B	0.1 B
R311 [b]	4335-3	24AUG94	9.3 B	19.1 U	0.5 U	7.5 U	0.7 B	0.28 B	0.08 B
RAC	3525-3	09MAR93	258 -	31 U -	2 U -	13 U -	29 U -	1 U -	1 U -
RAC	3811-3	19JUL93	37.5 B -	36 U -	2 UWUJ50	91.3 B U30,32	28.7 B -	1 U -	1 U UJ50
RAC	3841-3	19JUL93	30 U -	36 U -	2 U -	24 U -	16 U -	1 U -	1 U -
RS-1	3600-3	13APR93	298 -	31 U -	2 U -	45 B U30,32	36.1 B -	1 U -	1 U -
RS-3A	3601-3	13APR93	3950 -	31 U -	14.3 -	107 U U30,32	29 U -	1 U -	1 U -
RS-3A	3744-3	24MAY93	10400 -	27 U -	. -	128 U32	50.7 B -	1 B -	. -
RS-3A	3746-3	24MAY93	9720 -	27 U -	. -	145 U32	49 B -	1 B -	. -
RS-3A	3789-3	13JUL93	13200 -	36 U -	21.5 -	491 U32	51.4 B -	1.1 B -	1 U -
RS-3A	3894-3	30SEP93	7960 -	36 U -	19.9 -	127 U32	39.6 B -	1 U -	3 U -
RS-3A	3951-3	01DEC93	2400 -	36 U -	18 -	137 U30,32	23 U -	1 U -	3 U -
RS-3A	4071-3	08FEB94	9390 EJ48	49 U -	8.9 B -	91.9 B U30,32	40.6 B -	1 U -	2.1 B -
RS-3A	4147-3	19APR94	15400 -	34 U -	13.2 -	82.2 B -	69.1 B -	1 U -	4 U -
RS-3A	4224-3	15JUN94	17700 -	46 U -	14.5 S-	118 -	91 B -	1.1 B -	3 U -
RS-3A	4359-3	24AUG94	10000	19.1 U	23.6 S	93.5	43.4	0.47 B	0.08 BW
RS-3B	3602-3	13APR93	1420 -	31 U -	2 U -	120 U30,32	29.2 B -	1 U -	1 U -
RS-3B	4148-3	19APR94	1270 -	34 U -	3 U -	33.6 B -	37 U -	1 U -	4 U -
R-227 [b]	3639-3	14APR93	36 U -	31 U -	2 U -	24 B U32,31	29 U -	1 U -	1 U R34
R-227 [b]	3640-3	14APR93	36 U -	31 U -	2 UWUJ49	13.3 B -	29 U -	1 U -	1 U R34
R-227 [b]	3641-3	14APR93	36 U -	31 U -	2 U -	21.1 B -	29 U -	1 U -	1 U R34
R-227 [b]	3642-3	14APR93	36 U -	31 U -	2 UWUJ49	14.5 B -	29 U -	1 U -	1 U R34
R-227 [b]	3643-3	14APR93	36 U -	31 U -	2 UWUJ49	17.7 B -	29 U -	1 U -	1 U R34
R-227 [b]	3807-3	13JUL93	62.9 B U32	36 U -	3 U -	688 -	16 U -	1 U -	1 U -
R-227 [b]	3933-3	30SEP93	40 U -	36 U -	3 U -	19.8 B U32	23 U -	1 U -	3 U -
R-227 [b]	3969-3	01DEC93	40 U -	36 U -	3 U -	62.1 B U30,32	23 U -	1 U -	3 U -
R-227 [b]	4089-3	08FEB94	27 UEUJ48	49 U -	51 U -	63.1 B U30,32	23 U -	1 U -	2 U -
R-227 [b]	4161-15	19APR94	49 U -	34 U -	. -	49.8 B -	37 U -	1 U -	4 U -
R-227 [b]	4161-3	19APR94	49 U -	34 U -	. -	107 -	37 U -	1 U -	4 U -
R-311 [b]	3889-3	21JUL93	30 U -	36 U -	2 U -	24 U -	16 U -	1 U -	1 U -
SPD	4344-15	24AUG94	34.8 B	19.1 U	2.2 B	213	403	0.14 B	0.05 U
SW2-1	3621-3	13APR93	186 B -	31 U -	2 U -	19.3 B -	83.5 B -	1 U -	1 U R34
SW2-2	3576-3	11MAR93	36 U -	31 U -	2 U -	18.6 B U30,32	104 B -	1 U -	1 U -
SW2-3	3562-3	11MAR93	36 U -	31 U -	2 UWUJ49	13 U -	38 B -	1 U -	1 U -
SW2-4	3567-3	11MAR93	36 U -	31 U -	2 U -	51.5 B U30	57 B -	1 U -	1 U -
SW2-4	3825-3	19JUL93	221 U32	36 U -	2 UWUJ50	151 U32	130 B -	1 U -	1 U -

Table E.1. (continued)

Location	Sample ID	Calcium	Chromium	Copper	Cobalt	Lead	Iron	Magnesium
MB-15	4100-3-	63500 -	5.9 B U30	15.8 B -	6 U -	40 U -	370 -	12800 -
MB-15	4173-3	49400 -	5 U -	9.1 B -	11 U -	.	399 -	8210 -
MB-15	4249-3	34600 -	4 U -	3.6 B -	8 U -	55 U -	172 -	8010 -
MB-15	4350-3	71100	2.7 B	7.1 B	1.9 U	.	225	14500
MB-15	4351-3	61.7 B	2.3 U	1.5 B	1.9 U	.	2.8 B	14.7 U
MB-17	3848-3	58000 -	3 U -	4.6 B U30	5 U -	2 U -	832 J33	6030 -
MB-5	4264-15	36900 -	4 U -	2 U -	8 U -	55 U -	10.4 B -	8220 -
MB-5	4264-3	37400 -	4 U -	3.6 B -	8 U -	55 U -	120 -	8060 -
MB-5	4300-15	40200 -	4 U -	2 U -	8 U -	55 U -	10 U -	9040 -
MB-5	4347-15	64100	2.3 U	4.9 B	1.9 U	.	23.6 B	12700
MB-5	4347-3	64200	2.3 U	3.9 B	1.9 U	.	176	12600
MID. DRAIN.	4349-3	111000	2.3 U	1.6 B	1.9 U	.	4700	15800
MID. DRAIN.	3529-3	92400 -	3 U -	4 U -	8 U -	2.7 B U30,32	575 -	12900 -
MID. DRAIN.	3865-3	118000 -	5 B U30,32	3.7 B U30,32	5 U -	2 U -	2780 -	16000 -
MID. DRAIN.	3904-3	120000 -	6.1 B -	4 U -	6 U -	. -	799 -	16200 -
MID. DRAIN.	3979-3	106000 -	4 U -	4 U -	6 U -	1 BWJ49	1580 -	15000 -
MID. DRAIN.	4098-3-	89100 -	4 U -	4 U -	6 U -	40 U -	325 -	12600 -
MID. DRAIN.	4099-3-	90300 -	4 U -	4 U -	6 U -	40 U -	363 -	12800 -
MID. DRAIN.	4171-3	73400 -	5 U -	5 U -	11 U -	.	281 -	10900 -
MID. DRAIN.	4172-3	74600 -	5 U -	5 U -	11 U -	.	303 -	11000 -
MID. DRAIN.	4348-3	112000	2.3 U	1.2 B	1.9 U	.	8610	15900
MV-1	3860-3	79400 -	4.5 B U30,32	2.7 B U30,32	5 U -	2 U -	2090 -	5570 -
MV-1	3863-3	78900 -	6 B U30,32	2.9 B U30,32	6 B -	2 U -	2110 -	5390 -
MV-3	3533-3	82800 -	3 U -	4 U -	8 U -	2.1 B U30,32	172 -	5300 -
NWTRIB	3572-3	61600 -	3 U -	4 U -	8 U -	2 U -	75.9 B U32	6710 -
NWTRIB	3814-3	36100 -	3 U -	3.2 B U30,32	5 U -	2 U -	223 U32	11000 -
R311 [b]	4237-15	56 U -	4 U -	2 U -	8 U -	55 U -	10 U -	48 U -
R311 [b]	4237-3	56 U -	4 U -	2 U -	8 U -	55 U -	16 B -	48 U -
R311 [b]	4322-15	56 U -	4 U -	2.1 B -	8 U -	55 U -	10 U -	48 U -
R311 [b]	4322-3	56 U -	4 U -	2 U -	8 U -	55 U -	10 U -	48 U -
R311 [b]	4335-15	57 B	2.3 U	1.1 U	1.9 U	0.59 U	8.4 B	14.7 U
R311 [b]	4335-3	45.9 B	2.3 U	1.4 B	1.9 U	0.59 U	3.4 B	14.7 U
RAC	3525-3	75600 -	3 U -	4 U -	8 U -	3.1 U30,32	259 -	4740 B -
RAC	3811-3	92600 -	3 U -	2.9 B U30,32	5 U -	2 U -	211 U32	4780 -
RAC	3841-3	360 U -	3 U -	3.7 B U30,32	5 U -	2 U -	14.4 B U32	430 U -
RS-1	3600-3	34900 -	3 U -	5 U -	9 U -	2.6 B -	601 -	5960 -
RS-3A	3601-3	5880 -	67.3 -	11.4 B -	25 B -	5.9 -	3010 -	1150 B -
RS-3A	3744-3	7380 -	96.4 -	22.8 B U30	27.8 B -	. -	9370 -	1800 B -
RS-3A	3746-3	6540 -	87.4 -	22.6 B U30	32.4 B -	. -	8630 -	1780 B -
RS-3A	3789-3	5670 -	82.2 -	24.6 B -	28.9 B -	4.8 -	9130 -	1770 B -
RS-3A	3894-3	6830 -	79.2 -	19.8 B -	28 B -	3.3 -	5080 EJ48	1660 B -
RS-3A	3951-3	7450 -	74.7 -	14.5 B -	23.2 B -	2.6 B -	1830 -	1380 B -
RS-3A	4071-3-	8890 -	67 -	14.2 B -	25.5 B U30	40 U -	7420 -	2220 B -
RS-3A	4147-3	10800 -	67.7 -	21.8 B -	36.3 B -	.	11200 -	3130 B -
RS-3A	4224-3	8370 -	74.9 -	27.6 -	35.1 B -	55 U -	13900 -	2940 B -
RS-3A	4359-3	4170	87.8	13.3 B	25.9	.	7710	1410
RS-3B	3602-3	28800 -	3 U -	5 U -	9 U -	3.6 -	1050 -	4400 B -
RS-3B	4148-3	27400 -	5 U -	5 U -	11 U -	.	1080 -	4230 B -
R-227 [b]	3639-3	490 U -	3 U -	5 U -	9 U -	2 U -	17.2 B U32	680 U -
R-227 [b]	3640-3	490 U -	3 U -	5 U -	9 U -	2 U -	12 U -	680 U -
R-227 [b]	3641-3	490 U -	3 U -	5 U -	9 U -	2 U -	12.9 B U32	680 U -
R-227 [b]	3642-3	490 U -	3 U -	5 U -	9 U -	2 U -	18.2 B U32	680 U -
R-227 [b]	3643-3	490 U -	3 U -	5 U -	9 U -	2 U -	15.7 B U32	680 U -
R-227 [b]	3807-3	2130 B -	3 U -	7 B -	5 U -	2 U -	42.8 B -	430 U -
R-227 [b]	3933-3	31 U -	3 U -	4 U -	5 U -	1 U -	9 UEUJ48	54 U -
R-227 [b]	3969-3	31 U -	3 U -	4 U -	5 U -	1 U -	31.1 B -	54 U -
R-227 [b]	4089-3-	74.2 B U32	4 U -	4 U -	6 U -	40 U -	26.8 B U30,32	54 U -
R-227 [b]	4161-15	88 U -	5 U -	5 U -	11 U -	.	18 U -	89 U -
R-227 [b]	4161-3	88 U -	5 U -	5 U -	11 U -	.	18 U -	89 U -
R-311 [b]	3889-3	360 U -	3 U -	2 U -	5 U -	2 U -	12.1 B UJ32,33	430 U -
SPD	4344-15	147000	2.3 U	1.1 U	4.5 B	2.2 B	5570	15700
SW2-1	3621-3	103000 -	3 U -	5 U -	9 U -	3.3 -	2300 -	10700 -
SW2-2	3576-3	57900 -	3 U -	4 U -	8 U -	2 U -	394 -	8530 -
SW2-3	3562-3	40800 -	3 U -	4 U -	8 U -	2.3 B U30,32	225 -	6240 -
SW2-4	3567-3	107000 -	3 U -	4 U -	8 U -	2 UWUJ49	386 -	11000 -
SW2-4	3825-3	182000 -	3 U -	3.8 B U30	5 U -	8.4 -	809 J33	15000 -

Table E.1. (continued)

Location	Sample ID	Manganese	Mercury	Molybdenun	Sodium	Nickel	Potassium	Selenium
MB-15	4100-3-	34.2 -	0.2 U -	13 U -	8760 -	11 U -	2430 B -	61 U -
MB-15	4173-3	24.5 -	. -	26 U -	3830 B -	13 U -	2010 B -	.
MB-15	4249-3	40 -	. -	14 U -	4690 B -	8 U -	1390 B -	83 U -
MB-15	4350-3	96.8	0.05 U	5.2 U	9080	4.8 U	3200	0.51 UW
MB-15	4351-3	1 U	0.05 U	5.2 U	15.1 U	4.8 U	695 U	0.51 U
MB-17	3848-3	26.3 -	0.2 U UJ4	11 U -	4540 B -	14 U -	2440 B -	2 U -
MB-5	4264-15	59.1 -	. -	14 U -	5180 -	8 U -	1060 B -	83 U -
MB-5	4264-3	71.8 -	. -	14 U -	4920 B -	8 U -	1450 B -	83 U -
MB-5	4300-15	63.1 -	. -	14 U -	5620 -	8 U -	1180 B -	83 U -
MB-5	4347-15	146	0.05 U	5.2 U	8150	6.7 B	2720 B	0.51 U
MB-5	4347-3	157	0.05 U	5.2 U	8030	4.8 U	2310 B	0.51 U
MID. DRAIN.	4349-3	4590	0.05 U	5.2 U	16800	4.8 U	2730 B	0.51 U
MID. DRAIN.	3529-3	268 -	0.2 U -	15 U -	13000 -	31 U -	1830 B -	2 UWUJ49
MID. DRAIN.	3865-3	3930 -	0.2 U UJ4	11 U -	16400 -	14 U -	2530 -	2 U -
MID. DRAIN.	3904-3	2420 -	. -	13 U -	18800 -	11 U -	2460 B -	. -
MID. DRAIN.	3979-3	2000 -	0.2 U UJ4	13 U -	17700 -	11 U -	1760 B -	3 U -
MID. DRAIN.	4098-3-	200 -	0.2 U -	13 U -	14700 -	11 U -	1610 B -	61 U -
MID. DRAIN.	4099-3-	201 -	0.2 U -	13 U -	14700 -	11 U -	1420 B -	61 U -
MID. DRAIN.	4171-3	195 -	. -	26 U -	10600 -	13 U -	1350 B -	.
MID. DRAIN.	4172-3	204 -	. -	26 U -	10600 -	13 U -	1150 B -	.
MID. DRAIN.	4348-3	4740	0.05 U	5.2 U	16900	6 B	1940 B	0.51 UW
MV-1	3860-3	3990 -	0.2 U UJ4	11 U -	2170 -	14 U -	1410 B -	2 U -
MV-1	3863-3	3940 -	0.2 U UJ4	11 U -	2140 -	14 U -	2010 -	2 U -
MV-3	3533-3	19.1 -	0.2 U -	15 U -	1260 B -	31 U -	1200 B -	2 U -
NWTRIB	3572-3	17 -	0.2 U -	15 U -	2990 B -	31 U -	820 U -	2 U -
NWTRIB	3814-3	53.4 -	0.2 U UJ4	11 U -	3910 -	14 U -	1590 B -	2 U -
R311 [b]	4237-15	2 U -	. -	14 U -	41 U -	8 U -	364 U -	83 U -
R311 [b]	4237-3	2 U -	. -	14 U -	89.6 B -	8 U -	364 U -	83 U -
R311 [b]	4322-15	2 U -	. -	14 U -	82.9 B -	8 U -	364 U -	83 U -
R311 [b]	4322-3	2 U -	. -	14 U -	49.6 B -	8 U -	364 U -	83 U -
R311 [b]	4335-15	1 U	0.05 U	5.2 U	46.4 B	4.8 U	695 U	0.51 U
R311 [b]	4335-3	1 U	0.05 U	5.2 U	15.1 U	4.8 U	695 U	0.51 U
RAC	3525-3	5.8 B -	0.2 U -	15 U -	2180 B -	31 U -	899 B -	2 U -
RAC	3811-3	1460 -	0.2 U UJ4	12 B -	2560 -	14 U -	1060 B UJ4	2 U -
RAC	3841-3	2 U -	0.2 U UJ4	11 U -	380 U -	14 U -	640 U -	2 U -
RS-1	3600-3	1350 -	0.2 U -	15 U -	24600 -	31 U -	1420 B -	2 U -
RS-3A	3601-3	105 -	0.79 -	47.2 B -	456000 -	86.6 -	1500 B -	2 U -
RS-3A	3744-3	309 -	1.1 -	56.3 B -	565000 -	107 -	2710 B -	. -
RS-3A	3746-3	283 -	1.1 -	51.6 B -	557000 -	107 -	3310 B -	. -
RS-3A	3789-3	218 -	1.1 -	51.3 B -	598000 -	101 -	3400 B U31	10 U -
RS-3A	3894-3	163 -	0.88 J4	56.3 B -	585000 -	105 -	3700 B -	3 UWUJ49
RS-3A	3951-3	71.9 -	0.66 -	51.4 B -	513000 -	108 -	2910 B -	3 U
RS-3A	4071-3-	161 -	0.46 -	46.9 B -	434000 -	91.8 -	3490 B -	61 U -
RS-3A	4147-3	306 -	0.61 -	39.8 B -	427000 -	86 -	3820 B -	.
RS-3A	4224-3	531 -	1.1 -	40.2 B -	500000 -	98.9 -	4100 B -	83 U -
RS-3A	4359-3	196	0.97	43	522000	77.7	2690 B	1.7 BW
RS-3B	3602-3	69.2 -	0.2 U -	15 U -	70600 -	31 U -	1220 B -	2 U -
RS-3B	4148-3	43.3 -	0.2 U -	26 U -	48900 -	13 U -	896 B -	.
R-227 [b]	3639-3	2 U -	0.2 U -	15 U -	740 U -	31 U -	820 U -	2 U -
R-227 [b]	3640-3	2 U -	0.2 U -	15 U -	740 U -	31 U -	820 U -	2 UWUJ49
R-227 [b]	3641-3	2 U -	0.2 U -	15 U -	740 U -	31 U -	820 U -	2 U -
R-227 [b]	3642-3	2 U -	0.2 U -	15 U -	740 U -	31 U -	820 U -	2 U -
R-227 [b]	3643-3	2 U -	0.2 U -	15 U -	740 U -	31 U -	820 U -	2 UWUJ49
R-227 [b]	3807-3	2 U -	0.2 U -	11 U -	3490 B -	14 U -	640 U -	2 U -
R-227 [b]	3933-3	2 U -	0.2 U UJ4	15 U -	42 U -	10 U -	670 U -	3 U -
R-227 [b]	3969-3	2 U -	0.2 U -	15 U -	135 B U30,32	10.8 B U30	670 U -	3 U -
R-227 [b]	4089-3-	2 U -	0.2 U -	13 U -	119 B U32	11 U -	578 U -	61 U -
R-227 [b]	4161-15	3 U -	. -	26 U -	137 U -	13 U -	483 U -	.
R-227 [b]	4161-3	3 U -	. -	26 U -	137 U -	13 U -	483 U -	.
R-311 [b]	3889-3	2 U -	0.2 U UJ4	11 U -	380 U -	14 U -	640 U -	2 UWUJ50
SPD	4344-15	4860	0.06 B	5.2 U	19300	8.7 B	1970 B	0.51 U
SW2-1	3621-3	992 -	0.27 -	15 U -	3470 B -	31 U -	820 U -	2 U -
SW2-2	3576-3	796 -	0.2 U -	15 U -	3850 B -	31 U -	1060 B -	2 UWUJ49
SW2-3	3562-3	93 -	0.2 U -	15 U -	3260 B -	31 U -	820 U -	2 U -
SW2-4	3567-3	895 -	0.2 U -	15 U -	14100 -	31 U -	1640 B -	2 U -
SW2-4	3825-3	2260 -	0.2 J4	11 U -	19100 -	14 U -	2890 B -	2 U -

Table E.1. (continued)

Location	Sample ID	Silicon	Silver	Strontium	Thallium	Vanadium	Zinc
MB-15	4100-3-	4310 EJ48	4 U -	154 -	500 U -	6 U -	84.4 -
MB-15	4173-3	5510 -	5 U -	103 -	.	10 U -	31.1 -
MB-15	4249-3	2600 -	4 U -	82.2 B -	500 U -	4 U -	27.1 -
MB-15	4350-3		3.2 U	159	22.5 U	2.3 B	49.3
MB-15	4351-3		3.2 U	0.3 U	22.5 U	2.3 U	1.1 B
MB-17	3848-3	7500 J33	3 U -	117 -	4 U -	5 U -	10 B U32
MB-5	4264-15	2680 -	4 U -	88.4 B -	500 U -	4 U -	8.8 B -
MB-5	4264-3	2660 -	4 U -	86.5 B -	500 U -	4 U -	11 B -
MB-5	4300-15	2760 -	4 U -	96.9 B -	500 U -	4 U -	6 B -
MB-5	4347-15		3.2 U	143	22.5 U	2.3 B	16 B
MB-5	4347-3		3.2 U	142	22.5 U	2.3 U	17.2 B
MID. DRAIN.	4349-3		3.2 U	208	22.5 U	2.3 U	5 B
MID. DRAIN.	3529-3	3680 -	3 U -	163 -	3 U -	7 U -	13.8 B U32
MID. DRAIN.	3865-3	6330 EN35,37,48R	3 U -	223 -	4 U -	5 U -	58.5 U32
MID. DRAIN.	3904-3	5830 -	4 U -	243 -	500 U -	6 U -	14.8 B U32
MID. DRAIN.	3979-3	4220 -	4 U -	206 -	500 U -	6 U -	9 B U32
MID. DRAIN.	4098-3-	3580 -	4 U -	166 -	500 U -	6 U -	8.8 B U32
MID. DRAIN.	4099-3-	3550 -	4 U -	166 -	500 U -	6 U -	19.2 B U30,32
MID. DRAIN.	4171-3	3870 -	5 U -	142 -	.	10 U -	5 U -
MID. DRAIN.	4172-3	4090 -	5 U -	144 -	.	10 U -	6.4 B -
MID. DRAIN.	4348-3		3.2 U	210	22.5 U	2.3 U	5 B
MV-1	3860-3	6500 EN35,37,48R	3 U -	158 -	4 U -	5 U -	42.4 U32
MV-1	3863-3	6340 EN35,37,48R	3 U -	154 -	4 U -	5 U -	17 B U32
MV-3	3533-3	4660 -	3 U -	145 -	3 U -	7 U -	5 B U32
NWTRIB	3572-3	2540 -	3 U -	108 -	3 U -	7 U -	10.6 B U30,32
NWTRIB	3814-3	3020 EN35,37,48R	3 U -	84.6 -	4 U -	5 U -	32.4 U32
R311 [b]	4237-15	60 U -	4 U -	1 U -	500 U -	4 U -	5.9 B -
R311 [b]	4237-3	85.6 B -	4 U -	1 U -	500 U -	4 U -	7.5 B -
R311 [b]	4322-15	96.2 B -	4 U -	1 U -	500 U -	4 U -	7.6 B -
R311 [b]	4322-3	99.2 B -	4 U -	1 U -	500 U -	4 U -	6 B -
R311 [b]	4335-15		3.2 U	0.3 U	22.5 U	2.3 U	2.9 B
R311 [b]	4335-3		3.2 U	0.3 U	22.5 U	2.3 U	1.3 B
RAC	3525-3	3310 -	3 U -	108 -	3 U -	7 U -	5.4 B U32
RAC	3811-3	3790 EN35,37,48R	3 U -	142 -	4 U -	5 U -	77.9 U32
RAC	3841-3	76.6 BEN35,37,48,32	3 U -	1 U -	4 U -	5 U -	10.3 B U32
RS-1	3600-3	3310 -	3 U -	67.1 B -	3 U -	7 U -	12.7 B U32
RS-3A	3601-3	7060 -	4.6 B -	11.7 B U30	3 U -	14.2 B U30	14.2 B U30,32
RS-3A	3744-3	15800 -	5 U -	15.3 B U30	500 U -	20.9 B -	31.8 -
RS-3A	3746-3	15900 -	5 U -	15 B U30	500 U -	21 B -	39.4 -
RS-3A	3789-3	21400 -	4.8 B U30	14.5 B -	4 U -	30.3 B -	41.1 R135,136,137
RS-3A	3894-3	14600 J35	6.4 B -	13 B -	3 U -	18.8 B -	50.7 -
RS-3A	3951-3	6380 -	4.2 B -	13.4 B -	3 U -	10.6 B -	42.4 -
RS-3A	4071-3-	14800 EJ48	4 U -	17.4 -	500 U -	15.4 B -	28.2 U32
RS-3A	4147-3	22000 -	5 U -	23.2 B -	.	23.3 B -	54.6 -
RS-3A	4224-3	23100 -	4 U -	19.7 B -	500 U -	32.3 B -	68.4 -
RS-3A	4359-3		3.2 U	10	22.5 U	34.3	20.1
RS-3B	3602-3	3480 -	3 U -	53.6 B -	3 U -	7 U -	11.6 B U30,32
RS-3B	4148-3	3210 -	5 U -	50.9 -	.	10 U -	9 B -
R-227 [b]	3639-3	139 EUJ32,35,48	3 U -	2 U -	3 U -	7 U -	11 B U32
R-227 [b]	3640-3	73.3 BEUJ32,35,48	3 U -	2 U -	3 U -	7 U -	14.7 B U32
R-227 [b]	3641-3	174 EUJ32,35,48	3 U -	2 U -	3 U -	7 U -	14.9 B U32
R-227 [b]	3642-3	123 EUJ32,35,48	3 U -	2 U -	3 U -	7 U -	17.3 B U32
R-227 [b]	3643-3	127 EUJ32,35,48	3 U -	2 U -	3 U -	7 U -	14.8 B U32
R-227 [b]	3807-3	567 U32	3 U -	5.4 B U30,32	4 U -	5 U -	9.9 B R135,136,137
R-227 [b]	3933-3	120 UJ35	4 U -	2 U -	3 U -	5 U -	3 U -
R-227 [b]	3969-3	96.1 B U32	4 U -	2 U -	3 U -	5 U -	3.2 B U32
R-227 [b]	4089-3-	173 EUJ32,48	4 U -	1 U -	500 U -	6 U -	28.3 U32
R-227 [b]	4161-15	198 -	5 U -	2 U -	.	10 U -	6.6 B -
R-227 [b]	4161-3	253 -	5 U -	2 U -	.	10 U -	6.3 B -
R-311 [b]	3889-3	13 U -	5 B -	1 U -	4 U -	5 U -	7.1 B U32
SPD	4344-15		3.9 B	340	22.5 U	2.3 U	6.9 B
SW2-1	3621-3	3130 EJ35,48	3 U -	189 B -	3 U -	7 U -	22.3 U32
SW2-2	3576-3	2360 -	3 U -	124 -	3 U -	7 U -	5.6 B U30,32
SW2-3	3562-3	4000 -	3 U -	67.4 -	3 U -	7 U -	4.4 B U32
SW2-4	3567-3	3320 -	3 B -	195 -	3 U -	7 U -	3.7 B -
SW2-4	3825-3	5600 J33	3 U -	305 -	4 U -	5 U -	31.7 U32

Table E.1. (continued)

Location	Sample ID	Sample Date	Aluminum	Antimony	Arsenic	Boron	Barium	Beryllium	Cadmium
SW2-5	3520-3	09MAR93	61.1 B -	31 U -	2 U -	122 B U30	205 -	1 U -	1 U -
SW2-5	3724-3	24MAY93	24 U -	27 U -	. -	296 -	272 -	1 U -	. -
SW2-5	3725-3	24MAY93	41.4 B -	27 U -	. -	336 -	277 -	1 U -	. -
SW2-5	3858-3	21JUL93	30 U -	36 U -	2 UWUJ50	210 U32	331 -	1 U -	1 U -
SW2-5	3901-3	30SEP93	159 B -	49 U -	. -	241 U32	318 -	1 U -	. -
SW2-5	3973-3	01DEC93	160 B -	49 U -	3 UWUJ50	267 U32	291 -	1 U -	1 U -
SW2-5	4092-3	08FEB94	27 U -	49 U -	51 U -	152 U32	293 -	1 U -	2 U -
SW2-5	4165-15	19APR94	49 U -	34 U -	. -	130 -	238 -	1 U -	4 U -
SW2-5	4343-15	24AUG94	44.1 B	19.1 U	0.5 U	200	288	0.17 B	0.05 B
SW2-5	4343-3	24AUG94	55.7 B	19.1 U	0.5 U	196	288	0.16 B	0.05 U
SW2-6	4094-3	08FEB94	27 U -	49 U -	3 U -	165 U32	144 B -	1 U -	1 UE-
SW2-6	4167-3	19APR94	150 B -	34 U -	. -	118 -	153 B -	1 U -	4 U -
SW2-6	4346-15	24AUG94	37.9 B	19.1 U	1 B	116	162	0.17 B	0.05 U
SW2-7	3974-3	01DEC93	68.8 B U32	36 U -	3 UWUJ50	183 U32	135 B -	1 U -	3 U -
SW2-7	4093-3	08FEB94	27 U -	49 U -	3 U -	123 U32	121 B -	1 U -	1 UWUJ50
SW2-7	4166-3	19APR94	49 U -	34 U -	. -	141 -	128 B -	1 U -	4 U -
SW2-7	4345-15	24AUG94	37.9 B	19.1 U	1.4 B	139	139	0.29 B	0.05 U
SW4-1	3578-3	11MAR93	36 U -	31 U -	2 U -	113 B U30,32	264 -	1 U -	1 U -
SW4-1	3819-3	19JUL93	30 U -	44.6 B -	6.2 BWJ50	185 U32	227 -	1 U -	1 U -
SW4-2	3579-3	11MAR93	36 U -	31 U -	2 UWUJ49	131 B U30,32	454 -	1 U -	1 U -
SW4-2	3739-3	24MAY93	27.5 B -	27 U -	. -	231 -	385 -	1 U -	. -
SW4-2	3959-3	01DEC93	47 B U32	36 U -	3 UWUJ50	188 U32	327 -	1 U -	3 U -
SW4-2	4078-3	08FEB94	27 UEUJ48	49 U -	51 U -	142 U3	392 -	1 U -	2 U -
SW4-2	4154-3	19APR94	49 U -	34 U -	. -	110 -	268 -	1 U -	4 U -
SW4-2	4329-3	24AUG94	47 B	19.1 U	0.5 UW	126	414	0.17 B	0.06 B
SW5-2	3566-3	11MAR93	77.5 B -	31 U -	2 U -	175 B -	63.8 B -	1 U -	1 U -
SW5-4	3517-3	09MAR93	36 U -	31 U -	2 U -	13 U -	29 U -	1 U -	1 U -
SW5-4	3528-3	09MAR93	36 U -	31 U -	2 U -	89.6 B U30	85.9 B -	1 U -	1 U -
SW5-4	3726-3	24MAY93	53.8 B -	27 U -	. -	234 -	92 B -	1 U -	. -
SW5-4	3977-3	01DEC93	46.2 B -	49 U -	3 UWUJ50	206 U32	146 B -	1 U -	1 U -
SW5-4	4097-3	08FEB94	27 UEUJ48	49 U -	51 U -	120 U32	131 B -	1 U -	2.4 B -
SW5-4	4170-15	19APR94	49 U -	34 U -	. -	118 -	89.5 B -	1 U -	4 U -
SW5-4	4170-3	19APR94	49 U -	34 U -	. -	106 -	89.2 B -	1 U -	4 U -
SW7-1	3615-3	13APR93	36 U -	31 U -	2 U -	27.6 B U30,32	72.7 B -	1 U -	1 U -
SW7-1	3616-3	13APR93	36 U -	31 U -	2 U -	20.2 B U30,32	70.8 B -	1 U -	1 U -
SW7-2	3617-3	13APR93	496 -	31 U -	2 U -	25.6 B U30,32	29 U -	1 U -	1 U -
SW7-2	3788-3	13JUL93	652 -	36 U -	3 U -	407 U30,32	32 B -	1 U -	1 U -
SW7-3	3618-3	13APR93	775 -	31 U -	2 U -	66.5 B U32,31	29 U -	1 U -	1 U R34
SW7-3	3747-3	24MAY93	460 -	27 U -	. -	113 U32	25 U -	1 U -	. -
SW7-3	3792-3	13JUL93	420 -	36 U -	3 BWJ50	128 U30,32	22 B -	1 U -	1 U -
SW7-3	3911-3	30SEP93	324 -	36 U -	3 U -	80.2 B U32	23 U -	1 U -	3 U -
SW7-3	3954-3	01DEC93	455 -	36 U -	3 UWUJ50	73.4 B U30,32	23 U -	1 U -	3 U -
SW7-3	3955-3	01DEC93	434 -	36 U -	3 UWUJ50	65.9 B U30,32	23 U -	1 U -	3 U -
SW7-3	4074-3	08FEB94	. -	. -	. -	. -	. -	. -	. -
SW7-3	4227-3	15JUN94	443 -	46 U -	78 U -	101 -	20 B -	1 U -	3 U -
SW7-3	4253-3	15JUN94	438 -	46 U -	78 U -	61.2 B -	63.3 B -	1 U -	3 U -
SW7-3	4362-3	24AUG94	305	19.1 U	2.5 B	68.9	20.2	0.17 B	0.06 B
SW7-5	3619-3	13APR93	893 -	31 U -	2 U -	40.3 B U32,31	31.9 B -	1 U -	1 U R34
SW7-5	3620-3	13APR93	571 -	31 U -	2 UWUJ49	41.2 B U32,31	32.9 B -	1 U -	1 U R34
SW7-5	3632-15	13APR93	36 U -	31 U -	2 UWUJ49	13 U -	29 U -	1 U -	1 U R34
SW7-5	3748-3	24MAY93	573 -	27 U -	. -	67.1 B U32	35 B -	1 U -	. -
SW7-5	3796-3	13JUL93	2190 -	36 U -	3 UWUJ50	440 U30,32	121 B -	1 U -	1 U -
SW7-5	3986-3	01DEC93	320 -	36 U -	3 U -	62 B U32	59.9 B -	1 U -	3 U -
SW7-5	4103-3	08FEB94	923 -	49 U -	51 U -	57.3 B U30,32	35.5 B -	1 U -	2 U -
SW7-5	4176-3	19APR94	1150 -	34 U -	. -	77.2 B -	37.3 B -	1 U -	4 U -
SW7-5	4314-3	23JUN94	490 -	46 U -	78 U -	56.3 B -	64.5 B -	1 U -	3 U -
SW7-5	4363-3	24AUG94	469	19.1 U	0.5 U	50.3	63.5	1.1 B	0.08 B
SW7-6	3614-3	13APR93	761 -	31 U -	2 U -	31.3 B U30,32	48.5 B -	1 U -	1 U -
SW7-8	3610-3	13APR93	412 -	31 U -	2 U -	31.7 B U30,32	29.8 B -	1 U -	1 U -
SW9-1	3853-3	21JUL93	30 U -	36 U -	2 UWUJ50	24 U -	141 B -	1 U -	1 U -
SW9-1	3908-3	30SEP93	71.8 B U32	36 U -	3 U -	30.4 B U32	129 B -	1 U -	3 U -
SW9-1	3932-3	30SEP93	40 U -	36 U -	3 U -	22.9 B U32	23 U -	1 U -	3 U -
SW9-1	3983-3	01DEC93	95.3 B U32	36 U -	3 U -	41.8 B U32	138 B -	1 U -	3 U -
SW9-1	3984-3	01DEC93	73.8 B U30,32	36 U -	3 U -	33.6 B U30,32	23 U -	1 U -	3 U -
SW9-2	3855-3	21JUL93	377 U32	36 U -	2 UWUJ50	44.5 B U32	164 B -	1 U -	1 U -
SW9-2	3909-3	30SEP93	737 -	36 U -	3 U -	70.8 B U32	218 -	1 U -	3 U -
SW9-2	3985-3	01DEC93	1460 -	36 U -	3 UWUJ50	45.6 B U30,32	253 -	1 U -	3 U -

Table E.1. (continued)

Location	Sample ID	Calcium	Chromium	Copper	Cobalt	Lead	Iron	Magnesium
SW2-5	3520-3	117000 -	3.1 B -	4 U -	8.6 B -	2 U -	1540 -	12000 -
SW2-5	3724-3	146000 -	6.4 B U30	4 U -	6 U -	. -	65.7 B U32	15300 -
SW2-5	3725-3	150000 -	4 U -	4 U -	6 U -	. -	65.1 B U32	15800 -
SW2-5	3858-3	156000 -	3 U -	4.6 B U30	7.3 B -	2 U -	47.7 B UJ32,33	16600 -
SW2-5	3901-3	150000 -	6.3 B -	4.1 B -	6.1 B -	. -	166 -	15800 -
SW2-5	3973-3	142000 -	4 U -	4.1 B -	6.6 B -	1.2 B -	130 -	15100 -
SW2-5	4092-3-	133000 -	4 U -	4 U -	6 U -	40 U -	82 B -	14800 -
SW2-5	4165-15	91000 -	5 U -	5 U -	11 U -	.	1250 -	9480 -
SW2-5	4343-15	146000	2.3 U	2.9 B	3.2 B	1.8 B	58.2 B	16300
SW2-5	4343-3	145000	2.3 U	1.6 B	3.3 B	0.6 B	80.5 B	16100
SW2-6	4094-3-	128000 -	4 U -	4 U -	6 U -	1.9 B -	22.4 B -	10400 -
SW2-6	4167-3	120000 -	5 U -	5 U -	11 U -	.	8520 -	10000 -
SW2-6	4346-15	138000	8.2 B	1.6 B	4.6 B	.	29.1 B	10900
SW2-7	3974-3	131000 -	3 U -	4 U -	11.9 B U30	1 U -	17000 -	9750 -
SW2-7	4093-3-	125000 -	4 U -	4 U -	6 U -	1.5 B -	5410 -	10100 -
SW2-7	4166-3	113000 -	5 U -	5 U -	11 U -	.	4250 -	9080 -
SW2-7	4345-15	129000	5.9 B	2.3 B	1.9 U	.	910	9810
SW4-1	3578-3	124000 -	3 U -	4 U -	8 U -	2 U -	962 -	20000 -
SW4-1	3819-3	175000 -	3 U -	2 U -	8.2 B -	2 U -	28800 J33	23200 -
SW4-2	3579-3	112000 -	3 U -	4 U -	15.4 B -	2 U -	2510 -	21100 -
SW4-2	3739-3	104000 -	4 U -	4.4 B U30	11.2 B U30	. -	7060 -	17000 -
SW4-2	3959-3	106000 -	3 U -	5.1 B -	10.7 B U30	1 U -	267 -	19800 -
SW4-2	4078-3-	109000 -	4 U -	4 U -	33.2 B -	40 U -	23.8 B U30,32	18300 -
SW4-2	4154-3	82900 -	5 U -	5 U -	29.3 B -	.	3740 -	13800 -
SW4-2	4329-3	109000	2.3 U	2.1 B	14.2	0.59 U	861	18300
SW5-2	3566-3	102000 -	6.1 B U30,32	4 U -	8 U -	2.8 B U30,32	88.6 B -	14900 -
SW5-4	3517-3	490 U -	4.1 B U30,32	4 U -	8 U -	2.3 B U30,32	12 U -	680 U -
SW5-4	3528-3	83600 -	3 U -	4 U -	8 U -	2 U -	183 -	15600 -
SW5-4	3726-3	100000 -	4 U -	4 U -	6 U -	. -	726 -	18700 -
SW5-4	3977-3	107000 -	4 U -	4 U -	6 U -	11.2 -	1110 -	17300 -
SW5-4	4097-3-	91200 -	4 U -	4 U -	6 U -	40 U -	334 -	16600 -
SW5-4	4170-15	77600 -	5 U -	5 U -	11 U -	.	19.9 B -	16700 -
SW5-4	4170-3	78200 -	5 U -	5 U -	11 U -	.	47.7 B -	16700 -
SW7-1	3615-3	41200 -	3 U -	5 U -	9 U -	2 U -	6570 -	7500 -
SW7-1	3616-3	43000 -	3 U -	5 U -	9 U -	2 U -	6180 -	7630 -
SW7-2	3617-3	12100 -	3.7 B U30	5 U -	54.2 -	2.1 B -	530 -	2380 B -
SW7-2	3788-3	9170 -	3 U -	25.4 -	134 -	2 UWUJ50	642 -	1980 B -
SW7-3	3618-3	20600 -	44.6 -	5 U -	9 U -	2.8 BS-	693 -	2440 B -
SW7-3	3747-3	17700 -	69.8 -	4 U -	11.5 B -	. -	358 -	2170 B -
SW7-3	3792-3	19200 -	69.6 -	8.3 B -	16.6 B -	2 U -	376 -	2180 B -
SW7-3	3911-3	16400 -	50.8 -	4.5 B -	9.1 B -	1 U -	157 EJ48	1870 B -
SW7-3	3954-3	13100 -	32.4 -	4.2 B -	9.8 B U30	1 U -	330 -	1690 B -
SW7-3	3955-3	14100 -	28.8 -	7.1 B -	5.5 B U30	1 U -	321 -	1720 B -
SW7-3	4074-3-	. -	. -	. -	. -	. -	. -	. -
SW7-3	4227-3	14300 -	91.3 -	5.1 B -	21.6 B -	55 U -	309 -	2010 B -
SW7-3	4253-3	78600 -	4 U -	3.2 B -	12 B -	55 U -	378 -	9840 -
SW7-3	4362-3	15300	61.2	4.9 B	18.6	.	246	2130
SW7-5	3619-3	33100 -	3 U -	5 U -	9 U -	2 U -	782 -	4450 B -
SW7-5	3620-3	32700 -	3 U -	5 U -	9 U -	3.5 -	572 -	4520 B -
SW7-5	3632-15	490 U -	3 U -	5 U -	9 U -	2 U -	12.7 B U32	680 U -
SW7-5	3748-3	60600 -	7.6 B -	6.5 B U30	6 U -	4.3 U32	1090 -	8900 -
SW7-5	3796-3	131000 -	4.7 B -	13.6 B -	24.6 B -	3.8 -	2730 -	16200 -
SW7-5	3986-3	90200 -	3 U -	4 U -	5.2 B -	1 UWUJ50	216 EJ48	10700 -
SW7-5	4103-3-	42800 -	4.2 B U30	4 U -	6 U -	40 U -	588 -	5390 -
SW7-5	4176-3	31600 -	5 U -	5 U -	11 U -	.	887 -	4400 B -
SW7-5	4314-3	81700 -	4 U -	2.4 B -	15.6 B -	55 U -	398 -	10100 -
SW7-5	4363-3	74900	2.3 U	2.9 B	12.4	.	514	9390
SW7-6	3614-3	2550 B -	3 U -	5 U -	9 U -	2 U -	431 -	1430 B -
SW7-8	3610-3	31800 -	3 U -	5 U -	9 U -	2.5 B -	368 -	5830 -
SW9-1	3853-3	49200 -	3 U -	3 B U30	5 U -	2 U -	218 J33	9750 -
SW9-1	3908-3	48200 -	3 U -	4 U -	5 U -	1 B U31	260 EJ48	9260 -
SW9-1	3932-3	455 B U32	3 U -	4 U -	5 U -	1 U -	10.4 BEUJ48,32,31	54 U -
SW9-1	3983-3	47100 -	3 U -	6.7 B -	5 U -	1 U -	621 EJ48	9040 -
SW9-1	3984-3	485 B U32	3 U -	4 U -	5 U -	1 U -	51.4 B U30	54 U -
SW9-2	3855-3	108000 -	3 U -	3 B U30	5 U -	2 U -	771 J33	16800 -
SW9-2	3909-3	90400 -	3 U -	9.1 B -	5 U -	1.4 B U31	1460 EJ48	13500 -
SW9-2	3985-3	70200 -	3 U -	9.2 B -	5 U -	1 U -	3370 -	11000 -

Table E.1. (continued)

Location	Sample ID	Manganese	Mercury	Molybdenun	Sodium	Nickel	Potassium	Selenium
SW2-5	3520-3	1470 -	0.2 U -	15 U -	12900 -	31 U -	1720 B -	2 UWUJ49
SW2-5	3724-3	465 -	. -	11 U -	18000 -	11 U -	1920 B -	. -
SW2-5	3725-3	496 -	. -	11 U -	18300 -	13.9 B -	1970 B -	. -
SW2-5	3858-3	702 -	0.2 U UJ4	11 U -	20000 -	14 U -	1860 B -	2 U -
SW2-5	3901-3	463 -	. -	13 U -	19700 -	17 B -	2210 B -	. -
SW2-5	3973-3	382 -	0.2 U UJ4	13 U -	18000 -	13.2 B -	1770 B -	3 U -
SW2-5	4092-3-	1220 -	0.2 U -	13 U -	17900 -	12.5 B -	854 B -	61 U -
SW2-5	4165-15	3060 -	. -	26 U -	11900 -	13 U -	1980 B -	.
SW2-5	4343-15	546	0.05 U	5.2 U	19600	7.4 B	1610 B	0.51 U
SW2-5	4343-3	646	0.05 U	5.2 U	19400	7.3 B	2170 B	0.51 U
SW2-6	4094-3-	701 -	0.2 U -	13 U -	19500 -	11.4 B -	1490 B -	3 UWUJ50
SW2-6	4167-3	1360 -	. -	26 U -	13900 -	13 U -	1240 B -	.
SW2-6	4346-15	939	0.05 U	5.2 U	18300	7.9 B	3620	0.51 U
SW2-7	3974-3	1900 -	0.2 U -	15 U -	21200 -	11.2 B U30	1570 B -	3 UWUJ49
SW2-7	4093-3-	1120 -	0.2 U -	13 U -	17900 -	11 U -	1610 B -	3 U -
SW2-7	4166-3	1020 -	. -	26 U -	14500 -	13 U -	863 B -	.
SW2-7	4345-15	1750	0.05 U	5.2 U	17700	7.7 B	2390 B	0.51 U
SW4-1	3578-3	377 -	0.2 U -	15 U -	9020 -	31 U -	4260 B -	2 UWUJ49
SW4-1	3819-3	3810 -	0.2 U UJ4	11 U -	14700 -	14 U -	9930 -	2 U -
SW4-2	3579-3	1010 -	0.2 U -	15 U -	7880 -	5710 -	2940 B -	2 UWUJ49
SW4-2	3739-3	1230 -	. -	11 U -	8810 -	2240 -	2860 B -	. -
SW4-2	3959-3	282 -	0.2 U -	15 U -	9580 -	4070 -	8140 -	3 U -
SW4-2	4078-3-	977 -	0.2 U -	13 U -	7140 -	9460 -	3460 B -	61 U -
SW4-2	4154-3	596 -	. -	26 U -	4300 B -	9330 -	2990 B -	.
SW4-2	4329-3	426	0.06 B	7.7 B	6270	6210	5340	0.51 U
SW5-2	3566-3	16.7 -	0.2 U -	15 U -	5170 -	31 U -	1790 B -	2 U -
SW5-4	3517-3	2 U -	0.2 U -	15 U -	740 U -	31 U -	820 U -	2 U -
SW5-4	3528-3	171 -	0.2 U -	15 U -	8400 -	31 U -	1560 B -	2 U -
SW5-4	3726-3	726 -	. -	11 U -	11200 -	11.1 B -	1640 B -	. -
SW5-4	3977-3	2620 -	0.2 U UJ4	13 U -	18300 -	15.4 B -	2340 B -	3 U -
SW5-4	4097-3-	590 -	0.2 U -	13 U -	9460 -	11 U -	938 B -	61 U -
SW5-4	4170-15	309 -	. -	26 U -	7490 -	13 U -	1390 B -	.
SW5-4	4170-3	325 -	. -	26 U -	7460 -	13 U -	1460 B -	.
SW7-1	3615-3	6380 -	0.2 U -	15 U -	4120 B -	31 U -	944 B -	2 U -
SW7-1	3616-3	6400 -	0.2 U -	15 U -	4080 B -	31 U -	1240 B -	2 U -
SW7-2	3617-3	107 -	0.2 U -	15 U -	57100 -	31 U -	978 B -	2 U -
SW7-2	3788-3	147 -	0.2 U -	11 U -	102000 -	14 U -	916 B U31	2 UWUJ49
SW7-3	3618-3	8.4 B -	0.2 U -	15 U -	143000 -	31 U -	1010 B -	2 U -
SW7-3	3747-3	7.5 B U30	. -	11 U -	228000 -	20.4 B U30	1000 U -	. -
SW7-3	3792-3	6.7 B U30	0.2 U -	13 B -	275000 -	32.8 B -	725 B U31	2 UWUJ49
SW7-3	3911-3	2.5 B U32	0.2 U UJ4	15 U -	238000 -	27.5 B -	1870 B -	3 U -
SW7-3	3954-3	4.1 B U30	0.2 U -	15 U -	157000 -	21.4 B U30	1260 B -	3 U -
SW7-3	3955-3	3.6 B U30	0.2 U -	15 U -	157000 -	11.8 B U30	1010 B -	3 U -
SW7-3	4074-3-	. -	0.2 U -	. -	. -	. -	. -	. -
SW7-3	4227-3	5.4 B -	0.2 U -	16.7 B -	319000 -	24.6 B -	883 B -	83 U -
SW7-3	4253-3	8.7 B -	. -	14 U -	100000 -	18.4 B -	1230 B -	83 U -
SW7-3	4362-3	4.6 B	0.06 B	11.4 B	297000	23.3 B	1740 B	2.6 B
SW7-5	3619-3	26.1 -	0.2 U -	15 U -	37600 -	31 U -	820 U -	2 U -
SW7-5	3620-3	26 -	0.2 U -	15 U -	39000 -	31 U -	820 U -	2 U -
SW7-5	3632-15	2 U -	0.2 U -	15 U -	740 U -	31 U -	820 U -	2 UWUJ49
SW7-5	3748-3	2350 -	. -	11 U -	74100 -	33.5 B U30	1000 U -	.
SW7-5	3796-3	243 -	0.2 U -	11 U -	179000 -	33 B -	2320 B U31	2 UWUJ49
SW7-5	3986-3	2 B U32	0.2 U -	15 U -	101000 -	10 U -	726 B -	3 UWUJ49
SW7-5	4103-3-	11 B U30	0.2 U -	13 U -	47500 -	11 U -	746 B -	61 U -
SW7-5	4176-3	19.7 -	. -	26 U -	41100 -	13 U -	1240 B -	.
SW7-5	4314-3	10.1 B -	. -	14 U -	103000 -	13.8 B -	769 B -	83 U -
SW7-5	4363-3	13.9	0.05 U	5.2 U	99900	12.5 B	1840 B	0.51 U
SW7-6	3614-3	70.8 -	0.2 U -	15 U -	3620 B -	31 U -	944 B -	2 U -
SW7-8	3610-3	126 -	0.2 U -	15 U -	12100 -	31 U -	1130 B -	2 U -
SW9-1	3853-3	178 -	0.2 U UJ4	11 U -	5460 -	14 U -	2160 B -	2 UWUJ50
SW9-1	3908-3	254 -	0.2 U UJ4	15 U -	4780 B -	10 U -	1430 B -	3 U -
SW9-1	3932-3	2 U -	0.2 U UJ4	15 U -	985 B -	10 U -	670 U -	3 U -
SW9-1	3983-3	311 -	0.2 U -	15 U -	7910 -	10 U -	1690 B -	3 U -
SW9-1	3984-3	2 U -	0.2 U -	15 U -	1000 B -	10 U -	670 U -	3 U -
SW9-2	3855-3	414 -	0.2 U UJ4	11 U -	5860 -	14 U -	2330 B -	2 UWUJ50
SW9-2	3909-3	931 -	0.2 U UJ4	15 U -	7510 -	10 U -	2120 B -	3 U -
SW9-2	3985-3	2180 -	0.2 U -	15 U -	6550 -	14.1 B U30	4410 B -	3 U -

Table E.1. (continued)

Location	Sample ID	Silicon	Silver	Strontium	Thallium	Vanadium	Zinc
SW2-5	3520-3	6580 -	3 U -	255 -	3 U -	7 U -	6 B -
SW2-5	3724-3	9970 -	5 U -	334 -	500 U -	4 U -	29.1 -
SW2-5	3725-3	10300 -	5 U -	341 -	500 U -	4 U -	36.8 -
SW2-5	3858-3	10200 J33	3 U -	361 -	4 U -	5 U -	24.3 U32
SW2-5	3901-3	9840 -	4 U -	354 -	500 U -	6 U -	12 B U32
SW2-5	3973-3	9200 -	4 U -	334 -	500 U -	6 U -	45.4 U32
SW2-5	4092-3-	7070 -	4 U -	312 -	500 U -	6 U -	13 B U32
SW2-5	4165-15	6060 -	5 U -	217 -	.	10 U -	9.1 B -
SW2-5	4343-15		3.2 U	332	22.5 U	2.3 U	19.6 B
SW2-5	4343-3		3.2 U	328	22.5 U	2.6 B	22.6
SW2-6	4094-3-	6250 -	4 U -	219 -	500 U -	6 U -	16.9 B U32
SW2-6	4167-3	6880 -	5 U -	219 -	.	10 U -	8.5 B -
SW2-6	4346-15		3.2 U	228	22.5 U	2.3 U	13 B
SW2-7	3974-3	6000 -	4 U -	208 -	3 UWUJ49	5 U -	24 U32
SW2-7	4093-3-	5970 E-	4 U -	206 -	500 U -	6 U -	68.2 -
SW2-7	4166-3	6630 -	5 U -	192 -	.	10 U -	5 U -
SW2-7	4345-15		3.2 U	207	22.5 U	2.3 U	17.7 B
SW4-1	3578-3	2680 -	3 U -	306 -	3 U -	7 U -	30.3 -
SW4-1	3819-3	4810 J33	3 U -	360 -	4 U -	5 U -	9.7 B U32
SW4-2	3579-3	5180 -	3 U -	304 -	3 U -	7 U -	24.1 -
SW4-2	3739-3	5230 -	5 U -	263 -	500 U -	4 U -	21.7 U32
SW4-2	3959-3	5000 -	4 U -	243 -	3 UWUJ49	5 U -	74.2 -
SW4-2	4078-3-	5420 EJ48	4 U -	274 -	500 U -	6 U -	51.5 U32
SW4-2	4154-3	4230 -	5 U -	208 -	.	10 U -	57.5 -
SW4-2	4329-3		3.2 U	263	22.5 U	2.3 U	15.6 B
SW5-2	3566-3	2400 -	3 U -	201 -	3 U -	7 U -	4 B U32
SW5-4	3517-3	40 U -	3 U -	1 U -	3 U -	7 U -	5.9 B U32
SW5-4	3528-3	4330 -	3 U -	162 -	3 U -	7 U -	5.4 B -
SW5-4	3726-3	5330 -	5 U -	204 -	500 U -	4 U -	7.6 B U32
SW5-4	3977-3	5400 -	4 U -	219 -	500 U -	6 U -	7.6 B U32
SW5-4	4097-3-	4440 EJ48	4 U -	180 -	500 U -	6 U -	20.7 U32
SW5-4	4170-15	3940 -	5 U -	170 -	.	10 U -	10.3 B -
SW5-4	4170-3	3840 -	5 U -	168 -	.	10 U -	8.4 B -
SW7-1	3615-3	4550 -	3 U -	84.1 B -	3 U -	7 U -	13.1 B U30,32
SW7-1	3616-3	4640 -	3 U -	85.5 B -	3 U -	7 U -	20.6 U32
SW7-2	3617-3	5390 -	3 U -	27.6 B -	3 U -	7 U -	16.7 B U30,32
SW7-2	3788-3	6870 -	3 U -	24.9 B -	4 UW-	5 U -	13 B R135,136,137,
SW7-3	3618-3	4930 EJ35,48	3 U -	33.9 B -	3 U -	7 U -	47.9 U32
SW7-3	3747-3	4540 -	5 U -	29.4 B -	500 U -	4 U -	27.3 -
SW7-3	3792-3	5350 -	3 U -	35.9 B -	4 UWUJ49	5 U -	35 R135,136,137
SW7-3	3911-3	4720 J35	4 U -	26 B -	3 UWUJ49	5 U -	25.8 -
SW7-3	3954-3	4010 -	4 U -	21.9 B -	3 UWUJ49	5 U -	35.1 -
SW7-3	3955-3	3910 -	4 U -	23.4 B -	3 UWUJ49	5 U -	31.2 U32
SW7-3	4074-3-	. -	. -	. -	. -	. -	. -
SW7-3	4227-3	3850 -	4 U -	26.4 B -	500 U -	4.4 B -	28.7 -
SW7-3	4253-3	5800 -	4 U -	104 B -	500 U -	4 U -	7.3 B -
SW7-3	4362-3		3.2 U	26.7	22.5 U	4.4 B	24.8
SW7-5	3619-3	5560 EJ35,48	3 U -	47.4 B -	3 U -	7 U -	15.3 B U32
SW7-5	3620-3	4800 EJ35,48	3 U -	49 B -	3 U -	7 U -	14.4 B U32
SW7-5	3632-15	120 EUJ32,35,48	3 U -	2 U -	3 U -	7 U -	14.1 B U32
SW7-5	3748-3	.	5 U -	.	.	.	.
SW7-5	3796-3	10200 -	3 U -	169 B -	4 UWUJ49	5 U -	37.1 R135,136,137
SW7-5	3986-3	4930 J35	4 U -	116 B -	3 U -	5 U -	33.3 -
SW7-5	4103-3-	4420 -	4 U -	59.9 -	500 U -	6 U -	28.2 U32
SW7-5	4176-3	6050 -	5 U -	49.8 B -	.	10 U -	11.5 B -
SW7-5	4314-3	5690 -	4 U -	108 B -	500 U -	4 U -	8.8 B -
SW7-5	4363-3		3.2 U	98.2	22.5 U	2.3 B	5.9 B
SW7-6	3614-3	4760 -	3 U -	13.8 B U30	3 U -	7 U -	16.6 B U30,32
SW7-8	3610-3	4620 -	3 U -	69.2 B -	3 U -	7 U -	15.7 B U30,32
SW9-1	3853-3	3540 J33	3 U -	112 -	4 U -	5 U -	12 B U32
SW9-1	3908-3	3450 J35	4 U -	101 B -	3 U -	5 U -	4 B -
SW9-1	3932-3	2130 J35	4 U -	2 U -	3 U -	5 U -	3 U -
SW9-1	3983-3	3350 J35	4 U -	102 B -	3 U -	5 U -	24.2 -
SW9-1	3984-3	1990 -	4 U -	2 U -	3 U -	5 U -	5.2 B U30,32
SW9-2	3855-3	3740 J33	3 U -	177 -	4 U -	5 U -	288 -
SW9-2	3909-3	4230 J35	4 U -	149 B -	3 U -	5 U -	22.1 -
SW9-2	3985-3	3880 -	4 U -	119 B -	3 U -	5 U -	33.1 -

Table E.1. (continued)

Location	Sample ID	Sample Date	Aluminum	Antimony	Arsenic	Boron	Barium	Beryllium	Cadmium
W4TRIB-11	3582-3	11MAR93	36 U -	31 U -	2 U -	99.7 B U30	245 -	1 U -	2.1 B -
W4TRIB-11	3742-3	24MAY93	240 -	27 U -	. -	182 U32	290 -	1 U -	. -
W4TRIB-11	3896-3	30SEP93	170 B -	49 U -	. -	256 U32	319 -	1 U -	. -
W4TRIB-11	3962-3	01DEC93	153 B -	49 U -	3 UWUJ50	148 U30,32	213 -	1 U -	1 U -
W4TRIB-11	3963-3	01DEC93	66.2 B U32	36 U -	3 U -	38.2 B U30,32	23 U -	1 U -	3 U -
W4TRIB-11	4081-3	08FEB94	99.8 B -	49 U -	51 U -	125 U32	191 B -	1 U -	2 U -
W4TRIB-11	4082-3	08FEB94	27 U -	49 U -	51 U -	11 U -	23 U -	1 U -	2 U -
W4TRIB-11	4157-3	19APR94	49 U -	34 U -	. -	104 -	209 -	1 U -	4 U -
W4TRIB-11	4332-3	24AUG94	68.3 B	19.1 U	0.55 BW	185	294	0.2 B	0.5
W4TRIB-11	4333-3	24AUG94	11.6 B	19.1 U	0.5 UW	7.5 U	0.6 U	0.16 B	0.05 U
W4TRIB-5	3580-3	11MAR93	614 -	31 U -	2 U -	79.6 B U30	72.6 B -	1 U -	1 U -
W4TRIB-5	3740-3	24MAY93	2110 -	27 U -	. -	189 U32	90.2 B -	1 U -	. -
W4TRIB-5	4079-3	08FEB94	75.5 B -	49 U -	51 U -	74.6 B U32	83.4 B -	1 U -	2 U -
W4TRIB-5	4155-3	19APR94	365 -	34 U -	. -	144 -	78.2 B -	1 U -	4 U -
W4TRIB-5	4158-3	19APR94	49 U -	34 U -	. -	49 B -	37 U -	1 U -	4 U -
W4TRIB-7	3581-3	11MAR93	36 U -	31 U -	2 U -	214 B -	88.2 B -	1 U -	1 U -
W4TRIB-7	3741-3	24MAY93	38.9 B -	27 U -	. -	374 -	183 B -	1 U -	. -
W4TRIB-7	3961-3	01DEC93	39.6 B -	49 U -	3 UWUJ50	413 -	108 B -	1 U -	1 UWUJ49
W4TRIB-7	4080-3	08FEB94	27 U -	49 U -	51 U -	290 U32	80.2 B -	1 U -	2 U -
W4TRIB-7	4156-3	19APR94	49 U -	34 U -	. -	355 -	90 B -	1 U -	4 U -
WAG4 MS1	3577-3	11MAR93	59.3 B -	31 U -	2 UWUJ49	96.5 B U30,32	128 B -	1 U -	1 U -
WAG4 MS1	3738-3	24MAY93	24 U -	27 U -	. -	172 U32	25 U -	1.5 B -	. -
WAG4 MS1	3936-3	30SEP93	1020 -	49 U -	. -	249 U32	162 B -	1 U -	. -
WAG4 MS1	3957-3	01DEC93	70 B -	49 U -	3 UWUJ50	212 U32	143 B -	1 U -	1 U -
WAG4 MS1	3958-3	01DEC93	55.8 B -	49 U -	3 UWUJ50	189 U30,32	141 B -	1 U -	1 U -
WAG4 MS1	4076-3	08FEB94	55.5 B -	49 U -	51 U -	156 U32	126 B -	1 U -	2 U -
WAG4 MS1	4077-3	08FEB94	41.3 B -	49 U -	51 U -	121 U32	128 B -	1 U -	2 U -
WAG4 MS1	4152-3	19APR94	95.8 B -	34 U -	. -	138 -	128 B -	1 U -	4 U -
WAG4 MS1	4153-3	19APR94	136 B -	34 U -	. -	189 -	129 B -	1 U -	4 U -
WAG4 MS1	4327-3	24AUG94	60.9 B	19.1 U	0.5 U	190	178	0.17 B	0.28 B
WAG4 MS1	4328-3	24AUG94	70.2 B	19.1 U	0.5 UW	196	178	0.17 B	0.16 B
WAG4 T2A	3563-3	11MAR93	140 B -	31 U -	2 U -	87 B -	98 B -	1 U -	1 U -
WAG4 T2A	3564-3	11MAR93	127 B -	31 U -	2 U -	90.7 B -	97.5 B -	1 U -	1 U -
WAG4 T2A	3737-3	24MAY93	782 -	27 U -	. -	206 -	104 B -	1 U -	. -
WAG4 T2A	3956-3	01DEC93	1000 -	49 U -	3 UWUJ50	169 U30,32	73.3 B -	1 U -	1 U -
WAG4 T2A	4075-3	08FEB94	297 -	49 U -	51 U -	136 U32	73 B -	1 U -	2 U -
WAG4 T2A	4151-3	19APR94	484 -	34 U -	. -	140 -	99.3 B -	1 U -	4 U -
WAG4 T2A	4326-3	24AUG94	469	19.1 U	0.5 U	190	114	0.45 B	0.09 B
WC7500	3575-3	11MAR93	70.1 B -	31 U -	2 UWUJ49	21 B U30,32	31.8 B -	1 U -	1 U -
WC7500	3802-3	13JUL93	112 B U32	36 U -	3 UWUJ50	70.6 B U30,32	35.6 B -	1 U -	1 UWUJ50
WC7500	3822-3	19JUL93	82.2 B U32	36 U -	2 UWUJ50	24 U -	38 B -	1 U -	1 U -
WC7500	3867-3	21JUL93	96.6 B -	36 U -	2 UWUJ50	36.8 B U30,32	31.2 B -	1 U -	1 U -
WC7500	3888-3	21JUL93	38.8 B U32	36 U -	2 U -	24 U -	16 U -	1 U -	1 U -
WC7500	3897-3	30SEP93	107 B U32	36 U -	3 U -	55.5 B U32	37.2 B -	1 U -	3 U -
WC7500	3898-3	30SEP93	101 B U32	36 U -	3 U -	47.1 B U32	38.6 B -	1 U -	3 U -
WC7500	3965-3	01DEC93	95.4 B U32	36 U -	3 UWUJ50	76.7 B U30,32	32.5 B -	1 U -	3 U -
WC7500	4084-3	08FEB94	986 EJ48	49 U -	51 U -	64 B U30,32	40.4 B -	1 U -	2 U -
WC7500	4160-3	19APR94	124 B -	34 U -	. -	66.1 B -	37 U -	1 U -	4 U -
WC7500	4295-3	15JUN94	138 B -	46 U -	78 U -	38 U -	32.1 B -	1 U -	3 U -
WC7500	4319-3	23JUN94	95.1 B -	46 U -	78 U -	64.2 B -	35.6 B -	1 U -	3 U -
WC7500	4337-3	24AUG94	99.1 B	19.1 U	0.5 U	28.1 B	31.6	0.14 B	0.05 U
WCHEAD	3518-3	13APR93	196 B -	31 U -	2 U -	55.1 B U30,32	32.5 B -	1 U -	1 U -
WCHEAD	3817-3	19JUL93	30 U -	36 U -	2 UWUJ50	24 U -	95.4 B -	1 U -	1 U -
WCTRIB-1	3613-3	13APR93	957 -	31 U -	2 U -	26.5 B U30,32	41.2 B -	1 U -	1 U -
WCTRIB-1	3823-3	19JUL93	187 B U32	36 U -	2 UWUJ50	24 U -	68.1 B -	1 U -	1 U -
WCTRIB-2	3561-3	11MAR93	194 B -	31 U -	2 U -	13 U -	38.3 B -	1 U -	1 U -
WCTRIB-3	3565-3	11MAR93	36 U -	31 U -	2 U -	199 B -	62.1 B -	1 U -	1 U -
WCWEIR	3530-3	09MAR93	142 B -	31 U -	2 U -	13 U -	30.5 B -	1 U -	1 U -
WCWEIR	3568-3	11MAR93	65.4 B -	31 U -	2 U -	37.9 B U30,32	29.6 B -	1 U -	1 U -
WCWEIR	3622-3	13APR93	96.5 B -	31 U -	2 UWUJ49	37.1 B U32,31	30.3 B -	1 U -	1 U R34
WCWEIR	3795-3	13JUL93	148 B U32	36 U -	3 UWUJ50	398 U30,32	43.4 B -	1 U -	1 U -
WCWEIR	3806-3	13JUL93	39.4 B U32	36 U -	3 U -	402 U30,32	16 U -	1 U -	1 U -
WCWEIR	3809-3	19JUL93	219 -	36 U -	2 UWUJ50	24 U -	40.4 B -	1 U -	1 U -
WCWEIR	3861-3	21JUL93	98 B -	36 U -	2 UWUJ50	24 U -	32 B -	1 U -	1 U -
WCWEIR	3902-3	30SEP93	86.6 B U32	43.3 B -	3 U -	39.8 B U32	36.2 B -	1 U -	3 U -
WCWEIR	3903-3	30SEP93	104 B U32	36 U -	3 U -	37.9 B U32	36.1 B -	1 U -	3 U -
WCWEIR	3976-3	01DEC93	70.5 B U30,32	38.2 B -	3 UWUJ50	47.1 B U30,32	32.7 B -	1 U -	3 U -

Table E.1. (continued)

Location	Sample ID	Calcium	Chromium	Copper	Cobalt	Lead	Iron	Magnesium
W4TRIB-11	3582-3	98400 -	3 U -	27 -	8 U -	3.1 -	616 -	16100 -
W4TRIB-11	3742-3	115000 -	4 U -	17.2 B U30	6 U -	. -	1460 -	19300 -
W4TRIB-11	3896-3	127000 -	4 U -	13.3 B -	6 U -	. -	323 -	21000 -
W4TRIB-11	3962-3	100000 -	4 U -	10.8 B -	6 U -	1 U -	295 -	16400 -
W4TRIB-11	3963-3	505 B U32	3 U -	4 U -	5 U -	1 U -	97 B -	54 U -
W4TRIB-11	4081-3-	95000 -	4 U -	34 -	6 U -	40 U -	233 -	15600 -
W4TRIB-11	4082-3-	56.9 B U32	4 U -	4 U -	6 U -	40 U -	11 B -	54 U -
W4TRIB-11	4157-3	91200 -	5 U -	15.6 B -	11 U -	.	78.6 B -	13600 -
W4TRIB-11	4332-3	112000	2.3 U	4.7 B	2.9 B	0.6 B	1130	18300
W4TRIB-11	4333-3	75.6 B	2.3 U	1.1 U	1.9 U	0.59 U	3.2 B	14.7 U
W4TRIB-5	3580-3	37100 -	3.8 B -	4 U -	8 U -	2 UWUJ49	536 -	12100 -
W4TRIB-5	3740-3	44700 -	4 U -	4.8 B U30	6 U -	. -	2000 -	13600 -
W4TRIB-5	4079-3-	31300 -	4 U -	4 U -	6 U -	40 U -	44.1 B -	9130 -
W4TRIB-5	4155-3	30700 -	5 U -	5 U -	11 U -	.	206 -	9100 -
W4TRIB-5	4158-3	88 U -	5 U -	5 U -	11 U -	.	18 U -	89 U -
W4TRIB-7	3581-3	65500 -	3 U -	4 U -	8 U -	2 U -	235 -	18900 -
W4TRIB-7	3741-3	77400 -	5.8 B U30	4 U -	6 U -	. -	841 -	20400 -
W4TRIB-7	3961-3	76400 -	4 U -	4 U -	6 U -	1 UWUJ49	53.2 B U31,32	21400 -
W4TRIB-7	4080-3-	63300 -	4.3 B -	4 U -	6 U -	40 U -	17.3 B -	17100 -
W4TRIB-7	4156-3	60500 -	5 U -	5 U -	11 U -	.	54 B -	15500 -
WAG4 MS1	3577-3	72000 -	3 U -	4 U -	8 U -	2 U -	309 -	14000 -
WAG4 MS1	3738-3	340 U -	4 U -	4 U -	6 U -	. -	5 U -	570 U -
WAG4 MS1	3936-3	77500 -	4 U -	4 U -	7 B -	. -	1120 -	14300 -
WAG4 MS1	3957-3	83000 -	7.2 B U30	4 U -	6.6 B U30	1 U -	55.7 B U31,32	15800 -
WAG4 MS1	3958-3	81000 -	4 U -	4 U -	6 U -	1 U -	36.3 B U31,32	15400 -
WAG4 MS1	4076-3-	70700 -	5.9 B -	7.3 B -	6 U -	40 U -	82.5 B -	13000 -
WAG4 MS1	4077-3-	71300 -	4 U -	6.4 B -	6 U -	40 U -	63.5 B -	13300 -
WAG4 MS1	4152-3	62300 -	5 U -	5 U -	11 U -	.	104 -	10900 -
WAG4 MS1	4153-3	63000 -	5 U -	5 U -	11 U -	.	113 -	11100 -
WAG4 MS1	4327-3	90500	2.3 U	1.5 B	2.1 B	0.59 U	132	16500
WAG4 MS1	4328-3	91300	2.3 U	2.8 B	2.7 B	0.59 U	120	16700
WAG4 T2A	3563-3	78000 -	3 U -	4 U -	8 U -	3.8 U30,32	189 -	14200 -
WAG4 T2A	3564-3	77300 -	3 U -	4 U -	8 U -	5.1 U30,32	176 -	14000 -
WAG4 T2A	3737-3	87100 -	34.6 -	7.2 B U30	6 U -	. -	1430 -	15600 -
WAG4 T2A	3956-3	73200 -	4 U -	4.3 B U30	6 U -	1.2 B -	172 -	13100 -
WAG4 T2A	4075-3-	68800 -	4 U -	5.5 B -	6 U -	40 U -	325 -	12800 -
WAG4 T2A	4151-3	64800 -	5 U -	5 U -	11 U -	.	442 -	11100 -
WAG4 T2A	4326-3	90000	2.3 U	1.7 B	1.9 U	0.59 U	600	16300
WC7500	3575-3	43300 -	3 U -	4.4 B -	8 U -	2 U -	83.9 B U32	8910 -
WC7500	3802-3	42600 -	3 U -	11.3 B -	5 U -	3.6 -	125 -	10300 -
WC7500	3822-3	43600 -	3 U -	6 B U30	5 U -	2 U -	99.5 B J33	11700 -
WC7500	3867-3	42600 -	3.4 B U30,32	6.4 B U30,32	5 U -	2 U -	59.4 B U32	9670 -
WC7500	3888-3	360 U -	3 U -	2.2 B U30	5 U -	2 U -	36.1 B UJ32,33	430 U -
WC7500	3897-3	47000 -	3 U -	4 U -	5 U -	1 U -	76.3 BEUJ48,31	11600 -
WC7500	3898-3	47400 -	3 U -	4 U -	5 U -	1 U -	82.6 BEUJ48,31	11900 -
WC7500	3965-3	54100 -	3 U -	4.4 B -	5 U -	1 U -	133 -	9580 -
WC7500	4084-3-	52700 -	4.7 B U30	16.7 B -	6 U -	40 U -	1130 -	9290 -
WC7500	4160-3	32900 -	5 U -	5 U -	11 U -	.	144 -	6540 -
WC7500	4295-3	35700 -	4 U -	4.8 B -	8 U -	55 U -	151 -	8840 -
WC7500	4319-3	53600 -	4 U -	4 B -	8 U -	55 U -	128 -	9100 -
WC7500	4337-3	36900	2.3 U	4.9 B	1.9 U	0.59 U	113	8670
WCHEAD	3518-3	14600 -	3 U -	5 U -	9 U -	3.9 -	127 -	6600 -
WCHEAD	3817-3	32500 -	3.8 B U30,32	2.9 B U30,32	5 U -	2 U -	49.3 B U32	16700 -
WCTRIB-1	3613-3	31800 -	3 U -	5 U -	9 U -	2 U -	659 -	5120 -
WCTRIB-1	3823-3	74800 -	3 U -	2 U -	5 U -	2 U -	215 J33	8970 -
WCTRIB-2	3561-3	33500 -	3 U -	4 U -	8 U -	2.1 B U30,32	188 -	4500 B -
WCTRIB-3	3565-3	90500 -	5.2 B U30,32	4 U -	8 U -	5.8 U30,32	378 -	14900 -
WCWEIR	3530-3	40000 -	3.6 B U30,32	4 U -	8 U -	3.4 U30,32	183 -	7590 -
WCWEIR	3568-3	44900 -	3 U -	4 U -	8 U -	3.2 U30,32	91.2 B -	8490 -
WCWEIR	3622-3	38700 -	3 U -	5 U -	9 U -	2 U -	142 -	7680 -
WCWEIR	3795-3	48000 -	3 U -	17.6 B -	5 U -	2 UWUJ50	188 -	12100 -
WCWEIR	3806-3	2380 B -	3 U -	16.8 B -	5 U -	2 UWUJ50	83.4 B -	430 U -
WCWEIR	3809-3	43700	4.6 B U30,32	5.3 B U30,32	5 U -	2 U -	253 -	12100 -
WCWEIR	3861-3	44800 -	3.2 B U30,32	6.7 B U30,32	5 U -	2 U -	94.8 B U32	9300 -
WCWEIR	3902-3	44600 -	3 U -	4 U -	5 U -	1 U -	51.9 BEUJ48,31	10300 -
WCWEIR	3903-3	45100 -	3 U -	4 U -	5 U -	1 U -	92.7 BEJ48	10700 -
WCWEIR	3976-3	53000 -	3 U -	4 U -	5 U -	1 UWUJ49	75.5 B -	10000 -

Table E.1. (continued)

Location	Sample ID	Manganese	Mercury	Molybdenum	Sodium	Nickel	Potassium	Selenium
W4TRIB-11	3582-3	351 -	0.2 U -	15 U -	14200 -	31 U -	3670 B -	2 U -
W4TRIB-11	3742-3	2100 -	. -	16.1 B -	19300 -	12.3 B -	4320 B -	. -
W4TRIB-11	3896-3	458 -	. -	16.4 B -	20000 -	21.3 B -	4980 B -	. -
W4TRIB-11	3962-3	271 -	0.2 U UJ4	13 U -	13700 -	12.8 B -	3930 B -	3 U -
W4TRIB-11	3963-3	2 U -	0.2 U -	15 U -	1060 B -	10 U -	670 U -	3 U -
W4TRIB-11	4081-3-	109 -	0.2 U -	16.8 B -	15700 -	11 U -	4190 B -	61 U -
W4TRIB-11	4082-3-	2 U -	0.2 U -	13 U -	48.3 B U32	11 U -	578 U -	61 U -
W4TRIB-11	4157-3	72.3 -	. -	47 B -	9760 -	13 U -	3350 B -	.
W4TRIB-11	4332-3	1500	0.05 U	21.8 B	17400	16.9 B	5380	0.51 U
W4TRIB-11	4333-3	1 U	0.05 B	5.2 U	15.1 U	4.8 U	695 U	0.51 U
W4TRIB-5	3580-3	78.7 -	0.2 U -	15 U -	9780 -	31 U -	13600 -	2 U -
W4TRIB-5	3740-3	198 -	. -	11 U -	14300 -	18.3 B -	18300 -	. -
W4TRIB-5	4079-3-	6 B -	0.2 U -	13 U -	8400 -	11 U -	14300 -	61 U -
W4TRIB-5	4155-3	15.5 -	. -	26 U -	6390 -	13 U -	12700 -	.
W4TRIB-5	4158-3	3 U -	. -	26 U -	336 B -	13 U -	483 U -	.
W4TRIB-7	3581-3	877 -	0.2 U -	15 U -	12300 -	31 U -	3980 B -	2 U -
W4TRIB-7	3741-3	5700 -	. -	11.3 B -	13800 -	11 U -	4900 B -	. -
W4TRIB-7	3961-3	85.4 -	0.2 U UJ4	13 U -	17000 -	11 U -	5330 -	3 U -
W4TRIB-7	4080-3-	4.2 B -	0.2 U -	13 U -	12700 -	11 U -	5160 -	61 U -
W4TRIB-7	4156-3	53.8 -	. -	26 U -	9600 -	13 U -	4700 B -	.
WAG4 MS1	3577-3	312 -	0.2 U -	15 U -	9200 -	36.7 B -	5020 -	2 U -
WAG4 MS1	3738-3	2 U -	. -	11 U -	910 U -	11 U -	1000 U -	. -
WAG4 MS1	3936-3	412 -	. -	13 U -	10300 -	29.2 B -	5500 -	. -
WAG4 MS1	3957-3	75.1 -	0.2 U UJ4	13 U -	14500 -	24.8 B -	5370 -	3 U -
WAG4 MS1	3958-3	76.8 -	0.2 U UJ4	13 U -	14200 -	19.9 B -	5320 -	3 U -
WAG4 MS1	4076-3-	49.1 -	0.2 U -	13 U -	9880 -	32.6 B -	5200 -	61 U -
WAG4 MS1	4077-3-	50.4 -	0.2 U -	13 U -	9980 -	32.4 B -	4930 B -	61 U -
WAG4 MS1	4152-3	66.1 -	. -	26 U -	6440 -	57.1 -	4890 B -	.
WAG4 MS1	4153-3	63.4 -	. -	26 U -	6580 -	66.6 -	4820 B -	.
WAG4 MS1	4327-3	644	0.05 U	6.4 B	13100	26.8 B	6870	0.51 U
WAG4 MS1	4328-3	555	0.05 U	7 B	13300	32.1 B	7310	0.51 U
WAG4 T2A	3563-3	118 -	0.2 U -	15 U -	8860 -	31 U -	4230 B -	2 U -
WAG4 T2A	3564-3	116 -	0.2 U -	15 U -	8810 -	31 U -	4660 B -	2 U -
WAG4 T2A	3737-3	410 -	. -	11 U -	12900 -	37.1 B -	4880 B -	. -
WAG4 T2A	3956-3	25.2 U30	0.2 U UJ4	13 U -	12100 -	17.5 B -	3620 B -	3 U -
WAG4 T2A	4075-3-	22.1 -	0.2 U -	13 U -	9800 -	15.6 B -	3880 B -	61 U -
WAG4 T2A	4151-3	37.1 -	. -	26 U -	6430 -	36.9 B -	4270 B -	.
WAG4 T2A	4326-3	150	0.05 U	5.2 U	12200	18.2 B	5870	0.51 U
WC7500	3575-3	22.8 -	0.2 U -	15 U -	13000 -	31 U -	1420 B -	2 U -
WC7500	3802-3	19.8 -	0.2 U -	11 U -	23300 -	14 U -	961 B U31	2 U -
WC7500	3822-3	24.1 -	0.2 U UJ4	11 U -	20900 -	14 U -	2100 B -	2 U -
WC7500	3867-3	15.5 -	0.2 U UJ4	11 U -	21400 -	14 U -	1730 B -	2 U -
WC7500	3888-3	2 U -	0.2 U UJ4	11 U -	380 U -	14 U -	640 U -	2 UWUJ50
WC7500	3897-3	19.1 -	0.2 U UJ4	15 U -	20600 -	10 U -	2240 B -	3 U -
WC7500	3898-3	19.1 -	0.2 U UJ4	15 U -	21500 -	10 U -	1810 B -	3 U -
WC7500	3965-3	16.2 -	0.2 U -	15 U -	16100 -	10 U -	2270 B -	3 U -
WC7500	4084-3-	47.5 -	0.2 U -	13 U -	16500 -	11 U -	2130 B -	61 U -
WC7500	4160-3	20.4 -	. -	26 U -	6500 -	13 U -	1190 B -	.
WC7500	4295-3	28.9 -	. -	14 U -	7050 -	8 U -	1770 B -	83 U -
WC7500	4319-3	36.2 -	. -	14 U -	16400 -	8 U -	1350 B -	83 U -
WC7500	4337-3	27.8	0.05 U	5.2 U	14000	4.8 U	2600 B	0.51 U
WCHEAD	3518-3	9.8 B U30	0.2 U -	15 U -	740 U -	31 U -	820 U -	2 U -
WCHEAD	3817-3	7.8 B -	0.2 U UJ4	11 U -	523 B -	14 U UJ4	887 B -	2 U UJ4
WCTRIB-1	3613-3	56.5 -	0.2 U -	15 U -	5500 -	31 U -	1220 B -	2 U -
WCTRIB-1	3823-3	369 -	0.2 U UJ4	11 U -	10500 -	14 U -	1210 B -	2 U -
WCTRIB-2	3561-3	23.9 -	0.2 U -	15 U -	2560 B -	31 U -	1030 B -	2 U -
WCTRIB-3	3565-3	585 -	0.2 U -	15 U -	8110 -	31 U -	3060 B -	2 U -
WCWEIR	3530-3	31.7 -	0.2 U -	15 U -	8030 -	31 U -	1460 B -	2 UWUJ49
WCWEIR	3568-3	31.4 -	0.2 U -	15 U -	11800 -	31 U -	1350 B -	2 U -
WCWEIR	3622-3	28.9 -	0.2 U -	15 U -	9860 -	31 U -	885 B -	2 UWUJ49
WCWEIR	3795-3	32.8 -	0.2 U -	11 U -	28900 -	14 U -	2070 B U31	2 U -
WCWEIR	3806-3	3.1 B U30	0.2 U -	11 U -	3370 B -	14 U -	640 U -	2 U -
WCWEIR	3809-3	34.4 -	0.2 U UJ4	11 U -	20900 -	14 U -	2370 -	2 U -
WCWEIR	3861-3	22.6 -	0.2 U UJ4	11 U -	19900 -	14 U -	1830 B -	2 U -
WCWEIR	3902-3	18 -	0.2 U UJ4	15 U -	19600 -	10 U -	2350 B -	3 U -
WCWEIR	3903-3	18.4 -	0.2 U UJ4	15 U -	20000 -	10 U -	2530 B -	3 U -
WCWEIR	3976-3	22.6 -	0.2 U -	15 U -	15500 -	10 U -	1870 B -	3 U -

Table E.1. (continued)

Location	Sample ID	Silicon	Silver	Strontium	Thallium	Vanadium	Zinc
W4TRIB-11	3582-3	3900 -	3 U -	220 -	3 U -	7 U -	33.9 -
W4TRIB-11	3742-3	5410 -	5 U -	271 -	500 U -	4 U -	26 U32
W4TRIB-11	3896-3	5030 -	4 U -	298 -	500 U -	6 U -	24 U32
W4TRIB-11	3962-3	4160 -	4 U -	228 -	500 U -	6 U -	41.6 U32
W4TRIB-11	3963-3	2090 -	4 U -	2 U -	3 U -	5 U -	6.6 B U32
W4TRIB-11	4081-3-	3400 -	4 U -	219 -	500 U -	6 U -	31.4 U32
W4TRIB-11	4082-3-	120 U32	4 U -	1 U -	500 U -	6 U -	7.5 B U32
W4TRIB-11	4157-3	4050 -	5 U -	207 -	.	10 U -	17.9 B -
W4TRIB-11	4332-3		3.9 B	265	22.5 U	2.3 U	12.1 B
W4TRIB-11	4333-3		3.2 U	0.3 U	22.5 U	2.3 U	1.3 B
W4TRIB-5	3580-3	3330 -	3 U -	92 -	3 U -	7 U -	5 B -
W4TRIB-5	3740-3	6890 -	5 U -	111 B -	500 U -	4 U -	19.9 B U32
W4TRIB-5	4079-3-	2990 -	4 U -	73.5 -	500 U -	6 U -	11.8 B U32
W4TRIB-5	4155-3	4090 -	5 U -	77.9 -	.	10 U -	5 U -
W4TRIB-5	4158-3	305 -	5 U -	2 U -	.	10 U -	6.8 B -
W4TRIB-7	3581-3	2090 -	3 U -	207 -	3 U -	7 U -	3.2 B -
W4TRIB-7	3741-3	3630 -	5 U -	244 -	500 U -	4 U -	8.5 B U32
W4TRIB-7	3961-3	2930 -	4 U -	248 -	500 U -	6 U -	17.3 B U30,32
W4TRIB-7	4080-3-	2390 -	4 U -	212 -	500 U -	6 U -	10.1 B U32
W4TRIB-7	4156-3	2870 -	5 U -	210 -	.	10 U -	5.8 B -
WAG4 MS1	3577-3	2450 -	3 U -	171 -	3 U -	7 U -	14.4 B U30,32
WAG4 MS1	3738-3	3920 -	5 U -	2 U -	500 U -	4 U -	4 U -
WAG4 MS1	3936-3	4700 -	4 U -	213 -	500 U -	6 U -	15.7 B U32
WAG4 MS1	3957-3	3240 -	4 U -	206 -	500 U -	6 U -	8.6 B U30,32
WAG4 MS1	3958-3	3170 -	4 U -	204 -	500 U -	6 U -	8.3 B U30,32
WAG4 MS1	4076-3-	2660 -	4 U -	167 -	500 U -	6 U -	14.6 B U32
WAG4 MS1	4077-3-	2570 -	4 U -	170 -	500 U -	6 U -	19.2 B U32
WAG4 MS1	4152-3	3270 -	5 U -	151 -	.	10 U -	5 U -
WAG4 MS1	4153-3	3440 -	5 U -	153 -	.	10 U -	10.9 B -
WAG4 MS1	4327-3		3.2 U	219	22.5 U	2.3 U	5 B
WAG4 MS1	4328-3		3.2 U	220	22.5 U	2.3 U	4.9 B
WAG4 T2A	3563-3	2260 -	3 U -	181 -	3 U -	7 U -	13.6 B U32
WAG4 T2A	3564-3	2280 -	3 U -	180 -	3 U -	7 U -	8.3 B U32
WAG4 T2A	3737-3	4880 -	5 U -	213 -	500 U -	4 U -	31.5 -
WAG4 T2A	3956-3	3520 -	4 U -	183 -	500 U -	6 U -	17.1 B U30,32
WAG4 T2A	4075-3-	2770 -	4 U -	168 -	500 U -	6 U -	12.3 B U30,32
WAG4 T2A	4151-3	3350 -	5 U -	162 -	.	10 U -	9.7 B -
WAG4 T2A	4326-3		3.2 U	223	22.5 U	2.3 U	7.6 B
WC7500	3575-3	2640 -	3 U -	85.2 -	3 U -	7 U -	33.2 -
WC7500	3802-3	3020 -	3 U -	106 B -	4 U -	5 U -	49.1 R135,136,137
WC7500	3822-3	3120 J33	3 U -	110 -	4 U -	5 U -	36.6 U32
WC7500	3867-3	2680 EN35,37,48R	3 U -	99.6 -	4 U -	5 U -	38 U32
WC7500	3888-3	29.8 B R31,32,33	3 U -	1 U -	4 U -	5 U -	8.9 B U32
WC7500	3897-3	3590 J35	4 U -	108 B -	3 U -	5 U -	34.1 -
WC7500	3898-3	3480 J35	4 U -	112 B -	3 U -	5 U -	33.4 -
WC7500	3965-3	2240 -	4 U -	107 B -	3 U -	5 U -	44.8 -
WC7500	4084-3-	3300 EJ48	4 U -	113 -	500 U -	6 U -	74.4 -
WC7500	4160-3	3340 -	5 U -	60.2 -	.	10 U -	24.7 -
WC7500	4295-3	2430 -	4 U -	82.9 B -	500 U -	4 U -	33.9 -
WC7500	4319-3	2350 -	4 U -	103 B -	500 U -	4 U -	38.1 -
WC7500	4337-3		3.8 B	81.4	22.5 U	3.6 B	30.9
WCHEAD	3518-3	3700 -	3.6 B -	16.7 B U30	3 U -	7 U -	10.6 B U30,32
WCHEAD	3817-3	4020 EN35,37,48R	3 U -	35.9 B -	4 U -	5 U -	55.3 U32
WCTRIB-1	3613-3	5800 -	3 U -	68.8 B -	3 U -	7 U -	13.9 B U30,32
WCTRIB-1	3823-3	5710 J33	3 U -	155 -	4 U -	5 U -	21.3 U32
WCTRIB-2	3561-3	4060 -	3.4 B U30	61 -	3 U -	7 U -	4.4 B U32
WCTRIB-3	3565-3	3190 -	3 U -	210 -	3 U -	7 U -	4.8 B U32
WCWEIR	3530-3	2640 -	3.4 B U30	74.7 -	3 U -	7 U -	21 -
WCWEIR	3568-3	2530 -	3 U -	83.1 -	3 U -	7 U -	20.4 U32
WCWEIR	3622-3	2960 EJ35,48	3 U -	76.3 B -	3 U -	7 U -	26.6 U32
WCWEIR	3795-3	3180 -	3 U -	123 B -	4 UWUJ49	5 U -	42.8 R135,136,137
WCWEIR	3806-3	296 U32	3 U -	6 B U30,32	4 U -	5 U -	10.6 B R32,135,136,1
WCWEIR	3809-3	3230 EN35,37,48 R	3 U -	111 -	4 U -	5 U -	25 U32
WCWEIR	3861-3	2650 EN35,37,48R	3 U -	102 -	4 U -	5 U -	45.7 U32
WCWEIR	3902-3	3180 J35	4 U -	98.9 B -	3 U -	5 U -	28.8 -
WCWEIR	3903-3	3160 J35	4 U -	102 B -	3 U -	5 U -	24.2 -
WCWEIR	3976-3	2150 -	4 U -	106 B -	3 U -	5 U -	33.2 -

Table E.1. (continued)

Location	Sample ID	Sample Date	Aluminum	Antimony	Arsenic	Boron	Barium	Beryllium	Cadmium
WCWEIR	4095-3	08FEB94	87.8 BEJ48	49 U -	51 U -	43.2 B U30,32	36.4 B -	1 U -	2 U -
WCWEIR	4096-3	08FEB94	126 BEJ48	49 U -	51 U -	44.7 B U30,32	36.7 B -	1 U -	2 U -
WCWEIR	4168-3	19APR94	156 B -	34 U -	. -	65.2 B -	37 U -	1 U -	4 U -
WCWEIR	4169-3	19APR94	157 B -	34 U -	. -	78 B -	37 U -	1 U -	4 U -
WCWEIR	4244-3	15JUN94	163 B -	46 U -	78 U -	38.4 B -	34 B -	1 U -	3 U -
WCWEIR	4245-3	15JUN94	159 B -	46 U -	78 U -	50.5 B -	35.5 B -	1 U -	3 U -
WCWEIR	4312-3	23JUN94	110 B -	46 U -	78 U -	41.2 B -	39.3 B -	1 U -	3 U -
WCWEIR	4354-3	24AUG94	71.9 B	19.1 U	0.7 B	28.1 B	33.6	0.18 B	0.05 B
WCWEIR	4355-3	24AUG94	66.5 B	19.1 U	0.55 B	20.5 B	33.3	0.17 B	0.05 U
WC-1	3623-3	13APR93	123 B -	31 U -	2 UWUJ49	38.3 B U32,31	33 B -	1 U -	1 U R34
WC-1	3793-3	13JUL93	94.9 B U32	36 U -	3 UWUJ50	87.1 B U30,32	42.6 B -	1 U -	1 U -
WC-20	3574-3	11MAR93	75.2 B -	31 U -	2 U -	24.3 B U30,32	33 B -	1 U -	1 U -
WC-20	3813-3	19JUL93	222 -	36 U -	2 UWUJ50	37 B U30,32	34.8 B -	1 U -	1 U -
WEST SEEP	3607-3	13APR93	795 -	31 U -	2 U -	47.8 B U30,32	37.4 B -	1 U -	1 U -
WEST SEEP	3631-15	13APR93	36 U -	31 U -	2 UWUJ49	13 U -	29 U -	1 U -	1 U R34
WEST SEEP	3785-3	13JUL93	506 -	36 U -	3 UWUJ50	708 -	83.5 B -	1 U -	1 U -
WEST SEEP	3786-3	13JUL93	433 -	36 U -	3 UWUJ50	394 U30,32	84.1 B -	1 U -	1 U -
WEST SEEP	3893-3	30SEP93	286 U32	36 U -	3 U -	47.9 B U32	57.2 B -	1 U -	3 U -
WEST SEEP	3950-3	01DEC93	117 B U32	36 U -	3 U -	102 U30,32	54.2 B -	1 U -	3 U -
WEST SEEP	4070-3	08FEB94	289 EJ48	49 U -	51 U -	41.3 B U30,32	42.9 B -	1 U -	2 U -
WEST SEEP	4146-3	19APR94	433 -	34 U -	. -	36.7 B -	40.3 B -	1 U -	4 U -
WEST SEEP	4223-3	15JUN94	228 -	46 U -	78 U -	49.8 B -	56.4 B -	1 U -	3 U -
WEST SEEP	4316-3	23JUN94	118 B -	46 U -	78 U -	89.4 B -	108 B -	1 U -	3 U -
WEST SEEP	4357-3	24AUG94	198 B	19.1 U	0.6 B	29.2 B	55.9	0.2 B	0.05 U
WOCET	3526-3	09MAR93	642 -	31 U -	2 U -	13 U -	39.2 B -	1 U -	1 U -
WOCET	3812-3	19JUL93	1500 -	36 U -	2 UWUJ50	38.8 B U30,32	59.4 B -	1 U -	1 U -
WOD	4318-3	23JUN94	31 U -	46 U -	78 U -	38 U -	14 U -	1 U -	3 U -
WOD	3527-3	09MAR93	420 -	31 U -	2 U -	13 U -	34.9 B -	1 U -	1 U -
WOD	3570-3	11MAR93	861 -	31 U -	2 UWUJ49	44.8 B U30,32	39.8 B -	1 U -	1 U -
WOD	3599-3	13APR93	1000 -	31 U -	2 U -	56.7 B U30,32	33.3 B -	1 U -	1 U -
WOD	3799-3	13JUL93	1060 -	36 U -	3 UWUJ50	747 -	56.7 B -	1 U -	1 U -
WOD	3810-3	19JUL93	554 -	36 U -	2 UWUJ50	34.7 B U30,32	47.1 B -	1 U -	1 U -
WOD	3866-3	21JUL93	655 -	36 U -	2 UWUJ50	32.1 B U30,32	52.3 B -	1 U -	1 U -
WOD	3892-3	30SEP93	1340 -	36 U -	3 U -	43.5 B U32	56.8 B -	1 U -	3 U -
WOD	3949-3	01DEC93	287 -	36 U -	3 U -	77.7 B U30,32	40.7 B -	1 U -	3 U -
WOD	4069-3	08FEB94	700 EJ48	49 U -	51 U -	70.9 B U30,32	46.3 B -	1 U -	2 U -
WOD	4145-3	19APR94	864 -	34 U -	. -	60.7 B -	37 U -	1 U -	4 U -
WOD	4222-3	15JUN94	1050 -	46 U -	78 U -	64.6 B -	51.6 B -	1 U -	3 U -
WOD	4317-3	23JUN94	2050 -	46 U -	78 U -	146 -	58 B -	1 U -	3 U -
WOD	4325-3	24AUG94	537	19.1 U	0.6 B	33.6	49	0.19 B	0.06 B

Table E.1. (continued)

Location	Sample ID	Calcium	Chromium	Copper	Cobalt	Lead	Iron	Magnesium
WCWEIR	4095-3-	54500 -	4 U -	5.5 B -	6 U -	40 U -	166 -	9360 -
WCWEIR	4096-3-	55200 -	4 U -	5.5 B -	6 U -	40 U -	207 -	9410 -
WCWEIR	4168-3	33100 -	5 U -	7.1 B -	11 U -	.	183 -	6490 -
WCWEIR	4169-3	32500 -	5 U -	12.1 B -	11 U -	.	188 -	6470 -
WCWEIR	4244-3	37100 -	4 U -	4.6 B -	8 U -	55 U -	153 -	8760 -
WCWEIR	4245-3	37900 -	4 U -	5.6 B -	8 U -	55 U -	179 -	9060 -
WCWEIR	4312-3	54500 -	4 U -	2.9 B -	8 U -	55 U -	138 -	9320 -
WCWEIR	4354-3	37600	2.3 U	4.1 B	1.9 U	.	93.2 B	8670
WCWEIR	4355-3	37500	2.3 U	2.9 B	1.9 U	.	99.6 B	8690
WC-1	3623-3	42000 -	3 U -	5 U -	9 U -	2 U -	196 -	7590 -
WC-1	3793-3	46400 -	3 U -	13.1 B -	5 U -	2.4 B -	144 -	10800 -
WC-20	3574-3	42000 -	3 U -	6.8 B -	8 U -	2 U -	84.1 B U32	9120 -
WC-20	3813-3	39800 -	3 U -	5.1 B U30,32	5 U -	2 U -	109 U32	9890 -
WEST SEEP	3607-3	19500 -	3 U -	5 U -	9 U -	2.2 B -	561 -	5400 -
WEST SEEP	3631-15	490 U -	3 U -	5 U -	9 U -	2 U -	12 U -	680 U -
WEST SEEP	3785-3	53700 -	3 U -	6.5 B -	5 U -	2 UWUJ50	889 -	10400 -
WEST SEEP	3786-3	53700 -	3 U -	4.3 B -	5 U -	2 UWUJ50	823 -	10500 -
WEST SEEP	3893-3	51300 -	3 U -	4 U -	5 U -	1 U -	363 EJ48	11800 -
WEST SEEP	3950-3	44200 -	3 U -	4 U -	5 U -	1 U -	201 -	11100 -
WEST SEEP	4070-3-	25900 -	4 U -	4 U -	6 U -	40 U -	325 -	6480 -
WEST SEEP	4146-3	18000 -	5 U -	5 U -	11 U -	.	437 -	5440 -
WEST SEEP	4223-3	36800 -	4 U -	2 U -	8 U -	55 U -	330 -	9850 -
WEST SEEP	4316-3	26500 -	4 U -	2 U -	11.4 B -	55 U -	2320 -	4720 B -
WEST SEEP	4357-3	41000	2.3 U	2.4 B	1.9 U	.	329	10500
WOCET	3526-3	29200 -	4.5 B U30,32	4 U -	8 U -	3.1 U30,32	558 -	5980 -
WOCET	3812-3	45200 -	4.1 B U30,32	7.2 B U30,32	5 U -	2 UWUJ50	1610 -	5980 -
WOD	4318-3	56 U -	4 U -	2 U -	8 U -	55 U -	11.5 B -	48 U -
WOD	3527-3	43500 -	10.6 U30,32	4 U -	8 U -	3.6 U30,32	634 -	7210 -
WOD	3570-3	40900 -	15.7 U30	4.2 B -	8 U -	3.3 -	1070 -	7790 -
WOD	3599-3	38700 -	7.6 B U30	5 U -	9 U -	3.2 -	915 -	6720 -
WOD	3799-3	51200 -	18.5 -	12.3 B -	5 U -	3.9 -	1130 -	12000 -
WOD	3810-3	40700 -	9.8 B U30,32	5.1 B U30,32	5 U -	2.5 B -	733 -	9350 -
WOD	3866-3	44900 -	18 -	6.7 B U30,32	5 U -	2 B -	889 -	10400 -
WOD	3892-3	50700 -	21.9 -	11.5 B -	5 U -	4 -	1680 EJ48	9930 -
WOD	3949-3	53800 -	3 U -	4 U -	5 U -	1.5 B -	395 -	9400 -
WOD	4069-3-	51200 -	12.4 U30	4 U -	6 U -	40 U -	957 -	9220 -
WOD	4145-3	33800 -	9.5 B -	5 U -	11 U -	.	946 -	5840 -
WOD	4222-3	37900 -	16.8 -	11.2 B -	8 U -	55 U -	1420 -	7620 -
WOD	4317-3	38500 -	38.1 -	9.3 B -	8 U -	55 U -	2490 -	8200 -
WOD	4325-3	47500	14.9	5.5 B	2.2 B	1.8 B	800	8780

Table E.1. (continued)

Location	Sample ID	Manganese	Mercury	Molybdenun	Sodium	Nickel	Potassium	Selenium
WCWEIR	4095-3-	31.1 -	0.2 U -	13 U -	18000 -	11 U -	1480 B -	61 U -
WCWEIR	4096-3-	33.2 -	0.2 U -	13 U -	18100 -	11 U -	1930 B -	61 U -
WCWEIR	4168-3	31.6 -	. -	26 U -	5990 -	13 U -	1330 B -	.
WCWEIR	4169-3	29.8 -	. -	26 U -	5960 -	13 U -	1110 B -	.
WCWEIR	4244-3	31.4 -	. -	14 U -	16700 -	8 U -	1840 B -	83 U -
WCWEIR	4245-3	34.1 -	. -	14 U -	17400 -	8 U -	1730 B -	83 U -
WCWEIR	4312-3	33.8 -	. -	14 U -	17200 -	8 U -	1660 B -	83 U -
WCWEIR	4354-3	28.8	0.05 U	5.2 U	13700	4.8 U	2610 B	0.51 U
WCWEIR	4355-3	29.9	0.07 B	5.2 U	13600	4.8 U	2100 B	0.51 U
WC-1	3623-3	38.1 -	0.2 U -	15 U -	8760 -	31 U -	1200 B -	2 U -
WC-1	3793-3	31.2 -	0.2 U -	11 U -	26200 -	14 U -	1340 B U31	2 U -
WC-20	3574-3	18.6 -	0.2 U -	15 U -	15500 -	31 U -	1740 B -	2 U -
WC-20	3813-3	19.6 -	0.2 U UJ4	11 U -	22200 -	14 U -	1630 B -	2 U -
WEST SEEP	3607-3	36.1 -	0.34 -	15 U -	5560 -	31 U -	1380 B -	2 U -
WEST SEEP	3631-15	2 U -	0.2 U -	15 U -	740 U -	31 U -	820 U -	2 UWUJ49
WEST SEEP	3785-3	2960 -	0.2 U -	11 U -	71400 -	20.1 B -	2120 B U31	2 UWUJ49
WEST SEEP	3786-3	2960 -	0.2 U -	11 U -	71800 -	18.6 B -	1730 B U31	2 U -
WEST SEEP	3893-3	494 -	0.2 U UJ4	15 U -	42900 -	13 B -	2300 B -	3 U -
WEST SEEP	3950-3	176 -	0.2 U -	15 U -	19700 -	10 U -	1540 B -	3 U -
WEST SEEP	4070-3-	47.4 -	0.2 U -	13 U -	10800 -	11 U -	1320 B -	61 U -
WEST SEEP	4146-3	30.4 -	. -	26 U -	5240 -	13 U -	1130 B -	.
WEST SEEP	4223-3	201 -	. -	14 U -	17000 -	8 U -	2180 B -	83 U -
WEST SEEP	4316-3	8820 -	. -	14 U -	3100 B -	8 U -	1900 B -	83 U -
WEST SEEP	4357-3	354	0.05 U	5.2 U	18900	7.1 B	2920 B	0.51 U
WOCET	3526-3	60.3 -	0.2 U -	15 U -	4970 B -	31 U -	1190 B -	2 U -
WOCET	3812-3	649 -	0.2 U UJ4	11 U -	1230 B -	14 U -	3570 -	2 U -
WOD	4318-3	2 U -	. -	14 U -	74.4 B -	8 U -	364 U -	83 U -
WOD	3527-3	91.4 -	0.2 U -	15 U -	7420 -	31 U -	1680 B -	2 U -
WOD	3570-3	112 -	0.2 U -	15 U -	9190 -	31 U -	1080 B -	2 U -
WOD	3599-3	101 -	0.2 U -	15 U -	7120 -	31 U -	1470 B -	2 U -
WOD	3799-3	197 -	0.2 U -	11 U -	24000 -	14 U -	2060 B U31	2 U -
WOD	3810-3	223 -	0.2 U UJ4	11 U -	16400 -	14 U -	1680 B -	2 U -
WOD	3866-3	231 -	0.2 U UJ4	11 U -	17200 -	14 U -	2190 -	2 U -
WOD	3892-3	115 -	0.21 J4	15 U -	18000 -	10 U -	2180 B -	3 U -
WOD	3949-3	57.6 -	0.2 U -	15 U -	13300 -	10 U -	1800 B -	3 U -
WOD	4069-3-	125 -	0.2 U -	13 U -	14500 -	11 U -	1720 B -	61 U -
WOD	4145-3	85.4 -	. -	26 U -	5470 -	13 U -	972 B -	.
WOD	4222-3	212 -	. -	14 U -	15300 -	8 U -	2110 B -	83 U -
WOD	4317-3	229 -	. -	14 U -	13700 -	8 U -	1920 B -	83 U -
WOD	4325-3	120	0.11 B	5.2 U	12400	4.8 U	2640 B	0.51 U

Table E.1. (continued)

Location	Sample ID	Silicon	Silver	Strontium	Thallium	Vanadium	Zinc
WCWEIR	4095-3-	2410 EJ48	4 U -	108 -	500 U -	6 U -	37.3 U32
WCWEIR	4096-3-	2430 EJ48	4 U -	108 -	500 U -	6 U -	38.3 U32
WCWEIR	4168-3	3490 -	5 U -	60.8 -	.	10 U -	19.9 B -
WCWEIR	4169-3	3570 -	5 U -	60.4 -	.	10 U -	19.3 B -
WCWEIR	4244-3	2750 -	4 U -	88.3 B -	500 U -	4 U -	28.8 -
WCWEIR	4245-3	2780 -	4 U -	91.3 B -	500 U -	4 U -	31.7 -
WCWEIR	4312-3	2330 -	4 U -	106 B -	500 U -	4 U -	26.2 -
WCWEIR	4354-3		3.2 U	82.3	22.5 U	2.3 U	27.7
WCWEIR	4355-3		3.2 U	82.3	22.5 U	2.3 U	28.9
WC-1	3623-3	3180 EJ35,48	3 U -	83 B -	3 U -	7 U -	21.9 U32
WC-1	3793-3	3000 -	3 U -	117 B -	4 U -	5 U -	35.6 R135,136,137
WC-20	3574-3	2610 -	3 U -	86.1 -	3 U -	7 U -	35.4 -
WC-20	3813-3	2790 EN35,37,U8,R	3 U -	99.4 -	4 U -	5 U -	97.2 -
WEST SEEP	3607-3	4810 -	3 U -	46.3 B -	3 U -	7 U -	8.2 B U30,32
WEST SEEP	3631-15	92.8 BEUJ32,35,48	3 U -	2 U	3 U -	7 U -	9 B U32
WEST SEEP	3785-3	5410 -	3 U -	139 B -	4 UWUJ49	5 U -	16.7 B R135,136,137,
WEST SEEP	3786-3	5010 -	3 U -	140 B -	4 UWUJ49	5 U -	23.3 R135,136,137,
WEST SEEP	3893-3	4690 J35	4 U -	143 B -	3 U -	5 U -	32.4 -
WEST SEEP	3950-3	3770 -	4 U -	112 B -	3 U -	5 U -	8.4 B U32
WEST SEEP	4070-3-	3400 EJ48	4 U -	62.8 -	500 U -	6 U -	7.2 B U30,32
WEST SEEP	4146-3	4410 -	5 U -	42.7 B -	.	10 U -	5.3 B -
WEST SEEP	4223-3	4440 -	4 U -	90.3 B -	500 U -	4 U -	8 B -
WEST SEEP	4316-3	2720 -	4 U -	63.6 B -	500 U -	4 U -	5.7 B -
WEST SEEP	4357-3		3.2 U	97.8	22.5 U	2.3 U	2.4 B
WOCET	3526-3	4090 -	3.4 B U30	63.4 -	3 U -	7 U -	5.9 B U32
WOCET	3812-3	5150 EN35,37,48R	3 U -	88 -	4 U -	5 U -	82.1 U32
WOD	4318-3	68 B -	4 U -	1 U -	500 U -	4 U -	11 B -
WOD	3527-3	3240 -	3.4 B U30	80.2 -	3 U -	7 U -	21.3 -
WOD	3570-3	4780 -	3 U -	85.8 -	3 U -	7 U -	24.9 -
WOD	3599-3	4060 -	3 U -	76.9 B -	3 U -	7 U -	37.3 U32
WOD	3799-3	3540 -	3 U -	129 B -	4 U -	5 U -	36.5 R135,136,137
WOD	3810-3	4230 EN35,37,48 R	3 U -	99.6 -	4 U -	5 U -	61.2 U32
WOD	3866-3	4980 EN35,37,48 R	3 U -	108 -	4 U -	5 U -	53.5 U32
WOD	3892-3	4850 J35	4 U -	111 B -	3 U -	5 U -	52.7 -
WOD	3949-3	2720 -	4 U -	112 B -	3 U -	5 U -	19.2 B U32
WOD	4069-3-	3620 EJ48	4 U -	108 -	500 U -	6 U -	62.7 U32
WOD	4145-3	4350 -	5 U -	63.7 -	.	10 U -	19.6 B -
WOD	4222-3	3180 -	4 U -	83.4 B -	500 U -	4.9 B -	118 -
WOD	4317-3	4790 -	4 U -	89.8 B -	500 U -	4 U -	57.3 -
WOD	4325-3		3.2 U	100	22.5 U	3 B	19 B

[a] Includes laboratory and validation qualifiers.
[b] Rinseate.

Appendix F

VOLATILE ORGANIC COMPOUND RESULTS

Table F.1. Volatile organic compound (VOC) results (ug/L) and qualifiers from the WAG 2 RI Seep Task

Location	Sample ID	Sample Date	Lab Redo	1,1,1–Tri–chloroethane	1,1,2,2–Tetra–chloroethane	1,1,2–Tri–chloroethane	1,1–Di–chloroethane	1,1–Di–chloroethene	1,2–Dibromo–3–chloropropane	1,2–Di–bromoethane	1,2–Dichloro–benzene
5NNT	3648	19APR93	00	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
5NST	3707	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BTT	3660	28APR93	00	1 U	1 U	1 U	1 =	1 U	1 U	1 U	1 U
EAST SEEP	3692	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
FIRST CREEK	3646	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
FRENCH DR S	3711	28APR93	00	0.2 J	1 U	1 U	2 =	0.2 J	1 U	1 U	1 U
FRENCH DR S	3711	28APR93	D1	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
HRT–3	3666	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
MBTRIB–3	3663	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
MBTRIB–3	3663	19APR93	D1	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
MBWEIR	3664	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
MB–15	3665	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
MID. DRAIN	3671	19APR93	00	1 U	1 U	1 U	0.6 J	1 U	1 U	1 U	1 U
MV–1	3670	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
MV–2	3701	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
MV–3	3702	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
NWTRIB	3645	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
RAC	3672	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
RAC (FD)	3673	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
RS–1	3681	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
RS–3A	3683	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
RS–3A (FD)	3684	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
RS–3B	3685	28APR93	00	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
RS–3B	3685	28APR93	D1	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW2–1	3700	19APR93	00	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SW2–2	3649	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW2–3	3705	19APR93	00	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
SW2–3	3706	19APR93	00	0.1 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW2–4	3703	19APR93	00	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
SW2–5	3662	19APR93	00	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
SW2–5	3662	19APR93	D1	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
SW4–1	3654	28APR93	00	1 U	1 U	1 U	0.2 J	0.4 J	1 U	1 U	1 U
SW4–1	3654	28APR93	D1	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW4–1 (FD)	3655	28APR93	00	1 U	1 U	1 U	0.3 J	0.5 J	1 U	1 U	1 U
SW4–1 (FD)	3655	28APR93	D1	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW4–2	3656	28APR93	00	1 U	1 U	1 U	0.3 J	2 =	1 U	1 U	1 U
SW4–2	3656	28APR93	D1	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW6–1	3691	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW6–2	3708	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW7–1	3682	28APR93	00	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SW7–1	3682	28APR93	D1	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW7–2	3686	28APR93	00	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
SW7–2 (FD)	3687	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW7–3	3693	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW7–3	3694	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Table F.1. (continued)

Location	Sample ID	Sample Date	Lab Redo	1,1,1-Tri-chloroethane	1,1,2,2-Tetra-chloroethane	1,1,2-Tri-chloroethane	1,1-Di-chloroethane	1,1-Di-chloroethene	1,2-Dibromo-3-chloropropane	1,2-Di-bromoethane	1,2-Dichloro-benzene
SW7-4	3695	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW7-5	3699	19APR93	00	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW7-6	3680	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW7-6	3680	28APR93	D1	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW7-7	3696	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW7-7	3696	28APR93	D1	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW7-8	3697	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW9-1	3667	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW9-1	3667	19APR93	D1	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
SW9-2	3669	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW9-2	3668	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TB (trip blank)	3678	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TB (trip blank)	3714	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TB (trip blank)	3716	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TB (trip blank)	3679	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TB (trip blank)	3677	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TB (trip blank)	3715	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
W4TRIB-11	3659	28APR93	00	1 U	1 U	1 U	0.5 J	1 U	1 U	1 U	1 U
W4TRIB-5	3657	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
W4TRIB-7	3658	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WAG4 MS1	3653	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WAG4 T2A	3651	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WAG6 MS1	3709	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WAG6 MS1	3709	28APR93	D1	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
WAG6 MS2	3710	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WAG6 MS2 (R1)	3710	28APR93	R1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WAG6 MS3A	3712	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WAG6 MS3B	3713	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WC7500	3647	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WCTRIB-1	3698	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WCTRIB-2	3704	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WCTRIB-2	3704	19APR93	R1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WCTRIB-3	3652	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WCTRIB-4	3650	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WCTRIB-4	3650	19APR93	D1	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
WCWEIR	3661	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WCWEIR (R1)	3661	19APR93	R1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WEST SEEP	3688	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WOCET	3674	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WOCET (FD)	3675	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WOD	3676	19APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WSTRIB-1	3689	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WSTRIB-1 (FD)	3690	28APR93	00	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Table F.1. (continued)

Location	Sample ID	1,2–Dichloro–ethane	1,2–Dichloro–propane	1,3–Dichloro–benzene	1,4–Dichloro benzene	2–Butanone	2–Hexanone	4–Methyl–2–pentanone	Acetone	Benzene	Bromochloro–methane	Bromodi–chloromethane
5NNT	3648	10 U	10 U	10 U	10 U	50 U	50 U	50 U	8 JB	10 U	10 U	10 U
5NST	3707	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
BTT	3660	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
EAST SEEP	3692	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
FIRST CREEK	3646	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
FRENCH DR S	3711	0.6 J	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
FRENCH DR S	3711	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
HRT–3	3666	1 U	1 U	1 U	1 U	5 U	5 U	5 U	1 JB	1 U	1 U	1 U
MBTRIB–3	3663	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	0.7 J
MBTRIB–3	3663	0 U	0 U	0 U	0 U	5 U	5 U	5 U	5 U	0 U	0 U	0 U
MBWEIR	3664	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
MB–15	3665	1 U	1 U	1 U	1 U	5 U	5 U	5 U	3 JB	1 U	1 U	1 U
MID. DRAIN	3671	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
MV–1	3670	1 U	1 U	1 U	1 U	5 U	5 U	5 U	0.5 JB	1 U	1 U	1 U
MV–2	3701	1 U	1 U	1 U	1 U	5 U	5 U	5 U	3 J	1 U	1 U	1 U
MV–3	3702	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
NWTRIB	3645	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
RAC	3672	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
RAC (FD)	3673	1 U	1 U	1 U	1 U	5 U	5 U	5 U	0.5 JB	1 U	1 U	1 U
RS–1	3681	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
RS–3A	3683	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
RS–3A (FD)	3684	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 B	1 U	1 U	1 U
RS–3B	3685	5 U	5 U	5 U	5 U	25 U	25 U	25 U	25 U	5 U	5 U	5 U
RS–3B	3685	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW2–1	3700	10 U	10 U	10 U	10 U	50 U	50 U	50 U	11 J	10 U	10 U	10 U
SW2–2	3649	1 U	1 U	1 U	1 U	5 U	5 U	5 U	1 JB	1 U	1 U	1 U
SW2–3	3705	5 U	5 U	5 U	5 U	25 U	25 U	25 U	25 U	5 U	5 U	5 U
SW2–3	3706	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
SW2–4	3703	2 U	2 U	2 U	2 U	10 U	10 U	10 U	14 =	2 U	2 U	2 U
SW2–5	3662	5 U	5 U	5 U	5 U	25 U	25 U	25 U	25 U	5 U	5 U	5 U
SW2–5	3662	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
SW4–1	3654	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
SW4–1	3654	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW4–1 (FD)	3655	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
SW4–1 (FD)	3655	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW4–2	3656	1 U	1 U	1 U	1 =	5 U	5 U	5 U	5 U	3 =	1 U	1 U
SW4–2	3656	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW6–1	3691	1 U	1 U	1 U	1 U	5 U	5 U	5 U	3 JB	1 U	1 U	1 U
SW6–2	3708	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
SW7–1	3682	10 U	10 U	10 U	10 U	50 U	50 U	50 U	50 U	10 U	10 U	10 U
SW7–1	3682	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW7–2	3686	5 U	5 U	5 U	5 U	25 U	25 U	25 U	25 U	5 U	5 U	5 U
SW7–2 (FD)	3687	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
SW7–3	3693	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
SW7–3	3694	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U

Table F.1. (continued)

Location	Sample ID	1,2–Dichloro–ethane	1,2–Dichloro–propane	1,3–Dichloro–benzene	1,4–Dichloro benzene	2–Butanone	2–Hexanone	4–Methyl–2–pentanone	Acetone	Benzene	Bromochloro–methane	Bromodi–chloromethane
SW7–4	3695	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
SW7–5	3699	25 U	25 U	25 U	25 U	120 U	120 U	120 U	14 JB	25 U	25 U	25 U
SW7–6	3680	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
SW7–6	3680	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW7–7	3696	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
SW7–7	3696	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW7–8	3697	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
SW9–1	3667	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 =
SW9–1	3667	0 U	0 U	0 U	0 U	5 U	5 U	5 U	5 U	0 U	0 U	0 U
SW9–2	3669	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
SW9–2	3668	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	0.1 J
TB (trip blank)	3678	1 U	1 U	1 U	1 U	5 U	5 U	5 U	2 J	1 U	1 U	1 U
TB (trip blank)	3714	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
TB (trip blank)	3716	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
TB (trip blank)	3679	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
TB (trip blank)	3677	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
TB (trip blank)	3715	1 U	1 U	1 U	1 U	5 U	5 U	5 U	4 JB	1 U	1 U	1 U
W4TRIB–11	3659	1 U	1 U	1 U	1 U	5 U	5 U	5 U	2 J	1 U	1 U	1 U
W4TRIB–5	3657	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
W4TRIB–7	3658	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
WAG4 MS1	3653	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
WAG4 T2A	3651	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
WAG6 MS1	3709	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
WAG6 MS1	3709	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
WAG6 MS2	3710	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
WAG6 MS2 (R1)	3710	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
WAG6 MS3A	3712	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
WAG6 MS3B	3713	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
WC7500	3647	1 U	1 U	1 U	1 U	5 U	5 U	5 U	3 J	1 U	1 U	1 U
WCTRIB–1	3698	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
WCTRIB–2	3704	1 U	1 U	1 U	1 U	5 U	5 U	5 U	2 J	1 U	1 U	1 U
WCTRIB–2	3704	1 U	1 U	1 U	1 U	5 U	5 U	5 U	1 JB	1 U	1 U	1 U
WCTRIB–3	3652	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
WCTRIB–4	3650	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
WCTRIB–4	3650	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
WCWEIR	3661	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
WCWEIR (R1)	3661	1 U	1 U	1 U	1 U	5 U	5 U	5 U	3 JB	1 U	1 U	1 U
WEST SEEP	3688	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
WOCET	3674	1 U	1 U	1 U	1 U	5 U	5 U	5 U	9 B	1 U	1 U	1 U
WOCET (FD)	3675	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
WOD	3676	1 U	1 U	1 U	1 U	5 U	5 U	5 U	3 JB	1 U	1 U	1 U
WSTRIB–1	3689	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U
WSTRIB–1 (FD)	3690	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U

Table F.1: (continued)

Location	Sample ID	Bromoform	Bromo-methane	Carbon Disulfide	Carbon Tetrachloride	Chloro-benzene	Chloroethane	Chloroform	Chloro-methane	Cis-1,2-dichloroethene	Dibromo-chloromethane	Ethylbenzene
5NNT	3648	10 U	10 U	140 =	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
5NST	3707	1 U	1 U	4 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BTT	3660	1 U	1 U	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
EAST SEEP	3692	1 U	1 U	11 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
FIRST CREEK	3646	1 U	1 U	7 =	1 U	1 U	1 U	0.4 J	1 U	0.1 J	1 U	1 U
FRENCH DR S	3711	1 U	1 U	1 U	1 U	1 U	1 U	0.4 J	1 U	0 E	1 U	1 U
FRENCH DR S	3711	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	140 =	25 U	25 U
HRT-3	3666	1 U	1 U	5 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
MBTRIB-3	3663	1 U	1 U	0 E	1 U	1 U	1 U	6 =	1 U	1 U	1 U	1 U
MBTRIB-3	3663	0 U	0 U	63 D	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
MBWEIR	3664	1 U	1 U	11 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
MB-15	3665	1 U	1 U	11 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
MID. DRAIN	3671	1 U	1 U	16 =	1 U	1 U	1 U	1 U	1 U	5 =	1 U	1 U
MV-1	3670	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
MV-2	3701	1 U	1 U	0.3 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
MV-3	3702	1 U	1 U	0.8 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
NWTRIB	3645	1 U	1 U	4 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
RAC	3672	1 U	1 U	16 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
RAC (FD)	3673	1 U	1 U	2 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
RS-1	3681	1 U	1 U	25 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
RS-3A	3683	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
RS-3A (FD)	3684	1 U	1 U	1 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
RS-3B	3685	5 U	5 U	0 E	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
RS-3B	3685	25 U	25 U	260 =	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW2-1	3700	10 U	10 U	120 =	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SW2-2	3649	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW2-3	3705	5 U	5 U	75 =	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
SW2-3	3706	1 U	1 U	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW2-4	3703	2 U	2 U	41 =	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
SW2-5	3662	5 U	5 U	0 E	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
SW2-5	3662	0 U	0 U	240 D	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
SW4-1	3654	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0 E	1 U	1 U
SW4-1	3654	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	47 =	25 U	25 U
SW4-1 (FD)	3655	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0 E	1 U	1 U
SW4-1 (FD)	3655	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	49 =	25 U	25 U
SW4-2	3656	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0 E	1 U	1 U
SW4-2	3656	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	66 =	25 U	25 U
SW6-1	3691	1 U	1 U	2 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW6-2	3708	1 U	1 U	10 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW7-1	3682	10 U	10 U	0 E	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SW7-1	3682	25 U	25 U	410 =	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW7-2	3686	5 U	5 U	67 =	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
SW7-2 (FD)	3687	1 U	1 U	6 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW7-3	3693	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW7-3	3694	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Table F.1. (continued)

Location	Sample ID	Bromoform	Bromo-methane	Carbon Disulfide	Carbon Tetrachloride	Chloro-benzene	Chloroethane	Chloroform	Chloro-methane	Cis-1,2-dichloroethene	Dibromo-chloromethane	Ethylbenzene
SW7-4	3695	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW7-5	3699	25 U	25 U	300 =	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW7-6	3680	1 U	1 U	0 E	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW7-6	3680	25 U	25 U	110 =	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW7-7	3696	1 U	1 U	0 E	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW7-7	3696	25 U	25 U	43 =	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SW7-8	3697	1 U	1 U	0.3 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW9-1	3667	1 U	1 U	0 E	1 U	1 U	1 U	5 =	1 U	1 U	1 U	1 U
SW9-1	3667	0 U	0 U	87 D	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
SW9-2	3669	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW9-2	3668	1 U	1 U	3 =	1 U	1 U	1 U	0.6 J	1 U	0.1 J	1 U	1 U
TB (trip blank)	3678	1 U	1 U	0.1 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TB (trip blank)	3714	1 U	1 U	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TB (trip blank)	3716	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TB (trip blank)	3679	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TB (trip blank)	3677	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TB (trip blank)	3715	1 U	1 U	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
W4TRIB-11	3659	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.4 J	1 U	1 U
W4TRIB-5	3657	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 =	1 U	1 U
W4TRIB-7	3658	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WAG4 MS1	3653	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 =	1 U	1 U
WAG4 T2A	3651	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	14 =	1 U	1 U
WAG6 MS1	3709	1 U	1 U	0 E	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WAG6 MS1	3709	25 U	25 U	460 =	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
WAG6 MS2	3710	1 U	1 U	14 =	1 U	1 U	1 U	1 U	1 U	0.3 J	1 U	1 U
WAG6 MS2 (R1)	3710	1 U	1 U	17 =	1 U	1 U	1 U	1 U	1 U	0.5 J	1 U	1 U
WAG6 MS3A	3712	1 U	1 U	2 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WAG6 MS3B	3713	1 U	1 U	8 =	1 U	1 U	1 U	1 U	1 U	1 =	1 U	1 U
WC7500	3647	1 U	1 U	5 =	1 U	1 U	1 U	2 =	1 U	1 U	1 U	1 U
WCTRIB-1	3698	1 U	1 U	25 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WCTRIB-2	3704	1 U	1 U	0.4 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WCTRIB-2	3704	1 U	1 U	0.7 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WCTRIB-3	3652	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WCTRIB-4	3650	1 U	1 U	0 E	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WCTRIB-4	3650	0 U	0 U	37 D	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
WCWEIR	3661	1 U	1 U	13 =	1 U	1 U	1 U	0.8 J	1 U	1 U	1 U	1 U
WCWEIR (R1)	3661	1 U	1 U	0.7 J	1 U	1 U	1 U	0.9 J	1 U	1 U	1 U	1 U
WEST SEEP	3688	1 U	1 U	17 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WOCET	3674	1 U	1 U	0.5 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WOCET (FD)	3675	1 U	1 U	0.8 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WOD	3676	1 U	1 U	3 =	1 U	1 U	1 U	0.4 J	1 U	1 U	1 U	1 U
WSTRIB-1	3689	1 U	1 U	14 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
WSTRIB-1 (FD)	3690	1 U	1 U	9 =	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Table F.1. (continued)

Location	Sample ID	Methylene Chloride	Styrene	Tetrachloro-ethene	Toluene	Trans-1,2-Dichloroethene	Trans-1,3-Dichloropropene	Trichloro-ethene	Unknown	Vinyl Chloride	Xylene (total)	Cis-1,3-Di-chloropropene
5NNT	3648	13 JB	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
5NST	3707	0.2 JB	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
BTT	3660	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
EAST SEEP	3692	0.2 JB	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
FIRST CREEK	3646	0.3 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
FRENCH DR S	3711	0.1 J	1 U	0 E	1 U	0.9 J	1 U	0 E	NA	2 =	1 U	1 U
FRENCH DR S	3711	25 U	25 U	55 =	25 U	25 U	25 U	1000 =	NA	25 U	25 U	25 U
HRT-3	3666	2 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
MBTRIB-3	3663	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
MBTRIB-3	3663	0 U	0 U	0 U	0 U	0 U	0 U	0 U	NA	0 U	0 U	0 U
MBWEIR	3664	0.7 JB	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
MB-15	3665	0.1 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
MID. DRAIN	3671	1 JB	1 U	0.3 J	1 U	1 U	1 U	1 =	NA	0.5 J	1 U	1 U
MV-1	3670	1 JB	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
MV-2	3701	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
MV-3	3702	0.1 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
NWTRIB	3645	0.1 JB	1 U	1 U	1 U	1 U	1 U	1 U	1 J	1 U	1 U	1 U
RAC	3672	2 B	1 U	1 U	1 U	1 U	1 U	1 =	NA	1 U	1 U	1 U
RAC (FD)	3673	2 B	1 U	1 U	1 U	1 U	1 U	1 =	NA	1 U	1 U	1 U
RS-1	3681	0.3 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
RS-3A	3683	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
RS-3A (FD)	3684	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
RS-3B	3685	0.9 JB	5 U	5 U	5 U	5 U	5 U	5 U	NA	5 U	5 U	5 U
RS-3B	3685	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U
SW2-1	3700	1 J	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
SW2-2	3649	0.1 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
SW2-3	3705	3 JB	5 U	5 U	5 U	5 U	5 U	5 U	NA	5 U	5 U	5 U
SW2-3	3706	0.7 JB	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
SW2-4	3703	0.9 J	2 U	2 U	2 U	2 U	2 U	2 U	NA	2 U	2 U	2 U
SW2-5	3662	10 U	5 U	5 U	5 U	5 U	5 U	5 U	NA	5 U	5 U	5 U
SW2-5	3662	0 U	0 U	0 U	0 U	0 U	0 U	0 U	NA	0 U	0 U	0 U
SW4-1	3654	2 U	1 U	0.5 J	1 U	0.3 J	1 U	8 =	NA	10 =	1 U	1 U
SW4-1	3654	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U
SW4-1 (FD)	3655	0.2 J	1 U	0.7 J	1 U	0.4 J	1 U	9 =	NA	15 =	1 U	1 U
SW4-1 (FD)	3655	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U
SW4-2	3656	2 U	1 U	3 =	3 =	0.4 J	1 U	8 =	NA	0 E	1 J	1 U
SW4-2	3656	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NA	46 =	25 U	25 U
SW6-1	3691	0.3 JB	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
SW6-2	3708	0.2 JB	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
SW7-1	3682	20 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	10 U	10 U	10 U
SW7-1	3682	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U
SW7-2	3686	0.7 JB	5 U	5 U	5 U	5 U	5 U	5 U	NA	5 U	5 U	5 U
SW7-2 (FD)	3687	2 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
SW7-3	3693	0.1 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
SW7-3	3694	0.5 JB	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U

Table F.1. (continued)

Location	Sample ID	Methylene Chloride	Styrene	Tetrachloro-ethene	Toluene	Trans-1,2-Dichloroethene	Trans-1,3-Dichloropropene	Trichloro-ethene	Unknown	Vinyl Chloride	Xylene (total)	Cis-1,3-Di-chloropropene
SW7-4	3695	0.3 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
SW7-5	3699	30 JB	25 U	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U
SW7-6	3680	2 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
SW7-6	3680	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U
SW7-7	3696	2 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
SW7-7	3696	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U
SW7-8	3697	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
SW9-1	3667	0.1 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
SW9-1	3667	0 U	0 U	0 U	0 U	0 U	0 U	0 U	NA	0 U	0 U	0 U
SW9-2	3669	1 JB	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
SW9-2	3668	0.9 JB	1 U	1 U	1 U	1 U	1 U	0.1 J	NA	1 U	1 U	1 U
TB (trip blank)	3678	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
TB (trip blank)	3714	0.3 JB	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
TB (trip blank)	3716	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
TB (trip blank)	3679	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
TB (trip blank)	3677	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
TB (trip blank)	3715	0.4 JB	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
W4TRIB-11	3659	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	0.2 J	1 U	1 U
W4TRIB-5	3657	2 U	1 U	1 U	1 U	1 U	1 U	0.6 J	NA	1 U	1 U	1 U
W4TRIB-7	3658	2 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WAG4 MS1	3653	2 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	0.2 J	1 U	1 U
WAG4 T2A	3651	0.2 JB	1 U	0.3 J	1 U	1 U	1 U	2 =	NA	1 =	1 U	1 U
WAG6 MS1	3709	0.1 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WAG6 MS1	3709	25 U	25 U	25 U	25 U	25 U	25 U	25 U	NA	25 U	25 U	25 U
WAG6 MS2	3710	0.1 J	1 U	1 U	1 U	1 U	1 U	3 =	NA	1 U	1 U	1 U
WAG6 MS2 (R1)	3710	0.3 JB	1 U	1 U	1 U	1 U	1 U	2 =	NA	1 U	1 U	1 U
WAG6 MS3A	3712	2 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WAG6 MS3B	3713	2 U	1 U	0.6 J	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WC7500	3647	2 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WCTRIB-1	3698	0.1 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WCTRIB-2	3704	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WCTRIB-2	3704	0.2 JB	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WCTRIB-3	3652	2 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WCTRIB-4	3650	0.1 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WCTRIB-4	3650	0 U	0 U	0 U	0 U	0 U	0 U	0 U	NA	0 U	0 U	0 U
WCWEIR	3661	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WCWEIR (R1)	3661	0.3 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WEST SEEP	3688	0.2 JB	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WOCET	3674	1 JB	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WOCET (FD)	3675	0.9 JB	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WOD	3676	0.1 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WSTRIB-1	3689	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U
WSTRIB-1 (FD)	3690	0.2 J	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U

Appendix G

ANION AND ALKALINITY RESULTS AND FIELD MEASUREMENTS

Table G.1. Anion and alkalinity results and field parameter measurements from the WAG 2 RI Seep Task

Location	Base ID	Sample Date	pH	Alkalinity mg of $CaCO_3$/L	Specific Conductance uS/cm	Chloride mg/L	Fluoride mg/L	Nitrate mg/L	Phosphate mg/L	Sulfate mg/L	Flow L/s
BTT	4083	08-Feb-94	7.99	348	697	5.98	5.98	0.781	0.781	0.2	0.08
BTT	3583	11-Mar-93	7.6	402	243	6	0.1	0.1	0.3	7	0.05
BTT	4334	24-Aug-94	7.18	354.4	670	7.18	1.1	0.2	1	1	0.001
BTT	3743	24-May-93	7.23	252	240	5.1	0.56	0.1	0.3	5.1	0.003
BTT	4159	19-Apr-94	7.32	331	643	2.83	0.607	0.2	1	13.7	0.192
BTT	3584	11-Mar-93	7.65	416	242	5.9	0.1	0.1	0.3	8.3	.
BTT	4083	08-Feb-94	7.99	352	697	5.98	5.98	0.781	0.781	0.2	0.08
BTT	3743	24-May-93	7.23	236	240	5.1	0.56	0.1	0.3	5.1	0.003
BTT	3441	24-Mar-93	7.36	.	745	.	.	.	.	.	0.71
BTT	4334	24-Aug-94	7.18	331.1	670	7.18	1.1	0.2	1	1	0.001
BTT	3964	01-Dec-93	7.07	310	622	10.9	0.71	0.2	1	9.62	0.04
EAST SEEP	4315	23-Jun-94	8.4	415.4	1026	37.2	2.07	16	6.82	88.7	0.32
EAST SEEP	3608	13-Apr-93	7.63	177	436	4.5	1	10	4.3	39	1.5
EAST SEEP	4073	08-Feb-94	8.48	175	506	9.52	9.52	0.74	0.74	13	0.77
EAST SEEP	4226	15-Jun-94	7.98	374.8	893	27.8	1.66	16.3	1	84.1	0.32
EAST SEEP	4149	19-Apr-94	7.55	172	459	6.83	0.739	7.93	1	35.9	1.2
EAST SEEP	3791	13-Jul-93	.	392	1092	.	.	.	.	.	~ 0
EAST SEEP	3953	01-Dec-93	7.74	254	749	10	0.92	15.3	1	108	~ 0.7
EAST SEEP	3445	24-Mar-93	7.33	.	299	.	.	.	.	.	4.2
EAST SEEP	3910	30-Sep-93	8.34	346	.	24.8	1.78	24.1	4.23	132	< 1
EAST SEEP	4361	24-Aug-94	8.06	346	881	25.1	1.65	12.9	1	80	0.33
FIRST CREEK	3967	01-Dec-93	7.43	110	344	5.36	0.61	0.2	1	16.6	14.4
FIRST CREEK	3816	19-Jul-93	7.49	.	319	.	.	.	.	.	.
FIRST CREEK	3450	24-Mar-93	7.33	.	70	.	.	.	.	.	135
FIRST CREEK	3749	24-May-93	.	.	.	.	.	.	.	.	9.1
FIRST CREEK	4087	08-Feb-94	.	118	.	18.9	18.9	0.7	0.7	4.3	17.8
FIRST CREEK	4296	23-Jun-94	8.24	131.4	311	7.53	0.704	2.6	1	17.7	7.1
FIRST CREEK	3900	30-Sep-93	8.19	136	316	4.02	0.57	2.11	1	12	7.6
FIRST CREEK	4338	24-Aug-94	8.29	133.7	276	3.19	0.824	2.07	1	8.23	18.7
FIRST CREEK	3573	11-Mar-93	7.22	.	95	.	.	.	.	.	26.8
FIRST CREEK	4177	19-Apr-94	8.12	83.8	181	2.23	0.2	1.68	1	7.12	58.7
FIRST CREEK	3815	19-Jul-93	7.49	.	319	.	.	.	.	.	7.6
HRT-1A	3521	09-Mar-93	7.59	.	269	.	.	.	.	.	.
HRT-1A	3483	24-Mar-93	7.3	.	171	.	.	.	.	.	.
HRT-1A	3727	24-May-93	.	.	198	.	.	.	.	.	.
HRT-1A	3850	21-Jul-93	.	.	356	.	.	.	.	.	.
HRT-1B	3482	24-Mar-93	7.1	.	270	.	.	.	.	.	.
HRT-1B	3522	09-Mar-93	7.39	.	331	.	.	.	.	.	.
HRT-1B	3728	24-May-93	.	.	397	.	.	.	.	.	.
HRT-1C	3481	24-Mar-93	6.9	.	250	.	.	.	.	.	.
HRT-1C	3523	09-Mar-93	7.55	.	330	.	.	.	.	.	.
HRT-1C	3729	24-May-93	.	.	194	.	.	.	.	.	.
HRT-1C	3730	24-May-93	.	.	159	.	.	.	.	.	.
HRT-1D	3480	24-Mar-93	7.6	.	373	.	.	.	.	.	.
HRT-1D	3524	09-Mar-93	7.42	.	426	.	.	.	.	.	.
HRT-1D	3731	24-May-93	.	.	168	.	.	.	.	.	.
HRT-1D	3479	24-Mar-93	7.6	.	373	.	.	.	.	.	.
HRT-2	3981	01-Dec-93	8.2	.	.	.	.	.	.	.	.
HRT-2	3906	30-Sep-93	7.66	.	.	.	.	.	.	.	.
HRT-3	3733	24-May-93	.	.	309	.	.	.	.	.	1.6
HRT-3	4252	23-Jun-94	.	109.4	258	6.53	0.794	3.21	1	18.3	3
HRT-3	4102	08-Feb-94	8.56	73	265	9.97	9.97	0.753	0.753	2.52	4.6
HRT-3	3982	01-Dec-93	8.14	117	.	6.46	0.92	2.65	1	33.1	3.8
HRT-3	3471	24-Mar-93	7.6	.	149	.	.	.	.	.	16
HRT-3	4175	19-Apr-94	8.32	76.9	200	4.21	0.459	2.12	1	17.5	5.6
HRT-3	3532	09-Mar-93	7.4	100	244	4.8	0.44	1.5	0.4	25	4.7
HRT-3	3852	21-Jul-93	.	.	319	.	.	.	.	.	1.6
HRT-3	4352	24-Aug-94	.	.	.	.	.	.	.	.	3.4
HRT-3	3907	30-Sep-93	8.05	141	.	5.77	0.77	2.72	1	35.9	1
HRT-3	4353	24-Aug-94	7.58	114.9	300	5.94	0.805	2.66	1	20.4	.
MBTRIB-2A	3847	21-Jul-93	.	106	544	.	.	.	.	.	.
MBTRIB-3	3519	09-Mar-93	7.52	.	410	.	.	.	.	.	.
MBTRIB-3	3474	24-Mar-93	.	.	245	.	.	.	.	.	.
MBTRIB-3	3862	21-Jul-93	6.95	.	164	.	.	.	.	.	.
MBWEIR	4163	19-Apr-94	7.36	108.1	270	4.64	0.499	0.2	1	38.1	115.6
MBWEIR	3794	13-Jul-93	6.88	.	432	.	.	.	.	.	.
MBWEIR	3844	21-Jul-93	.	68	871	.	.	.	.	.	19.3
MBWEIR	3515	09-Mar-93	7.35	129	318	4.8	0.4	0.63	0.32	39	60

Table G.1. (continued)

Location	Base ID	Sample Date	pH	Alkalinity mg of $CaCO_3$/L	Specific Conductance uS/cm	Chloride mg/L	Fluoride mg/L	Nitrate mg/L	Phosphate mg/L	Sulfate mg/L	Flow L/s
MBWEIR	3793	13-Jul-93									8
MBWEIR	3476	24-Mar-93	7.1		202						295
MBWEIR	3569	11-Mar-93			310						41.8
MBWEIR	3891	30-Sep-93		142	452	10.3	1.37	2.54	3.94	63.9	3.7
MBWEIR	3475	24-Mar-93	7.1		202						
MBWEIR	4311	23-Jun-94	7.46	107.3	280	7.53	0.98	2.92	1	20.8	27.3
MBWEIR	3971	01-Dec-93	6.45	114	349	7.02	0.82	2.01	1	37	18.3
MBWEIR	3609	13-Apr-93	7.99	102	278	3.6	1	1	3	22	71
MBWEIR	3972	01-Dec-93	6.45	138	349	6.92	0.81	2.01	1	36.7	
MBWEIR	4091	08-Feb-94	7.12	93	406	10.2	10.2	1.04	1.04	3.86	60.1
MBWEIR	4356	24-Aug-94	8.04	140.6	421	9.27	1.04	2.7	3.59	59.5	15.5
MBWEIR	3516	09-Mar-93	7.35	125	318	4.9	0.4	0.63	0.35	39	
MBWEIR	4239	15-Jun-94	7.83	112.4	302	8.24	0.973	3.15	1	29.7	23.7
MBWEIR	3891	30-Sep-93		142	452	10.3	1.37	2.54	3.94	63.9	6
MBWEIR	3723	24-May-93			366						12.9
MBWEIR	3845	21-Jul-93		74							
MBWEIR	3824	19-Jul-93			784						21.4
MB-1	4257	15-Jun-94	7.85		301						
MB-1	4309	23-Jun-94	7.04		284						
MB-15	4220	19-Apr-94									78.67
MB-15	4350	24-Aug-94	7.73	118.2	493	11.2	1.63	5.25	6.79	110	~ 6
MB-15	4249	23-Jun-94		94.3	253	7.11	1.04	3.15	1	22.4	~ 21
MB-15	4100	08-Feb-94	8.41	82	432	10.4	10.4	1.15	1.15	4.18	~ 40
MB-15	4173	19-Apr-94	8.3	87	317	5.09	0.565	2.19	1	50.1	78.7
MB-15	3473	24-Mar-93			200						214
MB-15	4173	19-Apr-94	8.3	86	317	5.09	0.565	2.19	1	50.1	78.7
MB-15	3905	30-Sep-93	8.02	133		8.53	1.32	1.53	2.32	49.8	~ 5
MB-15	3846	21-Jul-93		51	919						
MB-15	4351	24-Aug-94	7.73		493						
MB-15	3531	09-Mar-93	7.95	127	279	2.3	0.22	0.4	0.3	19	~ 33
MB-15	3980	01-Dec-93	8.6	118		6.42	0.86	2.04	1	34.7	~ 14
MB-17	3848	21-Jul-93		141	307						
MB-1A	4258	15-Jun-94	7.9		302						
MB-6	4000	01-Dec-93		28							
MID. DRAIN.	3979	01-Dec-93	7.6	310	653	28.5	0.2	0.2	1	12.9	0.25
MID. DRAIN.	3529	09-Mar-93	6.9		170						1
MID. DRAIN.	4348	24-Aug-94		348.4	706	22	0.2	0.2	1	4.39	0.35
MID. DRAIN.	3904	30-Sep-93	7.33	326		24.4	0.2	0.2	1	13.7	0.07
MID. DRAIN.	4099	08-Feb-94		249		13.8	13.8	0.2	0.2	0.2	
MID. DRAIN.	3478	24-Mar-93	7.5		444						3
MID. DRAIN.	4247	23-Jun-94		343.6	637	20	0.2	0.2	1	4.69	0.54
MID. DRAIN.	3768	24-May-93									0.5
MID. DRAIN.	4098	08-Feb-94	8.3	248	548	13.9	13.9	0.2	0.2	0.2	0.93
MID. DRAIN.	4172	19-Apr-94		212		9.21	0.2	0.2	1	11.1	
MID. DRAIN.	4248	23-Jun-94		342.2		20.9	0.471	0.2	1	3.64	
MID. DRAIN.	4349	24-Aug-94		338.6	706	22.4	0.2	0.2	1	2.53	
MID. DRAIN.	4247	23-Jun-94		339.7	637	20	0.2	0.2	1	4.69	0.54
MID. DRAIN.	4171	19-Apr-94	7.9	209	433	9.13	0.429	0.2	1	11.2	2.7
MID. DRAIN.	3865	21-Jul-93	7.01		720						0.09
MV-1	3863	21-Jul-93	6.72	191	425						
MV-1	3860	21-Jul-93	6.72	185	425						
MV-3	3533	09-Mar-93	8.05	212	401	1.1	0.1	2	0.3	11	
NWTRIB	3814	19-Jul-93	7.28		281						5.5
NWTRIB	4088	08-Feb-94									34
NWTRIB	4339	24-Aug-94	8.19		284						7.8
NWTRIB	4178	19-Apr-94	8.1		261						32.6
NWTRIB	3935	30-Sep-93	8.32		325						3.2
NWTRIB	4297	23-Jun-94	7.82		237						6.6
NWTRIB	3968	01-Dec-93									~ 7.5
NWTRIB	3572	11-Mar-93	6.9		332						12.4
NWTRIB	3449	24-Mar-93	7.12		195						123.2
OF-304	4302	23-Jun-94	8.16		263						
R311	4322	23-Jun-94		2.9							
R311	4335	24-Aug-94		4.4		0.2	0.2	0.2	1	1	
R311	4237	15-Jun-94		2.4		0.2	0.2	0.2	1	1	
RAC	3525	09-Mar-93	7.7	178	350	3.8	0.1	0.3	0.3	12	
RAC	3525	09-Mar-93	7.7	181	350	3.8	0.1	0.3	0.3	12	
RAC	3811	19-Jul-93	6.65	199	465						
RAC	3811	19-Jul-93	6.65	232	465						

Table G.1. (continued)

Location	Base ID	Sample Date	pH	Alkalinity mg of $CaCO_3$/L	Specific Conductance uS/cm	Chloride mg/L	Fluoride mg/L	Nitrate mg/L	Phosphate mg/L	Sulfate mg/L	Flow L/s
RS-1	3600	13-Apr-93	6.82	131	326	1.2	1	2.5	3.9	35	
RS-3A	4147	19-Apr-94	9.83	258	1787	3.36	8.93	49.3	15.7	137	
RS-3A	4359	24-Aug-94	9.5	950.5	211	3.29	12.1	61.5	24	142	
RS-3A	3464	24-Mar-93	8.85		380						~ 0.1
RS-3A	4071	08-Feb-94	9.31	270	1741	3.64	3.64	7.02	7.02	37.9	
RS-3A	4224	15-Jun-94	9.02	934.3	2020	3.74	11.4	60	20.1	140	
RS-3A	3746	24-May-93	7.8	1065	316	2.4	10.3	60.3	22.6	170	
RS-3A	3789	13-Jul-93		930	2360						
RS-3A	3601	13-Apr-93	9.55	800	2010	3.7	10	52	18	161	
RS-3A	3894	30-Sep-93	9.35	855	2300	3.25	11.5	66.5	24	151	
RS-3A	3744	24-May-93	9.39	1080	804	2.4	10.2	60.1	21.9	167	
RS-3A	3951	01-Dec-93	9.31	925		3.64	9.93	53.6	20.7	156	
RS-3B	4148	19-Apr-94	7.52	134	365	1.37	0.548	5.18	1	30.2	
RS-3B	3602	13-Apr-93	7.83	189	467	1.6	1	6.1	3	45	
RS-3B	3745	24-May-93	7.8	390	316						
RS-3B	3465	24-Mar-93	7.63		263						~ 0.5
R-227	3807	13-Jul-93									
R-227	3933	30-Sep-93		12		0.2	0.2	0.2	1	1	
R-227	3969	01-Dec-93		5		0.2	0.2	0.2	1	1	
R-227	4161	19-Apr-94		3		0.2	0.2	0.2	1	1	
R-227	4089	08-Feb-94		12		0.2	0.2	0.2	0.2	0.2	
SPD	4294	15-Jun-94	7.24	408	812	17.3	0.2	0.2	1	22.7	
SPD	4344	24-Aug-94	6.36	399.8	871	18.3	0.2	0.2	1	23.9	
SW1-1	4304	23-Jun-94	8.65		571						
SW2-1	3621	13-Apr-93	6.94		394						
SW2-2	3576	11-Mar-93	6.81		349						
SW2-3	3562	11-Mar-93	6.67		249						
SW2-4	3567	11-Mar-93	7.36	314	627	9.6	0.1	0.1	0.3	11	
SW2-4	3825	19-Jul-93		256	974						
SW2-5	4241	15-Jun-94	7.08	415.4	823	19.3	0.2	2.5	1	33.5	
SW2-5	4343	24-Aug-94	6.04	408.4	856	19	0.2	3.81	1	32.4	
SW2-5	4165	19-Apr-94	7.34	239.6	540	11.1	0.2	0.2	1	29	
SW2-5	3725	24-May-93		406	787	18.2	0.1	3.9	0.3	23.1	
SW2-5	3858	21-Jul-93	6.65	384	274						
SW2-5	3520	09-Mar-93	7.16	328	624	14	0.1	0.1	0.3	22	
SW2-5	3901	30-Sep-93	7.11	376		17.6	0.2	2.13	1	24.5	
SW2-5	4092	08-Feb-94	7.13	358	710	15.7	15.7	0.2	0.2	0.2	
SW2-5	4310	23-Jun-94	6.98	415.4	855	20.4	0.2	2.4	1	33.1	
SW2-5	3724	24-May-93		398	787	18.2	0.1	3.7	0.3	23.2	
SW2-5	3973	01-Dec-93	6.58	384	781	17.9	0.2	2.1	1	28.7	
SW2-6	4167	19-Apr-94	7.26	332.8	669	20.2	<0.2	0.2	1	9.55	
SW2-6	4346	24-Aug-94	6.73	368	824	38	0.2	0.2	1	6.65	
SW2-6	4094	08-Feb-94	7.26	326	740	28.2	28.2	0.2	0.2	0.2	
SW2-7	4345	24-Aug-94	6.87	353	822	29.5	0.2	0.2	1	4.12	
SW2-7	3974	01-Dec-93	7.05	329	760	34.9	0.2	0.2	1	32	
SW2-7	4166	19-Apr-94	7.41	318.4	639	19.4	0.2	0.2	1	8.21	
SW2-7	3947	30-Sep-93	6.82	190		34	0.2	0.2	1	510	
SW2-7	4242	15-Jun-94	7.09	374	794	22.3	0.2	0.2	1	4.82	
SW2-7	4093	08-Feb-94	7.17	294	680	27.8	27.8	0.2	0.2	0.2	
SW4-1	3819	19-Jul-93		338	1083						
SW4-1	3578	11-Mar-93	6.6	354	708	14	1.5	0.1	0.3	17	
SW4-2	3959	01-Dec-93	7.23	250	634	25.6	1.16	0.2	1	28.7	
SW4-2	3429	24-Mar-93	6.71		685						
SW4-2	4329	24-Aug-94	7.11	334.8	707	22.4	2.26	0.2	1	5.08	
SW4-2	3739	24-May-93	6.67	330	218	8.1	0.77	0.1	0.3	0.2	
SW4-2	4078	08-Feb-94	7.4	344	737	20.7	20.7	1.23	1.23	0.2	
SW4-2	4154	19-Apr-94	7.24	270.8	531	9.49	1.37	0.2	1	8.74	
SW4-2	3579	11-Mar-93	6.76	360	715	26	1.2	0.1	0.3	1.7	
SW5-2	3566	11-Mar-93	6.73		593						
SW5-2	3462	24-Mar-93	7.41		491						~ 4
SW5-4	3726	24-May-93		332	617	9.1	0.1	0.1	0.3	8.5	
SW5-4	4097	08-Feb-94	7.46	270	554	6.87	6.87	0.2	0.2	0.2	0.05
SW5-4	3477	24-Mar-93	6.8		132						0.14
SW5-4	4097	08-Feb-94	7.46	274	554	6.87	6.87	0.2	0.2	0.2	0.05
SW5-4	3864	21-Jul-93	6.36	380	766						0.002
SW5-4	3977	01-Dec-93	7.56	328	689	15.8	0.2	0.2	1	29.7	
SW5-4	3978	01-Dec-93	7.56		689						
SW5-4	4170	19-Apr-94	7.47	252.2	500	6.71	0.2	0.2	1	14.6	0.12

Table G.1. (continued)

Location	Base ID	Sample Date	pH	Alkalinity mg of $CaCO_3$/L	Specific Conductance uS/cm	Chloride mg/L	Fluoride mg/L	Nitrate mg/L	Phosphate mg/L	Sulfate mg/L	Flow L/s
SW5-4	3638	13-Apr-93	6.78	.	423	.	.	.	.	.	.
SW5-4	3528	09-Mar-93	6.7	269	527	7.8	0.1	0.1	0.3	11	0.04
SW7-1	3616	13-Apr-93	6.59	.	270	.	.	.	.	.	.
SW7-1	3615	13-Apr-93	6.59	.	270	.	.	.	.	.	.
SW7-2	3788	13-Jul-93	.	96	504	.	.	.	.	.	.
SW7-2	3617	13-Apr-93	6.09	90	351	1.9	1	17	3	71	.
SW7-3	3447	24-Mar-93	7.69	.	393	.	.	.	.	.	0.14
SW7-3	3954	01-Dec-93	7.96	302	766	18	2.63	12.6	5.16	53.7	0.016
SW7-3	4227	15-Jun-94	8.17	497.2	1550	70.5	4.01	24.1	9.65	125	0.076
SW7-3	4362	24-Aug-94	8.43	463	1401	69.9	3.97	17.5	8.81	119	0.064
SW7-3	3747	24-May-93	7.9	392	364	36.7	3	17.5	8.2	80.6	0.09
SW7-3	3792	13-Jul-93	.	404	1177	.	.	.	.	.	.
SW7-3	4074	08-Feb-94	8.55	304	854	30	30	2.7	2.7	14.7	0.067
SW7-3	4150	19-Apr-94	7.67	326.8	844	30.2	2.5	14.7	8.62	58.7	.
SW7-3	3955	01-Dec-93	7.96	308	766	18	2.33	13.9	1	52.4	.
SW7-3	3618	13-Apr-93	7.37	290	750	25	2.4	15	6.7	63	0.12
SW7-3	3911	30-Sep-93	8.42	396	.	32.4	3.19	19.5	6.99	79.8	0.014
SW7-3	3792	14-Jul-93	.	396	1177	.	.	.	.	.	.
SW7-4	3612	13-Apr-93	7.04	.	346	.	.	.	.	.	.
SW7-5	4363	24-Aug-94	7.86	227.2	844	3.79	0.2	71.1	1	146	0.083
SW7-5	3748	24-May-93	7.3	212	202	1.8	0.1	7.86	0.3	59.3	.
SW7-5	4103	08-Feb-94	8.22	121	459	4.36	4.36	0.2	0.2	25.6	0.22
SW7-5	4176	19-Apr-94	8.21	104.2	360	1.93	0.411	29.3	1	46.6	0.564
SW7-5	4314	23-Jun-94	7.82	240.4	979	4.14	0.2	90.8	1	157	~ 0.017
SW7-5	4253	15-Jun-94	7.79	221.6	841	4.01	0.2	87.1	1	154	0.047
SW7-5	3442	24-Mar-93	7.02	.	250	.	.	.	.	.	1.05
SW7-5	3796	13-Jul-93	7.39	320	1342	.	.	.	.	.	.
SW7-5	3620	13-Apr-93	6.96	108	311	2.3	1	27	3	60	.
SW7-5	3986	01-Dec-93	7.66	224	.	4.31	0.2	38.2	1	181	0.05
SW7-5	3619	13-Apr-93	6.96	104	311	2.3	1	28	3	61	0.32
SW7-6	3444	24-Mar-93	5.6	.	40	.	.	.	.	.	.
SW7-6	3614	13-Apr-93	5.21	.	37	.	.	.	.	.	.
SW7-7	3611	13-Apr-93	6.82	.	340	.	.	.	.	.	.
SW7-8	3610	13-Apr-93	6.95	.	193	.	.	.	.	.	.
SW9-1	3853	21-Jul-93	.	123	310	.	.	.	.	.	.
SW9-1	3908	30-Sep-93	7.33	121	.	13.5	5.58	0.93	1	25.1	.
SW9-1	3932	30-Sep-93	7.33	.	.	.	.	.	.	.	.
SW9-1	3984	01-Dec-93	7.99	.	.	.	.	.	.	.	.
SW9-1	3983	01-Dec-93	7.99	113	.	7.06	0.71	0.2	1	24	.
SW9-1	3983	01-Dec-93	7.99	115	.	7.06	0.71	0.2	1	24	.
SW9-2	3909	30-Sep-93	6.99	185	.	7	0.73	0.2	1	52.6	.
SW9-2	3855	21-Jul-93	.	215	566	.	.	.	.	.	.
SW9-2	3985	01-Dec-93	7.95	166	.	5.88	0.72	0.2	1	40.5	.
W4TRIB-11	3963	01-Dec-93	7.36	.	616	.	.	.	.	.	.
W4TRIB-11	3821	19-Jul-93	.	402	.	.	.	.	.	.	.
W4TRIB-11	4234	15-Jun-94	7.13	396.6	742	13.6	0.562	0.2	1	12.2	.
W4TRIB-11	3742	24-May-93	6.86	368	684	10.2	0.48	0.1	0.3	8.9	.
W4TRIB-11	4082	08-Feb-94	7.95	.	606	.	.	.	.	.	.
W4TRIB-11	3962	01-Dec-93	7.36	280	616	11.5	0.64	0.2	1	31.7	.
W4TRIB-11	4081	08-Feb-94	7.95	272	606	9.58	9.58	0.742	0.742	2.01	.
W4TRIB-11	4332	24-Aug-94	6.88	355	711	11.7	1.01	0.2	1	11.1	.
W4TRIB-11	3582	11-Mar-93	7.32	326	600	7.6	0.1	0.3	0.3	12	.
W4TRIB-11	3896	30-Sep-93	6.93	290	839	18.4	0.45	0.2	1	95.9	.
W4TRIB-11	4157	19-Apr-94	7.46	290	530	3.92	0.629	0.2	1	14.8	.
W4TRIB-11	4235	15-Jun-94	7.13	.	742	.	.	.	.	.	.
W4TRIB-11	3820	19-Jul-93	.	386	792	.	.	.	.	.	.
W4TRIB-5	3433	24-Mar-93	6.76	.	300	.	.	.	.	.	.
W4TRIB-5	4079	08-Feb-94	8.15	107	304	7.17	7.17	6.27	6.27	0.2	.
W4TRIB-5	4155	19-Apr-94	7.47	95	275	4.17	7.55	0.2	1	7.51	.
W4TRIB-5	3580	11-Mar-93	7.14	163	125	6.9	7.4	0.28	0.3	4.3	.
W4TRIB-5	3740	24-May-93	7.2	171	133	6.3	5.9	0.1	0.3	6.7	.
W4TRIB-7	3435	24-Mar-93	7.14	.	482	.	.	.	.	.	.
W4TRIB-7	4080	08-Feb-94	7.78	185	470	9.35	9.35	0.773	0.773	0.2	.
W4TRIB-7	4156	19-Apr-94	7.46	196	438	4.38	0.722	0.2	1	22.9	.
W4TRIB-7	3741	24-May-93	7.07	292	186	10.1	0.1	3.9	0.3	27.9	.
W4TRIB-7	3961	01-Dec-93	7.03	234	600	12.5	0.2	0.2	1	66.1	.
W4TRIB-7	4156	19-Apr-94	7.46	190	438	4.38	0.722	0.2	1	22.9	.
W4TRIB-7	3581	11-Mar-93	7.01	251	491	7.1	0.1	0.28	0.3	15	.

Table G.1. (continued)

Location	Base ID	Sample Date	pH	Alkalinity mg of $CaCO_3$/L	Specific Conductance uS/cm	Chloride mg/L	Fluoride mg/L	Nitrate mg/L	Phosphate mg/L	Sulfate mg/L	Flow L/s
WAG4 MS1	3957	01-Dec-93	7.02	231	571	13.7	1.19	0.2	1	51.1	0.62
WAG4 MS1	3936	30-Sep-93	7.72	173	545	11	0.77	1.06	1	81.9	~ 0
WAG4 MS1	3818	19-Jul-93	.	249	619	.	.	.	.	.	~ 0
WAG4 MS1	4152	19-Apr-94	7.65	185	373	3.74	1.44	0.2	1	13.4	~ 1.7
WAG4 MS1	3738	24-May-93	6.7	233	521	7.4	1.2	0.1	0.3	10.8	0.27
WAG4 MS1	4077	08-Feb-94	8.07	197	459	8.23	8.23	1.46	1.46	0.2	.
WAG4 MS1	3958	01-Dec-93	7.02	233	571	13.9	1.18	0.2	1	51.1	.
WAG4 MS1	4327	24-Aug-94	7.19	286.2	644	11.5	1.69	0.2	1	14.9	0.35
WAG4 MS1	3577	11-Mar-93	7.06	229	397	6.3	1.3	0.27	0.3	13	.
WAG4 MS1	3425	24-Mar-93	7.18	.	391	.	.	.	.	.	6.61
WAG4 MS1	4230	15-Jun-94	7.63	248.1	508	7.55	1.06	0.2	1	16.5	.
WAG4 MS1	4153	19-Apr-94	.	189.8	.	3.8	1.46	0.2	1	13.5	.
WAG4 MS1	4229	15-Jun-94	7.63	240.2	508	7.64	1.05	0.2	1	15.1	0.015
WAG4 MS1	3936	30-Sep-93	7.72	168	545	11	0.77	1.06	1	81.9	~ 0
WAG4 MS1	4327	24-Aug-94	7.19	286.8	644	11.5	1.69	0.2	1	14.9	0.35
WAG4 MS1	4076	08-Feb-94	8.07	213	459	8.19	8.19	1.4	1.4	0.2	1.28
WAG4 MS1	4328	24-Aug-94	.	286.2	.	11.8	1.67	0.2	1	15.2	.
WAG4 T2A	3563	11-Mar-93	7.53	244	468	8.5	1.2	0.1	0.3	14	1.1
WAG4 T2A	4075	08-Feb-94	8.12	178	467	9.96	9.96	1.14	1.14	0.2	1.14
WAG4 T2A	4326	24-Aug-94	7.2	285.6	589	15.3	1.38	0.2	1	13.5	0.3
WAG4 T2A	4326	24-Aug-94	7.2	276.9	589	15.3	1.38	0.2	1	13.5	0.3
WAG4 T2A	4151	19-Apr-94	7.88	161	344	5.34	1.47	0.2	1	17.2	~ 1.7
WAG4 T2A	3737	24-May-93	6.85	246	539	11.9	0.94	0.1	0.3	10.8	~ 0.06
WAG4 T2A	3956	01-Dec-93	7.53	172	477	18.7	0.77	0.2	1	58.6	0.42
WAG4 T2A	3459	24-Mar-93	7.47	.	364	.	.	.	.	.	5.85
WAG4 T2A	3564	11-Mar-93	7.53	231	468	8.8	1.2	0.1	0.3	14	.
WAG6 MS2	3801	13-Jul-93	7.15	.	236	.	.	.	.	.	~ 0
WAG6 MS2	3484	24-Mar-93	7	.	243	.	.	.	.	.	0.42
WAG6 MS2	3624	13-Apr-93	.	.	.	.	.	.	.	.	0.6
WAG6 MS3B	3800	13-Jul-93	6.95	.	161	.	.	.	.	.	~ 0
WAG6 MS3B	3626	13-Apr-93	.	.	.	.	.	.	.	.	0.95
WAG6 MS3B	3485	24-Mar-93	7	.	267	.	.	.	.	.	2.85
WC7500	4337	24-Aug-94	8.95	108.8	300	7.58	1.28	5.81	3.54	26.4	170.8
WC7500	3965	01-Dec-93	7.49	118	414	11.4	1	9	1	65.2	159
WC7500	3898	30-Sep-93	8.51	116	404	13.3	1.23	7.01	2.31	45.8	.
WC7500	3575	11-Mar-93	7.41	.	318	.	.	.	.	.	231
WC7500	4160	19-Apr-94	7.98	93.8	220	4.22	0.447	2.1	1	15.7	433.1
WC7500	3897	30-Sep-93	.	114	.	14	1.53	7.29	2.37	47.3	131.1
WC7500	3867	21-Jul-93	8	111	385	.	.	.	.	.	159
WC7500	3721	24-May-93	.	.	.	.	.	.	.	.	153
WC7500	4084	08-Feb-94	8.68	99	380	18.5	18.5	0.999	0.999	7.82	275.1
WC7500	3888	21-Jul-93	8	.	385	.	.	.	.	.	.
WC7500	4295	15-Jun-94	.	104.2	.	8.44	0.767	6.53	3.78	19.2	164.7
WC7500	3802	13-Jul-93	.	.	375	.	.	.	.	.	.
WC7500	3822	19-Jul-93	.	.	387	.	.	.	.	.	142
WC7500	4319	23-Jun-94	7.16	104.9	361	23.5	1.19	6.05	1	69.5	164.7
WC7500	4295	15-Jun-94	.	105.1	.	8.44	0.767	6.53	3.78	19.2	164.7
WC7500	4295	15-Jun-94	.	104.2	.	8.44	0.767	6.53	3.78	19.2	164.7
WC7500	3452	24-Mar-93	7.33	.	142	.	.	.	.	.	950
WCHEAD	3518	13-Apr-93	6.98	.	128	.	.	.	.	.	59
WCHEAD	3817	19-Jul-93	7.76	.	268	.	.	.	.	.	4.7
WCTRIB-1	3613	13-Apr-93	6.86	.	197	.	.	.	.	.	.
WCTRIB-1	3823	19-Jul-93	.	.	447	.	.	.	.	.	.
WCTRIB-1	3443	24-Mar-93	7.01	.	137	.	.	.	.	.	~ 7
WCTRIB-2	3561	11-Mar-93	7.22	.	208	.	.	.	.	.	.
WCTRIB-3	3565	11-Mar-93	7.18	251	547	10	1.1	0.27	0.3	26	~ 3
WCTRIB-3	3565	11-Mar-93	7.18	257	547	10	1.1	0.27	0.3	26	.
WCTRIB-3	3460	24-Mar-93	7.33	.	450	.	.	.	.	.	~ 8
WCWEIR	3806	13-Jul-93	7.19	.	425	.	.	.	.	.	.
WCWEIR	4095	08-Feb-94	8.14	126	416	18.5	18.5	0.938	0.938	8.62	215.6
WCWEIR	4169	19-Apr-94	.	92.4	.	4.12	0.392	2.24	1	16	.
WCWEIR	3722	24-May-93	.	.	.	.	.	.	.	.	174
WCWEIR	3795	13-Jul-93	7.19	.	425	.	.	.	.	.	134
WCWEIR	3861	21-Jul-93	7.32	98	378	.	.	.	.	.	157
WCWEIR	4244	15-Jun-94	7.91	107.3	307	9	0.727	6.02	3.67	37	187.3
WCWEIR	3902	30-Sep-93	7.62	117	.	13.6	1.11	8.39	2.48	43.9	137.5
WCWEIR	3861	21-Jul-93	7.32	101	378	.	.	.	.	.	157
WCWEIR	3809	19-Jul-93	7.06	.	413	.	.	.	.	.	153
WCWEIR	4354	24-Aug-94	7.72	109.3	320	7.67	1.16	7.17	1	28.7	173.9

Table G.1. (continued)

Location	Base ID	Sample Date	pH	Alkalinity mg of $CaCO_3$/L	Specific Conductance uS/cm	Chloride mg/L	Fluoride mg/L	Nitrate mg/L	Phosphate mg/L	Sulfate mg/L	Flow L/s
WCWEIR	3530	09-Mar-93	8.1	116	281	6.1	0.52	4.2	0.37	22	274
WCWEIR	4168	19-Apr-94	7.68	93.8	220	3.99	0.393	2.22	1	15.7	470.1
WCWEIR	3568	11-Mar-93	8.33	.	324	.	.	.	.	.	231
WCWEIR	4355	24-Aug-94	.	109.6	.	7.44	0.821	5.6	3.37	27.4	.
WCWEIR	3622	13-Apr-93	8.12	.	261	.	.	.	.	.	310
WCWEIR	4312	23-Jun-94	7.75	103.9	417	23.4	1.03	4.79	1	71.3	141.3
WCWEIR	4245	15-Jun-94	7.91	107.9	307	9.17	0.734	6.03	3.66	36.9	.
WCWEIR	3903	30-Sep-93	7.62	112	.	13	1.12	6.93	2.35	44.3	.
WCWEIR	3976	01-Dec-93	6.58	119	420	12.4	0.99	6.84	1	65.4	170
WCWEIR	3454	24-Mar-93	7.13	.	212	.	.	.	.	.	991
WCWEIR	4096	08-Feb-94	8.14	121	416	18.6	18.6	0.938	0.938	8.59	.
WC-1	3623	13-Apr-93	7.88	.	264	.	.	.	.	.	.
WC-20	4298	23-Jun-94	7.56	.	372	.	.	.	.	.	≥ 82.04
WC-20	4364	24-Aug-94	8.08	.	312	.	.	.	.	.	.
WC-20	3899	30-Sep-93	8.19	.	380	.	.	.	.	.	≥ 61.4
WC-20	3451	24-Mar-93	7.25	.	221	.	.	.	.	.	≥ 521
WC-20	3966	01-Dec-93	.	.	.	.	.	.	.	.	≥ 62.4
WC-20	4182	19-Apr-94	.	.	.	.	.	.	.	.	≥ 249.8
WC-20	3574	11-Mar-93	7.2	.	335	.	.	.	.	.	≥ 111
WC-20	4085	08-Feb-94	.	.	.	.	.	.	.	.	≥ 169
WC-20	3750	24-May-93	.	.	.	.	.	.	.	.	≥ 82
WC-20	3813	19-Jul-93	.	.	.	.	.	.	.	.	≥ 72
WC-21	4306	23-Jun-94	7.82	.	250	.	.	.	.	.	.
WC-22	4305	23-Jun-94	7.94	.	240	.	.	.	.	.	.
WC-22 A	4303	23-Jun-94	8.11	.	255	.	.	.	.	.	.
WC-24	4307	23-Jun-94	8.27	.	275	.	.	.	.	.	82.04
WC-24	4365	24-Aug-94	8.43	.	264	.	.	.	.	.	68.8
WC-24	4299	23-Jun-94	8.27	.	275	.	.	.	.	.	82.04
WEST SEEP	3785	13-Jul-93	.	246	583	.	.	.	.	.	≈ 0.03
WEST SEEP	4316	23-Jun-94	7.95	99.9	210	2.17	0.2	0.2	1	4.71	≈ 8.25
WEST SEEP	3786	13-Jul-93	.	240	.	.	.	.	.	.	≈ .
WEST SEEP	3893	30-Sep-93	7.87	191	464	2.3	0.69	6.03	1	39.3	≈ 0.45
WEST SEEP	4357	24-Aug-94	7.28	154	348	3.34	0.429	3.15	1	21.5	1.7
WEST SEEP	4223	15-Jun-94	7.45	154.3	323	2.32	0.446	3.35	1	19.2	1.51
WEST SEEP	3950	01-Dec-93	7.18	134	359	3.24	0.6	3.48	1	45.8	2.12
WEST SEEP	4146	19-Apr-94	7.26	68	152	2.32	0.2	0.2	1	13.4	20.6
WEST SEEP	3607	13-Apr-93	7.22	62	173	2.7	1	2.6	3	17	11.6
WEST SEEP	3463	24-Mar-93	6.28	.	111	.	.	.	.	.	63
WEST SEEP	4070	08-Feb-94	8.2	71	236	11	11	0.469	0.469	2.15	7.08
WG6MS3	4401	24-Aug-94	.	.	.	.	.	.	.	.	0.014
WOCET	3526	09-Mar-93	7.1	59	192	7.7	0.1	0.1	0.3	25	.
WOCET	3812	19-Jul-93	6.82	109	266	.	.	.	.	.	.
WOD	3527	09-Mar-93	7.9	116	288	7.4	0.37	1.4	0.32	26	362
WOD	3570	11-Mar-93	8.05	.	284	.	.	.	.	.	310
WOD	4325	24-Aug-94	8.64	120	353	7.72	1.18	0.2	1	44.3	23.9
WOD	3799	13-Jul-93	8.18	.	396	.	.	.	.	.	150
WOD	3810	19-Jul-93	6.83	.	350	.	.	.	.	.	162
WOD	3599	13-Apr-93	7.92	.	271	.	.	.	.	.	394
WOD	3892	30-Sep-93	7.5	112	368	8.88	0.93	5.52	1	48.4	139
WOD	3448	24-Mar-93	7.24	.	171	.	.	.	.	.	1460
WOD	4145	19-Apr-94	7.68	91.8	254	3.62	0.358	1.89	1	19.5	604.4
WOD	4069	08-Feb-94	8.14	109	367	15.3	15.3	0.861	0.861	6.14	291.9
WOD	3949	01-Dec-93	6.3	127	409	9.64	0.8	4.53	1	53.8	194
WOD	3720	24-May-93	.	.	.	.	.	.	.	.	190
WOD	3866	21-Jul-93	7.46	97	179	.	.	.	.	.	181
WOD	4317	23-Jun-94	8.7	109.7	314	8.42	0.767	2.24	1	32.4	200.7
WOD	3892	30-Sep-93	7.5	112	368	8.88	0.93	5.52	1	48.4	143
WOD	4222	15-Jun-94	8.64	113.9	310	9.19	0.73	3.65	1	35.4	215.2
WSTRIB-1	3603	13-Apr-93	7.19	.	178	.	.	.	.	.	.
WS-1	3604	13-Apr-93	6.94	.	176	.	.	.	.	.	.
WS-2	3605	13-Apr-93	7.28	.	169	.	.	.	.	.	.
WS-3	3606	13-Apr-93	7.73	.	160	.	.	.	.	.	.

Appendix H

SAMPLING LOCATION COORDINATES

Table H.1. Northings and eastings for the WAG 2 RI Seep Task sampling locations

Location	ORNL grid		TN State Plane		Located Manually or GPS[a]
	Easting (xcoord)	Northing (ycoord)	Easting (xcoord)	Northing (ycoord)	
5NNT	29576	19273	751992	177135	GPS
5NST	28921	18312	751995	176781	GPS
BTT	27593	19091	751527	176745	GPS
EAST SEEP	26244	16911	751568	175965	GPS
FC-1	29578	20820	751723	177523	Manually
FIFTH CREEK	31765	21387	752172	178045	GPS
FIRST CREEK	29619	21072	751690	177593	GPS
FRENCH DR S	24493	16467	751207	175549	GPS
HRT-10	31662	18522	752644	177310	GPS
HRT-1A	30353	16811	752614	176654	GPS
HRT-1B	30268	16822	752591	176642	GPS
HRT-1C	30152	16756	752573	176605	GPS
HRT-1D	30019	16770	752538	176586	GPS
HRT-2	30565	17037	752628	176748	GPS
HRT-2A	30679	17329	752606	176840	GPS
HRT-3	30966	17802	752595	177009	GPS
HRT-4	31297	18252	752600	177179	GPS
HRT-5	31412	18388	752605	177233	GPS
HRT-6	31557	18460	752629	177276	GPS
HRT-7	31573	18479	752630	177284	GPS
HRT-8	31584	18499	752629	177290	GPS
HRT-9	31602	18572	752621	177312	GPS
MBTRIB-1	31286	16589	752886	176761	GPS
MBTRIB-2A	32562	16362	753245	176926	Manually
MBTRIB-2B	33088	16959	753273	177167	GPS
MBTRIB-3	28152	16827	752060	176275	GPS
MBWEIR	28368	16944	752094	176342	GPS
MB-1	27955	17001	751981	176285	GPS
MB-10	29785	16671	752496	176520	GPS
MB-11	29941	16716	752528	176559	GPS
MB-12	30220	16783	752586	176624	GPS
MB-13	30565	16832	752664	176696	GPS
MB-14	30893	16771	752756	176738	GPS
MB-15	31159	16621	752849	176747	GPS
MB-16	31292	16550	752895	176752	GPS
MB-17	31529	16438	752973	176765	GPS
MB-18	32273	16413	753164	176888	GPS
MB-19	32553	16268	753259	176901	GPS
MB-1A	27965	16902	752001	176262	GPS
MB-1B	28056	16847	752033	176264	GPS
MB-2	28541	16858	752152	176351	GPS
MB-3	28757	16849	752208	176386	GPS
MB-3A	28941	16857	752253	176420	GPS
MB-4	29018	16906	752263	176446	GPS
MB-5	29144	16925	752292	176472	GPS
MB-6	29309	16915	752335	176499	GPS
MB-7	29386	16893	752358	176506	GPS
MB-7B	29480	16891	752382	176522	GPS
MB-8	29554	16820	752413	176517	GPS
MB-9	29664	16706	752460	176508	GPS
MID. DRAIN.	29387	16987	752342	176530	GPS
MS3A-1	23795	16304	751061	175387	GPS

Table H.1. (continued)

Location	ORNL grid Easting (xcoord)	ORNL grid Northing (ycoord)	TN State Plane Easting (xcoord)	TN State Plane Northing (ycoord)	Located Manually or GPS[a]
MS3A-2	23734	16358	751036	175390	GPS
MS3B-2	24112	16678	751075	175536	GPS
MS3B-3	24142	16823	751057	175577	GPS
MS3B-4	24152	17115	751009	175652	GPS
MS3B-5	24244	17293	751001	175713	GPS
MS3B-6	24368	17507	750995	175788	GPS
MV-1	26369	16331	751700	175841	GPS
MV-2	27752	16656	751990	176163	GPS
MV-3	32120	16190	753164	176806	GPS
NON RAD OUTFAL	31043	21148	752033	177860	Manually
NWTRIB	29260	20976	751617	177507	GPS
OF-304	30842	21160	751980	177828	Manually
RAC	18147	20741	748875	175516	GPS
RS-1	26120	17930	751360	176198	GPS
RS-3	25454	17388	751287	175947	GPS
RS-3A	25445	17386	751286	175945	GPS
RS-3B	25457	17377	751290	175944	GPS
SW1-1	30719	21161	751950	177807	Manually
SW2-1	28043	17222	751964	176355	GPS
SW2-2	29434	19254	751959	177106	Manually
SW2-3	28716	18296	751946	176741	GPS
SW2-4	28326	17326	752017	176430	GPS
SW2-5	27983	16921	752002	176270	GPS
SW2-6	28225	17169	752019	176374	GPS
SW2-7	28195	17137	752017	176361	GPS
SW4-1	28400	18930	751757	176845	GPS
SW4-2	28152	19027	751678	176826	GPS
SW5-2	28680	17673	752045	176579	Manually
SW5-4	29085	16915	752279	176460	GPS
SW6-1	25307	16812	751351	175777	GPS
SW6-2	25354	17602	751225	175983	GPS
SW7-1	25529	17806	751234	176064	GPS
SW7-2	25553	17215	751342	175921	GPS
SW7-3	26221	17121	751526	176013	GPS
SW7-4	26302	17245	751525	176058	GPS
SW7-5	27851	17212	751918	176319	GPS
SW7-6	27717	18461	751668	176609	GPS
SW7-7	26364	17353	751521	176096	GPS
SW7-8	26488	17611	751507	176182	GPS
SW9-1	31352	18360	752595	177215	GPS
SW9-2	31450	18423	752608	177248	GPS
W4TRIB-1	28161	18976	751689	176815	GPS
W4TRIB-10	27706	19031	751566	176750	GPS
W4TRIB-11	27656	19044	751551	176744	GPS
W4TRIB-12	27672	19052	751554	176749	GPS
W4TRIB-2	28080	18974	751669	176800	GPS
W4TRIB-3	28003	19002	751645	176794	GPS
W4TRIB-4	27923	19015	751623	176783	GPS
W4TRIB-5	27879	19011	751612	176775	GPS
W4TRIB-6	27851	19007	751606	176769	GPS
W4TRIB-7	27820	19011	751597	176764	GPS
W4TRIB-8	27821	19015	751597	176765	GPS
W4TRIB-9	27757	19028	751579	176758	GPS

Table H.1. (continued)

Location	ORNL grid Easting (xcoord)	ORNL grid Northing (ycoord)	TN State Plane Easting (xcoord)	TN State Plane Northing (ycoord)	Located Manually or GPS[a]
WAG4 MS1	28345	18874	751753	176821	GPS
WAG4 T2A	28891	18502	751954	176823	GPS
WAG6 MS1	24982	16370	751346	175610	GPS
WAG6 MS1-1	24786	16695	751241	175657	GPS
WAG6 MS2	24787	16317	751307	175563	GPS
WAG6 MS3A	23889	16082	751123	175348	GPS
WAG6 MS3B	23904	16057	751131	175344	GPS
W6MS3	23847	16035	751121	175329	Manually
WC7500	29515	19831	751879	177264	GPS
WCHEAD	37777	23544	753302	179630	GPS
WCTRIB-1	27191	16922	751803	176132	GPS
WCTRIB-2	28462	18090	751918	176646	GPS
WCTRIB-3	28969	18696	751940	176885	GPS
WCTRIB-4	29663	19543	751966	177218	GPS
WCWEIR	28179	17292	751986	176397	GPS
WC-1	25374	16096	751492	175609	GPS
WC-10	27929	17087	751959	176302	GPS
WC-11	28257	17565	751958	176478	GPS
WC-12	28479	17840	751966	176586	GPS
WC-13	28678	18081	751974	176681	GPS
WC-14	28832	18246	751984	176749	GPS
WC-15	28934	18332	751994	176788	GPS
WC-16	29012	18434	751996	176827	GPS
WC-17	29194	18784	751981	176946	GPS
WC-18	29371	19147	751962	177068	Manually
WC-19	29494	19314	751964	177131	Manually
WC-2	25749	16175	751572	175694	GPS
WC-20	29850	20454	751855	177478	GPS
WC-21	30324	21004	751878	177699	GPS
WC-22	30593	21143	751921	177780	GPS
WC-22 A	30775	21156	751964	177815	Manually
WC-23	31086	21165	752041	177871	GPS
WC-24	31348	21190	752102	177923	GPS
WC-3	26182	16391	751643	175824	GPS
WC-4	26471	16414	751711	175880	GPS
WC-5	26795	16560	751767	175973	GPS
WC-6	27005	16760	751785	176059	GPS
WC-7	27306	16894	751837	176145	GPS
WC-8	27641	17078	751889	176249	GPS
WC-9	27880	17090	751947	176294	GPS
WEST SEEP	25437	17168	751322	175889	GPS
WOCET	21708	16736	750463	175132	GPS
WOD	23368	15404	751110	175088	GPS
WSTRIB-1	25371	16779	751373	175780	GPS
WS-1	25362	16431	751431	175691	Manually
WS-2	25456	17268	751309	175917	Manually
WS-3	25436	17447	751273	175958	GPS

[a]Global Positioning System used for most locations. Remaining locations were visually located on a map and the coordinates retrieved from the map.

Appendix I

TRANSURANIC RESULTS

Table I.1. Transuranic results (pCi/L) from the WAG 2 RI Seep Task

Location	Sample Date	Sample ID	Analysis	Result	Uncertainty	MDA
BTT	11-Mar-93	3584-4	U-238	56.4	4.46	0.01
BTT	11-Mar-93	3583-4	U-238	112	14.9	0.02
BTT	11-Mar-93	3583-4	U-235	6.98	2.44	0.02
BTT	11-Mar-93	3584-4	U-235	3.65	0.38	0.01
BTT	11-Mar-93	3583-4	U-234	217	26.7	0.02
BTT	11-Mar-93	3584-4	TH-232	0	0.07	0.14
BTT	11-Mar-93	3583-4	U-232	3.08	1.47	0.02
BTT	11-Mar-93	3584-4	TH-228	3.2	0.87	0.19
BTT	11-Mar-93	3583-4	TH-232	-0.01	0.07	0.15
BTT	11-Mar-93	3584-4	PU-238	0	0.05	0.08
BTT	11-Mar-93	3583-4	TH-230	0.06	0.08	0.12
BTT	11-Mar-93	3584-4	AM-241	0.14	0.43	1.1
BTT	11-Mar-93	3583-4	TH-228	1.5	0.55	0.27
BTT	11-Mar-93	3584-4	U-234	108	8.46	0.01
BTT	11-Mar-93	3583-4	PU-239	0.35	0.09	0.05
BTT	11-Mar-93	3584-4	PU-239	0.32	0.09	0.02
BTT	11-Mar-93	3583-4	PU-238	0.05	0.03	0.04
BTT	11-Mar-93	3583-4	AM-241	0.12	0.53	1.5
BTT	11-Mar-93	3584-4	CM-243	0.14	0.43	1.1
BTT	11-Mar-93	3584-4	TH-230	0.02	0.13	0.22
BTT	11-Mar-93	3583-4	CM-243	0	0	0.69
MBWEIR	09-Mar-93	3515-4	AM-241	0.6	0.74	0.98
MBWEIR	09-Mar-93	3516-4	AM-241	-0.01	0.63	2.2
MBWEIR	09-Mar-93	3516-4	U-238	0.4	0.4	0.49
MBWEIR	09-Mar-93	3516-4	CM-243	0.44	0.85	1.8
MBWEIR	09-Mar-93	3515-4	PU-238	0.2	0.07	0.01
MBWEIR	09-Mar-93	3516-4	PU-238	0.12	0.05	0.02
MBWEIR	09-Mar-93	3515-4	TH-228	1.2	0.2	0.06
MBWEIR	09-Mar-93	3516-4	PU-239	0.01	0.04	0.06
MBWEIR	09-Mar-93	3515-4	TH-232	0	0	0.07
MBWEIR	09-Mar-93	3516-4	TH-228	1.3	0.23	0.08
MBWEIR	09-Mar-93	3515-4	U-235	0.07	0.15	0.2
MBWEIR	09-Mar-93	3516-4	TH-230	0.22	0.09	0.02
MBWEIR	09-Mar-93	3515-4	CM-243	0.39	0.6	0.98
MBWEIR	09-Mar-93	3516-4	TH-232	0.02	0.04	0.06
MBWEIR	09-Mar-93	3515-4	TH-230	0.11	0.06	0.06
MBWEIR	09-Mar-93	3516-4	U-234	0.99	0.66	0.53
MBWEIR	09-Mar-93	3515-4	U-238	0.65	0.48	0.2
MBWEIR	09-Mar-93	3515-4	U-234	1.59	0.89	0.68
MBWEIR	09-Mar-93	3515-4	PU-239	0.01	0.05	0.07
MBWEIR	09-Mar-93	3516-4	U-235	-0.01	0.03	0.35
RS-1	13-Apr-93	3600-4	U-238	0.18	0.06	0.01
RS-1	13-Apr-93	3600-4	TH-230	0.12	0.07	0.06
RS-1	13-Apr-93	3600-4	TH-228	0	0	0.14
RS-1	13-Apr-93	3600-4	U-235	0.01	0.02	0.01
RS-1	13-Apr-93	3600-4	PU-239	0.1	0.14	0.2
RS-1	13-Apr-93	3600-4	U-232	0	0	0.01
RS-1	13-Apr-93	3600-4	PU-238	0.11	0.11	0.15
RS-1	13-Apr-93	3600-4	AM-241	0.53	0.37	0.28
RS-1	13-Apr-93	3600-4	TH-232	0	0.03	0.06
RS-1	13-Apr-93	3600-4	U-234	3.47	0.35	0.01
RS-1	13-Apr-93	3600-4	CM-243	-0.01	0.13	0.47

Table I.1. (continued)

Location	Sample Date	Sample ID	Analysis	Result	Uncertainty	MDA
RS-3A	13-Apr-93	3601-4	U-235	6.22	1.28	0.01
RS-3A	13-Apr-93	3601-4	TH-230	0.21	0.08	0.08
RS-3A	13-Apr-93	3601-4	TH-228	0	0	0.1
RS-3A	13-Apr-93	3601-4	U-238	64.2	7.31	0.01
RS-3A	13-Apr-93	3601-4	PU-239	0.05	0.03	0.03
RS-3A	13-Apr-93	3601-4	U-232	71.5	8.01	0.01
RS-3A	13-Apr-93	3601-4	PU-238	0.16	0.06	0.05
RS-3A	13-Apr-93	3601-4	AM-241	20.95	3.66	0.31
RS-3A	13-Apr-93	3601-4	TH-232	0.2	0.07	0.06
RS-3A	13-Apr-93	3601-4	U-234	1490	52	0.01
RS-3A	13-Apr-93	3601-4	CM-243	50.64	7.85	0.43
RS-3B	13-Apr-93	3602-4	PU-239	0	0.05	0.09
RS-3B	13-Apr-93	3602-4	U-235	0.52	0.38	0.01
RS-3B	13-Apr-93	3602-4	TH-230	0.09	0.07	0.1
RS-3B	13-Apr-93	3602-4	AM-241	0.01	0.12	0.4
RS-3B	13-Apr-93	3602-4	TH-228	0	0	0.18
RS-3B	13-Apr-93	3602-4	U-234	134	16.7	0.01
RS-3B	13-Apr-93	3602-4	PU-238	0.23	0.1	0.09
RS-3B	13-Apr-93	3602-4	TH-232	0.04	0.04	0.03
RS-3B	13-Apr-93	3602-4	U-232	5.63	1.47	0.01
RS-3B	13-Apr-93	3602-4	U-238	6.64	1.64	0.01
RS-3B	13-Apr-93	3602-4	CM-243	-0.1	0.19	0.67
SW4-1	11-Mar-93	3578-4	PU-238	0.16	0.07	0.05
SW4-1	11-Mar-93	3578-4	TH-230	0.12	0.11	0.16
SW4-1	11-Mar-93	3578-4	U-238	2.43	0.3	0.01
SW4-1	11-Mar-93	3578-4	TH-232	0.01	0.06	0.11
SW4-1	11-Mar-93	3578-4	AM-241	0.1	0.44	1.3
SW4-1	11-Mar-93	3578-4	U-234	4.85	0.52	0.01
SW4-1	11-Mar-93	3578-4	TH-228	0.95	0.41	0.11
SW4-1	11-Mar-93	3578-4	PU-239	0.02	0.05	0.08
SW4-1	11-Mar-93	3578-4	CM-243	-0.25	0.19	1.6
SW4-1	11-Mar-93	3578-4	U-235	0.01	0.04	0.01
SW4-2	11-Mar-93	3579-4	U-238	0.41	0.1	0.01
SW4-2	11-Mar-93	3579-4	PU-239	0	0.06	0.1
SW4-2	11-Mar-93	3579-4	AM-241	1.1	1.5	2.6
SW4-2	11-Mar-93	3579-4	PU-238	-0.07	0.08	0.14
SW4-2	11-Mar-93	3579-4	CM-243	0.28	0.89	2.3
SW4-2	11-Mar-93	3579-4	U-235	0.06	0.04	0.01
SW4-2	11-Mar-93	3579-4	TH-230	0.14	0.1	0.13
SW4-2	11-Mar-93	3579-4	TH-228	1.3	0.46	0.17
SW4-2	11-Mar-93	3579-4	U-234	4.18	0.46	0.01
SW4-2	11-Mar-93	3579-4	TH-232	0.03	0.05	0.09
SW5-4	09-Mar-93	3528-4	TH-228	0.68	0.13	0.19
SW5-4	09-Mar-93	3528-4	TH-232	0.04	0.03	0.02
SW5-4	09-Mar-93	3528-4	CM-243	15.1	3.2	0.7
SW5-4	09-Mar-93	3528-4	U-235	0.01	0.01	0.26
SW5-4	09-Mar-93	3528-4	TH-230	0.08	0.07	0.09
SW5-4	09-Mar-93	3528-4	PU-238	0.45	0.13	0.08
SW5-4	09-Mar-93	3528-4	U-234	0.03	0.01	0.32
SW5-4	09-Mar-93	3528-4	AM-241	2.08	0.95	0.65
SW5-4	09-Mar-93	3528-4	PU-239	0.03	0.06	0.09
SW5-4	09-Mar-93	3528-4	U-238	0.02	0	0.31

Table I.1. (continued)

Location	Sample Date	Sample ID	Analysis	Result	Uncertainty	MDA
SW7-3	13-Apr-93	3618-4-2	TH-230	0.15	0.08	0.07
SW7-3	13-Apr-93	3618-4-1	PU-238	-0.01	0.08	0.12
SW7-3	13-Apr-93	3618-4-2	TH-228	0.97	0.16	0.12
SW7-3	13-Apr-93	3618-4-1	PU-239	0.13	0.08	0.09
SW7-3	13-Apr-93	3618-4-2	CM-243	1.62	0.74	0.76
SW7-3	13-Apr-93	3618-4-1	TH-228	1.1	0.17	0.1
SW7-3	13-Apr-93	3618-4-2	U-232	225	28.1	0.04
SW7-3	13-Apr-93	3618-4-1	TH-230	0.08	0.09	0.14
SW7-3	13-Apr-93	3618-4-2	U-235	15	4.91	0.03
SW7-3	13-Apr-93	3618-4-1	TH-232	0.01	0.04	0.07
SW7-3	13-Apr-93	3618-4-2	U-238	101	15.2	0.03
SW7-3	13-Apr-93	3618-4-1	U-232	118	15.5	0.02
SW7-3	13-Apr-93	3618-4-1	CM-243	2.82	0.86	0.14
SW7-3	13-Apr-93	3618-4-1	U-234	2220	43	0.02
SW7-3	13-Apr-93	3618-4-2	TH-232	0.03	0.03	0.03
SW7-3	13-Apr-93	3618-4-1	U-235	4.93	1.84	0.02
SW7-3	13-Apr-93	3618-4-2	PU-238	0.05	0.05	0.06
SW7-3	13-Apr-93	3618-4-1	U-238	51.6	8.06	0.02
SW7-3	13-Apr-93	3618-4-2	PU-239	0.04	0.07	0.1
SW7-3	13-Apr-93	3618-4-1	AM-241	0.32	0.26	0.14
SW7-3	13-Apr-93	3618-4-2	U-234	4140	20	0.04
SW7-3	13-Apr-93	3618-4-2	AM-241	0.94	0.55	0.58
WAG4 MS1	11-Mar-93	3577-4	U-238	13	1.11	0.02
WAG4 MS1	11-Mar-93	3577-4	U-234	29.1	2.31	0.02
WAG4 MS1	11-Mar-93	3577-4	TH-228	3.5	0.71	0.14
WAG4 MS1	11-Mar-93	3577-4	TH-230	0.08	0.07	0.09
WAG4 MS1	11-Mar-93	3577-4	CM-243	0.09	0.4	1.1
WAG4 MS1	11-Mar-93	3577-4	TH-232	0.04	0.03	0.02
WAG4 MS1	11-Mar-93	3577-4	PU-239	0.06	0.05	0.06
WAG4 MS1	11-Mar-93	3577-4	PU-238	0.04	0.05	0.07
WAG4 MS1	11-Mar-93	3577-4	U-235	0.68	0.14	0.02
WAG4 MS1	11-Mar-93	3577-4	AM-241	0.41	0.68	1.3
WC7500	23-Jun-94	4319-4	PU-239	0	0.02	.
WC7500	23-Jun-94	4319-4	PU-238	0	0.02	.
WC7500	23-Jun-94	4319-4	EU-152	0.36	20.52	.
WC7500	23-Jun-94	4319-4	EU-155	0	0.46	.
WC7500	23-Jun-94	4319-4	AM-241	0	0.06	.
WC7500	23-Jun-94	4319-4	CM-244	0	0.04	.
WC-20	23-Jun-94	4298-4	PU-238	0	0.02	.
WC-20	23-Jun-94	4298-4	CM-244	0	0.04	.
WC-20	23-Jun-94	4298-6	EU-155	-0.03	3.51	.
WC-20	23-Jun-94	4298-4	PU-239	0	0.02	.
WC-20	23-Jun-94	4298-6	EU-152	0.1	35.1	.
WC-20	23-Jun-94	4298-4	AM-241	0	0.05	.
WC-24	23-Jun-94	4299-4	CM-244	0	0.03	.
WC-24	23-Jun-94	4307-4	AM-241	0	0.08	.
WC-24	23-Jun-94	4299-6	EU-155	-0.01	1.89	.
WC-24	23-Jun-94	4307-4	EU-152	0.4	29.7	.
WC-24	23-Jun-94	4299-6	EU-152	0.63	16.47	.
WC-24	23-Jun-94	4307-4	PU-238	0	0.02	.
WC-24	23-Jun-94	4299-4	PU-239	0	0.01	.
WC-24	23-Jun-94	4307-4	CM-244	0	0.08	.
WC-24	23-Jun-94	4307-4	PU-239	0	0.02	.
WC-24	23-Jun-94	4307-4	EU-155	-0.01	2.97	.
WC-24	23-Jun-94	4299-4	PU-238	0	0.01	.
WC-24	23-Jun-94	4299-4	AM-241	0	0.06	.

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