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CALENDAR YEAR 1993 GROUNDWATER QUALITY REPORT
FOR THE
BEAR CREEK HYDROGEOLOGIC REGIME,
Y-12 PLANT, OAK RIDGE, TENNESSEE

1993 Groundwater and Surface Water Quality Data and
Calculated Rate of Contaminant Migration

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Prepared by

HSW ENVIRONMENTAL CONSULTANTS, INC.
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for

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Health, Safety, Environment, and Accountability Organization
Oak Ridge Y-12 Plant
Oak Ridge, Tennessee 37831

Managed By

MARTIN MARIETTA ENERGY SYSTEMS, INC.
for the U.S. Department of Energy
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LIST OF ACRONYMS

ARAR	Appropriate, Relevant, and Applicable Requirement
BCV	Bear Creek Valley
BCK	Bear Creek Kilometer
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CY	Calendar Year
DOE	U.S. Department of Energy
EMD	Environmental Monitoring Database
EPA	U.S. Environmental Protection Agency
FFA	Federal Facility Agreement
GWPP	Groundwater Protection Program
HSEA	Health, Safety, Environment, and Accountability (Organization)
ORNL	Oak Ridge National Laboratory
ORR	Oak Ridge Reservation
OU	Operable Unit
PCPA	Post-Closure Permit Application
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
SWMU	Solid Waste-Management Unit
TDEC	Tennessee Department of Environment and Conservation
TSD	Treatment, Storage, and Disposal (Unit)
VOC	Volatile Organic Compound
WMA	Waste Management Area

1.0 INTRODUCTION

This report contains groundwater and surface-water quality data obtained during the 1993 calendar year (CY) at several hazardous and non-hazardous waste-management facilities associated with the U.S. Department of Energy (DOE) Y-12 Plant located on the DOE Oak Ridge Reservation (ORR) southeast of Oak Ridge, Tennessee (Figure 1). These sites are located southwest of the Y-12 Plant complex within the Bear Creek Hydrogeologic Regime (Bear Creek Regime), which is one of three regimes defined for the purposes of groundwater and surface-water quality monitoring at the Y-12 Plant. The Environmental Management Department of the Y-12 Plant Health, Safety, Environment, and Accountability (HSEA) Organization manages the monitoring activities in each regime as part of the Y-12 Plant Groundwater Protection Program (GWPP).

The annual groundwater and surface water report for the Bear Creek Regime is completed in two-parts; Part 1 (this report) containing the groundwater and surface-water quality data and Part 2 containing a detailed evaluation of the data. The primary purpose of this report is to serve as a reference for the groundwater and surface-water quality data obtained each year under the lead of the Y-12 Plant GWPP. However, because it contains information needed to comply with Resource Conservation and Recovery Act (RCRA) interim status assessment monitoring reporting requirements, this report is submitted to the Tennessee Department of Health and Environment (TDEC) by the RCRA reporting deadline (March 1 of the following CY). Part 2 of the annual groundwater report, to be issued mid-year, will contain a regime-wide evaluation of groundwater and surface water quality, present the findings and status of ongoing hydrogeologic studies, describe changes in monitoring priorities, and present planned modifications to the groundwater and surface water sampling and analysis activities.

2.0 BACKGROUND INFORMATION

Located west of the Y-12 Plant in Bear Creek Valley (BCV), the Bear Creek Regime is bound to the north by Pine Ridge and to the south by Chestnut Ridge (directions in this report are in reference to the Y-12 Plant grid system). The regime encompasses the portion of BCV extending from a surface water and shallow groundwater divide at the west end of the Y-12 Plant to the western boundary of the Bear Creek watershed (Figure 2).

Groundwater and surface-water quality monitoring in the Bear Creek Ridge Regime during CY 1993 was performed at two classes of waste-management facilities:

- sites scheduled for investigation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); and
- a low level radioactive waste storage facility.

A brief description of the waste-management facilities in the regime, including waste inventories and disposal histories, and a discussion of the regulatory status and groundwater monitoring history of each site, are provided in the following sections.

2.1 CERCLA Operable Units

In 1984, the U.S. Environmental Protection Agency (EPA) and the TDEC determined that several of the waste-management sites at the Y-12 Plant were hazardous waste treatment, storage, and disposal (TSD) units subject to regulation under RCRA. Three of the TSD units are located in the Bear Creek Regime; the S-3 Site, the Oil Landfarm waste-management area (WMA), and the Bear Creek Burial Grounds WMA. These sites were granted RCRA interim status until operating or post-closure RCRA permits were obtained by DOE, and RCRA Post-Closure Permit Applications (PCPAs) for these sites were initially submitted to the TDEC in 1987. Also in 1987, Spoil Area I, the Rust Spoil Area, and the SY-200 Yard were identified as solid waste-management units (SWMUs) subject to regulation under section 3004(u) of RCRA (Welch *et al.* 1987).

In November 1989, the ORR was added to the National Priority List and in January 1992, the DOE, the EPA, and the TDEC negotiated a Federal Facility Agreement (FFA) regarding

environmental restoration at the ORR under CERCLA. This agreement changed the regulatory status of the RCRA TSD units and SWMUs in the Bear Creek Regime to CERCLA Operable Units (OUs). As such, the DOE appealed the applicability of RCRA post-closure care, corrective action, and groundwater monitoring requirements to CERCLA OUs.

In April 1993, the DOE, TDEC, and Martin Marietta Energy Systems, Inc. signed an Agreed Order for a post-closure permit for the S-3 Site, thereby resolving the appeal and formally agreeing to proceed with CERCLA as a lead regulatory program with RCRA as an appropriate, relevant, and applicable requirement (ARAR). Under this agreement, RCRA will be applied as an ARAR to the extent that post-closure maintenance and care of former TSD facilities will be conducted in compliance with the terms of RCRA post-closure permits. Groundwater monitoring is to be integrated with the CERCLA remedial investigation/feasibility study (RI/FS) programs with RCRA corrective action deferred to CERCLA. Groundwater monitoring data reporting will comply with RCRA post-closure permit conditions as well as RI/FS requirements.

Two types of OUs were established under the FFA; source control OUs and integrator OUs. Source control OUs are individual or groups of waste sites for which a RI/FS will be performed, including any interim actions and/or remedial actions. Integrator OUs encompass groundwater and surface water, and are considered separate from source control OUs that contribute to the contamination of these media. Integrator OUs were established because available data showed that contaminants from multiple sources had intermingled in the groundwater system and migrated through a common exit-pathway (U.S. Department of Energy 1992).

The FFA established three source control OUs and one integrator OU that lie within the Bear Creek Regime (Table 1). Source control OUs 01 and 02 include all of the waste-management sites in the regime. The third source control OU encompasses contaminated sediments within the Bear Creek flood plain, and has no groundwater component. Groundwater and surface water in the regime comprise the integrator OU (Bear Creek OU 04).

2.1.1 Bear Creek Operable Unit 01

Bear Creek OU 01 is a source control OU comprised of the three former RCRA TSD units in the regime; the S-3 Site, the Oil Landfarm WMA, and the Bear Creek Burial Grounds

WMA (Table 1). An RI work plan for this OU has been prepared and reviewed by the EPA (Region IV) and the TDEC (U.S. Department of Energy 1993a). Efforts to address EPA and TDEC comments on the work plan are currently in progress.

2.1.1.1 S-3 Site

The S-3 Site is next to the west end of the Y-12 Plant (Figure 3), just west of the groundwater flow divide separating the Bear Creek Regime from the Upper East Fork Poplar Creek Hydrogeologic Regime (East Fork Regime). Formerly called the S-3 Ponds, the site was constructed in 1951 and consisted of four unlined ponds covering an area of roughly 400 x 400 feet (ft). Each pond was about 17 ft deep (excavations did not extend into bedrock), and had a storage capacity of about 2.5 million gallons (Geraghty & Miller, Inc. 1988a).

Wastes discharged into the ponds consisted primarily of nitric and other acids, nitrate wastes, pickling and plating wastes, machine coolants, caustic solutions, depleted uranium in nitric acid solution, technetium in raffinate and condensate, and miscellaneous liquid wastes (mop waters) associated with routine clean-up and operations at the Y-12 Plant. Most of the acid wastes were discharged into the S-3 Ponds from a pipeline (the Nitric Acid Pipeline) connected to operations within Buildings 9212, 9206, and 9998 (the H-1 Foundry) located in the west central section of the Y-12 Plant complex. A small section of the Nitric Acid Pipeline lies within the westernmost part of the Bear Creek Regime. The remainder of the pipeline lies east of the groundwater and surface water divide separating the Bear Creek Regime from the East Fork Regime.

Waste disposal at the S-3 Ponds ceased in 1984 and in 1988 the site was closed as a landfill in accordance with a closure plan approved by the TDEC (Martin Marietta Energy Systems 1988a). When closed, the ponds contained 2 to 5 ft of sludge produced during in-situ denitrification and neutralization of wastewater in the ponds, and a small volume of contaminated sediments removed from Bear Creek downstream of the site. The sludge was not leachable in weak acid and water (Geraghty & Miller, Inc. 1988a). During closure, the sludge and sediments were stabilized with coarse aggregate and the ponds were covered with a low-permeability cap. Construction of an asphalt parking lot over the cap completed final closure of the site, which was certified by the TDEC on November 15, 1990.

The TDEC issued a RCRA post-closure permit for the S-3 Site in April 1993. Negotiations with the TDEC regarding modifications to the permit and the effective date of the permit are currently in progress.

2.1.1.2 Oil Landfarm Waste-Management Area

The Oil Landfarm WMA is approximately one mile west of the Y-12 Plant (Figure 3), and consists of the Oil Landfarm, the Boneyard, the Burnyard, the Chemical Storage Area, and the Sanitary Landfill I. Figure 4 illustrates the components of the Oil Landfarm WMA.

The Oil Landfarm consisted of three areas where waste oils and coolants were applied to nutrient-adjusted soil during the dry months of the year (April to October) to enhance biodegradation. These oils and coolants contained beryllium compounds, depleted uranium, polychlorinated biphenyls, and spent solvents. Approximately one million gallons of waste oil were applied to soils at the site between 1973 and 1982 (Geraghty & Miller, Inc. 1988b). In 1989, the site was covered with a low-permeability cap in accordance with a TDEC-approved closure plan (Martin Marietta Energy Systems, Inc. 1988b). The TDEC certified final closure of the Oil Landfarm on December 15, 1990.

The Boneyard was used for the disposal of magnesium chips and construction debris (e.g., concrete) in unlined shallow trenches. The magnesium chips were placed in the trenches and burned, and residues were covered with soil and compacted. Filled trenches were covered with top soil and seeded with grass (Geraghty & Miller, Inc. 1988b).

The Burnyard consisted of two unlined trenches about 300 ft long by 40 ft wide. Between 1943 and 1968, various types of refuse (including pesticide containers, metal shavings, solvents, oils, and laboratory chemicals) were burned in the trenches. Some residues may have been buried in the Boneyard (Geraghty & Miller, Inc. 1988b).

The Chemical Storage Area was constructed on top of the Burnyard and used as an area for releasing compressed gas from cylinders with leaking or damaged valves, and for disposal of reactive or explosive laboratory chemicals. Gas in the damaged cylinders was allowed to leak into the atmosphere or was bled off; corrosive gases were bled through neutralizing slurries. Laboratory chemicals disposed at the site included acids, bases, organics, water-reactive compounds, and shock-sensitive compounds such as picric acid. The chemicals were handled to

induce the expected reaction or explosion, and remaining liquids were discharged into a small unlined surface impoundment (Geraghty & Miller, Inc. 1988b).

Sanitary Landfill I is south of the Oil Landfarm next to Bear Creek (Figure 4). The TDEC permitted the site for disposal of non-hazardous wastes generated at the Y-12 Plant, including paper, cardboard, plastics, rubber, wood, brush, organic refuse, textile products, and asphalt roofing materials. Waste disposal at the site started in 1968 and the site contained about 105,000 tons of waste when disposal activities ceased in 1982 (Geraghty & Miller, Inc. 1988b). In 1983, the site was graded and capped in accordance with a TDEC-approved closure plan (Bailey 1983).

As noted previously, a RCRA Part B PCPA for the Oil Landfarm WMA was submitted to the TDEC in 1987. The PCPA for the site is currently being revised to reflect the signed Agreed Order and the provisions contained in the post-closure permit issued by the TDEC for the S-3 Site.

2.1.1.3 Bear Creek Burial Grounds Waste-Management Area

The Bear Creek Burial Grounds WMA, located approximately two miles west of the Y-12 Plant (Figure 3), is comprised of several waste disposal units designated Burial Grounds A (North and South), B, C, D, E, and J, and two ponds designated Oil Retention Ponds No. 1 and 2 (Figure 5). Each disposal unit consisted of multiple trenches excavated 14 to 25 ft below grade that were used for disposal of liquid and/or solid wastes. Perforated stand-pipes installed vertically in some trenches were used for liquid waste disposal; rock and gravel were backfilled around the standpipes for support and to maximize the drainage rate. Oil Retention Ponds No. 1 and 2 were constructed to collect oils seeping from disposal trenches in Burial Ground A South, and A North, respectively (Figure 5).

Burial Grounds A (North and South) and C primarily received liquid wastes that generally consisted of waste oils and coolants, spent solvents, and mop waters. Solid wastes disposed at the site included salts, metals (primarily beryllium and uranium) and metal oxides, metal saw-fines, and asbestos. Hazardous waste disposal activities ceased in 1981 (Geraghty & Miller, Inc. 1988c).

Burial Grounds A (North and South) and C, and the Oil Retention Ponds were closed in 1988 and 1989 in accordance with TDEC-approved closure plans (Martin Marietta Energy Systems, Inc. 1988c and 1988d). The TDEC certified final closure of Burial Ground A (North and South) on December 15, 1989. Certification of final closure of Burial Ground C was requested from the TDEC on December 27, 1990. The TDEC certified final closure of Oil Retention Ponds No. 1 and 2 on November 15, 1990, and December 11, 1990, respectively.

As noted previously, a RCRA Part B PCPA for the Bear Creek Burial Grounds WMA was submitted to the TDEC in 1987. The PCPA for the site is currently being revised to reflect Agreed Order and provisions contained in the post-closure permit issued by the TDEC for the S-3 Site.

2.1.2 Bear Creek Operable Unit 02

Bear Creek OU 02 is a source control OU comprised of three former RCRA SWMUs; Spoil Area I, the SY-200 Yard, and the Rust Spoil Area (Table 1). The RI work plan for this OU (U.S. Department of Energy 1993b) has been approved by the EPA and the TDEC. Field work for the RI was completed in December 1993 and included one round of groundwater sampling from monitoring wells located at each of the sites.

2.1.2.1 Spoil Area I

Spoil Area I is located on the northern slope of Chestnut Ridge, west of the Y-12 Plant near the intersection of Old Bear Creek Road and West Patrol Road (Figure 3). The five-acre site has been used since about 1980 for disposal of non-radioactive construction debris. The TDEC permitted the site in 1986 (Permit No. DML011030012) for disposal of rubble and other non-combustible, stable solid wastes (Tennessee Department of Health and Environment 1986). The site has received approximately 100,000 cubic yards of debris, including asphalt, brick, concrete, roofing materials, brush, steel rebar, rock, and tile (Battelle Columbus Division 1989a).

2.1.2.2 SY-200 Yard

The SY-200 Yard is located south of Bear Creek near the base of the northern slope of Chestnut Ridge, approximately one-half mile west of the Y-12 Plant (Figure 3). Operated from the 1950s to 1986, the SY-200 Yard was a 300 x 200 ft gravel-covered area used for temporary storage of equipment, machinery, and miscellaneous items. Records indicate that waste materials were not disposed or stored at the site (Geraghty & Miller, Inc. 1989a).

2.1.2.3 Rust Spoil Area

The Rust Spoil Area is a 5.4-acre site located west of the SY-200 Yard (Figure 3) that was used between 1975 and 1983 for disposal of solid wastes (spoil) generated during various renovation, maintenance, and construction operations at the Y-12 Plant. Waste materials were primarily non-radioactive soil fill, masonry, and concrete with steel rebar, but also may have included materials containing solvents, asbestos, mercury, and uranium (Battelle Columbus Division 1989b). The total waste volume is estimated at less than 100,000 cubic yards. Closure of the site was completed in 1984 in accordance with a TDEC-approved closure plan (MCI Consulting Engineers 1983).

2.1.3 Bear Creek Operable Unit 04

Bear Creek OU 04 is the integrator OU encompassing groundwater and surface water in the regime. Since 1990, groundwater and surface-water quality monitoring in the regime has been performed in accordance with the technical approach described in the *Comprehensive Groundwater Monitoring Plan for the Department of Energy Y-12 Plant* (Comprehensive Monitoring Plan; Geraghty & Miller, Inc. 1990), which defined the following monitoring objectives:

- monitor at the plume boundaries for evidence of lateral contaminant migration;
- determine the maximum depth of groundwater contamination to the extent necessary for the evaluation and selection of remedial alternatives;

- focus well installation and monitoring efforts on the Maynardville Limestone - the primary avenue for contaminant migration in groundwater;
- perform regular sampling of surface water in Bear Creek;
- define and coordinate studies to determine the hydrogeologic characteristics of the flow system in the Bear Creek Regime;
- perform all sampling activities in accordance with RCRA assessment monitoring protocols (i.e., quarterly sampling frequency) to ensure continued regulatory compliance; and
- report all the monitoring results in a single regime-wide groundwater quality assessment report.

Although some objectives of this technical approach, such as following RCRA assessment monitoring protocols, are less applicable because of changing regulatory developments, implementation of this approach has provided a substantial portion of the groundwater and surface-water quality data needed to effectively characterize the extent of contamination in the Bear Creek Regime. This is reflected by the relatively limited groundwater monitoring activities planned for Bear Creek OU 04. The approved RI work plan for the OU specifies quarterly monitoring of 25 wells for one year (U.S. Department of Energy 1993c). These sampling activities are scheduled to begin in March 1994.

2.2 Above Grade Low Level Waste Storage Facility

The Above Grade Low Level Waste Storage Facility is located west of the Oil Landfarm WMA (Figure 4). An access road divides the facility into a northern and southern section. Construction of the northern section of the facility was completed in the second quarter of 1993, but only the northern section is currently in operation. This section consists of six, 52 x 171 ft prefabricated rubber buildings engineered with concrete, slab-on-grade foundations with floor dikes as secondary containment. The facility is used to store low level radioactive solid wastes including construction/demolition debris, process materials, rubbish, sludge and soil, and beryllium in drums and B-25 boxes.

3.0 1993 GROUNDWATER PROTECTION PROGRAM

The following sections describe the groundwater and surface-water sampling activities performed during CY 1993 under the lead of the Y-12 Plant GWPP. Included are brief descriptions of the monitoring programs for which the sampling was performed, as well as details regarding sampling locations and frequencies, sample collection procedures, analytical parameters, quality assurance/quality control (QA/QC) sampling, and data management.

3.1 Monitoring Programs

Groundwater and surface-water sampling activities during 1993 addressed the purposes of four monitoring programs: (1) RCRA Compliance Monitoring, (2) RCRA Assessment Monitoring, (3) Exit-Pathway Monitoring, (4) Surveillance and Maintenance Monitoring, and (5) Best-Management Practice Monitoring. Each of these monitoring programs is implemented within the context of the technical approach contained in the Comprehensive Monitoring Plan. However, in light of the increase in regulatory requirements, an increasing number of wells are sampled to meet multiple programmatic goals.

3.1.1 RCRA Compliance Monitoring

As noted in the preceding section, RCRA compliance monitoring for the S-3 site was initiated in September 1993 in accordance with the Agreed Order signed in April 1993. This program currently involves semi-annual collection of groundwater samples from a network of 23 compliance wells (Table 2) located throughout the Bear Creek Regime, and analysis of the samples for the parameters specified in the post closure permit. Analytical results for the compliance wells are included in Appendix E. An evaluation of groundwater flow directions, which also is a permit condition, is provided in Section 4.2.5.

The modifications to the post-closure permit issued for the S-3 Site by the TDEC in April 1993 contain additional monitoring requirements that are currently being negotiated. The well network specified for compliance monitoring will likely change pending resolution of these negotiations.

3.1.2 RCRA Assessment Monitoring

Quarterly RCRA Assessment Monitoring was continued during 1993 and initially included 47 monitoring wells, most located at the Oil Landfarm and Bear Creek Burial Grounds WMAs. In the second quarter of 1993, however, 39 of these wells were shifted to the Surveillance and Maintenance Monitoring program managed by the Y-12 Plant Environmental Restoration Program. Further reduced emphasis on assessment monitoring is expected and the program will be discontinued entirely when post-closure permits for these sites are issued by the TDEC.

3.1.3 Exit Pathway Monitoring

In June 1990, the DOE revised Order 5400.1 regarding environmental protection standards for DOE facilities. This order required monitoring of groundwater that is or could be affected by operations at DOE facilities to demonstrate compliance with DOE requirements and applicable Federal, State, and local laws and regulations. Compliance with most of the DOE Order 5400.1 requirements was achieved through continued implementation of ongoing monitoring programs required under TDEC and EPA regulations. However, the order did impose additional requirements for monitoring groundwater quality where contamination was most likely to be transported beyond the ORR boundaries.

Exit Pathway Monitoring is implemented under the Y-12 Plant GWPP to comply with the DOE Order 5400.1 requirements. In 1993, Exit Pathway Monitoring involved quarterly sampling of groundwater from 22 monitoring wells completed in the Maynardville Limestone and from 5 springs discharging to Bear Creek, and surface water from 5 locations along Bear Creek (Table 2). Six of the exit pathway wells are also used for RCRA Compliance Monitoring.

3.1.4 Surveillance and Maintenance Monitoring

As noted in Section 3.1.2, beginning in the second quarter of 1993, 39 wells previously used for RCRA Assessment Monitoring were shifted to the Surveillance and Maintenance Monitoring program managed by the Y-12 Plant Environmental Restoration Program (Table 2). The wells are located near the closed and capped source control OUs, and are sampled quarterly

to provide data needed to evaluate cap effectiveness in terms of water-quality trends over time as well as provide data on the extent of contamination within the Bear Creek Regime. The Y-12 Plant GWPP will implement the monitoring requirements of the Surveillance and Maintenance Monitoring program in the future.

3.1.5 Best-Management Practice Monitoring

Groundwater samples were collected during CY 1993 from 3 monitoring wells at the Above Grade Low Level Storage Facility as a best-management practice of the Y-12 Plant GWPP (Table 2). Groundwater monitoring as a best-management practice at this site was requested by the TDEC and has been performed since 1991.

3.2 Sampling and Analysis Program

The following sections describe the groundwater and surface water sampling and analyses activities performed during CY 1993. Included are descriptions of the sampling locations, frequency, and procedures, analytical parameters, quality assurance/quality control (QA/QC) sampling, and data management.

3.2.1 Sampling Locations

Groundwater samples were collected from the 89 monitoring wells listed in Table 2. Locations of these monitoring wells are shown on Figure 6, and data regarding the elevation of the screened or open hole interval, the aquifer zone, and the bedrock formation monitored by the wells are provided in Table 3. Detailed well construction information is contained in Appendix C.

Samples of groundwater discharging to Bear Creek from five springs were collected during 1993. Three of these springs are located near the waste disposal sites in the regime; one (SS-1) in the upper reaches of Bear Creek just downstream of the S-3 Site and two (SS-4 and SS-5) located south of the Bear Creek Burial Grounds WMA (Figure 7). The other two springs (SS-6 and SS-8) are located a few miles west of the Bear Creek Burial Grounds WMA.

Surface water samples were collected along Bear Creek at two background stations and three downstream stations (Figure 7). The background stations (NT-01 and NT-13) are in northern tributaries to Bear Creek that have not been affected by waste-management activities in the Bear Creek Regime. Sampling locations along Bear Creek are designated by the distance (in kilometers) from the confluence of Bear Creek and East Fork Poplar Creek. The three locations sampled during 1993 were Bear Creek Kilometer (BCK) 0.63, BCK 4.55, and BCK 9.40.

3.2.2 Sampling Frequency

Groundwater and surface water samples were collected during each quarter of 1993. First through fourth quarter sampling events were performed from January 28 to March 30, April 16 to June 27, July 1 to September 29, and October 6 to January 29, respectively.

Groundwater samples were collected during each quarter from each spring and surface-water sampling station and from all but 10 of the monitoring wells. One well (GW-052) at the Bear Creek Burial Grounds WMA was dry during the third and fourth quarters. Well GW-063 at the Oil Landfarm WMA was sampled only once because it was plugged and abandoned on May 7, 1993. Only one groundwater sample was collected from 7 of the wells used for RCRA Compliance Monitoring; GW-042, GW-079, GW-080, GW-162, and GW-342 at the Bear Creek Burial Grounds WMA and wells GW-613 and GW-614 at the S-3 Site. Semi-annual sampling of these wells was initiated in the fourth quarter of 1993 after they were designated as compliance wells in the RCRA post-closure permit for the S-3 Site. After installation in April 1993, well GW-800 at the Oil Landfarm WMA was sampled during the second, third, and fourth quarters of 1993.

3.2.3 Sample Collection

Groundwater samples were collected by personnel from the Oak Ridge K-25 Site Sampling and Environmental Support Department; personnel from the Y-12 Plant Compliance Monitoring Section of the HSEA Organization collected the surface-water samples. Pre-defined sampling sequences were followed to minimize the potential for cross-contamination. Monitoring wells were sampled during each quarterly event in the sequences listed in

Appendix D, which generally reflect sampling from least contaminated wells to the most contaminated wells at a site or in a sampling group (a series of monitoring wells grouped for sampling and data-tracking purposes). Samples from the springs and surface water stations were collected from the farthest downstream (least contaminated) location (BCK 0.63) to the farthest upstream (most contaminated) location (Spring SS-1).

Groundwater sampling was performed in accordance with the most recent version of the Standard Operating Procedure 8102 approved by the Y-12 Plant GWPP Manager. Descriptions of the field methods and procedures used to collect the groundwater and surface water samples are contained in *Environmental Surveillance Procedures Quality Control Program, Martin Marietta Energy Systems, Inc.* (Kimbrough *et al.* 1987). The EPA (Region IV) and the TDEC have approved these methods and procedures (U.S. Environmental Protection Agency 1988a).

3.2.4 Quality Assurance/Quality Control Sampling

Quality assurance/quality control samples included laboratory blanks, trip blanks, equipment rinsates, and duplicate groundwater samples. A total of 142 laboratory blanks, 197 trip blanks, 61 equipment rinsate samples, and 37 duplicate samples were analyzed during 1993. Similar numbers of QA/QC samples were analyzed during each quarterly sampling event: 31 to 42 laboratory blanks, 41 to 55 trip blanks, 14 to 16 equipment rinsates, and 9 to 10 duplicate samples.

Laboratory blanks were prepared using deionized water and analyzed along with the groundwater and surface-water samples. Trip blanks were prepared in the laboratory using deionized water and transported unopened in coolers containing groundwater and/or surface-water samples to be analyzed for volatile organic compounds (VOCs). Equipment rinsates were obtained from the deionized water used to decontaminate the groundwater sampling equipment. These samples were collected after a sampling team had completed sampling at a site or finished a sampling group (typically no more than 10 wells grouped for sampling and data-tracking purposes). If more than one team collected samples at a site or within a sampling group, each collected an equipment rinsate sample. Duplicate groundwater and surface water samples were collected at a frequency of at least one per sampling group, or one for every 10 monitoring wells, whichever was greater.

3.2.5 Laboratory Analysis

All groundwater and surface water samples were analyzed for the suite of parameters and constituents listed on Table 4. The analytical parameters and constituents included:

- trace metals and principal ions (total and dissolved concentrations);
- VOCs;
- gross alpha activity and gross beta activity;
- total suspended solids, total dissolved solids, and turbidity;
- field and laboratory determinations of pH and specific conductance; and
- field determinations of temperature, dissolved oxygen, and oxidation-reduction potential.

Samples from wells with elevated gross alpha and/or gross beta activity, as determined from CY 1992 data, were analyzed for selected radionuclides. The K-25 Analytical Chemistry Department performed most of the laboratory analyses; radiochemical analyses were performed by the Oak Ridge National Laboratory (ORNL) Chemistry Division.

All of the laboratory blanks, trip blanks, and equipment rinsate samples were analyzed for the suite of VOCs listed on Table 4. Selected equipment rinsate samples also were analyzed for trace metals (Inductively Coupled Plasma analyses), nitrate (as N), and gross alpha and gross beta activity. Duplicate groundwater samples were analyzed for the constituents and parameters specified for the well from which the duplicate sample was collected.

3.2.6 Data Management

Analytical results obtained by the K-25 and ORNL laboratories were verified, entered into the Y-12 Plant Environmental Monitoring Database (EMD), and electronically processed through several data evaluation procedures. Brief descriptions of the data verification/entry/evaluation procedures follow; details are provided in *Data Verification and Evaluation Techniques for Groundwater Monitoring Programs* (Mercier and Turner 1990).

Analytical results obtained from each quarterly sampling event were either downloaded directly into the EMD from data files provided by the analytical laboratory or were manually input from hardcopy documentation (laboratory reports and field data sheets). For manually input data, a double-entry procedure was followed whereby the hardcopy data were input twice into separate data files. A computer program then compared the two input data files and identified

discrepancies, which were then accounted for and corrected. When all data from the quarterly sampling event were in the EMD, a computer program then verified that the parameter names were correct, correct units were reported, and that the results reported for each parameter were within an expected range or were valid numeric values. As a final step in the data entry/verification process, printouts of the data were visually checked against the laboratory reports and field data sheets for completeness and obvious data outliers. The appropriate laboratory was contacted to resolve incomplete data transfers, discrepancies between electronic and hardcopy versions of the data, and questions regarding data outliers.

Upon completion of the data verification and entry into the EMD, a computer program was used to scan the monitoring data, flag questionable or suspect data based on pre-defined criteria, and prepared a report for transmittal to the appropriate laboratory. This data evaluation program calculated ion-charge balances for each sample, identified changes in analytical detection limits, validated analytical results for VOCs using the QA/QC sample data in accordance with an EPA validation procedure (U.S. Environmental Protection Agency 1988b). Questionable or suspect data were reported to the appropriate analytical laboratory. Errors in the data were corrected and questionable results unresolved by the appropriate laboratory were flagged.

3.2.7 Analytical Results

The groundwater and surface-water quality data obtained during 1993 are contained in Appendices E through L. The analytical results for each groundwater and surface water sample are contained in Appendix E; results for duplicate groundwater and surface water samples are presented in Appendix F. Ion-charge balances for each groundwater and surface water sample are presented in Appendix G. Appendix H contains trace metal results that exceed Maximum Contaminant Levels or background screening levels. Analytical results for the QA/QC samples are summarized in Appendix I. A summary of the validated analytical results for VOCs is provided in Appendix J, and radiochemical data are summarized in Appendix K. Annual average concentrations of nitrate (as N) (a primary groundwater contaminant in the Bear Creek Regime) determined for each well, spring, and surface water station are provided in Appendix L.

4.0 HYDROLOGIC FRAMEWORK

This section contains a general description of the complex hydrogeologic system in the Bear Creek Regime. It provides sufficient descriptive detail needed for the purposes of RCRA reporting requirements regarding evaluation of groundwater flow directions, and determination of representative rates of groundwater flow and contaminant transport. The description is based on the conceptual framework and associated nomenclature presented in: *Status Report-A Hydrologic Framework for the Oak Ridge Reservation* (Solomon *et al.* 1992).

Groundwater in the Bear Creek Regime occurs in two broad units with fundamentally different hydrologic characteristics: the Knox Aquifer and the ORR Aquitards. The Knox Aquifer is comprised of the Knox Group and the underlying Maynardville Limestone of the Conasauga Group. The bulk permeability of the Knox Aquifer, which is due primarily to solution conduits, is ten times greater than that of the ORR Aquitards. The Maynardville Limestone formation is believed to be a drain for the flow system in the Bear Creek Regime and provides the primary pathways for migration of contaminants in groundwater.

The remaining Conasauga Group formations, the underlying Rome Formation, and the Chickamauga Group form the ORR Aquitards. In this report, the term "ORR Aquitards" refers only to the Conasauga Group (excluding the Maynardville Limestone), and the Rome Formation. Flow in the ORR Aquitards is controlled by short, intersecting fractures in a relatively impermeable matrix, and most groundwater flows through a thin zone near the water table. Most of the waste-management sites in the Bear Creek Regime are underlain by the ORR Aquitards, in which contaminant migration rates relative to groundwater flow velocities are reduced by diffusive exchange between matrix and fractures (Solomon *et al.* 1992).

Pine Ridge and Chestnut Ridge are the primary recharge areas for the groundwater system in the Bear Creek Regime. Annual recharge is greater for the Knox Aquifer (about 2.6 inches) than for the ORR Aquitards (about 0.8 inches), and it is possible that a portion of the recharge to each unit results from delayed unsaturated flow (Solomon *et al.* 1992). Groundwater in the ORR Aquitards generally flows from the recharge areas toward the Maynardville Limestone, which outcrops in BCV along the base of Chestnut Ridge and underlies Bear Creek in much of the regime. Groundwater in the Maynardville Limestone generally flows west along geologic strike.

4.1 Geology

The geology in the area of the Y-12 Plant is generally characterized by sequences of southeast-dipping, fractured clastic (primarily shale and siltstone) and carbonate (limestone and dolostone) strata of Lower Cambrian to Lower Ordovician age (Figure 8). Bear Creek Valley is underlain by the interbedded limestone and shale formations of the Conasauga Group. Shale and siltstone beds of the underlying Rome Formation form Pine Ridge to the north, and the primarily dolostone strata of the overlying Knox Group form Chestnut Ridge to the south. Strike and dip of bedding in the Bear Creek Regime are generally N 55°E and 45°SE, respectively.

Bedrock in the Bear Creek Regime is overlain by any of several materials, including alluvium, colluvium, man-made fill, fine-grained residuum from the weathering of the bedrock, saprolite (a transitional mixture of fine-grained residuum and bedrock remnants), and weathered bedrock. In many areas, the saprolite retains primary textural features of the bedrock, including fractures (Solomon *et al.* 1992). The overall thickness of these materials in BCV is typically less than 40 ft.

The Maynardville Limestone subcrops along the axis of BCV at the base of Chestnut Ridge and the underlying formations of the ORR Aquitards subcrop successively to the north toward Pine Ridge (Figure 8). The Maynardville Limestone consists of fine- to coarse-grained, thin-bedded to massive limestone and dolostone (King and Haase 1987). Information obtained during 1992 indicates that the thickness of the Maynardville Limestone varies from about 300 to 620 ft and averages about 490 ft (Shevenell *et al.* 1992).⁵ Additionally, Shevenell *et al.* (1992) report, based on lithologic information obtained during installation of several exit-pathway monitoring wells, that most of the basal portion of the Maynardville Limestone (the Low Hollow member) is not present in an area southeast of the Bear Creek Burial Grounds WMA. This loss of stratigraphic section may reflect a facies change in the Maynardville, as suggested by Shevenell *et al.* (1992), or may be the result of structural displacement. Further investigation to explain the substantial thinning of the Maynardville Limestone in this area is ongoing.

Underlying formations of the Conasauga Group that comprise the ORR Aquitards are, from youngest to oldest, the Nolichucky Shale, Maryville Limestone, Rogersville Shale, Rutledge Limestone, and Pumpkin Valley Shale (Figure 8). The lithologic compositions of the Nolichucky Shale and Maryville Limestone are similar in the Bear Creek Regime. These formations consist

primarily of between 350 and 550 ft of massive to thin-bedded mudstone with interbedded limestone (King and Haase 1987). Beneath the Maryville Limestone are the massive mudstones of the Rogersville Shale and the interbedded limestone and shale of the Rutledge Limestone. The thickness of each of these formations ranges from 90 to 120 ft (King and Haase 1987). The Pumpkin Valley Shale consists of 260 to 320 ft of massive shale and mudstone with thin beds of siltstone and sandstone (King and Haase 1987).

The most pervasive structural features in the Bear Creek Regime are extensional, hybrid, and shear fractures (Solomon *et al.* 1992). Three major joint sets are evident in the Bear Creek Regime; one that roughly parallels bedding, one steeply dipping set that parallels geologic strike, and one steeply dipping set that trends perpendicular to strike (Dreier *et al.* 1987). Fracture densities ranging from about 1 to 60 per foot have been observed in rock outcrops near ORNL (Dreier *et al.* 1987; Sledz and Huff 1981). Most fractures are short, ranging from tenths of an inch to a few feet in length (Solomon *et al.* 1992). Within a fracture, groundwater may flow either downdip, laterally, or in both directions. Changes in flow direction may occur at fracture splits and intersections, and groundwater flow paths may locally resemble stairs in both plan and sectional views (Moore 1989).

Dissolution of carbonates along fractures, particularly in the Maynardville Limestone, has produced solution-enlarged features ranging from less than an inch to tens of feet in thickness. Shevenell *et al.* (1992) report that solution cavities occur throughout the Maynardville Limestone, but occur most frequently in the uppermost and lowermost of six stratigraphic zones defined by gamma-log signatures and core data. All water-bearing intervals in the uppermost zone occur at less than 235 ft below the ground surface, and 22% of these intervals were identified as cavities. Water-bearing intervals in the lowermost zone occur at depths up to about 450 ft below the ground surface, and 19% of these intervals were identified as cavities (Shevenell *et al.* 1992).

4.2 Groundwater System

Solomon *et al.* (1992) divide the groundwater flow system in both the Knox Aquifer and the ORR Aquitards into four subsystems: (1) the stormflow zone, (2) the vadose zone, (3) the groundwater zone (subdivided into water table, intermediate, and deep intervals), and (4) the aquiclude (Figure 9). The divisions are based on the amount of water transmitted by each

subsystem (i.e., flux), which decreases with depth; the largest water flux occurs in the stormflow zone and the smallest in the aquiclude.

The groundwater flow system is vertically gradational with no discrete boundaries separating the subsystems. The stormflow zone occurs in regolith as does much of the vadose zone, although in some areas the vadose zone includes weathered and fresh rock. About 90% of subsurface flow occurs in the stormflow zone. In the groundwater zone, flow volumes decrease and solute residence times increase sharply with depth. The bulk (98%) of groundwater flow occurs at shallow depths (<100 ft below ground surface), and most (80%) of this flow occurs in the water table interval. Below the water table interval, groundwater flow occurs along permeable fractures (or possibly fractured regions) within a relatively impermeable matrix. Variations in the number and aperture of the fractures within these regions occur along flow paths, and these differences determine lateral and vertical flow directions. Additionally, the vertical spacing between the permeable regions increases with depth, and permeable regions at depth are poorly connected in three dimensions (Solomon *et al.* 1992).

4.2.1 Stormflow Zone

Investigations in Bethel Valley and Melton Valley near ORNL show that groundwater occurs intermittently above the water table in the ORR Aquitards in a shallow "stormflow zone" that extends from ground surface to a depth of about 6 ft (Moore 1989). Channels for lateral flow in the stormflow zone include macropores and mesopores, which are connected voids created by various processes, including biochanneling, cracking, and soil particle aggregation (Moore 1989). This zone is thicker and more permeable in forested areas than in grassy or brushy areas, and is more permeable near the land surface than at deeper levels (Moore 1989). However, a stormflow zone may not exist in areas that are not vegetated.

Water is present in the stormflow zone during, and for short periods after, significant rainfall events; some of the water is lost to evapotranspiration and recharge to the water table, and the remaining water discharges at nearby seeps, springs, and streams. Analysis of infiltrometer test results from Bethel Valley and Melton Valley suggest that the hydraulic conductivity of the stormflow zone averages about 29 feet per day (ft/day) near the top and 0.1 ft/day near the base (Moore 1989). Lateral flow in the stormflow zone is intermittent, lasting

a few days to a few weeks after precipitation. Flow is fairly rapid when the zone is full of water but relatively slow when nearly drained (Moore 1989).

4.2.2 Vadose Zone

The vadose zone occurs between the stormflow zone and the water table (Figure 9). The geometric mean depth to the water table in the ORR Aquitards is about 13 ft (Moore 1989). The vadose zone is primarily composed of regolith. Moore (1989) estimates effective porosity (the porosity through which advective transport can occur) for regolith of 0.01 to 0.15.

Water is added to the vadose zone by percolation from the stormflow zone and is removed by transpiration and recharge to the water table. The vadose zone is unsaturated except in the capillary fringe above the water table and within wetting fronts during periods of vertical percolation from the stormflow zone (Moore 1989). A geometric mean hydraulic conductivity of about 0.006 ft/day was determined from analysis of infiltrometer tests in the vadose zone in Bethel Valley and Melton Valley (Moore 1989).

4.2.3 Groundwater Zone

Solomon *et al.* (1992) divide the saturated zone in the Knox Aquifer and ORR Aquitards into water table, intermediate, and deep intervals based on observed changes in hydrologic characteristics and groundwater geochemistry with depth (Figure 9). For the purposes of this report, the above subdivisions have been modified for the Bear Creek Regime to include a shallow interval between the water table and intermediate intervals. The boundary between the shallow and intermediate intervals is set at 100 ft below ground surface, which generally corresponds with an aquifer subdivision noted by Moore (1989) in an evaluation of groundwater flow parameters, and is the depth at which a fairly abrupt change from calcium-magnesium-bicarbonate groundwater to sodium-bicarbonate groundwater typically occurs in the ORR Aquitards. Additionally, solution cavities in the Maynardville Limestone occur most frequently at depths less than 100 ft below the ground surface, suggesting that the active karst flow system in the Maynardville Limestone is relatively shallow (Shevenell *et al.* 1992).

4.2.3.1 Water Table Interval

A permeable interval 3 to 15 ft thick usually occurs in the transitional horizon between regolith and unweathered bedrock, and the water table often occurs within this permeable interval (Solomon *et al.* 1992). The saturated thickness of this interval changes with cyclic variations in the water table elevation, and the interval may be nearly drained during seasonal water table declines. It is postulated that in the ORR Aquitards, the water table interval transmits more than 80% of the flow that occurs below the stormflow zone. Estimates of the permeability of the water-table zone are provided by results of hydraulic conductivity tests performed in wells completed in regolith below the water table. Analysis of these test results indicated a range of hydraulic conductivity of 0.03 to 3.25 ft/day (Connell and Bailey 1989).

Results of geochemical dating studies of groundwater in the ORR Aquitards in Melton Valley generally support the concept of a groundwater zone that is most active near the water table and becomes increasingly sluggish with depth (Solomon *et al.* 1992). Analyses of ^3H : ^3He ratios in groundwater samples collected from 1 to 6 ft below the water table showed ages ranging from 0.09 to 7.23 years, and the presence of large amounts of ^4He in groundwater samples from greater depths (45 to 165 ft below ground surface) suggest much greater residence times (Poreda *et al.* 1988).

4.2.3.2 Shallow Interval

The shallow interval of the groundwater zone extends from the bottom of the water table interval to depths of about 100 ft in the ORR Aquitards (Figure 9), and from 160 to 325 ft in the Knox Aquifer (Moore 1989). Groundwater in this zone is typically encountered under unconfined conditions in fractures and solution cavities. Enlarged fractures and cavities are the primary water-producing features and solute-transport pathways, and are supplied by seepage through fractures in the rock matrix. Fractures outnumber the cavities, are interconnected, and provide the continuity for groundwater flow paths (Moore 1989).

Analysis of hydraulic conductivity test results for wells completed at shallow depths in the ORR Aquitards and the Knox Aquifer generally shows two populations; an upper population with a geometric mean hydraulic conductivity of about 0.15 ft/day and a lower population with

a geometric mean hydraulic conductivity of about 0.0008 ft/day (Moore 1989). The upper population represents more permeable, water-producing intervals and the lower population represents less permeable matrix intervals.

The hydraulic conductivity of the water-producing intervals at shallow depths in the Knox Aquifer is much greater owing to an interconnected network of solution cavities and solution-enlarged fractures. For instance, results of hydraulic conductivity tests for wells less than 100 ft deep in the Maynardville Limestone, as summarized in Geraghty & Miller, Inc. (1989b), range from 0.13 to 99 ft/day and average about 22 ft/day. Additionally, Shevenell *et al.* (1992) report that fractures and solution cavities in the Maynardville Limestone encountered during installation of several exit-pathway wells yield as much as 200 to 300 gallons per minute (gpm), which is several orders-of-magnitude greater than the typical yield (0.25 gpm; Solomon *et al.* 1992) of wells completed in the ORR Aquitards. Results of a dye tracer test in the Maynardville Limestone near the Bear Creek Burial Grounds WMA suggested (qualitatively) a conduit flow rate of about 25 ft/day (Geraghty & Miller, Inc. 1989c).

Results of tracer tests performed in the Bear Creek Regime and calculations of the fracture porosity in bedrock provide estimates of the effective porosity of the ORR Aquitards and the Maynardville Limestone. Tracer tests have yielded effective porosity values ranging from 0.002 to 0.004 (Law Engineering Testing Company 1983; Lozier *et al.* 1987). Moore (1989) calculated a fracture porosity ranging from 0.001 to 0.002, based on estimates of fracture density and average fracture aperture for water-producing intervals at shallow depths in the Conasauga Group.

4.2.3.3 Intermediate Interval

Groundwater in the intermediate bedrock interval occurs in relatively permeable fractures (or possibly fractured intervals) within a relatively impermeable matrix. Review of data obtained with an electromagnetic borehole flowmeter suggest that the permeable regions commonly develop within a single layer of rock, and the average thickness of a permeable region (assuming an average dip of 35°) is less than 2 ft. The vertical spacing between permeable regions in the intermediate interval is believed to be more than 100 ft (Solomon *et al.* 1992); a vertical spacing of 150 ft is supported by results of matrix diffusion modeling of measured ^{14}C and ^3H activities

(Toran et al. 1991). Results of straddle packer tests in wells completed in the intermediate interval of the ORR Aquitards at several locations in BCV and Melton Valley show a range of mean hydraulic conductivity of 0.006 to 0.016 ft/day (Solomon et al. 1992).

4.2.3.4 Deep Interval

Identification of the deep bedrock interval is based on hydraulic and geochemical data for several deep (greater than 500 ft) monitoring wells and coreholes. Solomon et al. (1992) report that the boundary between the intermediate interval and the deep interval in BCV occurs at depths of about 325 ft in the ORR Aquitards and 650 ft in the Knox Aquifer. The boundary is based on lower hydraulic conductivity and unusually high hydraulic heads (estimated from packer tests), although use of hydraulic conductivity may not always be a reliable indicator (Solomon et al. 1992).

The transition from the intermediate interval to the deep interval in the ORR Aquitards is often indicated by a change from sodium-bicarbonate groundwater to sodium-chloride groundwater accompanied by a general increase in specific conductance and total dissolved solids. This change in groundwater geochemistry probably reflects longer residence times in the deep interval, and usually occurs at depths of more than 400 ft below the ground surface (Solomon et al. 1992). However, no such change in groundwater geochemistry has been observed in the Knox Aquifer; calcium-magnesium-bicarbonate or calcium-sulfate groundwater occurs to depths of 1,000 ft below the ground surface (Dreier et al. 1993).

Evaluation of data obtained from straddle packer tests and slug tests, and slow-recovery analyses, indicates that the geometric mean hydraulic conductivity of the deep interval in BCV is about 0.001 ft/day (Solomon et al. 1992). Although the mean hydraulic conductivity is comparable to that of the intermediate interval, measured conductivities in the deep interval are as low as 2.83×10^{-6} ft/day (Solomon et al. 1992). The low conductivities may reflect reduced fracture apertures or increased fracture spacings (Solomon et al. 1992).

4.2.4 Aquiclude

The aquiclude occurs below the deep groundwater interval and is generally marked by the presence of saline water with total dissolved solids of 40,000 to 300,000 milligrams per liter (mg/L) (Solomon *et al.* 1992). The water in the aquiclude is a sodium-, calcium-, and chloride-rich brine that is chemically similar to brines associated with major sedimentary basins (Solomon *et al.* 1992). In Melton Valley, saline water typically occurs at depths of about 600 to 700 ft below the ground surface (Solomon *et al.* 1992).

Saline groundwater has not been encountered at depth in the Bear Creek Regime. However, several wells in BCV completed at depths of about 500 to 1,000 ft below the ground surface monitor groundwater with total dissolved solids of several thousand mg/L to several tens of thousand mg/L. The presence of water with relatively high total dissolved solids (as well as increased sodium and chloride concentrations) in the deep groundwater interval in BCV may represent a mixing zone or diffusion zone between the fresh and saline groundwater, suggesting that the aquiclude is most likely present at greater depth in BCV than in Melton Valley (Solomon *et al.* 1992).

4.2.5 Groundwater Flow Directions

Directions of groundwater flow in the Bear Creek Regime were evaluated from static water-level measurements obtained from 206 monitoring wells during January 1993 (the seasonally high water table) and 186 wells in August/September 1993 (the seasonally low water table); depths to water and water-level elevations for each well are tabulated in Appendix M. Review of these data show that water level declines averaged about 5 ft in water-table interval wells and about 7 ft in bedrock (shallow and intermediate intervals) wells, with the largest decreases typically occurring in bedrock wells completed in the Maynardville Limestone. Additionally, the pattern of water level decrease was the same in all wells such that there were no significant changes in groundwater flow directions (i.e., no reversals of horizontal hydraulic gradients).

Groundwater elevations in the water table and bedrock (shallow and intermediate) intervals during the seasonally high and seasonally low groundwater flow conditions are

illustrated on Figures 10 and 11, respectively. On average, groundwater elevations in the water table interval were 16 to 18 ft higher than in the bedrock. The groundwater surface in both the water table interval and bedrock is a subdued replica of surface topography, with steep gradients along the flanks of Pine Ridge and Chestnut Ridge and a gentle slope southwest down the axis of BCV. The horizontal hydraulic gradient averages about 0.046 across BCV (strike-normal) and about 0.012 along the axis of BCV (strike-parallel).

The overall direction of groundwater flow in the ORR Aquitards is south and southwest toward the Maynardville Limestone, suggesting that this formation is a hydrologic drain for the groundwater flow system in the regime. Groundwater in the Maynardville generally flows westerly parallel to strike.

4.2.6 Contaminant Transport

Quantitative and qualitative methods were used to estimate contaminant migration rates. Quantitative migration rates were estimated only for the water table and shallow intervals in the groundwater zone. Migration rates in the stormflow zone were not estimated because waste sources in the Bear Creek Regime lie below this zone. Estimates of migration rates in the intermediate and deep intervals also were not performed, but representative rates are probably as low as a few centimeters per year (Solomon *et al.* 1992). Qualitative transport rates were determined based on the extent of nitrate in the Bear Creek Regime assuming a constant input rate from a single source area.

The wide range of potential contaminant migration rates reported in the following sections demonstrate the uncertainty in determining a representative rate of solute transport for this groundwater flow system. Long term transport of solutes in dual porosity and/or highly heterogeneous media is a complex physical and chemical process that is not fully explained by calculations using the modified Darcy equation or qualitative estimates based on distances from source areas to plume boundaries. It is probable that at various times and under various conditions, migration rates throughout the given range occur; some contaminants such as nitrate move relatively rapidly through the flow system, while other more highly attenuated constituents move much more slowly. Moreover, even the highly mobile compounds will diffuse into smaller pores from the large conduits and later, under a reverse concentration gradient, will slowly diffuse

back out. Thus, although the actual transport rates may vary over several orders of magnitude, the relatively limited extent of the contaminant plumes in the Bear Creek Regime suggests that slower transport rates may dominate and that attenuation processes such as matrix diffusion are an important controlling factor.

4.2.6.1 Quantitative Estimates

Quantitative estimates of contaminant transport were based on the assumption that contaminants move with the groundwater unimpeded by various retardation processes. Factors which would reduce transport rates, such as matrix diffusion, degradation, sorption, and chemical precipitation, or factors which may increase transport, such as dispersion, were not explicitly considered. Free product migration, which may occur independent of groundwater flow rates and directions, also was not considered.

Assuming that saturated regolith and fractured bedrock can be treated as an equivalent porous medium, average groundwater flow rates can be estimated using the modified Darcy equation:

$$v = Ki/n$$

where v is the average linear velocity of the groundwater, K is the hydraulic conductivity of the medium, i is the hydraulic gradient, and n is the effective porosity. Although the modified Darcy equation can be used to calculate average flow velocities in fractured rock, the velocities in individual fractures may vary over orders of magnitude, depending on the fracture aperture and wall roughness (Freeze and Cherry 1979).

Using the range of hydraulic conductivities for regolith (0.03 to 3.25 ft/day), effective porosities ranging from 0.001 to 0.15, an average strike-parallel (down-valley) gradient of 0.011, and an average strike-normal (cross-valley) gradient of 0.045, calculated rates of solute transport in the water table interval range from 0.002 to 146.2 ft/day. However, the bulk of the water mass in the water table interval resides within porous matrix zones between fractures, and diffusive exchange between matrix and fractures would reduce contaminant migration rates relative to calculated flow rates (Solomon *et al.* 1992).

Contaminant transport rates for the shallow interval in the ORR Aquitards were calculated using a geometric mean hydraulic conductivity of 0.0008 ft/day for matrix intervals and 0.15 ft/day for water-producing intervals, effective porosity values ranging from 0.001 to 0.004, and an average strike-normal hydraulic gradient of 0.046. Using these values, the rate of contaminant migration in the ORR Aquitards ranges from 0.0009 to 6.7 ft/day.

Contaminant transport rates for the shallow interval in the Maynardville Limestone were calculated using the average hydraulic conductivity (22 ft/day) obtained from well tests, effective porosity values ranging from 0.001 to 0.004, and an average strike-parallel hydraulic gradient of 0.012. Using these values, the rate of contaminant migration in the Maynardville Limestone ranges from about 66 to 264 ft/day. Relatively high transport rates in the Maynardville Limestone also are indicated by results of a dye-tracer study performed in the Bear Creek Regime which yielded a transport rate of about 200 ft/day (Geraghty & Miller, Inc. 1989d).

4.2.6.2 Qualitative Estimates

Qualitative estimates of contaminant migration rates in the Bear Creek Regime were based on the extent of the nitrate plume originating from the S-3 Site observed during CY 1990 (HSW Environmental Consultants, Inc. 1991). Unlike most of the other groundwater contaminants in the Bear Creek Regime, many of which have multiple source areas, the S-3 Site is the only significant nitrate source in the regime. Moreover, nitrate salts are highly soluble and generally move with no significant sorption or decay during transport (Geraghty & Miller, Inc. 1989d).

The nitrate plume originating from the S-3 Site extends westward (along strike) about 3,650 ft in the water table interval, approximately 2,000 ft at shallow depths in the ORR Aquitards, and about 9,500 ft west at shallow depths in the Maynardville Limestone (HSW Environmental Consultants, Inc. 1991). Given the 39 years between initial waste disposal at the S-3 Site in 1951 and the horizontal extent of the nitrate plume observed in 1990, the rate of nitrate transport ($v = \text{distance/time}$) is about 0.3 ft/day in the water table interval, about 0.1 ft/day in the ORR Aquitards, and about 0.7 ft/day in the Maynardville Limestone.

4.3 Surface-Water System

The surface-water system in the Bear Creek Regime consists of Bear Creek and its tributaries. The headwaters of Bear Creek are at the west end of the Y-12 Plant near the S-3 Site (Figure 7). From its headwaters, the creek flows west for approximately 4.5 miles, where it turns north through a gap in Pine Ridge and flows into East Fork Poplar Creek about 6 miles upstream of its confluence with the Clinch River.

Several sections of Bear Creek were modified since construction of the Y-12 Plant. The channel at the original headwaters was filled with rubble during construction of the S-3 Ponds and moved to its present location, and sections of the creek north of the Rust Spoil Area, east and south of the Oil Landfarm WMA, and south of the Bear Creek Burial Grounds WMA were rerouted. Spring SS-4, which discharges to Bear Creek south of the Bear Creek Burial Grounds WMA (Figure 7), may be a seepage face for groundwater moving through the buried original creek channel, which is located south of the present channel (Geraghty & Miller, Inc. 1989c).

The highest flows in Bear Creek occur in response to precipitation during winter and spring. Low flows occur during late summer and early fall, when several tributaries become dry and parts of the main channel within the Bear Creek Regime are dry. After periods of rainfall, the first several hundred feet of the creek headwaters may contain water from surface runoff, but at other times the headwaters remain dry for about 700 ft downstream of the S-3 Site. Flow in the creek during rainfall events is usually of short duration with rapid recession and no observed overbank flow (Geraghty & Miller, Inc. 1987).

Along much of its course through the Bear Creek Regime, Bear Creek lies entirely within the outcrop area of the Maynardville Limestone, and to a large extent, dissolution along fractures controls the position of the channel (Geraghty & Miller, Inc. 1987). Solution cavities have been encountered during drilling in the Maynardville near Bear Creek, indicating that they are an integral part of the Bear Creek flow system.

Shevenell *et al.* (1992) report evidence of hydraulic communication between subsurface conduits and springs discharging to Bear Creek observed during installation of several exit-pathway monitoring wells. For example, during installation of a well (GW-684), production of water from a fracture or cavity encountered at a depth of about 125 ft below the ground surface had turbidity and flow rate impacts on one of two adjacent springs (SS-5) located about 100 ft north (updip) of the well (Shevenell *et al.* 1992). Surprisingly, hydraulic connection between the other spring at this location and the Copper Ridge Dolomite of the Knox Group was

indicated by turbidity impacts observed during installation of an exit-pathway well (GW-683) located about 250 ft south of well GW-684 (Shevenell et al. 1992).

Because of the hydrologic interaction between the creek and the solution cavity system in the Maynardville Limestone, and possibly the Copper Ridge Dolomite, Bear Creek contains influent (losing) reaches where water flows from the creek to the groundwater system, and effluent (gaining) reaches where the creek receives groundwater discharge. A review of historical stream flow data performed as part of a dye-tracer study initiated to evaluate these hydrologic interactions indicated that Bear Creek loses flow during extreme low-flow conditions over much of its length in the Bear Creek Regime (Geraghty & Miller, Inc. 1989c). During normal flow conditions, Bear Creek loses flow in its upper reaches but gains flow in its lower reaches downstream of the Bear Creek Burial Grounds WMA. Results of the dye test also produced conclusive evidence that the surface water lost through influent reaches of Bear Creek between the Oil Landfarm WMA and the Bear Creek Burial Grounds WMA discharges back into the creek from Spring SS-5 (Geraghty & Miller, Inc. 1989c).

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APPENDIX A
FIGURES

FIGURE 1

REGIONAL LOCATION OF THE Y-12 PLANT

LOCATION:	Y-12 PLANT OAK RIDGE, TN.
DATE:	2-15-94
DWG ID.:	OR250-HC

LOCATION:	Y-12 PLANT OAK RIDGE, TN.	FIGURE 2	
DATE:	2-19-94	HYDROGEOLOGIC REGIMES AT THE Y-12 PLANT	
DWG ID.:	OR321-HC

FIGURE 3

BEAR CREEK VALLEY
WASTE-MANAGEMENT SITES

LOCATION:

Y-12 PLANT
OAK RIDGE, TN.

DATE:

1-27-94

DWG. ID.:

OR003-HC

FIGURE 4

COMPONENTS OF THE OIL LANDFARM
WASTE-MANAGEMENT AREA

LOCATION: Y-12 PLANT
OAK RIDGE, TN.
DATE: 1-27-94
DWG. ID.: OR004-HC

FIGURE 5

COMPONENTS OF THE BEAR CREEK
BURIAL GROUNDS WASTE-MANAGEMENT AREA

LOCATION:	Y-12 PLANT OAK RIDGE, TN.
DATE:	1-27-94
DWG ID.:	OR005-HC

EXPLANATION

- GW - ■ - Water Table Monitoring Well
- GW - ● - Bedrock Monitoring Well
- SS -
- BCK - ▲ - Spring (SS) or Surface-Water (BCK or NT) Sampling Station
- NT -
- - - - - Surface Drainage Feature
- AQT - Oak Ridge Reservation Aquitards
- · - - - - Approximate Nolichucky Shale/Maynardville Limestone Contact
- AQF - Knox Aquifer

LOCATION:	Y-12 PLANT OAK RIDGE, TN.	FIGURE 6 LOCATION OF MONITORING WELLS SAMPLED DURING 1993
DATE:	2-18-94	
DWG ID.:	OR305-HC

EXPLANATION

BCK-4.55 • SURFACE-WATER
 BCK-0.63 • SAMPLING LOCATION
 SS-5 • SPRING
 SS-5 • SAMPLING LOCATION
 NT-5 NORTH TRIBUTARY
 NT-2 SOUTH TRIBUTARY

FIGURE 7

LOCATION OF SPRINGS AND SURFACE
 WATER STATIONS SAMPLED DURING 1993

LOCATION: Y-12 PLANT
 OAK RIDGE, TN.
 DATE: 1-27-94
 DWG ID.: OR010-HC

Y-12 PLANT
AK RIDGE, TN.
1-27-94
OR006-HC

TOPOGRAPHY AND BEDROCK GEOLOGY IN THE BEAR CREEK HYDROGEOLOGIC REGIME

SOURCE: King and Haase, 1987

SYSTEM		GROUP	HYDRO UNIT	FORMATION	MAP SYMBOL	THICKNESS (ft)	
CAMBRIAN	UPPER	KNOX	KNOX AQUIFER	COPPER RIDGE DOLOMITE	Ock	NOT DETERMINED	
				MAYNARDVILLE LIMESTONE	Cmn	418-450	
	MIDDLE	CONASAUGA	ORR AQUITARDS	NOLICHUCKY SHALE	Cn	422-550	
				MARYVILLE LIMESTONE	Cm	348-445	
				ROGERSVILLE SHALE	Crg	90-120	
				RUTLEDGE LIMESTONE	Cr	90-120	
				PUMPKIN VALLEY SHALE	Cpv	260-320	
				ROME	Cr	NOT DETERMINED	
	LOWER						

LOCATION:
DATE:
DWG. ID.:

Y-12 PLANT
OAK RIDGE, TN.
2-19-93
OR007-HC

SCHEMATIC PROFILE
OF HYDROSTRATIGRAPHIC UNITS
IN THE BEAR CREEK HYDROGEOLOGIC REGIME

FIGURE 9

HYDROSTRATIGRAPHIC UNITS
PROPOSED BY
SOLOMON et al. (1992)

HYDROSTRATIGRAPHIC UNITS
EVALUATED BY
MOORE (1989)

HYDROSTRATIGRAPHIC UNITS
FOR THE GROUNDWATER QUALITY
ASSESSMENT REPORT

- NOTE: 1. Approximate depths are for ORR Aquitards; depths in the Knox Aquifer will be greater.
2. Drawing is not to scale.
3. Modified from Solomon et al. (1992).

AUGUST

EXPLANATION

GW-372 ■ — Water Table Monitoring Well

967.63

— Water-Level Isopleth (ft msl)

- - - Surface Drainage Feature

LOCATION:	Y-12 PLANT OAK RIDGE, TN.	<p align="center">FIGURE 10</p> <p align="center">GROUNDWATER ELEVATIONS IN THE WATER-TABLE INTERVAL</p>
DATE:	2-18-94	
DWG ID.:	OR312-HC

EXPLANATION

- GW-627 917.55 • — Bedrock Monitoring Well and Water-Level Elevations
- Water-Level Isopleth (ft msl)
- - - Surface Drainage Feature

LOCATION:	Y-12 PLANT OAK RIDGE, TN.
DATE:	2-18-94
DWG ID.:	OR313-HC

GROUNDWATER ELEVATIONS IN THE SHALLOW AND INTERMEDIATE BEDROCK INTERVALS

APPENDIX B

TABLES

Table 1. Operable Units Established for the Bear Creek Hydrogeologic Regime

Site Name	Regulatory Classification	
	Historical ¹	Current ²
S-3 Site	TSD Unit	BC OU 01
Oil Landfarm WMA		
Oil Landfarm	TSD Unit	BC OU 01
Burnyard, Boneyard, and Hazardous Chemical Storage Area	SWMU	BC OU 01
Sanitary Landfill I	SWMU	BC OU 01
Bear Creek Burial Grounds WMA		
Burial Grounds A (North and South)	TSD Unit	BC OU 01
Burial Grounds C	TSD Unit	BC OU 01
Burial Grounds B, D, E, and J	SWMUs	BC OU 01
Oil Retention Pond No. 1	SWMU	BC OU 01
Oil Retention Pond No. 2	SWMU	BC OU 01
Spoil Area I	SWMU	BC OU 02
SY-200 Yard	SWMU	BC OU 02
Rust Spoil Area	SWMU	BC OU 02
Bear Creek Flood Plain Soils	N/A	BC OU 03
Bear Creek Groundwater, Surface Water, and Creek Sediments	N/A	BC OU 04
Above Grade Low Level Storage Facility	N/A	N/A

Notes:

1 Regulatory status before 1992 Federal Facility Agreement.

- TSD Unit - RCRA regulated land-based treatment, storage, or disposal unit.
- SWMU - RCRA regulated solid waste management unit.
- N/A - Not Applicable (not previously regulated as a separate unit or not currently regulated).

2 Modified from: *Oak Ridge Reservation Site Management Plan for the Environmental Restoration Program* (U.S. Department of Energy 1992).

- BC OU 01 - Bear Creek Operable Unit 01 (Source Control OU)
- BC OU 02 - Bear Creek Operable Unit 02 (Source Control OU)
- BC OU 03 - Bear Creek Operable Unit 03 (Source Control OU)
- BC OU 04 - Bear Creek Operable Unit 04 (Integrator OU)

Table 2. Monitoring Wells, Springs, and Surface Water Stations Sampled During 1993

Monitoring Program	Sampling Point¹	Location²	Quarters Sampled³	Notes
RCRA Compliance Monitoring				
	GW-040	BG	4	Background/Upgradient Well
	GW-042	BG	1	Background/Upgradient Well
	GW-043	OLF	4	Background/Upgradient Well
	GW-044	OLF	4	Background/Upgradient Well
	GW-079	BG	1	Background/Upgradient Well
	GW-080	BG	1	Background/Upgradient Well
	GW-084	OLF	4	Background/Upgradient Well
	GW-115	S3	4	Background/Upgradient Well
	GW-162	BG	1	Background/Upgradient Well
	GW-324	S3	4	Background/Upgradient Well
	GW-325	S3	4	Background/Upgradient Well
	GW-342	BG	1	Background/Upgradient Well
	GW-372	BG	4	Background/Upgradient Well
	GW-373	BG	4	Background/Upgradient Well
	GW-613	S3	1	Background/Upgradient Well
	GW-614	S3	1	Background/Upgradient Well
	GW-642	BG	4	
RCPA Assessment Monitoring				
	GW-056	BG	4	
	GW-057	CMN	4	
	GW-063	OLF	1	P & A May 93
	GW-064	OLF	4	
	GW-311	RS	4	
	GW-312	RS	4	
	GW-317	SPI	4	
	GW-323	SPI	4	

Table 2 (cont'd)

Monitoring Program	Sampling Point ¹	Location ²	Quarters Sampled ³	Notes
Exit-Pathway Monitoring				
	GW-710	CMN	4	Compliance Monitoring Well
	GW-711	CMN	4	Compliance Monitoring Well
	GW-712	CMN	4	Compliance Monitoring Well
	GW-713	CMN	4	Compliance Monitoring Well
	GW-714	CMN	4	Compliance Monitoring Well
	GW-715	CMN	4	Compliance Monitoring Well
	GW-683	CMN	4	
	GW-684	CMN	4	
	GW-685	CMN	4	
	GW-694	CMN	4	
	GW-695	CMN	4	
	GW-703	CMN	4	
	GW-704	CMN	4	
	GW-706	CMN	4	
	GW-723	CMN	4	
	GW-724	CMN	4	
	GW-725	CMN	4	
	GW-736	CMN	4	
	GW-737	CMN	4	
	GW-738	CMN	4	
	GW-739	CMN	4	
	GW-740	CMN	4	
	BCK 0.63	BC	4	
	SS-8	BC	4	Spring
	BCK 4.55	BC	4	
	NT-13	BCT	4	Background Location
	SS-6	BC	4	Spring

Table 2 (cont'd)

Monitoring Program	Sampling Point¹	Location²	Quarters Sampled³	Notes
Exit-Pathway Monitoring (cont'd)				
	BCK 9.40	BC	4	
	SS-5	BC	4	Spring
	SS-4	BC	4	Spring
	SS-1	BC	4	Spring
	NT-01	BCT	4	Background Location
Surveillance and Maintenance Monitoring				
	GW-013	OLF	4	
	GW-052	BG	2	Dry 3rd and 4th Quarter
	GW-069	BG	4	
	GW-082	BG	4	
	GW-085	OLF	4	
	GW-086	OLF	4	
	GW-118	BG	4	
	GW-286	BG	4	
	GW-287	BG	4	
	GW-315	SPI	4	
	GW-316	SPI	4	
	GW-345	S3	4	
	GW-347	S3	4	
	GW-348	S3	4	
	GW-364	OLF	4	
	GW-365	OLF	4	
	GW-370	BG	4	
	GW-371	BG	4	
	GW-526	S3	4	
	GW-537	OLF	4	

Table 2 (cont'd)

Monitoring Program	Sampling Point¹	Location²	Quarters Sampled³	Notes
Surveillance and Maintenance Monitoring (cont'd)				
	GW-601	OLF	4	
	GW-621	BG	4	
	GW-626	BG	4	
	GW-627	BG	4	
	GW-636	OLF	4	
	GW-637	OLF	4	
	GW-638	OLF	4	
	GW-639	BG	4	
	GW-640	BG	4	
	GW-641	BG	4	
	GW-643	BG	4	
	GW-644	OLF	4	
	GW-647	OLF	4	
	GW-651	BG	4	
	GW-652	BG	4	
	GW-653	BG	4	
	GW-654	BG	4	
	GW-655	BG	4	
	GW-800	OLF	3	Well Installed Apr 93
Best-Management Practice Monitoring				
	GW-793	AGLLSF	4	
	GW-794	AGLLSF	4	
	GW-795	AGLLSF	4	

Table 2 (cont'd)

Notes:

1 See Table 3 and Appendix C for well construction details.

BCK - Bear Creek Kilometer

NT - Northern Tributary

2 AGLLSF - Above Grade Low Level Storage Facility

BC - Bear Creek

BCT - Bear Creek Tributary

BG - Bear Creek Burial Grounds WMA

CMN - Maynardville Limestone

OLF - Oil Landfarm WMA

RS - Rust Spoil Area

S3 - S-3 Site

SPI - Spoil Area I

3 The number of quarterly sampling events in which samples were collected during CY 1993.

Table 3. General Construction Information for Monitoring Wells Sampled During 1993

Well No. ¹	Location ²	Aquifer ³		Monitored Interval ⁴			
		Zone	Unit	Depth		Elevation	
GW-013	OLF	WT	Cn	6.0	- 14.0	956.3	- 948.3
GW-040 ^a	BG	WT	Cpv	21.0	- 29.0	983.1	- 975.1
GW-042 ^a	BG	WT	Cpv	13.4	- 28.2	986.6	- 971.8
GW-043 ^a	OLF	WT	Cm	10.0	- 40.0	999.8	- 969.8
GW-044 ^a	OLF	BDR	Cm	42.5	- 70.0	967.8	- 940.3
GW-052	BG	WT	Cmn	4.0	- 19.5	899.7	- 884.2
GW-056	BG	BDR	Cmn	49.1	- 55.2	837.6	- 831.5
GW-057	EXP	BDR	Cmn	17.5	- 22.8	869.3	- 864.0
GW-063	OLF	BDR	Cmn	27.7	- 32.7	931.2	- 926.2
GW-064	OLF	BDR	Cmn	46.8	- 52.7	932.4	- 926.5
GW-069	BG	BDR	Cn	79.0	- 99.2	845.3	- 825.1
GW-079 ^a	BG	BDR	Crg	49.9	- 64.9	927.2	- 912.2
GW-080 ^a	BG	WT	Crg	20.8	- 29.7	956.2	- 947.3
GW-082	BG	BDR	Cm	29.4	- 34.4	930.1	- 925.1
GW-084 ^a	OLF	WT	Cm	18.5	- 27.8	975.9	- 966.6
GW-085	OLF	BDR	Cn	48.4	- 58.8	931.4	- 921.0
GW-086	OLF	WT	Cn	21.0	- 29.6	958.5	- 949.9
GW-115 ^a	S3	WT	Cm	37.6	- 53.0	1,014.3	- 998.9
GW-118 ^b	BG	BDR	Cmn	525.0	- 575.0	384.4	- 334.4
GW-162 ^{a, b}	BG	BDR	Cpv	92.0	- 125.0	946.1	- 913.1
GW-286	BG	BDR	Cm	19.5	- 32.3	905.0	- 892.2
GW-287	BG	WT	Cm	5.6	- 12.5	919.0	- 912.1
GW-311	RS	WT	Cmn	25.6	- 40.3	970.8	- 956.1
GW-312	RS	WT	Cmn	29.6	- 41.0	964.5	- 953.1
GW-315	SPI	BDR	Cmn	90.0	- 104.0	954.8	- 940.8

Table 3 (cont'd)

Well No. ¹	Location ²	Aquifer ³		Monitored Interval ⁴			
		Zone	Unit	Depth		Elevation	
GW-316	SPI	WT	Cmn	67.5	- 80.0	977.2	- 964.7
GW-317	SPI	BDR	Cmn	117.0	- 132.0	943.8	- 928.8
GW-323	SPI	WT	OCk	94.0	- 108.0	1,033.4	- 1,019.4
GW-324 ^a	S3	BDR	Cn	66.5	- 80.0	934.9	- 921.4
GW-325 ^a	S3	WT	Cn	5.1	- 17.9	995.4	- 982.6
GW-342 ^a	BG	BDR	Cpv	61.0	- 75.0	1,023.5	- 1,009.5
GW-345	S3	WT	Cn	15.2	- 26.3	979.7	- 968.6
GW-347	S3	WT	Cmn	9.5	- 27.8	988.3	- 970.0
GW-348	S3	BDR	Cmn	68.1	- 80.9	929.9	- 917.1
GW-364	OLF	BDR	Cmn	47.0	- 60.3	886.4	- 873.1
GW-365 ^b	OLF	BDR	Cmn	126.7	- 150.0	806.3	- 783.0
GW-370	BG	WT	Cm	21.1	- 33.1	936.8	- 924.8
GW-371 ^b	BG	BDR	Cm	110.0	- 125.0	848.1	- 833.1
GW-372 ^a	BG	WT	Cm	39.8	- 51.6	940.1	- 928.3
GW-373 ^{a, b}	BG	BDR	Cm	123.0	- 158.0	857.8	- 822.8
GW-526 ^b	S3	BDR	Cn	101.0	- 123.0	894.3	- 872.3
GW-537	OLF	WT	Cn	4.8	- 23.3	969.4	- 950.9
GW-601 ^b	OLF	BDR	Cmn	318.5	- 356.0	680.6	- 643.1
GW-613 ^a	S3	WT	Cn	30.0	- 42.0	980.2	- 968.2
GW-614 ^a	S3	BDR	Cn	71.6	- 90.2	937.8	- 919.2
GW-621	BG	WT	Cmn	23.3	- 40.5	899.8	- 882.6
GW-626	BG	WT	Cn	63.0	- 78.0	877.0	- 862.0
GW-627 ^b	BG	BDR	Cn	254.0	- 270.0	686.4	- 670.4
GW-636 ^b	OLF	BDR	Cn	98.5	- 117.0	839.6	- 821.1
GW-637	OLF	WT	Cn	14.5	- 27.5	923.8	- 910.8
GW-638	OLF	WT	Cn	2.5	- 11.5	935.6	- 926.6

Table 3 (cont'd)

Well No. ¹	Location ²	Aquifer ³		Monitored Interval ⁴			
		Zone	Unit	Depth		Elevation	
GW-639 ^b	BG	BDR	Cn	95.5	- 125.5	842.5	- 812.5
GW-640	BG	BDR	Cn	35.0	- 47.4	907.6	- 895.2
GW-641	BG	WT	Cn	11.0	- 24.3	933.0	- 919.7
GW-642	BG	WT	Crg	18.5	- 36.9	993.4	- 975.0
GW-643	BG	WT	Cm	16.5	- 28.5	963.4	- 951.4
GW-644	OLF	WT	Cn	10.3	- 23.4	946.5	- 933.4
GW-647	OLF	BDR	Cmn	78.0	- 91.0	952.1	- 939.1
GW-651	BG	WT	Cmn	39.8	- 52.0	860.2	- 848.1
GW-652	BG	WT	Cmn	13.4	- 31.2	884.6	- 866.8
GW-653	BG	WT	Cn	26.3	- 39.0	902.6	- 889.8
GW-654	BG	WT	Cm	4.2	- 15.3	934.1	- 923.0
GW-655	BG	BDR	Cpv	47.7	- 65.0	1,060.5	- 1,043.2
GW-683	EXP	BDR	OCk	133.9	- 196.8	835.6	- 772.7
GW-684	EXP	BDR	Cmn	106.4	- 128.4	789.1	- 767.1
GW-685 ^b	EXP	BDR	Cmn	88.5	- 138.3	800.8	- 751.0
GW-694 ^b	EXP	BDR	Cmn	154.0	- 204.5	784.6	- 734.1
GW-695	EXP	BDR	OCk	50.6	- 62.6	886.6	- 874.6
GW-703 ^b	EXP	BDR	Cmn	135.0	- 182.0	816.8	- 769.8
GW-704 ^b	EXP	BDR	Cmn	246.0	- 256.0	696.0	- 686.0
GW-706 ^b	EXP	BDR	Cmn	157.0	- 182.5	768.8	- 743.3
GW-710 ^b	EXP	BDR	OCk	539.7	- 744.5	368.3	- 163.5
GW-711 ^b	EXP	BDR	Cmn	616.0	- 666.2	286.0	- 235.8
GW-712 ^b	EXP	BDR	OCk	441.5	- 457.5	432.1	- 416.1
GW-713 ^b	EXP	BDR	Cmn	305.0	- 315.2	572.8	- 562.6
GW-714 ^b	EXP	BDR	Cmn	115.1	- 145.0	757.2	- 727.3
GW-715	EXP	WT	Cmn	32.0	- 44.0	840.2	- 828.2

Table 3 (cont'd)

Well No. ¹	Location ²	Aquifer ³		Monitored Interval ⁴			
		Zone	Unit	Depth		Elevation	
GW-723 ^b	EXP	BDR	Cmn	340.6	- 444.5	678.7	- 574.8
GW-724 ^b	EXP	BDR	Cmn	289.6	- 301.6	687.0	- 675.0
GW-725 ^b	EXP	BDR	Cmn	132.5	- 142.5	825.8	- 815.8
GW-736	EXP	BDR	Cmn	92.0	- 105.0	865.6	- 852.6
GW-737	EXP	BDR	Cmn	79.0	- 89.5	878.5	- 868.0
GW-738	EXP	BDR	Cmn	63.5	- 88.0	916.9	- 892.4
GW-739 ^b	EXP	BDR	Cmn	289.2	- 320.0	731.5	- 700.7
GW-740 ^b	EXP	BDR	Cmn	165.6	- 190.0	851.4	- 827.0
GW-793	AGLLSF	BDR	Cn	16.9	- 29.0	948.2	- 936.1
GW-794	AGLLSF	BDR	Cmn	25.8	- 39.3	905.1	- 891.6
GW-795	AGLLSF	WT	Cmn	7.5	- 20.1	915.4	- 902.8
GW-800	OLF	BDR	OCK	19.3	- 31.5	942.1	- 929.9

Notes:

- 1 Well construction information compiled from: *Updated Subsurface Data Base for Bear Creek Valley, Chestnut Ridge, and Parts of Bethel Valley on the U.S. Department of Energy Oak Ridge Reservation* (Jones et al. 1993).
- 2
 - AGLLSF - Above Grade Low Level Storage Facility
 - BG - Bear Creek Burial Grounds WMA
 - EXP - Exit Pathway (Maynardville Limestone)
 - OLF - Oil Landfarm WMA
 - RS - Rust Spoil Area
 - S3 - S-3 Site
 - SPI - Spoil Area I

Table 3 (cont'd)

- 3 BDR - Bedrock (Shallow, Intermediate, and Deep Intervals)
 WT - Water Table Interval
 Ock - Knox Group
 Cmn - Maynardville Limestone
 Cn - Nolichucky Shale
 Cm - Maryville Limestone
 Crg - Rogersville Shale
 Crt - Rutledge Limestone
 Cpv - Pumpkin Valley Shale
 Cr - Rome Formation
- 4 Depth in feet below the ground surface.
 Elevation in feet above mean sea level.
- a Background/Upgradient monitoring well.
- b Open borehole well construction.

**Table 4. Analytical Parameters for Groundwater and Surface Water Samples
Collected During 1993**

Sampling Point¹	Location²	Analytical Parameters	Notes
GW-013	OLF	STD ³	
GW-040	BG	STD/CMP ⁴	CMP parameters analyzed 4th Qtr. sample only
GW-042	BG	CMP	
GW-043	OLF	STD/CMP	CMP parameters analyzed 4th Qtr. sample only
GW-044	OLF	STD/CMP	CMP parameters analyzed 4th Qtr. sample only
GW-052	BG	STD	
GW-056	BG	STD	
GW-057	CMN	STD	
GW-063	OLF	STD	
GW-064	OLF	STD	
GW-069	BG	STD	
GW-079	BG	CMP	
GW-080	BG	CMP	
GW-082	BG	STD	
GW-084	OLF	STD/CMP	CMP parameters analyzed 4th Qtr. sample only
GW-085	OLF	STD	
GW-086	OLF	STD	
GW-115	S3	STD/CMP	CMP parameters analyzed 4th Qtr. sample only
GW-118	BG	STD	
GW-162	BG	CMP	
GW-286	BG	STD	
GW-287	BG	STD	
GW-311	RS	STD	
GW-312	RS	STD	
GW-315	SPI	STD	

Table 4. (cont'd.)

Sampling Point¹	Location²	Analytical Parameters	Notes
GW-316	SPI	STD	
GW-317	SPI	STD	
GW-323	SPI	STD	
GW-324	S3	STD/CMP	CMP parameters analyzed 4th Qtr. sample only
GW-325	S3	STD/CMP	CMP parameters analyzed 4th Qtr. sample only
GW-342	BG	CMP	
GW-345	S3	STD	
GW-347	S3	STD	
GW-348	S3	STD	
GW-364	OLF	STD	
GW-365	OLF	STD	
GW-370	BG	STD	
GW-371	BG	STD	
GW-372	BG	STD/CMP	CMP parameters analyzed 4th Qtr. sample only
GW-373	BG	STD/CMP	CMP parameters analyzed 4th Qtr. sample only
GW-526	S3	STD	
GW-537	OLF	STD, BETA ⁵	
GW-601	OLF	STD	
GW-613	S3	CMP	
GW-614	S3	CMP	
GW-621	BG	STD	
GW-626	BG	STD	
GW-627	BG	STD	
GW-636	OLF	STD	
GW-637	OLF	STD	
GW-638	OLF	STD	

Table 4. (cont'd.)

Sampling Point¹	Location²	Analytical Parameters	Notes
GW-639	BG	STD	
GW-640	BG	STD	
GW-641	BG	STD	
GW-642	BG	STD/CMP	CMP parameters analyzed 4th Qtr. sample only
GW-643	BG	STD	
GW-644	OLF	STD	
GW-647	OLF	STD	
GW-651	BG	STD	
GW-652	BG	STD	
GW-653	BG	STD	
GW-654	BG	STD	
GW-655	BG	STD	
GW-683	CMN	STD	
GW-684	CMN	STD	
GW-685	CMN	STD	
GW-694	CMN	STD, BETA	
GW-695	CMN	STD	
GW-703	CMN	STD	
GW-704	CMN	STD	
GW-706	CMN	STD, BETA	
GW-710	CMN	STD	
GW-711	CMN	STD	
GW-712	CMN	STD	
GW-713	CMN	STD	
GW-714	CMN	STD	
GW-715	CMN	STD	

Table 4. (cont'd.)

Sampling Point ¹	Location ²	Analytical Parameters	Notes
GW-723	CMN	STD	
GW-724	CMN	STD	
GW-725	CMN	STD	
GW-736	CMN	STD	
GW-737	CMN	STD	
GW-738	CMN	STD	
GW-739	CMN	STD	
GW-740	CMN	STD	
GW-793	AGLLSF	STD	
GW-794	AGLLSF	STD, U ⁶	
GW-795	AGLLSF	STD, U	
GW-800	OLF	STD	
NT-01	BCT	STD, BETA	
NT-13	BCT	STD	
SS-1	BC	STD,BETA	
SS-4	BC	STD	
SS-5	BC	STD	
SS-6	BC	STD	
SS-8	BC	STD	
BCK 0.63	BC	STD	
BCK 04.55	BC	STD	
BCK 09.40	BC	STD	

Table 4. (cont'd.)

Notes:

1. BCK - Bear Creek Kilometer
GW - Monitoring Well
NT - Northern Tributary
SS - Spring
2. AGLLSF - Above Grade Low Level Storage Facility
BC - Bear Creek
BCT - Bear Creek Tributary
BG - Bear Creek Burial Grounds WMA
CMN - Maynardville Limestone
OLF - Oil Landfarm WMA
RS - Rust Spoil Area
S3 - S-3 Site
SPI - Spoil Area I
3. STD - Standard suite of analytical parameters; includes the following:
 - Inductively Coupled Plasma (ICP) Metals

Aluminum	Chromium	Potassium
Antimony	Cobalt	Selenium
Arsenic	Copper	Silver
Barium	Iron	Sodium
Beryllium	Magnesium	Strontium
Boron	Manganese	Thorium
Cadmium	Molybdenum	Vanadium
Calcium	Nickel	Zinc
 - Atomic Absorption Spectroscopy Metals

Cadmium
Chromium
Lead
 - Other Metals

Mercury (Cold Vapor Atomic Absorption Spectroscopy)
Uranium (Fluorimetric Analysis)
 - Volatile Organic Compounds

Acetone	1,2-Dichloropropane
Benzene	cis-1,3-Dichloropropene
Bromodichloromethane	trans-1,3-Dichloropropene
Bromoform	Ethylbenzene
Bromomethane	2-Hexanone
2-Butanone	4-Methyl-2-pentanone
Carbon disulfide	Methylene chloride

Table 4. (cont'd.)

· Volatile Organic Compounds (cont'd.)

Carbon tetrachloride	Styrene
Chlorobenzene	1,1,2,2-Tetrachloroethane
Chlorodibromomethane	Tetrachloroethene
Chloroethane	Toluene
Chloroform	1,1,1-Trichloroethane
Chloromethane	1,1,2-Trichloroethane
1,1-Dichloroethane	Trichloroethene
1,2-Dichloroethane	Vinyl acetate
1,1-Dichloroethene	Vinyl chloride
1,2-Dichloroethene	Xylenes

· Anions

Alkalinity - Carbonate	Nitrate (as N)
Alkalinity - Bicarbonate	Fluoride
Chloride	Sulfate

· Radiological Parameters

Gross Alpha Activity
Gross Beta Activity

· Miscellaneous Parameters

pH
Specific Conductance
Total Suspended Solids (TSS)
Total Dissolved Solids (TDS)
Turbidity

· Field Measurements

Static Water Level
pH
Temperature
Dissolved Oxygen
Specific Conductance
Oxidation - Reduction Potential (REDOX)

4. CMP - Compliance Monitoring Parameters; includes the following:

- Standard suite of analytical parameters
- Americium (^{241}Am)
- Iodine (^{129}I)
- Neptunium (^{237}Np)
- Plutonium (^{238}Pu)
- Radium (total)
- Strontium (total)
- Technetium (^{99}Tc)

Table 4. (cont'd.)

4. Compliance Monitoring Parameters (cont'd)
 - Tritium (^3H)
 - Isotopic Uranium (^{234}U , ^{235}U , ^{238}U)
5. BETA - Beta-emitting isotopes:
 - Strontium (total)
 - Technetium (^{99}Tc)
 - Tritium (^3H)
6. U - Isotopic Uranium (^{234}U , ^{235}U , ^{238}U)

APPENDIX C
MONITORING-WELL CONSTRUCTION DETAILS

EXPLANATION

LOCATION:

AGLLSF	-	Above Grade Low Level Storage Facility
BG	-	Bear Creek Burial Grounds WMA
EXP	-	Exit-Pathway Monitoring
OLF	-	Oil Landfarm WMA
RS	-	Rust Spoil Area
S3	-	S-3 Site
SPI	-	Spoil Area I

CASING MATERIAL:

PVC	-	Polyvinyl chloride
SS	-	Stainless Steel

MONITORED INTERVAL:

BDR	-	Bedrock Interval
WT	-	Water-Table Interval
Ock	-	Knox Group
CON	-	Conasauga Group (undifferentiated)
Cmn	-	Maynardville Limestone
Cn	-	Nolichucky Shale
Cm	-	Maryville Limestone
Crg	-	Rogersville Shale
Crt	-	Rutledge Limestone
Cpv	-	Pumpkin Valley Shale
Cr	-	Rome Formation
Top	-	Depth to top of filter pack or open-hole
Bottom	-	Depth to bottom of filter pack or open-hole
SS/sw/.01	-	Spiral wound, 0.01 inch slot size
SS/pp/.01	-	Perforated pipe, 0.01 inch hole size

NOTES:

Coordinates	-	Y-12 Plant grid system
Elevations	-	Feet above mean sea level
Depths	-	Feet below ground surface
Casing Diameter	-	Outside diameter, in inches
Borehole Diameter	-	Nominal diameter, in inches
Length	-	Feet
.	-	Not applicable or not available

All data compiled from Jones et al. 1993.

APPENDIX C
Monitoring-Well Construction Details

1

Well No.	GW-013	GW-040	GW-042	GW-043	GW-044	GW-052	GW-056
Location	OLF	BG	BG	OLF	OLF	BG	BG
East Coordinate	47343	43358	43938	47932	47928	43483	41384
North Coordinate	30174	31111	31137	30522	30526	29046	28698
ELEVATIONS	.	.	.	.	.	.	.
Measuring Point	964.52	1008.02	1003.39	1011.51	1013.49	906.04	890.71
Surface	962.29	1004.11	999.95	1009.78	1010.3	903.71	886.65
Weathered Rock	956.99	.	996.45	1008.78	1009.3	.	.
Fresh Rock	951.79	.	.	971.78	972.3	.	880.25
Top Monitored Interval	956.29	983.11	986.55	999.78	967.8	899.71	837.55
Bottom Monitored Interval	948.29	975.11	971.75	969.78	940.3	884.21	831.45
SURFACE/CONDUCTOR CASING	.	.	.	.	.	.	.
Casing Depth	.	.	.	.	.	.	32
Casing Diameter	.	.	.	.	.	.	4.5
Casing Material	.	.	.	.	unknown	.	PVC/#40
WELL CASING BOREHOLE	.	.	.	.	.	.	.
Borehole Depth	33.8	35	30	40	70	19.5	55.2
Borehole Diameter	6	6	6	6	4	6	4
Weathered Rock - Depth	5.3	.	3.5	1	1	.	.
Fresh Rock - Depth	10.5	.	.	38	38	.	6.4
WELL CASING	.	.	.	.	.	.	.
Well Casing Depth	10.4	27.7	26.9	32.8	58	18.3	55.2
Well Casing Diameter	2.37	2.37	2.37	2.37	2.37	2.37	2.37
Well Casing Material	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304
MONITORED INTERVAL	.	.	.	.	.	.	.
Aquifer Zone	WT	WT	WT	WT	BDR	WT	BDR
Geologic Formation	Cn	Cpv	Cpv	Cm	Cm	Cmn	Cmn
Screened or Open	Screen	Screen	Screen	Screen	Screen	Screen	Screen
Top - Depth	6	21	13.4	10	42.5	4	49.1
Bottom - Depth	14	29	28.2	40	70	19.5	55.2
Screen Material	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01
Screen Length	2.0	2.0	2.0	10.0	10.0	5.0	2.0
Open-Hole Length	.	.	.	.	.	.	.
Open-Hole Diameter	.	.	.	.	.	.	.

(CONTINUED)

APPENDIX C
Monitoring-Well Construction Details

2

Well No.	GW-057	GW-063	GW-064	GW-069	GW-079	GW-080	GW-082
Location	EXP	OLF	OLF	BG	BG	BG	BG
East Coordinate	41380	48257	49168	43803	41619	41622	42090
North Coordinate	28688	29016	29195	29490	30632	30624	30434
ELEVATIONS	.	.	.	.	.	.	.
Measuring Point	889.36	961.93	981.56	927.01	980.5	980.31	962.49
Surface	886.83	958.89	979.17	924.25	977.14	977.03	959.49
Weathered Rock	.	.	.	921.25	973.14	973.53	952.49
Fresh Rock	883.43	942.19	944.47	900.25	950.64	953.53	936.49
Top Monitored Interval	869.33	931.19	932.37	845.25	927.24	956.23	930.09
Bottom Monitored Interval	864.03	926.19	926.47	825.05	912.24	947.33	925.09
SURFACE/CONDUCTOR CASING	.	.	.	.	.	.	.
Casing Depth	14	.	.	.	.	.	25
Casing Diameter	4.5	.	.	.	.	.	6.5
Casing Material	PVC/#40	unknown	unknown	unknown	.	.	PVC/#40
WELL CASING BOREHOLE	.	.	.	.	.	.	.
Borehole Depth	25	35	57	100	65	30	35
Borehole Diameter	4	4	4	7.88	6.5	6.5	4
Weathered Rock - Depth	.	.	.	3	4	3.5	7
Fresh Rock - Depth	3.4	16.7	34.7	24	26.5	23.5	23
WELL CASING	.	.	.	.	.	.	.
Well Casing Depth	22.8	32.7	52.7	99.2	64.9	29.7	34.4
Well Casing Diameter	2.37	2.37	2.37	2.37	2.37	2.37	2.37
Well Casing Material	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304
MONITORED INTERVAL	.	.	.	.	.	.	.
Aquifer Zone	BDR	BDR	BDR	BDR	BDR	WT	BDR
Geologic Formation	Cmn	Cmn	Cmn	Cn	Crg	Crg	Cn
Screened or Open	Screen	Screen	Screen	Screen	Screen	Screen	Screen
Top - Depth	17.5	27.7	46.8	79	49.9	20.8	29.4
Bottom - Depth	22.8	32.7	52.7	99.2	64.9	29.7	34.4
Screen Material	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01
Screen Length	2.0	5.0	2.0	10.2	5.0	5.0	5.0
Open-Hole Length	.	.	.	.	.	.	.
Open-Hole Diameter	.	.	.	.	.	.	.

(CONTINUED)

APPENDIX C
Monitoring-Well Construction Details

3

Well No.	GW-084	GW-085	GW-086	GW-115	GW-118	GW-162	GW-286
Location	OLF	OLF	OLF	S3	BG	BG	BG
East Coordinate	48801	49058	49043	52685	43404	44480.91	42287
North Coordinate	30421	30002	29993	31073	29147	31330.75	29993
ELEVATIONS	.	.	.	.	.	.	.
Measuring Point	996.6	982.87	982.76	1054.41	912.39	1040.44	926.83
Surface	994.37	979.82	979.5	1051.92	909.37	1038.06	924.52
Weathered Rock	990.37	977.82	971.5	.	.	.	919.52
Fresh Rock	.	939.82	.	.	894.37	1026.06	914.52
Top Monitored Interval	975.87	931.42	958.5	1014.32	384.37	946.06	905.02
Bottom Monitored Interval	966.57	921.02	949.9	998.92	334.37	913.06	892.22
SURFACE/CONDUCTOR CASING	.	.	.	.	.	.	.
Casing Depth	.	.	.	.	31	26	14.2
Casing Diameter	.	.	.	.	10.75	10.75	10.75
Casing Material	.	unknown	.	.	.	.	.
WELL CASING BOREHOLE	.	.	.	.	.	.	.
Borehole Depth	34	62	33.5	53	525	92	32.3
Borehole Diameter	6.5	4	4	.	9.87	10	9
Weathered Rock - Depth	4	2	8	.	.	.	5
Fresh Rock - Depth	.	40	.	.	15	12	10
WELL CASING	.	.	.	.	.	.	.
Well Casing Depth	27.8	58.8	29.6	53	525	92	32
Well Casing Diameter	2.37	2.37	2.37	2.37	4.5	6.62	4.5
Well Casing Material	SS/#304	SS/#304	SS/#304	SS/#304	Steel/F25	Steel/F25	SS/#304
MONITORED INTERVAL	.	.	.	.	.	.	.
Aquifer Zone	WT	BDR	WT	WT	BDR	BDR	BDR
Geologic Formation	Cm	Cn	Cn	Cm	Cn	Cpv	Cm
Screened or Open	Screen	Screen	Screen	Screen	Open	Open	Screen
Top - Depth	18.5	48.4	21	37.6	525	92	19.5
Bottom - Depth	27.8	58.8	29.6	53	575	125	32.3
Screen Material	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	.	.	SS/sw/.01
Screen Length	5.0	5.0	5.0	10.0	.	.	10.0
Open-Hole Length	.	.	.	.	50	33	.
Open-Hole Diameter	.	.	.	.	4	6	.

(CONTINUED)

APPENDIX C
Monitoring-Well Construction Details

4

Well No.	GW-287	GW-311	GW-312	GW-315	GW-316	GW-317	GW-323
Location	BG	RS	RS	SPI	SPI	SPI	SPI
East Coordinate	42288	50126	49778	52268	52412	52192	52106
North Coordinate	29989	29267	29216	29455	29336	29285	28985
ELEVATIONS	.	.	.	.	.	.	.
Measuring Point	926.87	999.35	996.49	1047.28	1047.17	1062.98	1130.11
Surface	924.6	996.43	994.13	1044.84	1044.73	1060.8	1127.41
Weathered Rock	920.1	956.13	.	990.84	989.73	.	1052.41
Fresh Rock	913.6	.	.	973.84	.	1012.8	.
Top Monitored Interval	919	970.83	964.53	954.84	977.23	943.8	1033.41
Bottom Monitored Interval	912.1	956.13	953.13	940.84	964.73	928.8	1019.41
SURFACE/CONDUCTOR CASING	.	.	.	.	.	.	.
Casing Depth	.	.	.	84.4	54.7	49.3	93
Casing Diameter	.	.	.	10.75	10.75	10.75	10.75
Casing Material	.	.	.	.	.	.	.
WELL CASING BOREHOLE	.	.	.	.	.	.	.
Borehole Depth	12.5	40.3	41	104	80	132	108
Borehole Diameter	9	10	12	10	10	10	10
Weathered Rock - Depth	4.5	40.3	.	54	55	.	75
Fresh Rock - Depth	11	.	.	71	.	48	.
WELL CASING	.	.	.	.	.	.	.
Well Casing Depth	12.3	40.3	40.5	103.3	79.4	130.5	107
Well Casing Diameter	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Well Casing Material	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304
MONITORED INTERVAL	.	.	.	.	.	.	.
Aquifer Zone	WT	WT	WT	BDR	WT	BDR	WT
Geologic Formation	Cm	Cmn	Cmn	Cmn	Cmn	Cmn	OCk
Screened or Open	Screen	Screen	Screen	Screen	Screen	Screen	Screen
Top - Depth	5.6	25.6	29.6	90	67.5	117	94
Bottom - Depth	12.5	40.3	41	104	80	132	108
Screen Material	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01
Screen Length	5.0	10.6	10.0	10.0	10.7	11.0	10.5
Open-Hole Length	.	.	.	.	.	.	.
Open-Hole Diameter	.	.	.	.	.	.	.

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APPENDIX C
Monitoring-Well Construction Details

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Well No.	GW-324	GW-325	GW-342	GW-345	GW-347	GW-348	GW-364
Location	S3	S3	BG	S3	S3	S3	OLF
East Coordinate	50700	50689	42608.87	50700	50750	50763	46508
North Coordinate	30307	30306	31326.9	30029	29292	29294	29152
ELEVATIONS	.	.	.	.	.	.	.
Measuring Point	1003.83	1003	1087.1	999.46	1001.56	1000.12	935.95
Surface	1001.44	1000.53	1084.49	994.93	997.76	998	933.39
Weathered Rock	.	.	1064.49	985.93	971.26	962.2	911.39
Fresh Rock	982.44	.	1057.49	968.63	.	961.4	903.39
Top Monitored Interval	934.94	995.43	1023.49	979.73	988.26	929.9	886.39
Bottom Monitored Interval	921.44	982.63	1009.49	968.63	969.96	917.1	873.09
SURFACE/CONDUCTOR CASING	.	.	.	.	.	.	.
Casing Depth	25	.	36	.	.	46.4	30
Casing Diameter	10.75	.	10.75	.	.	10.75	11
Casing Material	.	.	.	.	.	unknown	unknown
WELL CASING BOREHOLE	.	.	.	.	.	.	.
Borehole Depth	80	17.9	75	26.3	27.8	80.9	60.3
Borehole Diameter	10	10	9.5	14.5	9.5	9.5	10.6
Weathered Rock - Depth	.	.	20	9	26.5	35.8	22
Fresh Rock - Depth	19	.	27	26.3	.	36.6	30
WELL CASING	.	.	.	.	.	.	.
Well Casing Depth	79	17.3	75	26.3	27.8	80.9	60.3
Well Casing Diameter	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Well Casing Material	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304
MONITORED INTERVAL	.	.	.	.	.	.	.
Aquifer Zone	BDR	WT	BDR	WT	WT	BDR	BDR
Geologic Formation	Cn	Cn	Cpv	Cn	Cmn	Cmn	Cmn
Screened or Open	Screen	Screen	Screen	Screen	Screen	Screen	Screen
Top - Depth	66.5	5.1	61	15.2	9.5	68.1	47
Bottom - Depth	80	17.9	75	26.3	27.8	80.9	60.3
Screen Material	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01
Screen Length	10.5	10.0	10.0	10.0	15.8	10.4	10.0
Open-Hole Length	.	.	.	.	.	.	.
Open-Hole Diameter	.	.	.	.	.	.	.

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APPENDIX C
Monitoring-Well Construction Details

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Well No.	GW-365	GW-370	GW-371	GW-372	GW-373	GW-526	GW-537
Location	OLF	BG	BG	BG	BG	S3	OLF
East Coordinate	46490	44989	45036	45257	45271	50708	49539.23
North Coordinate	29150	30241	30245	30673	30679	30033	30057.19
ELEVATIONS	.	.	.	.	.	.	.
Measuring Point	935.58	960.62	960.22	983.53	982.8	997.45	976.24
Surface	933.03	957.94	958.13	979.87	980.75	995.34	974.19
Weathered Rock	922.03	946.94	950.63	965.37	959.75	991.84	959.29
Fresh Rock	918.03	932.94	933.13	932.87	905.75	971.74	.
Top Monitored Interval	806.33	936.84	848.13	940.07	857.75	894.34	969.39
Bottom Monitored Interval	783.03	924.84	833.13	928.27	822.75	872.34	950.89
SURFACE/CONDUCTOR CASING	.	.	.	.	.	.	.
Casing Depth	18.5	.	36	.	34.5	23.6	.
Casing Diameter	11.75	.	10.75	.	10.75	10.75	.
Casing Material	unknown	.	unknown	.	unknown	unknown	.
WELL CASING BOREHOLE	.	.	.	.	.	.	.
Borehole Depth	126.7	33.1	110	51.6	123	101	24.5
Borehole Diameter	10.75	9.5	9.5	9.5	9.5	9.5	8.75
Weathered Rock - Depth	11	11	7.5	14.5	21	3.5	14.9
Fresh Rock - Depth	15	25	25	47	75	23.6	.
WELL CASING	.	.	.	.	.	.	.
Well Casing Depth	126.7	33.1	110	51.6	123	101	23.3
Well Casing Diameter	6.62	4.5	6.37	4.5	6.62	6.62	4.5
Well Casing Material	Steel/F25	SS/#304	Steel/F25	SS/#304	Steel/F25	Steel/F25	SS/#304
MONITORED INTERVAL	.	.	.	.	.	.	.
Aquifer Zone	BDR	WT	BDR	WT	BDR	BDR	WT
Geologic Formation	Cmn	Cm	Cm	Cm	Cm	Cn	Cn
Screened or Open	Open	Screen	Open	Screen	Open	Open	Screen
Top - Depth	126.7	21.1	110	39.8	123	101	4.8
Bottom - Depth	150	33.1	125	51.6	158	123	23.3
Screen Material	.	SS/sw/.01	.	SS/sw/.01	.	.	SS/sw/.01
Screen Length	.	10.0	.	10.0	.	.	15.0
Open-Hole Length	23.3	.	15	.	35	22	.
Open-Hole Diameter	6	.	6	.	6	6.1	.

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APPENDIX C
Monitoring-Well Construction Details

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Well No.	GW-601	GW-613	GW-614	GW-621	GW-626	GW-627	GW-636
Location	OLF	S3	S3	BG	BG	BG	OLF
East Coordinate	47629.49	50231.77	50223.05	45032.91	42772.01	42774.1	46412.64
North Coordinate	28902.55	30406.77	30425.77	29023.3	29535.32	29505.05	29482.3
ELEVATIONS	.	.	.	.	.	.	.
Measuring Point	1002.2	1013.37	1012.22	925.24	942.61	942.85	941.92
Surface	999.09	1010.17	1009.39	923.07	939.95	940.39	938.08
Weathered Rock	991.09	995.17	996.89	901.07	937.95	937.39	930.08
Fresh Rock	945.09	.	958.59	.	875.95	897.39	922.08
Top Monitored Interval	680.59	980.17	937.79	899.77	876.95	686.39	839.58
Bottom Monitored Interval	643.09	968.17	919.19	882.57	861.95	670.39	821.08
SURFACE/CONDUCTOR CASING	.	.	.	.	.	.	.
Casing Depth	41.4	16.8	44.4	24	62.5	47.5	23
Casing Diameter	11.75	10.75	10.75	10.75	11.75	11.75	11.75
Casing Material	Steel	Steel	Steel	Steel	Steel	Steel	Steel
WELL CASING BOREHOLE	.	.	.	.	.	.	.
Borehole Depth	319	42	90.2	43	78	254	99
Borehole Diameter	10.625	9.5	9.5	7.875	9.5	10.625	10.75
Weathered Rock - Depth	8	15	12.5	22	2	3	8
Fresh Rock - Depth	54	.	50.8	.	64	43	16
WELL CASING	.	.	.	.	.	.	.
Well Casing Depth	318.5	42	90.2	40.5	78	254	98.5
Well Casing Diameter	7	4.5	4.5	4.5	4.5	7	7
Well Casing Material	Steel	SS/#304	SS/#304	SS/#304	SS/#304	Steel	Steel
MONITORED INTERVAL	.	.	.	.	.	.	.
Aquifer Zone	BDR	WT	BDR	WT	WT	BDR	BDR
Geologic Formation	Cmn	Cn	Cn	Cmn	Cn	Cn	Cn
Screened or Open	Open	Screen	Screen	Screen	Screen	Open	Open
Top - Depth	318.5	30	71.6	23.3	63	254	98.5
Bottom - Depth	356	42	90.2	40.5	78	270	117
Screen Material	.	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	.	.
Screen Length	.	10.3	15.0	15.7	10.0	.	.
Open-Hole Length	37.5	.	.	.	.	16	18.5
Open-Hole Diameter	6.25	.	.	.	.	6.25	6.25

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APPENDIX C
Monitoring-Well Construction Details

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Well No.	GW-637	GW-638	GW-639	GW-640	GW-641	GW-642	GW-643
Location	OLF	OLF	BG	BG	BG	BG	BG
East Coordinate	46402.39	46388.51	45259.76	45252.92	45250.72	44654.05	45253.26
North Coordinate	29492.81	29485.32	29626.12	29670.1	29685.73	31215.27	30656.47
ELEVATIONS	.	.	.	.	.	.	.
Measuring Point	941.83	941.77	940.7	945.38	946.66	1014.67	982.42
Surface	938.26	938.14	937.98	942.59	944.01	1011.93	979.9
Weathered Rock	928.26	930.14	934.98	939.59	933.01	1010.93	979.4
Fresh Rock	.	.	917.98	917.59	.	991.93	.
Top Monitored Interval	923.76	935.64	842.48	907.59	933.01	993.43	963.4
Bottom Monitored Interval	910.76	926.64	812.48	895.19	919.71	975.03	951.4
SURFACE/CONDUCTOR CASING	.	.	.	.	.	.	.
Casing Depth	15	.	31	35.5	.	21.5	.
Casing Diameter	10.75	.	11	10.75	.	10.75	.
Casing Material	Steel	.	Steel	Steel	.	Steel	.
WELL CASING BOREHOLE	.	.	.	.	.	.	.
Borehole Depth	27.5	12	95.5	47.4	24.3	36.9	29.3
Borehole Diameter	10	10	10	9.5	9.5	9.5	14
Weathered Rock - Depth	10	8	3	3	11	1	0.5
Fresh Rock - Depth	.	.	20	25	.	20	.
WELL CASING	.	.	.	.	.	.	.
Well Casing Depth	27.5	11.5	95.5	47.4	24.3	36.9	28.5
Well Casing Diameter	4.5	4.5	7	4.5	4.5	4.5	4.5
Well Casing Material	SS/#304	SS/#304	Steel	SS/#304	SS/#304	SS/#304	SS/#304
MONITORED INTERVAL	.	.	.	.	.	.	.
Aquifer Zone	WT	WT	BDR	BDR	WT	WT	WT
Geologic Formation	Cn	Cn	Cn	Cn	Cn	Crg	Cm
Screened or Open	Screen	Screen	Open	Screen	Screen	Screen	Screen
Top - Depth	14.5	2.5	95.5	35	11	18.5	16.5
Bottom - Depth	27.5	11.5	125.5	47.4	24.3	36.9	28.5
Screen Material	SS/sw/.01	SS/sw/.01	.	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01
Screen Length	10.0	5.0	.	11.1	10.4	16.2	10.6
Open-Hole Length	.	.	30	.	.	.	.
Open-Hole Diameter	.	.	6.25	.	.	.	.

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APPENDIX C
Monitoring-Well Construction Details

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Well No.	GW-644	GW-647	GW-651	GW-652	GW-653	GW-654	GW-655
Location	OLF	OLF	BG	BG	BG	BG	BG
East Coordinate	46608.69	48770.23	42535.39	42452.49	42317.29	41907.28	42907.49
North Coordinate	29945.31	28940.89	29042.93	29029.46	29660.39	30548.76	31403.07
ELEVATIONS	.	.	.	.	.	.	.
Measuring Point	959.75	1033.27	903.12	900.83	931.6	940.79	1111.42
Surface	956.78	1030.14	900.05	897.98	928.85	938.26	1108.2
Weathered Rock	953.58	1020.14	892.55	888.48	925.35	934.26	1099.2
Fresh Rock	940.28	980.14	.	.	.	.	1061.2
Top Monitored Interval	946.48	952.14	860.25	884.58	902.55	934.06	1060.5
Bottom Monitored Interval	933.38	939.14	848.05	866.78	889.85	922.96	1043.2
SURFACE/CONDUCTOR CASING	.	.	.	.	.	.	.
Casing Depth	.	15.5	39	12.6	.	.	.
Casing Diameter	.	10.75	10.75	10.75	.	.	.
Casing Material	.	Steel	Steel	Steel	.	.	.
WELL CASING BOREHOLE	.	.	.	.	.	.	.
Borehole Depth	23.4	91	52	31.2	39	15.5	65
Borehole Diameter	9.5	9.5	9.5	9.5	9.5	9.5	9.5
Weathered Rock - Depth	3.2	10	7.5	9.5	3.5	4	9
Fresh Rock - Depth	16.5	50	.	.	.	.	47
WELL CASING	.	.	.	.	.	.	.
Well Casing Depth	23.4	91	52	31.2	39	15.3	65
Well Casing Diameter	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Well Casing Material	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304
MONITORED INTERVAL	.	.	.	.	.	.	.
Aquifer Zone	WT	BDR	WT	WT	WT	WT	BDR
Geologic Formation	Cn	Cmn	Cmn	Cmn	Cn	Cm	Cpv
Screened or Open	Screen	Screen	Screen	Screen	Screen	Screen	Screen
Top - Depth	10.3	78	39.8	13.4	26.3	4.2	47.7
Bottom - Depth	23.4	91	52	31.2	39	15.3	65
Screen Material	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01
Screen Length	10.3	10.0	10.0	16.2	10.0	10.0	15.9
Open-Hole Length	.	.	.	.	.	.	.
Open-Hole Diameter	.	.	.	.	.	.	.

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APPENDIX C
Monitoring-Well Construction Details

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Well No.	GW-683	GW-684	GW-685	GW-694	GW-695	GW-703	GW-704
Location	EXP	EXP	EXP	EXP	EXP	EXP	EXP
East Coordinate	41552.33	41353.53	41447.78	44893.28	44868.3	44930.51	44934.98
North Coordinate	28281.78	28524.52	28667.4	28844.77	28844.73	28806.34	28844.67
ELEVATIONS	.	.	.	.	.	.	.
Measuring Point	972.06	898.66	891.51	941.38	939.37	954.69	944.73
Surface	969.45	895.53	889.28	938.58	937.22	951.8	941.99
Weathered Rock	947.45	.	884.28	927.58	931.22	944.8	925.99
Fresh Rock	943.45	886.53	873.78	917.58	919.22	941.8	918.99
Top Monitored Interval	835.55	789.13	800.78	784.58	886.62	816.8	695.99
Bottom Monitored Interval	772.65	767.13	750.98	734.08	874.62	769.8	685.99
SURFACE/CONDUCTOR CASING	.	.	.	.	.	.	.
Casing Depth	82	87	.	25.8	22.5	.	21
Casing Diameter	11.75	11.75	.	11.75	11.75	.	11.75
Casing Material	Steel	Steel	.	Steel	Steel	.	Steel
WELL CASING BOREHOLE	.	.	.	.	.	.	.
Borehole Depth	197.5	129.6	88.5	154	62.6	135	246
Borehole Diameter	10.625	10.5	10.625	10.6	9.875	10.625	10.625
Weathered Rock - Depth	22	.	5	11	6	7	16
Fresh Rock - Depth	26	9	15.5	21	18	10	23
WELL CASING	.	.	.	.	.	.	.
Well Casing Depth	197.1	128.8	88.3	153	62.6	133.8	244.5
Well Casing Diameter	4.5	4.5	7	7	4.5	7	7
Well Casing Material	SS/#304	SS/#304	Steel/F25	Steel/F25	SS/#304	Steel/F25	Steel/F25
MONITORED INTERVAL	.	.	.	.	.	.	.
Aquifer Zone	BDR	BDR	BDR	BDR	BDR	BDR	BDR
Geologic Formation	Ock	Cmn	Cmn	Cmn	Ock	Cmn	Cmn
Screened or Open	Screen	Screen	Open	Open	Screen	Open	Open
Top - Depth	133.9	106.4	88.5	154	50.6	135	246
Bottom - Depth	196.8	128.4	138.3	204.5	62.6	182	256
Screen Material	SS/pp/.01	SS/pp/.01	.	.	SS/sw/.01	.	.
Screen Length	50.8	14.6	.	.	10.0	.	.
Open-Hole Length	.	.	49.8	50.5	.	47	10
Open-Hole Diameter	.	.	6.625	6.25	.	6.25	6.5

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APPENDIX C
Monitoring-Well Construction Details

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Well No.	GW-706	GW-710	GW-711	GW-712	GW-713	GW-714	GW-715
Location	EXP	EXP	EXP	EXP	EXP	EXP	EXP
East Coordinate	44943.63	36470.81	36535.38	36506.87	36434.4	36435.09	36453.11
North Coordinate	28946.41	27645.05	27872.8	28232.52	28235.95	28421.56	28424.58
ELEVATIONS	.	.	.	.	.	.	.
Measuring Point	928.67	911.26	905.2	877.09	880.63	875.08	874.72
Surface	925.78	908.03	901.96	873.61	877.83	872.3	872.17
Weathered Rock	908.78	.	886.96	861.61	851.03	845.3	838.17
Fresh Rock	898.78	904.53	881.46	807.61	814.03	837.3	.
Top Monitored Interval	768.78	368.33	285.96	432.11	572.83	757.2	840.17
Bottom Monitored Interval	743.28	163.53	235.76	416.11	562.63	727.3	828.17
SURFACE/CONDUCTOR CASING	.	.	.	.	.	.	.
Casing Depth	40.3	83.4	17	44.8	50	40.5	.
Casing Diameter	11.75	11.75	11.75	11.75	11.75	11.75	.
Casing Material	Steel	Steel	Steel	Steel	.	Steel	.
WELL CASING BOREHOLE	.	.	.	.	.	.	.
Borehole Depth	157	539.7	616	441.5	305	115.1	44.6
Borehole Diameter	10.6	10.6	10.6	10.6	10.6	10.6	10.6
Weathered Rock - Depth	17	.	15	12	26.8	27	34
Fresh Rock - Depth	27	3.5	20.5	66	63.8	35	.
WELL CASING	.	.	.	.	.	.	.
Well Casing Depth	156.1	539.7	616	451.5	305	113.8	33.1
Well Casing Diameter	7	7	7	7	7	7	4.25
Well Casing Material	Steel/F25	Steel	Steel	Steel	Steel/F25	Steel	SS/#304
MONITORED INTERVAL	.	.	.	.	.	.	.
Aquifer Zone	BDR	BDR	BDR	F2DR	BDR	BDR	WT
Geologic Formation	Cmn	OCk	Cmn	OCk	Cmn	Cmn	Cmn
Screened or Open	Open	Open	Open	Open	Open	Open	Screen
Top - Depth	157	539.7	616	441.5	305	115.1	32
Bottom - Depth	182.5	744.5	666.2	457.5	315.2	145	44
Screen Material	.	.	.	.	.	.	SS/sw/.01
Screen Length	.	.	.	.	.	.	9.9
Open-Hole Length	25.5	204.8	50.2	16	10.2	29.9	.
Open-Hole Diameter	6.25	6.25	6.25	6.25	6.25	6.25	.

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APPENDIX C
Monitoring-Well Construction Details

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Well No.	GW-723	GW-724	GW-725	GW-736	GW-737	GW-738	GW-739
Location	EXP	EXP	EXP	EXP	EXP	EXP	EXP
East Coordinate	49088.55	48995.17	48989.13	48936	48890	49026	49126
North Coordinate	29006.44	29198.24	29405.44	29381	29365	29150	29010
ELEVATIONS	.	.	.	.	.	.	.
Measuring Point	1022.23	979.27	961.05	960.12	959.91	983.08	1023.74
Surface	1019.31	976.62	958.26	957.55	957.5	980.36	1020.66
Weathered Rock	992.61	943.12	944.26	950.05	.	968.36	986.66
Fresh Rock	989.61	936.62	940.76	945.55	943.5	965.26	978.66
Top Monitored Interval	678.71	687.02	825.76	865.55	878.5	916.86	731.46
Bottom Monitored Interval	574.81	675.02	815.76	852.55	868	892.36	700.66
SURFACE/CONDUCTOR CASING	.	.	.	.	.	.	.
Casing Depth	39	40	21	21.5	22	16.5	60.3
Casing Diameter	11.75	11.75	11.75	11.75	11.75	11.75	11.75
Casing Material	Steel	Steel	Steel	.	.	.	.
WELL CASING BOREHOLE	.	.	.	.	.	.	.
Borehole Depth	340.6	289.6	132.5	102.5	89.5	90.1	289.2
Borehole Diameter	10.6	10.6	10.6	10.6	10.6	10.6	10.6
Weathered Rock - Depth	26.7	33.5	14	7.5	.	12	34
Fresh Rock - Depth	29.7	40	17.5	12	14	15.1	42
WELL CASING	.	.	.	.	.	.	.
Well Casing Depth	340.6	289.6	132.5	102.5	89.5	87.5	289.2
Well Casing Diameter	7	7	7	4.5	4.5	4.5	7
Well Casing Material	Steel	Steel	Steel	SS/#304	SS/#304	SS/#304	Steel
MONITORED INTERVAL	.	.	.	.	.	.	.
Hydrogeologic Zone	BDR	BDR	BDR	BDR	BDR	BDR	BDR
Geologic Formation	Cmn	Cmn	Cmn	Cmn	Cmn	Cmn	Cmn
Screened or Open	Open	Open	Open	Screen	Screen	Screen	Open
Top - Depth	340.6	289.6	132.5	92	79	63.5	289.2
Bottom - Depth	444.5	301.6	142.5	105	89.5	88	320
Screen Material	.	.	.	SS/sw/.01	SS/sw/.01	SS/sw/.01	.
Screen Length	.	.	.	10.1	10.1	20.2	.
Open-Hole Length	103.9	12	10	.	.	.	30.8
Open-Hole Diameter	6.25	6.25	6.25	.	.	.	6.25

(CONTINUED)

APPENDIX C
Monitoring-Well Construction Details

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Well No.	GW-740	GW-793	GW-794	GW-795	GW-800
Location	EXP	AGLLSF	AGLLSF	AGLLSF	OLF
East Coordinate	49055	46831.52	46392.92	45630.06	48260.3
North Coordinate	29027	30235.82	29273.17	29286.69	28981.6
ELEVATIONS	.	.	.	.	.
Measuring Point	1019.63	965.58	931.55	923.57	964.36
Surface	1016.95	965.05	930.91	922.92	961.4
Weathered Rock	978.85	954.05	927.41	917.92	.
Fresh Rock	971.85	951.05	917.61	910.92	.
Top Monitored Interval	851.35	948.15	905.11	915.42	942.1
Bottom Monitored Interval	826.95	936.05	891.61	902.82	929.9
SURFACE/CONDUCTOR CASING	.	.	.	.	.
Casing Depth	46.9	.	.	.	.
Casing Diameter	11.75	.	.	.	.
Casing Material	.	.	.	.	.
WELL CASING BOREHOLE	.	.	.	.	.
Borehole Depth	165.6	29	39.3	20.1	32
Borehole Diameter	10.6	9.9	9.9	9.9	10.63
Weathered Rock - Depth	38.1	11	3.5	5	.
Fresh Rock - Depth	45.1	14	13.3	12	.
WELL CASING	.	.	.	.	.
Well Casing Depth	165.6	18.4	28.7	9.8	29.9
Well Casing Diameter	7	4.5	4.5	4.5	4.5
Well Casing Material	Steel	SS/#304	SS/#304	SS/#304	SS/#304
MONITORED INTERVAL	.	.	.	.	.
Aquifer Zone	BDR	BDR	BDR	WT	BDR
Geologic Formation	Cmn	Cn	Cmn	Cmn	OCK
Screened or Open	Open	Screen	Screen	Screen	Screen
Top - Depth	165.6	16.9	25.8	7.5	19.3
Bottom - Depth	190	29	39.3	20.1	31.5
Screen Material	.	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01
Screen Length	.	9.9	10.0	9.9	10.0
Open-Hole Length	24.4	.	.	.	.
Open-Hole Diameter	6.25	.	.	.	.

APPENDIX D

SAMPLING SEQUENCE

EXPLANATION

SAMPLING POINT:

BCK	-	Bear Creek Kilometer
GW	-	Monitoring Well
NT	-	North Tributary to Bear Creek
SS	-	Spring

LOCATION:

AGLLSF	-	Above Grade Low Level Storage Facility
BG	-	Bear Creek Burial Grounds WMA
EXP	-	Exit-Pathway Monitoring
OLF	-	Oil Landfarm WMA
RS	-	Rust Spoil Area
S3	-	S-3 Site
SPI	-	Spoil Area I

APPENDIX D
Sampling Sequence

Sampling Point	Location	Date	Time
First Quarter 1993			
GW-115	S3	01/28/93	11:45
GW-324	S3	01/29/93	12:11
GW-325	S3	02/01/93	10:30
GW-347	S3	02/01/93	12:30
GW-348	S3	02/01/93	14:10
GW-323	SPI	02/02/93	10:30
GW-317	SPI	02/02/93	13:00
GW-316	SPI	02/02/93	15:00
GW-345	S3	02/03/93	10:00
GW-526	S3	02/03/93	13:30
GW-315	SPI	02/03/93	15:09
GW-043	OLF	02/04/93	10:00
GW-044	OLF	02/04/93	10:45
GW-084	OLF	02/04/93	11:31
GW-086	OLF	02/05/93	10:34
GW-655	BG	02/05/93	11:45
GW-311	RS	02/08/93	11:45
GW-642	BG	02/08/93	11:45
GW-312	RS	02/08/93	14:30
GW-647	OLF	02/08/93	14:35
GW-064	OLF	02/09/93	10:29
GW-372	BG	02/09/93	12:55
GW-740	EXP	02/09/93	15:09
GW-739	EXP	02/10/93	7:45
GW-724	EXP	02/10/93	9:45
GW-738	EXP	02/10/93	11:55
GW-736	EXP	02/11/93	10:26
GW-373	BG	02/11/93	11:00
GW-085	OLF	02/11/93	11:03
GW-737	EXP	02/11/93	12:40
GW-537	OLF	02/11/93	13:34
GW-723	EXP	02/12/93	13:37
GW-725	EXP	02/12/93	13:55
GW-643	BG	02/16/93	10:04
GW-371	BG	02/16/93	14:30
GW-370	BG	02/17/93	11:50
GW-641	BG	02/22/93	12:45
GW-640	BG	02/22/93	13:50
GW-063	OLF	02/23/93	11:00
GW-654	BG	02/24/93	11:15
GW-287	BG	02/24/93	13:00
GW-639	BG	02/24/93	13:26
GW-286	BG	02/25/93	10:45
GW-793	AGLLSF	02/26/93	10:32
GW-652	BG	03/01/93	10:39

APPENDIX D
Sampling Sequence

Sampling Point	Location	Date	Time
GW-651	BG	03/01/93	12:30
GW-794	AGLLSF	03/01/93	13:00
GW-653	BG	03/01/93	13:28
GW-795	AGLLSF	03/02/93	10:21
GW-685	EXP	03/02/93	14:15
GW-684	EXP	03/03/93	12:25
GW-069	BG	03/03/93	14:16
GW-056	BG	03/04/93	9:56
GW-118	BG	03/04/93	11:30
GW-057	EXP	03/04/93	11:56
GW-683	EXP	03/04/93	15:01
BCK-00.63	EXP	03/09/93	7:55
BCK-04.55	EXP	03/09/93	8:12
SS-8	EXP	03/09/93	8:22
NT-13	EXP	03/09/93	8:55
SS-6	EXP	03/09/93	9:02
BCK-09.40	EXP	03/09/93	9:24
SS-5	EXP	03/09/93	9:30
SS-4	EXP	03/09/93	9:50
NT-01	EXP	03/09/93	10:04
SS-1	EXP	03/09/93	10:26
GW-627	BG	03/09/93	13:10
GW-626	BG	03/10/93	10:14
GW-082	BG	03/10/93	14:25
GW-712	EXP	03/18/93	7:02
GW-713	EXP	03/19/93	13:59
GW-621	BG	03/20/93	8:42
GW-711	EXP	03/20/93	9:04
GW-703	EXP	03/20/93	13:20
GW-714	EXP	03/21/93	8:00
GW-715	EXP	03/21/93	8:59
GW-710	EXP	03/21/93	14:50
GW-704	EXP	03/22/93	10:42
GW-694	EXP	03/23/93	13:41
GW-706	EXP	03/23/93	13:45
GW-695	EXP	03/24/93	13:30
GW-644	OLF	03/25/93	10:02
GW-0.2	BG	03/25/93	10:15
GW-637	OLF	03/25/93	11:05
GW-638	OLF	03/25/93	13:09
GW-040	BG	03/25/93	14:00
GW-636	OLF	03/26/93	15:12
GW-364	OLF	03/27/93	10:30
GW-365	OLF	03/28/93	10:03
GW-601	OLF	03/28/93	13:30
GW-013	OLF	03/29/93	11:15

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APPENDIX D
Sampling Sequence

Sampling Point	Location	Date	Time
Second Quarter 1993			
GW-654	BG	04/16/93	11:15
GW-287	BG	04/16/93	12:45
GW-286	BG	04/19/93	11:15
GW-652	BG	04/19/93	12:10
GW-651	BG	04/19/93	14:00
GW-653	BG	04/20/93	12:13
GW-069	BG	04/21/93	11:31
GW-118	BG	04/21/93	12:15
GW-685	EXP	04/21/93	12:30
GW-082	BG	04/21/93	13:44
GW-684	EXP	04/22/93	10:57
GW-056	BG	04/22/93	12:34
GW-057	EXP	04/22/93	13:02
GW-683	EXP	04/23/93	12:16
GW-627	BG	04/23/93	13:40
GW-626	BG	04/26/93	10:48
GW-052	BG	04/26/93	13:40
GW-712	EXP	04/28/93	13:10
GW-711	EXP	04/29/93	9:52
GW-714	EXP	04/29/93	16:20
GW-715	EXP	04/29/93	17:16
GW-713	EXP	04/30/93	11:00
GW-710	EXP	04/30/93	13:35
BCK-00.63	EXP	05/03/93	8:25
BCK-04.55	EXP	05/03/93	8:40
SS-8	EXP	05/03/93	8:45
NT-13	EXP	05/03/93	9:08
SS-6	EXP	05/03/93	9:20
BCK-09.40	EXP	05/03/93	9:35
SS-5	EXP	05/03/93	9:43
SS-4	EXP	05/03/93	10:20
NT-01	EXP	05/03/93	10:32
SS-1	EXP	05/03/93	10:55
GW-043	OLF	05/10/93	11:45
GW-655	BG	05/10/93	12:00
GW-044	OLF	05/10/93	12:09
GW-084	OLF	05/10/93	12:40
GW-086	OLF	05/11/93	9:30
GW-040	BG	05/11/93	10:00
GW-311	RS	05/11/93	10:45
GW-312	RS	05/11/93	12:15
GW-642	BG	05/11/93	13:20
GW-800	OLF	05/11/93	13:45
GW-085	OLF	05/12/93	12:45

APPENDIX D
Sampling Sequence

Sampling Point	Location	Date	Time
GW-064	OLF	05/12/93	13:52
GW-537	OLF	05/12/93	14:36
GW-373	BG	05/14/93	10:03
GW-647	OLF	05/17/93	11:15
GW-740	EXP	05/17/93	18:15
GW-723	EXP	05/18/93	9:45
GW-724	EXP	05/18/93	9:48
GW-739	EXP	05/18/93	10:00
GW-738	EXP	05/18/93	11:50
GW-736	EXP	05/18/93	14:45
GW-737	EXP	05/19/93	10:38
GW-372	BG	05/19/93	12:40
GW-643	BG	05/19/93	13:20
GW-725	EXP	05/19/93	14:00
GW-371	BG	05/21/93	12:40
GW-370	BG	05/21/93	13:45
GW-641	BG	05/24/93	10:20
GW-640	BG	05/24/93	11:17
GW-639	BG	05/24/93	16:30
GW-793	AGLLSF	05/25/93	9:16
GW-115	S3	05/25/93	9:22
GW-794	AGLLSF	05/25/93	11:00
GW-324	S3	05/25/93	11:30
GW-795	AGLLSF	05/25/93	12:56
GW-325	S3	05/25/93	13:00
GW-347	S3	05/27/93	9:42
GW-348	S3	05/27/93	13:17
GW-323	SPI	05/28/93	10:45
GW-317	SPI	05/28/93	13:40
GW-316	SPI	06/01/93	11:05
GW-345	S3	06/01/93	14:00
GW-621	BG	06/02/93	9:50
GW-526	S3	06/03/93	9:10
GW-703	EXP	06/03/93	10:30
GW-315	SPI	06/03/93	10:46
GW-704	EXP	06/04/93	14:00
GW-694	EXP	06/06/93	14:12
GW-695	EXP	06/09/93	11:27
GW-706	EXP	06/11/93	13:32
GW-013	OLF	06/17/93	11:20
GW-644	OLF	06/25/93	9:38
GW-637	OLF	06/26/93	9:50
GW-638	OLF	06/26/93	11:20
GW-636	OLF	06/27/93	10:20
GW-364	OLF	06/27/93	12:20
GW-601	OLF	06/27/93	14:15
GW-365	OLF	06/27/93	14:25

APPENDIX D
Sampling Sequence

Sampling Point	Location	Date	Time
Third Quarter 1993			
GW-655	BG	07/01/93	10:40
GW-654	BG	07/01/93	11:40
GW-642	BG	07/01/93	13:30
GW-373	BG	07/02/93	9:30
GW-040	BG	07/02/93	10:45
GW-372	BG	07/02/93	12:45
GW-643	BG	07/08/93	9:03
GW-056	BG	07/09/93	11:40
GW-057	EXP	07/09/93	12:30
GW-371	BG	07/09/93	13:00
GW-287	BG	07/10/93	9:20
GW-370	BG	07/10/93	9:45
GW-286	BG	07/10/93	11:00
GW-641	BG	07/10/93	11:15
GW-652	BG	07/10/93	11:47
GW-640	BG	07/10/93	12:20
GW-651	BG	07/10/93	13:30
GW-653	BG	07/10/93	14:14
GW-639	BG	07/11/93	11:30
GW-685	EXP	07/11/93	12:45
GW-793	AGLLSF	07/11/93	13:00
GW-794	AGLLSF	07/11/93	14:30
GW-684	EXP	07/11/93	15:15
GW-795	AGLLSF	07/12/93	11:20
GW-683	EXP	07/12/93	14:40
GW-069	BG	07/25/93	10:44
GW-118	BG	07/25/93	12:00
GW-082	BG	07/25/93	12:31
GW-627	BG	07/28/93	12:34
GW-712	EXP	07/29/93	11:04
GW-711	EXP	07/30/93	11:09
GW-713	EXP	07/31/93	12:17
GW-714	EXP	08/01/93	12:30
GW-710	EXP	08/01/93	13:15
GW-715	EXP	08/01/93	14:06
GW-626	BG	08/02/93	11:11
BCK-00.63	EXP	08/16/93	8:00
BCK-09.40	EXP	08/16/93	8:00
BCK-04.55	EXP	08/16/93	8:40
SS-8	EXP	08/16/93	8:50
NT-13	EXP	08/16/93	9:20
SS-6	EXP	08/16/93	9:40
SS-5	EXP	08/16/93	10:06
SS-4	EXP	08/16/93	10:35

APPENDIX D
Sampling Sequence

Sampling Point	Location	Date	Time
SS-1	EXP	08/16/93	11:05
NT-01	EXP	08/16/93	11:22
GW-115	S3	09/11/93	9:07
GW-043	OLF	09/11/93	10:30
GW-324	S3	09/11/93	11:10
GW-044	OLF	09/11/93	12:00
GW-084	OLF	09/11/93	13:00
GW-325	S3	09/11/93	13:35
GW-064	OLF	09/11/93	14:45
GW-347	S3	09/12/93	9:23
GW-086	OLF	09/12/93	11:00
GW-348	S3	09/12/93	11:20
GW-311	RS	09/12/93	12:30
GW-312	RS	09/12/93	14:00
GW-323	SPI	09/12/93	14:25
GW-317	SPI	09/13/93	12:00
GW-316	SPI	09/13/93	13:45
GW-800	OLF	09/14/93	9:15
GW-345	S3	09/14/93	9:58
GW-085	OLF	09/14/93	10:30
GW-537	OLF	09/14/93	11:20
GW-526	S3	09/14/93	14:02
GW-315	SPI	09/14/93	15:43
GW-013	OLF	09/17/93	10:30
GW-644	OLF	09/17/93	11:18
GW-637	OLF	09/17/93	12:55
GW-638	OLF	09/17/93	14:05
GW-636	OLF	09/18/93	13:10
GW-364	OLF	09/19/93	9:30
GW-601	OLF	09/19/93	13:00
GW-365	OLF	09/19/93	15:45
GW-621	BG	09/20/93	11:10
GW-703	EXP	09/20/93	16:00
GW-704	EXP	09/22/93	13:23
GW-694	EXP	09/22/93	13:30
GW-695	EXP	09/22/93	15:30
GW-706	EXP	09/23/93	17:00
GW-647	OLF	09/25/93	10:20
GW-739	EXP	09/27/93	13:20
GW-740	EXP	09/27/93	14:55
GW-738	EXP	09/27/93	16:48
GW-723	EXP	09/27/93	17:30
GW-736	EXP	09/28/93	11:13
GW-725	EXP	09/28/93	13:15
GW-737	EXP	09/28/93	13:27
GW-724	EXP	09/29/93	14:15

APPENDIX D
Sampling Sequence

Sampling Point	Location	Date	Time
Fourth Quarter 1993			
GW-655	BG	10/06/93	13:00
GW-654	BG	10/07/93	10:35
GW-342	BG	10/07/93	11:50
GW-287	BG	10/07/93	11:55
GW-286	BG	10/07/93	13:15
GW-056	BG	10/09/93	11:00
GW-057	EXP	10/09/93	11:29
GW-040	BG	10/09/93	11:50
GW-651	BG	10/10/93	10:30
GW-162	BG	10/10/93	11:05
GW-069	BG	10/10/93	11:10
GW-653	BG	10/10/93	11:20
GW-642	BG	10/10/93	12:00
GW-118	BG	10/10/93	12:15
GW-080	BG	10/10/93	13:45
GW-373	BG	10/11/93	13:53
GW-685	EXP	10/11/93	16:10
GW-372	BG	10/12/93	10:30
GW-684	EXP	10/12/93	11:32
GW-643	BG	10/12/93	11:45
GW-683	EXP	10/12/93	16:02
GW-371	BG	10/13/93	14:00
GW-370	BG	10/14/93	11:30
GW-641	BG	10/14/93	13:00
GW-640	BG	10/14/93	13:59
GW-639	BG	10/15/93	13:00
GW-793	AGLLSF	10/18/93	12:09
GW-079	BG	10/18/93	13:15
GW-794	AGLLSF	10/18/93	13:30
GW-082	BG	10/18/93	13:50
GW-652	BG	10/18/93	13:51
GW-795	AGLLSF	10/18/93	14:05
GW-044	OLF	10/19/93	12:30
GW-115	S3	10/19/93	12:39
GW-043	OLF	10/19/93	13:30
GW-324	S3	10/19/93	14:41
GW-084	OLF	10/20/93	10:00
GW-613	S3	10/20/93	10:04
GW-064	OLF	10/20/93	11:10
GW-614	S3	10/20/93	12:17
GW-627	BG	10/20/93	12:54
GW-626	BG	10/20/93	14:23
GW-086	OLF	10/21/93	9:36
GW-311	RS	10/21/93	11:30

APPENDIX D
Sampling Sequence

Sampling Point	Location	Date	Time
GW-325	S3	10/21/93	13:30
GW-312	RS	10/21/93	13:45
GW-800	OLF	10/22/93	9:15
GW-347	S3	10/22/93	10:20
GW-085	OLF	10/22/93	10:40
GW-348	S3	10/22/93	11:43
GW-537	OLF	10/22/93	11:55
GW-323	SPI	10/23/93	9:50
GW-317	SPI	10/24/93	10:35
GW-316	SPI	10/24/93	12:20
GW-345	S3	10/26/93	9:45
GW-526	S3	10/26/93	13:35
GW-315	SPI	10/27/93	9:58
GW-712	EXP	11/06/93	12:52
GW-711	EXP	11/07/93	12:41
BCK-00.63	EXP	11/08/93	9:05
BCK-04.55	EXP	11/08/93	9:15
SS-8	EXP	11/08/93	9:27
NT-13	EXP	11/08/93	10:10
SS-6	EXP	11/08/93	10:25
BCK-09.40	EXP	11/08/93	10:33
SS-5	EXP	11/08/93	10:41
SS-4	EXP	11/08/93	10:50
SS-1	EXP	11/08/93	11:37
NT-01	EXP	11/08/93	12:00
GW-713	EXP	11/09/93	13:30
GW-714	EXP	11/09/93	13:40
GW-710	EXP	11/09/93	14:00
GW-715	EXP	11/11/93	10:30
GW-647	OLF	12/10/93	11:00
GW-740	EXP	12/11/93	14:17
GW-739	EXP	12/13/93	14:12
GW-723	EXP	12/14/93	8:15
GW-738	EXP	12/14/93	11:00
GW-724	EXP	12/14/93	13:00
GW-725	EXP	12/15/93	12:36
GW-736	EXP	12/15/93	15:22
GW-737	EXP	12/15/93	17:37
GW-644	OLF	12/18/93	8:49
GW-637	OLF	12/18/93	9:30
GW-638	OLF	12/18/93	10:30
GW-364	OLF	12/18/93	12:30
GW-636	OLF	12/18/93	15:14
GW-013	OLF	12/19/93	9:50
GW-365	OLF	12/19/93	11:55
GW-621	BG	12/20/93	11:18
GW-703	EXP	12/21/93	9:55

APPENDIX D
Sampling Sequence

Sampling Point	Location	Date	Time
GW-695	EXP	12/21/93	12:05
GW-704	EXP	12/22/93	14:30
GW-694	EXP	12/28/93	14:00
GW-706	EXP	12/28/93	15:30
GW-042	BG	12/29/93	10:50
GW-601	OLF	12/21/94	15:25

APPENDIX E

GROUNDWATER AND SURFACE-WATER QUALITY DATA

EXPLANATION

SAMPLING POINT:

BCK - Bear Creek Kilometer
GW - Monitoring Well
NT - North Tributary to Bear Creek
SS - Spring

LOCATION:

AGLLSF - Above Grade Low Level Storage Facility
BG - Bear Creek Burial Grounds WMA
EXP - Exit-Pathway Monitoring
OLF - Oil Landfarm WMA
RS - Rust Spoil Area
S3 - S-3 Site
SPI - Spoil Area I

ALL DATA:

- Not Analyzed

VOLATILE ORGANIC COMPOUNDS:

All results in micrograms per Liter (ug/L).

U - Compound not detected at the reported minimum attainable detection limit.

METALS, MAJOR IONS, MISCELLANEOUS, AND RADIOCHEMICAL PARAMETERS:

All analyses are by Inductively Coupled Plasma (ICP) Spectroscopy
unless otherwise noted.

Bicarbonate and carbonate alkalinity reported as CaCO_3 .

< - Compound analyzed but not detected at the reported
minimum attainable detection limit
mg/L - milligrams per Liter
AAS - Atomic Absorption Spectroscopy
CVAA - Cold Vapor Atomic Absorption
DIS - Dissolved Concentration (Filtered Sample)
TOT - Total Concentration (Unfiltered Sample)

EXPLANATION (cont'd)

Fluor	-	Fluorometric
TDS	-	Total Dissolved Solids
TSS	-	Total Suspended Solids
Sp. Cond.	-	Specific Conductance
ppm	-	parts per million
umho/cm	-	micromhos per centimeter
NTU	-	Nephelometric Turbidity Unit
mV	-	millivolts
pCi/L	-	picoCuries per liter
Bq/L	-	Becquerels per liter
CE +/-	-	Counting Error (two standard deviations)

APPENDIX E.1
TRACE METALS AND MAJOR IONS

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

1

Sampling Point . Location . Date Sampled	GW-013							
	OLF							
	03/29/93		06/17/93		09/17/93		12/19/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	<0.02	0.022	0.033	0.041	0.066	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.48	0.46	0.45	0.46	0.56	0.57	0.51	0.5
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.014	0.018	0.012	0.013	0.027	0.037	0.014	0.023
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.0057	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	2.3	1.1	1.4	1.2	1.5	1.4	1.1	0.55
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	0.058	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.19	0.19	0.18	0.2	0.23	0.23	0.2	0.2
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	<0.002	0.0036	0.0025	0.0038	0.0074	0.0096	0.0048	0.003
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	299	.	292	.	284	.	310	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	92	91	95	96	110	110	100	100
Chloride	4.3	.	4.4	.	4	.	5	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	12	11	12	12	13	13	12	12
Manganese	1.1	1	1.1	1.1	1.3	1.3	1.2	1.1
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	1.6	1.8	1.5	1.2	1.6	1.7	1.6	1.7
Sodium	3.7	3.7	3.4	3.6	4.4	4.5	3.9	4.1
Sulfate	4	.	5.9	.	4	.	3	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

2

Sampling Point . Location . Date Sampled	GW-040							
	BG							
	03/25/93		05/11/93		07/02/93		10/09/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Aluminum	23	0.027	15	0.054	11	0.025	13	0.27
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	0.057	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.35	0.036	0.19	0.035	0.17	0.039	0.2	0.034
Beryllium	0.0018	<0.0003	0.00068	<0.0003	0.00047	<0.0003	0.00048	<0.0003
Boron	0.033	0.022	0.05	0.03	0.035	0.017	0.037	0.021
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.031	0.0041
Cadmium	<0.003	<0.003	<0.003	<0.003	0.0038	<0.003	0.033	0.0044
Chromium (AAS)	0.22	<0.01	0.025	<0.01	0.05	<0.01	0.12	<0.01
Chromium	0.049	<0.01	0.034	0.012	0.067	<0.01	0.075	<0.01
Cobalt	0.018	<0.005	0.01	0.0062	0.011	<0.005	0.015	0.0065
Copper	0.014	<0.004	0.013	0.0043	0.017	<0.004	0.054	<0.004
Iron	33	0.15	16	0.14	19	0.14	22	0.54
Lead (AAS)	0.04	<0.004	0.011	<0.004	0.028	<0.004	0.039	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	0.00027	0.00026	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.053	0.019	0.045	0.023	0.051	<0.01	0.046	0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.039	0.017	0.029	0.016	0.026	0.015	0.028	0.018
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	0.001	<0.001	<0.001	0.001	0.001	<0.001	<0.001
Vanadium	0.035	<0.005	0.018	<0.005	0.019	<0.005	0.026	<0.005
Zinc	0.075	0.0069	0.037	0.0079	0.057	0.014	0.062	0.0097
	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Alkalinity-HCO3	38	.	37	.	41	.	38	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	7.6	6.6	6.6	5.9	7.6	5.6	8.6	7.6
Chloride	2.7	.	2.2	.	1.9	.	2	.
Fluoride	0.4	.	0.3	.	0.3	.	0.3	.
Magnesium	11	6.1	8.7	6.2	9.3	6.7	9.9	7.2
Manganese	1.4	1	1.2	1.1	1.3	1.1	1.4	1.3
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	8.6	1.6	6.9	1.7	5.6	2.1	6.7	1.8
Sodium	10	11	11	11	12	12	12	12
Sulfate	30	.	30	.	31	.	29	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

3

Sampling Point . Location . Date Sampled	GW-042		GW-043					
	BG		OLF					
	12/29/93		02/04/93		05/10/93		09/11/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	0.33	<0.02	0.46	<0.02	3.5	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.11	0.088	0.022	0.019	0.015	0.013	0.026	0.014
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.033	0.042	0.024	0.018	0.03	0.031	0.011	0.012
Cadmium (AAS)	0.066	0.077	<0.002	0.0021	<0.002	<0.002	0.0078	0.0069
Cadmium	0.062	0.082	<0.003	<0.003	<0.003	<0.003	0.0089	0.0066
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.011	0.037	0.1	<0.004	<0.004	<0.004	0.0061	0.004
Iron	0.93	0.54	0.26	<0.005	0.73	<0.005	2.6	0.0089
Lead (AAS)	0.0047	<0.004	0.01	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	0.023	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.0074	<0.006
Strontium	0.014	0.011	0.041	0.039	0.025	0.027	0.028	0.026
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.043	0.08	0.057	0.014	0.011	0.0065	0.015	0.009
	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Alkalinity-HCO3	25	.	75	.	52	.	62	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	3.2	2.5	22	21	14	14	15	15
Chloride	1.5	.	1.1	.	1.6	.	1.1	.
Fluoride	0.1	.	0.1	.	<0.1	.	<0.1	.
Magnesium	4	2.8	3.9	3.7	2.4	2.4	3.5	2.9
Manganese	0.25	0.17	0.0045	0.002	0.0086	0.0014	0.033	0.0023
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	0.83	<0.6	0.85	0.77	0.6	0.68	1.1	0.7
Sodium	3	2.2	6.6	6.6	6.5	7.2	6.8	6.7
Sulfate	4.8	.	11	.	7.8	.	12.3	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

4

Sampling Point . Location . Date Sampled	GW-043		GW-044					
	OLF		OLF					
	10/19/93		02/04/93		05/10/93		09/11/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Aluminum	1.4	<0.02	0.047	0.047	0.041	<0.02	0.027	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.023	0.018	0.24	0.22	0.23	0.23	0.23	0.23
Beryllium	0.00042	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.02	0.016	0.009	0.017	0.017	0.028	0.012	0.0083
Cadmium (AAS)	0.002	0.0064	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	0.0041	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.012	<0.004	<0.004	<0.004	<0.004	<0.004	0.0059	0.0046
Iron	1	0.011	0.061	<0.005	0.027	0.01	0.024	<0.005
Lead (AAS)	<0.004	<0.004	0.015	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.036	0.035	0.088	0.082	0.074	0.074	0.076	0.076
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.015	0.0094	0.0072	0.014	0.0041	0.011	0.009	0.013
	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	62	.	143	.	128	.	135	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	18	18	51	48	45	45	50	49
Chloride	1	.	1.1	.	1.2	.	1	.
Fluoride	<0.1	.	0.1	.	<0.1	.	0.1	.
Magnesium	3.6	3.3	3.4	3.2	2.9	2.9	3.2	3.2
Manganese	0.021	<0.001	0.049	0.002	0.016	0.0027	0.015	0.0018
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	1.1	0.7	0.71	0.74	<0.6	0.6	<0.6	<0.6
Sodium	7	7.1	4.9	4.6	4.7	4.8	4.7	4.7
Sulfate	9	.	9.1	.	8.5	.	6.7	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

5

Sampling Point	GW-044		GW-052				GW-056	
Location	OLF		BG				BG	
Date Sampled	10/19/93		03/25/93		04/26/93		03/04/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	0.27	<0.02	3.5	0.022	0.16	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.23	0.23	0.063	0.056	0.089	0.057	0.21	0.16
Beryllium	<0.0003	<0.0003	0.0005	0.00075	<0.0003	<0.0003	0.00049	<0.0003
Boron	0.0078	0.0099	0.034	0.027	0.045	0.039	0.059	0.032
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	0.033	0.0022	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	0.026	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	0.018	<0.01	0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	0.018	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	0.0045	<0.004	<0.004	0.0066	<0.004	<0.004	<0.004
Iron	0.005	<0.005	0.44	<0.005	3.4	0.018	1.2	0.029
Lead (AAS)	<0.004	<0.004	0.0079	<0.004	0.026	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.00022	<0.00022
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	0.011	0.012	<0.01	0.019	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.077	0.078	0.11	0.1	0.12	0.11	0.2	0.16
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	0.042	0.043	0.064	0.046	0.004	0.004
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.017	0.0071	0.0066	0.0076	0.044	0.0069	0.013	0.0049
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	141	.	105	.	115	.	217	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	49	49	49	47	53	47	120	92
Chloride	1	.	18	.	18.5	.	229	.
Fluoride	<0.1	.	0.3	.	0.4	.	<0.1	.
Magnesium	3.3	2.9	7	6.9	8.2	7.7	25	21
Manganese	0.0034	<0.001	0.012	<0.001	0.084	0.0019	0.43	0.29
Nitrate-N	<0.2	.	6.3	.	12.06	.	<0.2	.
Potassium	0.67	0.64	1.5	1.5	2.5	1.7	2.7	3.1
Sodium	4.7	4.6	9.9	9.9	9.5	9.3	140	99
Sulfate	8	.	20	.	18.7	.	26	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

6

Sampling Point . Location . Date Sampled	GW-056						GW-057	
	BG						EXP	
	04/22/93		07/09/93		10/09/93		03/04/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.12	0.032	0.17	<0.02	0.17	0.024	0.099	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.16	0.16	0.16	0.16	0.16	0.15	0.13	0.12
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.032	0.043	0.017	0.03	0.038	0.038	0.075	0.028
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	0.0035	<0.003	<0.003	<0.003
Chromium (AAS)	0.23	<0.01	0.016	<0.01	0.092	<0.01	0.028	<0.01
Chromium	0.12	<0.01	0.011	<0.01	0.089	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	0.005	<0.004	<0.004	<0.004	<0.004
Iron	1.6	0.12	1.4	1	1.5	0.8	0.14	<0.005
Lead (AAS)	0.0063	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	0.00021	0.00024	<0.0002	<0.0002	<0.00022	<0.00022
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.22	0.2	0.031	0.026	0.049	0.031	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.16	0.16	0.18	0.17	0.18	0.16	0.16	0.16
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.003	0.004	0.005	0.005	0.007	0.005	0.002	0.002
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.014	0.008	0.01	0.019	0.011	0.008	0.043	0.024
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	220	.	275	.	314	.	208	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	97	97	110	110	110	110	89	88
Chloride	301	.	187	.	108	.	341	.
Fluoride	<0.1	.	0.1	.	<0.1	.	<0.1	.
Magnesium	19	20	23	22	22	21	17	17
Manganese	0.13	0.057	0.48	0.44	0.6	0.51	0.051	0.04
Nitrate-N	0.3	.	<0.2	.	<0.2	.	0.28	.
Potassium	1.9	1.8	2.2	1.9	2.1	1.9	1.9	1.7
Sodium	130	140	75	73	55	52	130	120
Sulfate	26	.	26	.	36	.	24	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

7

Sampling Point . Location . Date Sampled	GW-057						GW-063	
	EXP						OLF	
	04/22/93		07/09/93		10/09/93		02/23/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	0.048	0.071	0.024	0.034	0.024	0.19	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.1	0.099	0.12	0.11	0.12	0.12	0.079	0.074
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.024	0.027	0.014	0.0098	0.032	0.034	0.02	0.0075
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	0.0043	<0.003	<0.003
Chromium (AAS)	0.031	<0.01	0.019	<0.01	0.016	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	0.017	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.0062	<0.004
Iron	0.086	0.013	0.22	0.11	0.066	0.012	0.31	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.005	<0.004
Mercury (CVAA)	<0.0002	<0.0002	0.00022	0.00024	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.16	0.15	0.19	0.19	0.21	0.21	0.066	0.077
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.013	0.014	0.015	0.011	0.015	0.017	0.0095	0.0027
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	218	.	266	.	302	.	218	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	89	88	110	110	120	120	61	60
Chloride	130	.	185	.	133	.	4.6	.
Fluoride	0.1	.	0.1	.	<0.1	.	0.1	.
Magnesium	16	16	24	24	22	22	19	18
Manganese	0.049	0.041	0.33	0.32	0.24	0.23	0.013	<0.001
Nitrate-N	0.27	.	<0.2	.	0.3	.	1.8	.
Potassium	1.5	1.4	1.8	2.3	1.9	1.9	1.5	1.9
Sodium	61	60	77	76	73	72	3	3.1
Sulfate	26	.	29	.	42	.	9.1	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

8

Sampling Point . Location . Date Sampled	GW-064							
	OLF							
	02/09/93		05/12/93		09/11/93		10/20/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.56	0.16	0.45	0.032	0.23	<0.02	0.88	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.05	0.046	0.05	0.049	0.047	0.045	0.053	0.049
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.029	0.036	0.027	0.028	0.036	0.012	0.033	0.038
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	0.004	0.0053	0.0068	<0.004
Iron	0.48	<0.005	0.41	<0.005	0.2	<0.005	0.69	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	0.074	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.11	0.11	0.11	0.12	0.11	0.1	0.12	0.12
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	0.001	<0.001	0.001	0.001	0.001	0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0055	0.0039	0.009	0.0052	0.019	0.012	0.011	0.005
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	286	.	285	.	171	.	293	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	110	100	110	110	120	110	120	120
Chloride	11	.	12	.	11.3	.	15	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	16	16	17	17	17	16	16	16
Manganese	0.021	0.0026	0.015	0.0014	0.0067	0.0021	0.024	<0.001
Nitrate-N	8.3	.	4.7	.	7.67	.	9	.
Potassium	2.1	1.9	1.7	2	2.1	5	2.3	1.8
Sodium	4.8	4.7	4.5	4.6	4.8	4.8	5.1	5.1
Sulfate	25	.	17	.	23.2	.	25	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

9

Sampling Point . Location . Date Sampled	GW-069							
	BG							
	03/03/93		04/21/93		07/25/93		10/10/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	0.078	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.35	0.35	0.36	0.36	0.41	0.41	0.44	0.41
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.11	0.1	0.1	0.089	0.11	0.092	0.11	0.1
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	0.0065	<0.004	0.0074	<0.004	<0.004	<0.004
Iron	0.011	0.025	0.014	<0.005	0.047	0.012	0.02	0.013
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.94	0.92	0.83	0.83	0.91	0.9	0.99	0.93
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0048	0.0086	0.0081	0.0034	0.0093	0.0047	0.0055	0.0049
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	111	.	111	.	131	.	132	.
Alkalinity-CO3	20	.	10	.	6	.	8	.
Calcium	6.6	7.5	8.7	8.6	11	11	15	12
Chloride	39	.	36	.	39	.	48.8	.
Fluoride	0.1	.	0.1	.	<0.1	.	0.1	.
Magnesium	5.6	5.6	5.2	5.3	6.1	6	6.5	6.2
Manganese	<0.001	0.048	0.0017	0.0026	0.0039	0.0049	0.006	0.0045
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	0.26	.
Potassium	4.3	4.2	4.7	4.8	4.6	4.8	4.2	4.4
Sodium	61	59	58	57	63	63	65	64
Sulfate	1.9	.	7.8	.	3.9	.	2.3	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

10

Sampling Point . Location . Date Sampled	GW-079		GW-080		GW-082			
	BG		BG		BG			
	10/18/93		10/10/93		03/10/93		04/21/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.036	<0.02	3.5	<0.02	0.74	<0.02	0.11	0.022
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.17	0.15	0.059	0.023	0.4	0.37	0.35	0.35
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	0.0005	0.00038	<0.0003	<0.0003
Boron	<0.004	0.0067	0.018	0.021	0.011	0.017	0.0083	0.0088
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	0.0053	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	0.01	0.0075	<0.004	<0.004	<0.004	<0.004
Iron	0.073	<0.005	3.5	0.24	0.7	0.0065	0.082	0.009
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	0.027	0.017	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.13	0.14	0.018	0.016	0.13	0.13	0.1	0.1
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	0.0056	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0099	0.0062	0.016	0.017	0.0054	0.0065	0.0065	0.0052
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	103	.	43	.	181	.	160	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	34	24	4	4.4	68	66	57	57
Chloride	1.1	.	2	.	13.1	.	7.3	.
Fluoride	0.1	.	0.1	.	0.2	.	0.2	.
Magnesium	3.7	4.5	4.8	4.9	6.8	6.5	6.5	6.4
Manganese	0.047	0.014	0.072	0.085	0.14	0.11	0.063	0.064
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	1.5	2.7	2.5	2.7	1.2	1.2	1.2	1.5
Sodium	4.1	5.4	14	14	4.6	4.5	4.3	4.4
Sulfate	6.9	.	21	.	7.2	.	13	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

11

Sampling Point . Location . Date Sampled	GW-082				GW-084			
	BG				OLF			
	07/25/93		10/18/93		02/04/93		05/10/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.28	<0.02	0.02	<0.02	1	<0.02	1.5	0.037
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.42	0.4	0.4	0.38	0.17	0.15	0.17	0.15
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	0.00033	0.00071	<0.0003	<0.0003
Boron	0.01	0.015	0.02	0.015	0.011	0.02	0.016	0.014
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.005	0.0049	<0.004	<0.004	<0.004	<0.004	<0.004	0.0087
Iron	0.26	0.017	0.036	0.0088	1	<0.005	1.7	0.012
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.012	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	0.021
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.12	0.12	0.12	0.11	0.082	0.078	0.079	0.078
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.018	0.056	0.0031	0.0052	0.0072	0.0068	0.0099	0.0073
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	176	.	173	.	149	.	149	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	65	63	66	60	54	50	54	53
Chloride	17	.	17.6	.	<1	.	<1	.
Fluoride	0.2	.	0.2	.	0.1	.	<0.1	.
Magnesium	7.6	7.4	7.5	7	4.3	3.7	4	3.6
Manganese	0.11	0.087	0.12	0.11	0.04	0.0077	0.077	0.0073
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	1.7	1.5	1.7	2.1	1.3	1.5	0.98	0.61
Sodium	4.8	4.7	4.7	4.5	5.4	5.4	5.1	5.2
Sulfate	7.2	.	6.8	.	8.9	.	8.1	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

12

Sampling Point . Location . Date Sampled	GW-084				GW-085			
	OLF				OLF			
	09/11/93		10/20/93		02/11/93		05/12/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	1.3	<0.02	1.5	<0.02	0.13	<0.02	0.18	0.097
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.17	0.16	0.17	0.16	1	0.95	1.2	1.1
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.026	0.019	0.012	0.008	0.041	0.021	0.039	0.035
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.0042	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	1.5	0.0087	1.7	<0.005	0.077	0.044	0.078	0.006
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	0.089	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.077	0.075	0.08	0.077	0.75	0.71	0.94	0.9
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.011	0.0071	0.0099	0.012	0.036	0.032	0.045	0.038
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	153	.	153	.	123	.	124	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	59	56	58	55	320	340	440	410
Chloride	<1	.	1	.	16	.	16	.
Fluoride	0.1	.	0.1	.	0.2	.	<0.1	.
Magnesium	4.3	3.8	4	3.5	21	22	26	25
Manganese	0.074	0.0059	0.077	0.0063	0.0061	0.0026	0.0061	0.013
Nitrate-N	<0.2	.	<0.2	.	2139	.	240	.
Potassium	0.87	<0.6	1.5	0.73	2	1.7	2.3	2.1
Sodium	5.4	5.4	5.5	5.4	12	14	13	12
Sulfate	7.8	.	7	.	11	.	7.7	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

13

Sampling Point . Location . Date Sampled	GW-085				GW-086			
	OLF				OLF			
	09/14/93		10/22/93		02/05/93		05/11/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	0.066	0.069	16	0.12	9.4	0.06
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.072
Barium	1.3	1.3	1.3	1.3	0.32	0.14	0.39	0.14
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	0.0011	<0.0003	0.00063	<0.0003
Boron	0.02	0.015	0.041	0.039	0.034	0.025	0.021	0.013
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	0.031	<0.01	0.062	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	0.027	<0.01	0.014	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	0.012	<0.005	0.0072	<0.005
Copper	0.0064	<0.004	<0.004	<0.004	0.0097	<0.004	0.011	<0.004
Iron	0.035	<0.005	0.037	<0.005	16	0.1	8.9	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	0.0095	<0.004	0.016	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	0.014	<0.01	0.023	0.016
Selenium	0.065	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.97	0.97	0.95	0.96	0.092	0.082	0.094	0.083
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.002	.	<0.001	<0.001	<0.001	0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	0.018	<0.005	0.01	<0.005
Zinc	0.07	0.059	0.035	0.03	0.095	0.061	0.083	0.04
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	128	.	121	.	96	.	95	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	450	440	390	410	41	39	44	41
Chloride	14	.	15	.	1.4	.	1.8	.
Fluoride	<0.1	.	0.1	.	<0.1	.	<0.1	.
Magnesium	29	28	27	27	6.6	2.9	5	2.9
Manganese	0.0059	0.0063	0.0069	0.0055	0.61	0.011	0.38	0.0069
Nitrate-N	304	.	312.6	.	4.5	.	3.1	.
Potassium	2.3	2.6	2.4	2.4	6.8	1.1	4.4	1
Sodium	13	13	14	14	5.1	5.1	5.1	5.1
Sulfate	11	.	<10	.	14	.	15	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

14

Sampling Point . Location . Date Sampled	GW-086				GW-115			
	OLF				S3			
	09/12/93		10/21/93		01/28/93		05/25/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	22	<0.02	22	0.022	0.044	0.025	0.07	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.42	0.14	0.49	0.14	0.24	0.24	0.24	0.24
Beryllium	0.0012	<0.0003	0.0015	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.021	0.022	0.021	0.006	0.028	0.018	0.016	0.03
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	0.0078	<0.003	0.0061	<0.003	0.0048	<0.003	<0.003	<0.003
Chromium (AAS)	0.035	<0.01	0.044	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	0.04	<0.01	0.043	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	0.019	<0.005	0.026	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.027	0.019	0.033	<0.004	<0.004	<0.004	0.0043	0.03
Iron	28	<0.005	32	<0.005	0.24	0.18	0.44	0.44
Lead (AAS)	0.0089	<0.004	0.014	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.041	<0.01	0.048	<0.01	0.012	<0.01	<0.01	0.019
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.088	0.076	0.09	0.073	0.11	0.11	0.12	0.12
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	0.027	<0.005	0.036	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.16	0.094	0.13	0.033	<0.002	<0.002	0.0068	0.049
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	91	.	92	.	212	.	224	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	43	42	43	37	71	69	69	69
Chloride	1.3	.	2	.	3.5	.	4.1	.
Fluoride	<0.1	.	<0.1	.	0.1	.	0.1	.
Magnesium	9.1	3.1	9.9	2.9	9.5	9.5	11	11
Manganese	1	0.0076	1.1	0.0041	0.097	0.092	0.3	0.3
Nitrate-N	4.97	.	5.6	.	<0.2	.	<0.2	.
Potassium	7.9	0.93	7.5	1.1	1.8	2	1.6	2.1
Sodium	5.3	5.2	5.4	5.1	8.9	8.8	9.7	9.8
Sulfate	10.9	.	9	.	18	.	17.9	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

15

Sampling Point . Location . Date Sampled	GW-115				GW-118			
	S3				BG			
	09/11/93		10/19/93		03/04/93		04/21/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	0.034	<0.02	<0.2	<0.2	<0.2	<0.2
Antimony	<0.05	<0.05	<0.05	<0.05	<0.5	<0.5	<0.5	<0.5
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.5	<0.5	<0.5	<0.5
Barium	0.25	0.24	0.26	0.24	0.11	0.12	0.26	0.26
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	0.0038	<0.003	<0.003	<0.003
Boron	0.026	0.017	0.015	0.024	0.22	0.17	0.2	0.57
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.03	<0.03	<0.03	<0.03
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05	<0.05	<0.05
Copper	<0.004	<0.004	0.0046	<0.004	<0.04	<0.04	<0.04	<0.04
Iron	0.4	0.35	0.34	0.28	12	<0.05	19	<0.05
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	0.028	<0.004	0.017	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1
Nickel	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1
Selenium	<0.05	<0.05	<0.05	<0.05	<0.5	<0.5	<0.5	<0.5
Silver	<0.006	<0.006	<0.006	<0.006	<0.06	<0.06	<0.06	<0.06
Strontium	0.12	0.12	0.13	0.12	0.93	1.1	1.6	1.7
Thorium	<0.2	<0.2	<0.2	<0.2	<2	<2	<2	<2
Uranium (Fluor)	0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05	<0.05	<0.05
Zinc	<0.002	0.0033	0.0036	<0.002	0.03	<0.02	0.025	0.042
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	235	.	235	.	99	.	71	.
Alkalinity-CO3	<1	.	<1	.	152	.	176	.
Calcium	74	72	71	70	2	2.4	2.9	3
Chloride	3.9	.	4	.	3220	.	3060	.
Fluoride	<0.1	.	<0.1	.	1.7	.	1.7	.
Magnesium	11	11	12	12	1.3	1.8	4.1	4.6
Manganese	0.31	0.29	0.31	0.29	0.36	<0.01	0.23	<0.01
Nitrate-N	<0.2	.	<0.2	.	<23	.	<0.2	.
Potassium	1.8	2.8	2	1.8	26	24	21	22
Sodium	10	10	11	9.8	2100	2000	1600	1800
Sulfate	15.8	.	15	.	<100	.	<1	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

16

Sampling Point . Location . Date Sampled	GW-118				GW-162		GW-286	
	BG				BG		BG	
	07/25/93		10/10/93		10/10/93		02/25/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.2	<0.2	<0.1	<0.1	0.34	<0.02	0.072	<0.02
Antimony	<0.5	<0.5	<0.25	<0.25	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.5	<0.5	<0.25	<0.25	<0.05	<0.05	0.053	<0.05
Barium	<0.01	0.017	0.0058	<0.005	0.31	0.23	0.32	0.32
Beryllium	<0.003	<0.003	<0.0015	<0.0015	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.15	0.15	0.13	0.13	0.045	0.039	0.04	0.038
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.03	<0.03	<0.015	<0.015	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.1	<0.1	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.05	<0.05	<0.025	<0.025	0.0052	<0.005	<0.005	<0.005
Copper	<0.04	<0.04	<0.02	<0.02	0.0046	<0.004	<0.004	<0.004
Iron	14	<0.05	25	0.046	15	0.0086	0.098	<0.005
Lead (AAS)	0.0069	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	0.00021	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.1	<0.1	<0.05	0.054	<0.01	<0.01	<0.01	<0.01
Nickel	<0.1	<0.1	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01
Selenium	<0.5	<0.5	<0.25	<0.25	<0.05	<0.05	<0.05	<0.05
Silver	<0.06	<0.06	<0.03	<0.03	<0.006	<0.006	<0.006	<0.006
Strontium	0.3	0.26	0.2	0.19	0.66	0.63	0.11	0.11
Thorium	<2	<2	<1	<1	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.001	<0.001
Vanadium	<0.05	<0.05	<0.025	<0.025	0.0059	<0.005	<0.005	<0.005
Zinc	0.037	<0.02	0.015	0.012	0.014	0.0025	0.0075	<0.002
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	43	.	49	.	115	.	140	.
Alkalinity-CO3	194	.	192	.	<1	.	<1	.
Calcium	1.3	1.3	1	0.94	30	27	49	49
Chloride	3910	.	3160	.	3	.	1.2	.
Fluoride	1.5	.	1.2	.	0.1	.	0.1	.
Magnesium	0.33	0.58	0.041	0.035	4.7	4.4	4.7	4.6
Manganese	0.79	0.014	0.93	<0.005	0.15	0.073	0.02	0.017
Nitrate-N	<0.2	.	<22.6	.	<0.2	.	<0.2	.
Potassium	31	34	28	26	3.5	3.1	0.93	0.7
Sodium	2000	1900	2000	1900	15	15	5.1	5
Sulfate	<1	.	<100	.	8.6	.	6.1	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

17

Sampling Point . Location . Date Sampled	GW-286						GW-287	
	BG						BG	
	04/19/93		07/10/93		10/07/93		02/24/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.11	<0.02	0.034	<0.02	0.024	0.024	0.3	0.045
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.29	0.28	0.3	0.3	0.31	0.31	0.13	0.12
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0023	<0.0003
Boron	0.012	0.033	0.011	0.014	0.014	0.014	0.025	0.012
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.0047	<0.004	<0.004	<0.004	<0.004	0.0077	<0.004	<0.004
Iron	0.097	0.0073	0.033	0.012	0.026	0.0054	0.36	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.095	0.093	0.098	0.098	0.11	0.1	0.081	0.079
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.022	0.023	0.0074	0.007	0.011	0.017	0.019	0.018
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	135	.	141	.	142	.	120	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	44	44	47	47	47	47	38	38
Chloride	1.4	.	1.5	.	2	.	2.6	.
Fluoride	0.1	.	0.2	.	0.1	.	0.2	.
Magnesium	4.2	4.1	4.5	4.6	4.6	4.5	5.7	5.7
Manganese	0.016	0.013	0.017	0.016	0.014	0.014	0.035	0.0093
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	0.89	0.96	0.62	0.75	0.77	0.71	1.3	1.2
Sodium	4.6	4.5	4.7	4.7	4.9	4.8	3.7	3.9
Sulfate	6.2	.	7	.	6	.	8.2	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

18

Sampling Point . Location . Date Sampled	GW-287						GW-311	
	BG						RS	
	04/16/93		07/10/93		10/07/93		02/08/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Aluminum	0.064	<0.02	0.22	<0.02	0.34	<0.02	2	0.31
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05
Barium	0.12	0.11	0.12	0.12	0.15	0.13	0.024	0.019
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.016	0.01	0.014	0.0077	0.015	0.013	0.018	0.026
Cadmium (AAS)	<0.002	<0.002	0.0048	0.0051	0.0049	0.0035	<0.002	<0.002
Cadmium	<0.003	<0.003	0.0041	0.0041	0.0074	0.005	0.0031	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.0096	0.0072	0.0046	0.0058	<0.004	<0.004	0.014	<0.004
Iron	0.053	<0.005	0.25	<0.005	0.44	<0.005	2.9	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.024	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	0.017	<0.006	0.023	<0.006	<0.006	<0.006
Strontium	0.072	0.07	0.068	0.064	0.083	0.076	0.071	0.082
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.063	0.055	0.011	0.014	0.02	0.02	0.025	0.0041
	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Alkalinity-HCO3	115	.	125	.	137	.	226	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	37	36	36	34	45	40	80	88
Chloride	2.8	.	2.6	.	3	.	2	.
Fluoride	0.1	.	0.2	.	0.2	.	<0.1	.
Magnesium	5.5	5.4	5.5	5.4	4.9	5.3	5.8	5.3
Manganese	0.0089	0.005	0.018	0.0069	0.032	0.0039	0.089	0.0028
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	0.42	.
Potassium	0.85	0.88	1.1	1.1	1.2	1.3	1.9	1.7
Sodium	3.6	3.6	3.6	3.5	4.1	4.5	1.9	2
Sulfate	11	.	6.4	.	7	.	4.4	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

19

Sampling Point . Location . Date Sampled	GW-311						GW-312	
	RS						RS	
	05/11/93		09/12/93		10/21/93		02/08/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.05	0.054	0.13	0.021	0.24	<0.02	6.2	2.8
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.017	0.016	0.023	0.023	0.019	0.021	0.034	0.039
Beryllium	0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.022	0.013	0.02	0.018	0.015	0.016	0.014	0.016
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	0.0022	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (\S)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.015	0.01
Chromium	0.029	0.015	<0.01	<0.01	<0.01	<0.01	0.011	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	0.0046	<0.004	<0.004	0.0042	0.0046	<0.004
Iron	0.028	<0.005	0.42	<0.005	0.27	<0.005	2	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.014	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.031	0.014	<0.01	<0.01	<0.01	<0.01	0.011	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.07	0.07	0.065	0.065	0.067	0.064	0.44	0.44
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.001	0.001	0.001	0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.013	<0.005
Zinc	0.028	0.029	0.06	0.072	0.032	0.037	0.026	0.008
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	214	.	210	.	209	.	<1	.
Alkalinity-CO3	<1	.	<1	.	<1	.	50	.
Calcium	79	78	82	82	81	76	170	150
Chloride	2.5	.	2.7	.	3	.	1.3	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	0.2	.
Magnesium	5.2	5.1	4.8	4.8	4.4	4.7	2	0.2
Manganese	0.0025	0.0029	0.013	0.0055	0.007	0.0019	0.035	0.0058
Nitrate-N	0.5	.	0.54	.	0.5	.	<0.2	.
Potassium	1.5	1.4	1.2	0.77	1.3	1	10	10
Sodium	1.8	1.8	1.6	1.5	1.6	1.6	9.9	9.4
Sulfate	9.8	.	3.8	.	3	.	5.7	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

20

Sampling Point . Location . Date Sampled	GW-312						GW-315	
	RS						SPI	
	05/11/93		09/12/93		10/21/93		02/03/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	4	3.9	3.6	3.3	3.7	3.7	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.028	0.024	0.025	0.041	0.033	0.033	0.041	0.04
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0027	<0.0003	<0.0003
Boron	0.013	0.012	0.0047	0.024	0.0052	0.0081	0.012	0.011
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	0.013	0.012	0.011	<0.01	0.011	0.01	<0.01	<0.01
Chromium	0.024	0.016	0.023	0.017	0.015	0.016	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.008	<0.004	0.016	0.0094	<0.004	0.0042	<0.004	<0.004
Iron	0.025	<0.005	0.76	0.03	0.036	0.035	<0.005	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01
Nickel	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	0.056	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.44	0.4	0.38	0.51	0.46	0.42	0.14	0.14
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	0.001	0.001	<0.001	<0.001	0.001	0.001
Vanadium	0.0062	0.0078	0.0054	<0.005	0.0056	0.0082	<0.005	<0.005
Zinc	0.037	0.03	0.086	0.053	0.033	0.031	0.0085	0.0064
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	<1	.	<1	.	<1	.	179	.
Alkalinity-CO ₃	52	.	48	.	50	.	<1	.
Calcium	160	140	160	200	170	150	89	86
Chloride	1.9	.	1.3	.	1	.	11	.
Fluoride	0.2	.	0.2	.	0.2	.	0.1	.
Magnesium	0.036	<0.003	0.42	0.025	0.019	0.023	8.1	7.9
Manganese	0.0015	0.0019	0.01	<0.001	0.001	0.0039	<0.001	<0.001
Nitrate-N	0.26	.	0.26	.	0.2	.	7.8	.
Potassium	9.6	8.7	9.6	9	11	9.8	3.5	3.4
Sodium	8.2	9.5	16	16	14	13	6.3	6.5
Sulfate	9.9	.	3.9	.	6	.	38	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

21

Sampling Point . Location . Date Sampled	GW-315						GW-316	
	SPI						SPI	
	06/03/93		09/14/93		10/27/93		02/02/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Aluminum	0.074	<0.02	<0.02	<0.02	<0.02	<0.02	0.023	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.041	0.041	0.046	0.047	0.058	0.056	0.012	0.012
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.04	0.012	0.014	0.012	0.012	0.014	0.013	<0.004
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	0.0047	<0.004	<0.004	0.0071	<0.004
Iron	<0.005	<0.005	0.031	<0.005	0.026	<0.005	0.87	<0.005
Lead (AAS)	<0.004	<0.004	<0.008	<0.008	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.14	0.14	0.15	0.15	0.17	0.17	0.023	0.024
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.001	0.001	0.001	0.002	0.001	<0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0034	0.0047	0.0066	0.011	0.015	0.013	0.049	0.054
	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	216	.	229	.	218	.	191	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	89	88	100	100	100	100	42	41
Chloride	8.5	.	8.2	.	13	.	1.6	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	0.1	.
Magnesium	9.3	9.2	11	11	10	10	21	21
Manganese	<0.001	0.0014	0.0012	0.0017	0.0012	0.0012	0.005	0.0018
Nitrate-N	8.9	.	15	.	19.8	.	0.46	.
Potassium	3	2.9	3	3	3.6	3.6	2.3	2.4
Sodium	5.1	5.1	5.7	5.7	7.1	6.9	2	2.2
Sulfate	27	.	22	.	20	.	3.7	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

22

Sampling Point . Location . Date Sampled	GW-316						GW-317	
	SPI						SPI	
	06/01/93		09/13/93		10/24/93		02/02/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.054	<0.02	0.22	<0.02	<0.02	<0.02	0.036	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.012	0.014	0.014	0.013	0.012	0.012	0.018	0.016
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.00035	<0.0003
Boron	0.026	0.027	<0.004	0.0081	0.0046	0.0081	0.0067	0.011
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.0042	<0.004
Iron	0.048	<0.005	0.3	0.012	0.018	<0.005	0.02	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.03	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	0.0065	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.025	0.026	0.024	0.024	0.024	0.024	0.034	0.034
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	0.001	<0.001	0.001	0.001	0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.02	0.015	0.029	0.02	0.015	0.018	0.012	0.011
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	197	.	209	.	198	.	206	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	44	45	45	45	44	41	46	46
Chloride	1.4	.	1.5	.	2	.	<1	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	0.1	.
Magnesium	24	24	23	23	24	23	20	20
Manganese	0.0065	0.0043	0.01	0.0015	0.0012	<0.001	0.0017	<0.001
Nitrate-N	0.33	.	0.3	.	0.35	.	0.26	.
Potassium	1.4	2	2.3	1.9	2.1	2.2	1.6	1.4
Sodium	1.1	1.4	3.2	2.5	1.2	1.3	6.2	3.4
Sulfate	2.1	.	3.8	.	3.8	.	5.2	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

23

Sampling Point Location Date Sampled	GW-317						GW-323	
	SPI						SPI	
	05/28/93		09/13/93		10/24/93		02/02/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)								
Aluminum	<0.02	<0.02	0.022	<0.02	0.032	<0.02	0.023	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.017	0.016	0.017	0.017	0.017	0.018	0.36	0.36
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.02	0.016	0.0068	0.014	0.0055	0.0057	0.0079	0.0058
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	0.0048	0.0091	<0.004	<0.004	<0.004	<0.004
Iron	0.012	<0.005	0.077	<0.005	0.036	<0.005	0.1	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	0.013	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.03	0.03	0.062	0.064	0.032	0.033	0.019	0.02
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	0.001	0.001	0.006	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.011	0.016	0.012	0.017	0.01	0.012	0.013	0.024
MAJOR IONS (mg/L)								
Alkalinity-HCO3	197	.	221	.	197	.	212	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	46	45	52	50	43	42	42	42
Chloride	<1	.	<1	.	1.1	.	<1	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	20	20	24	24	21	21	25	25
Manganese	0.0011	0.0011	0.0021	<0.001	0.0012	<0.001	0.0015	0.0018
Nitrate-N	<0.2	.	<0.2	.	0.2	.	<0.2	.
Potassium	0.87	0.87	1.1	1.3	0.9	0.88	1.3	1.5
Sodium	4.1	4.4	1.8	1.8	4.7	6.9	0.9	1
Sulfate	5.6	.	5.3	.	3.9	.	1.9	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

24

Sampling Point . Location . Date Sampled	GW-323						GW-324	
	SPI						S3	
	05/28/93		09/12/93		10/23/93		01/29/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	0.043	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.36	0.37	0.34	0.34	0.39	0.39	0.2	0.2
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.049	0.026	0.014	<0.004	0.007	0.0058	0.01	0.014
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	0.0048	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	0.0052	<0.004	<0.004	<0.004
Iron	<0.005	<0.005	0.0053	<0.005	<0.005	<0.005	0.18	0.032
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	0.013	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	0.063	0.055	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.019	0.02	0.018	0.018	0.022	0.021	0.21	0.21
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.009	0.0086	0.022	0.023	0.0081	0.0086	0.0059	0.0068
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	207	.	205	.	215	.	100	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	43	44	43	42	42	42	28	28
Chloride	1.1	.	1.1	.	1	.	1.3	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	0.1	.
Magnesium	25	26	25	25	27	27	5.2	5.2
Manganese	0.001	0.001	<0.001	0.0012	<0.001	<0.001	0.016	0.015
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	1.1	1.2	1.3	0.98	1.3	1.2	0.96	1.1
Sodium	1.4	1.6	1.4	1.4	1.9	1.9	4.8	5
Sulfate	2.2	.	2.5	.	2	.	9.3	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

25

Sampling Point Location Date Sampled	GW-324						GW-325	
	83						83	
	05/25/93		09/11/93		10/19/93		02/01/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.31	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.2	0.2	0.21	0.21	0.22	0.22	0.045	0.054
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.011	0.012	0.02	0.017	0.0084	0.011	0.0051	0.013
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.0048	<0.004	0.0067	<0.004	<0.004	<0.004	0.0049	<0.004
Iron	0.076	0.057	0.065	0.071	0.074	0.062	0.31	0.0069
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.22	0.22	0.23	0.23	0.25	0.25	0.01	0.012
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0072	0.0052	0.0042	0.0023	0.0044	0.0034	0.077	0.17
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	102	.	104	.	103	.	9	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	28	29	30	31	29	30	2.3	2.6
Chloride	1	.	<1	.	1	.	1.6	.
Fluoride	0.1	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	5.5	5.5	5.6	5.7	5.9	6	1.4	1.5
Manganese	0.016	0.016	0.016	0.016	0.017	0.018	0.023	0.035
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	<0.6	<0.6	1	0.82	0.9	0.84	0.7	1.3
Sodium	4.8	4.9	5.2	5.2	5.3	5.3	2.8	3.6
Sulfate	9.3	.	7.4	.	7	.	7.5	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

26

Sampling Point . Location . Date Sampled	GW-325						GW-342	
	S3						BG	
	05/25/93		09/11/93		10/21/93		10/07/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	1	<0.02	5.2	<0.02	44	0.042	0.59	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.055	0.049	0.065	0.04	0.29	0.035	0.19	0.15
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	0.0014	<0.0003	<0.0003	<0.0003
Boron	0.015	0.019	0.0091	0.014	0.014	0.0071	0.006	0.012
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	0.0041	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	0.011	<0.01	0.077	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	0.011	<0.01	0.098	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	0.021	<0.005	<0.005	<0.005
Copper	0.0059	0.0084	0.015	0.012	0.098	<0.004	<0.004	<0.004
Iron	0.87	<0.005	4.2	0.24	46	0.016	2.4	1.2
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	0.042	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	0.02	<0.01	<0.01	0.061	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.011	0.011	0.011	0.0094	0.023	0.0097	0.028	0.026
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	0.0065	<0.005	0.058	<0.005	<0.005	<0.005
Zinc	0.078	0.13	0.095	0.17	0.094	0.0051	0.0074	0.005
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	8	.	12	.	9	.	38	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	2.4	2.4	3.4	3.5	5.1	3.2	3.9	3.6
Chloride	1.6	.	1.7	.	2	.	<1	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	0.2	.
Magnesium	1.4	1.2	1.6	1.1	5.7	1.2	5.5	5.1
Manganese	0.026	0.021	0.062	0.033	0.35	0.055	0.29	0.27
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	0.71	<0.6	1.7	0.85	6	0.69	1.7	2.2
Sodium	1.5	1.6	1.4	1.4	1.5	1.5	5.6	5.6
Sulfate	5.1	.	3	.	3	.	6	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

27

Sampling Point . Location . Date Sampled	GW-345							
	83							
	02/03/93		06/01/93		09/14/93		10/26/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.13	0.026	0.054	<0.02	0.086	<0.02	<0.2	<0.2
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.5
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.5
Barium	0.043	0.042	0.071	0.068	0.19	0.17	13	13
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	0.00075	<0.0003	<0.003	<0.003
Boron	0.017	0.011	0.028	0.017	0.016	0.014	0.2	0.21
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.03	<0.03
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05
Copper	<0.004	0.019	<0.004	<0.004	0.083	0.012	<0.04	<0.04
Iron	0.16	0.0068	0.072	<0.005	0.22	0.013	15	<0.05
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1
Nickel	<0.01	<0.01	0.016	0.015	<0.01	<0.01	<0.1	<0.1
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.5
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.06	<0.06
Strontium	0.024	0.023	0.044	0.044	0.12	0.11	16	15
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	0.002	0.002	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05
Zinc	0.029	0.051	0.026	0.029	0.022	0.02	0.039	<0.02
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	20	.	24	.	27	.	22	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	5.1	4.9	11	11	35	33	130	130
Chloride	4.7	.	4.8	.	5.4	.	7	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	1.8	1.7	2.6	2.6	6	5.6	53	52
Manganese	0.04	0.035	0.033	0.031	0.066	0.057	0.06	0.027
Nitrate-N	7.7	.	3.4	.	20	.	66	.
Potassium	2	2.1	3.4	3.3	6.3	6.7	22	17
Sodium	6.8	7	6.8	6.9	8.1	7.9	1600	1600
Sulfate	12	.	8.5	.	14	.	9	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

28

Sampling Point . Location . Date Sampled	GW-347							
	S3							
	02/01/93		05/27/93		09/12/93		10/22/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.16	<0.02	0.072	<0.02	0.68	<0.02	1.1	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.0092	0.0094	0.012	0.01	0.013	0.012	0.01	0.0082
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	0.00036	<0.0003	<0.0003	<0.0003
Boron	<0.004	<0.004	0.011	0.0092	0.015	<0.004	<0.004	<0.004
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	0.018	0.012	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	0.015	0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	0.016	<0.004	<0.004	<0.004
Iron	0.18	<0.005	0.14	<0.005	1.6	<0.005	1.9	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	0.0073	<0.004	0.007	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	0.017	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.019	0.02	0.029	0.025	0.057	0.059	0.025	0.021
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	0.001	0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.014	0.032	0.025	0.014	0.015	0.0065	0.018	0.0064
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	74	.	83	.	156	.	93	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	23	24	31	28	57	58	28	23
Chloride	<1	.	<1	.	<1	.	<1	.
Fluoride	<0.1	.	<0.1	.	0.1	.	0.1	.
Magnesium	1.8	1.9	2.4	2.1	4.9	5.1	2	1.8
Manganese	0.0091	0.0023	0.01	0.0049	0.027	0.0017	0.026	0.0016
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	3.6	3.4	3.2	3.2	3.8	3.9	3.3	2.9
Sodium	0.86	0.87	1.1	0.98	1.1	1.1	0.65	0.63
Sulfate	1.1	.	1.4	.	6.2	.	3	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

29

Sampling Point . Location . Date Sampled	GW-348							
	S3							
	02/01/93		05/27/93		09/12/93		10/22/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.023	<0.02	0.045	<0.02	<0.02	<0.02	0.11	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.083	0.083	0.087	0.087	0.09	0.089	0.095	0.093
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	<0.004	<0.004	0.014	0.014	0.014	0.018	0.0054	0.0065
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.047	<0.005	0.011	<0.005	0.02	<0.005	0.038	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.087	0.087	0.095	0.095	0.096	0.096	0.1	0.099
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.001	0.001	0.001	0.001	0.004	0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0051	0.0096	0.0058	0.011	0.0037	0.0022	0.0027	<0.002
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	232	.	232	.	248	.	244	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	80	81	84	84	87	87	85	82
Chloride	9.1	.	8.9	.	8.7	.	10	.
Fluoride	<0.1	.	0.3	.	<0.1	.	<0.1	.
Magnesium	17	17	18	18	18	18	19	19
Manganese	<0.001	<0.001	0.0015	0.0012	<0.001	<0.001	<0.001	<0.001
Nitrate-N	9.73	.	8.5	.	9.35	.	11.4	.
Potassium	1.5	1.9	1.3	1.4	1.1	1.6	1.5	1.4
Sodium	2.9	2.9	2.8	2.8	3.2	3.2	3.3	3.3
Sulfate	5.4	.	7.1	.	6	.	6	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

30

Sampling Point . Location . Date Sampled	GW-364							
	OLF							
	03/27/93		06/27/93		09/19/93		12/18/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.83	<0.02	4.6	<0.02	12	0.035	0.69	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.089	0.079	0.15	0.13	0.24	0.14	0.096	0.092
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	0.0013	<0.0003	<0.0003	<0.0003
Boron	0.05	0.057	0.11	0.098	0.13	0.12	0.063	0.067
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	0.006	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	0.0072	<0.005	<0.005	<0.005
Copper	0.0045	<0.004	0.0042	<0.004	0.033	0.0041	<0.004	<0.004
Iron	0.83	0.0061	2.8	0.0057	13	0.014	0.65	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	0.0084	<0.004	0.0088	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	0.021	0.015	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.24	0.24	0.44	0.44	0.56	0.53	0.28	0.28
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.001	0.003	0.004	0.008	0.008	0.003	0.003
Vanadium	<0.005	<0.005	<0.005	<0.005	0.016	<0.005	<0.005	<0.005
Zinc	0.018	0.015	0.019	0.012	0.19	0.069	0.0059	0.0035
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	169	.	237	.	226	.	193	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	59	57	87	87	100	94	73	73
Chloride	15.5	.	42	.	39	.	17	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	10	9.8	17	17	20	18	12	12
Manganese	0.049	0.0045	0.14	0.0073	0.59	0.018	0.025	<0.001
Nitrate-N	1.21	.	1.12	.	10.2	.	2.8	.
Potassium	2.3	1.5	3.5	2.6	5.2	2.8	2.2	1.8
Sodium	3.7	3.8	6.2	6.3	8.9	8.7	4.1	4.2
Sulfate	17	.	29.6	.	29.5	.	17	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

31

Sampling Point . Location . Date Sampled	GW-365							
	OLF							
	03/28/93		06/27/93		09/19/93		12/19/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	<0.02	<0.02	0.032	0.043	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.3	0.29	0.33	0.33	0.37	0.36	0.35	0.35
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.21	0.16	0.15	0.16	0.19	0.18	0.18	0.17
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	1.8	1.4	0.81	0.89	0.64	0.73	1.2	1.1
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.029	0.037	0.026	0.026	0.033	0.033	0.022	0.023
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.82	0.79	0.78	0.77	0.88	0.86	0.83	0.84
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0054	0.0042	0.0025	<0.002	0.009	0.024	<0.002	<0.002
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	334	.	348	.	344	.	346	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	140	140	130	130	140	140	140	140
Chloride	73	.	87	.	93	.	86	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	26	26	25	25	27	26	27	27
Manganese	0.057	0.056	0.035	0.038	0.035	0.036	0.035	0.035
Nitrate-N	2.9	.	4.04	.	5.17	.	3.9	.
Potassium	2.9	3.1	3.5	3.2	3.5	3.6	3.6	3.3
Sodium	16	15	16	15	17	17	17	17
Sulfate	43.7	.	43.2	.	40	.	42	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

32

Sampling Point . Location . Date Sampled	GW-370							
	BG							
	02/17/93		05/21/93		07/10/93		10/14/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.61	<0.02	6.5	0.038	0.69	0.06	1.6	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.068	0.058	0.15	0.045	0.064	0.051	0.081	0.045
Beryllium	0.0012	<0.0003	0.00061	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.015	0.014	0.049	0.025	0.01	0.0096	0.014	0.0071
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0056	<0.005
Copper	0.009	0.0068	0.022	<0.004	<0.004	<0.004	0.0065	<0.004
Iron	0.48	0.02	6	0.01	0.52	0.043	1.4	<0.005
Lead (AAS)	<0.004	<0.004	0.014	<0.004	<0.004	<0.004	0.0064	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	0.013	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.059	0.053	0.066	0.042	0.054	0.047	0.049	0.041
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	<0.001	0.002	<0.001	0.001	0.001	0.001	<0.001
Vanadium	<0.005	<0.005	0.0058	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.018	0.014	0.029	0.0071	0.016	0.01	0.023	0.011
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	113	.	78	.	91	.	76	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	36	36	29	22	29	26	24	24
Chloride	1.3	.	1.4	.	1.4	.	1	.
Fluoride	0.1	.	0.1	.	0.1	.	0.1	.
Magnesium	3.4	3.3	4.1	2.4	3.1	2.8	2.8	2.5
Manganese	0.012	0.0026	0.13	0.0058	0.012	0.0034	0.028	0.005
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	0.83	<0.6	1.9	<0.6	<0.6	<0.6	0.63	<0.6
Sodium	10	10	11	9.9	10	10	9.9	9.8
Sulfate	11	.	11	.	12.5	.	10	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

33

Sampling Point . Location . Date Sampled	GW-371							
	BQ							
	02/16/93		05/21/93		07/09/93		10/13/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.023	<0.02	0.067	0.079	<0.02	<0.02	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.13	0.13	0.15	0.15	0.13	0.14	0.14	0.13
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.044	0.047	0.059	0.067	0.038	0.046	0.042	0.039
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.0053	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.52	0.32	2.7	0.39	4.9	0.4	1.2	0.097
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.00026	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	0.0077	<0.006	<0.006	<0.006	<0.006
Strontium	1.4	1.4	1.6	1.5	1.5	1.5	1.4	1.4
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0029	0.0026	0.0045	0.0054	0.017	0.004	<0.002	0.0026
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	291	.	297	.	304	.	299	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	71	71	82	81	75	75	75	74
Chloride	1.2	.	1.4	.	1.2	.	1	.
Fluoride	<0.1	.	<0.1	.	0.1	.	<0.1	.
Magnesium	19	19	21	21	20	20	20	20
Manganese	0.022	0.022	0.027	0.023	0.025	0.023	0.025	0.027
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	3.5	3.1	3.6	3.4	3.5	3	2.9	3.6
Sodium	17	17	18	18	17	18	17	17
Sulfate	15.6	.	18	.	17	.	17	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

34

Sampling Point . Location . Date Sampled	GW-372							
	BG							
	02/09/93		05/19/93		07/02/93		10/12/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.2	<0.02	0.094	0.053	0.19	<0.02	0.22	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	0.062	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.067	0.064	0.069	0.065	0.07	0.067	0.076	0.07
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.01	0.012	0.021	0.028	0.015	0.022	0.0089	0.013
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.0042	<0.004	<0.004	<0.004	<0.004	<0.004	0.0081	<0.004
Iron	0.36	0.065	0.22	<0.005	0.42	0.044	0.53	0.042
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.15	0.15	0.17	0.17	0.18	0.17	0.17	0.17
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	0.001	0.001	<0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0057	0.0057	0.011	0.01	0.0075	0.0071	1.6	0.0064
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	184	.	180	.	182	.	184	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	60	59	59	57	59	58	63	62
Chloride	2.7	.	2.1	.	1.9	.	2	.
Fluoride	0.2	.	0.1	.	0.2	.	0.2	.
Magnesium	11	11	11	11	11	11	12	11
Manganese	0.039	0.028	0.019	0.012	0.023	0.019	0.065	0.026
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	2	1.6	1.6	1.6	1.9	1.6	1.8	1.6
Sodium	8.7	8.4	8.8	8.6	9.6	9.3	9.2	9.2
Sulfate	33	.	31	.	31	.	31	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

35

Sampling Point . Location . Date Sampled	GW-373							
	BG							
	02/11/93		05/14/93		07/02/93		10/11/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	0.051	0.022	0.84	<0.02	0.82	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.051	0.042	0.048	0.026	0.061	0.036	0.059	0.039
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.16	0.16	0.18	0.15	0.15	0.17	0.16	0.15
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	0.0069	<0.004	0.013	<0.004
Iron	0.61	0.015	0.17	<0.005	2.3	0.042	3.2	0.031
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	0.0099	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	0.00022	0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	0.023	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.059	0.056	0.062	0.037	0.064	0.059	0.061	0.056
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0024	<0.002	0.047	0.0059	0.01	0.0053	0.0058	<0.002
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	178	.	186	.	188	.	183	.
Alkalinity-CO ₃	26	.	24	.	26	.	<1	.
Calcium	1.4	1.3	1.3	1.1	1.5	1.1	1.4	1.1
Chloride	2.2	.	1.5	.	1.2	.	1	.
Fluoride	1.5	.	1.4	.	1.7	.	1.5	.
Magnesium	0.14	0.13	0.14	0.45	0.38	0.11	0.38	0.11
Manganese	0.0077	0.0024	0.0042	0.031	0.022	0.002	0.025	0.0025
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	0.79	1.2	0.72	0.8	1.4	1.4	1.1	0.99
Sodium	100	100	110	110	110	110	110	110
Sulfate	30	.	29	.	31	.	27	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

36

Sampling Point . Location . Date Sampled	GW-526							
	83							
	02/03/93		06/03/93		09/14/93		10/26/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.2	<0.2	<0.2	<0.2	<0.04	<0.04	0.3	<0.02
Antimony	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.05	<0.05
Arsenic	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.05	<0.05
Barium	11	10	11	10	11	11	0.35	0.52
Beryllium	<0.003	<0.003	<0.003	<0.003	<0.0006	<0.0006	<0.0003	<0.0003
Boron	0.18	0.22	0.19	0.18	0.21	0.2	0.018	0.011
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.03	<0.03	<0.03	<0.03	<0.006	<0.006	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.1	<0.1	<0.1	<0.1	<0.02	<0.02	<0.01	<0.01
Cobalt	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.005	<0.005
Copper	<0.04	<0.04	<0.04	<0.04	<0.008	<0.008	<0.004	<0.004
Iron	4.1	<0.05	2.1	<0.05	7	0.24	0.46	0.0067
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.008	<0.008	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.1	<0.1	<0.1	<0.1	<0.02	<0.02	<0.01	<0.01
Nickel	<0.1	<0.1	<0.1	<0.1	0.025	<0.02	0.013	0.015
Selenium	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.05	<0.05
Silver	<0.06	<0.06	<0.06	<0.06	<0.012	<0.012	<0.006	<0.006
Strontium	13	12	13	13	14	14	0.24	0.35
Thorium	<2	<2	<2	<2	<0.4	<0.4	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	0.001	0.001	<0.001	0.001
Vanadium	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.005	<0.005
Zinc	0.025	<0.02	0.097	0.062	0.026	0.01	0.018	3.2
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	50	.	49	.	43	.	48	.
Alkalinity-CO3	<1	.	2	.	<1	.	<1	.
Calcium	110	110	110	100	110	120	70	100
Chloride	19	.	5.5	.	21	.	19	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	48	47	41	39	44	46	10	14
Manganese	0.039	0.03	0.032	0.021	0.068	0.049	0.098	0.14
Nitrate-N	826	.	1006	.	846	.	1171	.
Potassium	14	23	14	13	16	17	3.8	4
Sodium	1400	1300	1500	1400	1500	1500	9.8	12
Sulfate	<10	.	4.3	.	11	.	7	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

37

Sampling Point Location Date Sampled	GW-537							
	OLF							
	02/11/93		05/12/93		09/14/93		10/22/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.2	<0.2	0.28	<0.2	0.15	<0.1	0.11	0.11
Antimony	<0.5	<0.5	<0.5	<0.5	<0.25	<0.25	<0.25	<0.25
Arsenic	<0.5	<0.5	<0.5	<0.5	<0.25	<0.25	<0.25	<0.25
Barium	2.3	2.2	2.5	2.5	2.3	2.3	2.4	2.3
Beryllium	<0.003	<0.003	<0.003	<0.003	<0.0015	<0.0015	<0.0015	<0.0015
Boron	0.14	<0.04	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.03	<0.03	<0.03	<0.03	<0.015	<0.015	<0.015	<0.015
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	0.15	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Cobalt	<0.05	<0.05	<0.05	<0.05	<0.025	<0.025	<0.025	<0.025
Copper	<0.04	<0.04	<0.04	<0.04	0.023	<0.02	<0.02	<0.02
Iron	<0.05	<0.05	<0.05	<0.05	0.05	<0.025	0.086	<0.025
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Nickel	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Selenium	<0.5	<0.5	<0.5	<0.5	<0.25	0.26	<0.25	<0.25
Silver	<0.06	<0.06	<0.06	<0.06	<0.03	<0.03	<0.03	<0.03
Strontium	2.9	2.5	3	3	2.6	2.6	2.7	2.7
Thorium	<2	<2	<2	<2	<1	<1	<1	<1
Uranium (Fluor)	0.002	0.001	0.001	0.001	0.001	.	0.001	0.001
Vanadium	<0.05	<0.05	<0.05	<0.05	<0.025	<0.025	<0.025	<0.025
Zinc	0.034	0.031	<0.02	0.023	0.028	0.028	<0.01	<0.01
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	246	.	247	.	252	.	252	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	1100	1000	1100	1100	1100	1100	1200	1100
Chloride	30	.	32	.	26	.	33	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	72	66	74	73	72	72	77	74
Manganese	<0.01	<0.01	<0.01	<0.01	0.0086	0.0076	<0.005	<0.005
Nitrate-N	782	.	692	.	525	.	791.6	.
Potassium	<6	<6	<6	<6	3.9	3.3	3.1	4.2
Sodium	29	27	31	30	29	29	31	30
Sulfate	<10	.	2.6	.	<10	.	3	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-601							
	OLF							
	03/28/93		06/27/93		09/19/93		12/21/94	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	<0.02	<0.02	0.033	0.026	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.079	0.077	0.086	0.085	0.094	0.096	0.088	0.088
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.089	0.084	0.09	0.083	0.12	0.13	0.11	0.1
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	0.0058	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.11	<0.005	0.31	<0.005	0.2	0.015	0.057	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	1.5	1.5	1.6	1.6	1.8	1.9	1.7	1.7
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	0.001	0.001	0.001	<0.001	<0.001	<0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	<0.002	0.0039	0.013	0.0064	0.014	0.0056	<0.002	<0.002
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	188	.	195	.	193	.	192	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	76	76	83	82	89	89	82	82
Chloride	86	.	131	.	91	.	101	.
Fluoride	0.3	.	0.3	.	0.3	.	0.2	.
Magnesium	37	37	42	41	43	43	42	42
Manganese	0.015	0.015	0.012	0.011	0.021	0.02	0.011	0.011
Nitrate-N	32.1	.	41.6	.	30.5	.	31.9	.
Potassium	2.3	2.5	2.6	2.1	2.4	2.3	2.1	2.4
Sodium	35	35	39	38	45	46	46	46
Sulfate	44.5	.	47.6	.	50	.	45.6	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-613		GW-614		GW-621			
	S3		S3		BQ			
	10/20/93		10/20/93		03/20/93		06/02/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.26	0.026	0.066	<0.02	0.6	0.036	1.4	0.21
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.063	0.062	0.16	0.16	0.021	0.019	0.028	0.021
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.0041	0.0048	0.014	0.013	0.0088	0.037	0.043	0.013
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	0.063	<0.01	0.22	0.036
Chromium	<0.01	<0.01	<0.01	<0.01	0.051	<0.01	0.15	0.026
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.093	<0.005	0.1	0.045	0.85	0.034	2.2	0.43
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	0.038	0.022	0.16	0.049
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.05	0.049	0.56	0.58	0.055	0.061	0.061	0.062
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	0.003	0.003	0.004	0.003
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.007	0.0048	0.0025	<0.002	0.0068	0.0048	0.025	0.027
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	88	.	168	.	151	.	152	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	30	30	45	47	51	53	52	53
Chloride	1	.	1	.	3.6	.	5.2	.
Fluoride	0.1	.	<0.1	.	0.1	.	<0.1	.
Magnesium	3.1	3	9.6	10	9.3	9.2	9	9.1
Manganese	0.0037	<0.001	0.015	0.015	0.044	<0.001	0.13	0.026
Nitrate-N	<0.2	.	<0.2	.	4.45	.	6	.
Potassium	<0.6	<0.6	1.5	1.6	1.4	1.3	1.5	1.4
Sodium	3.5	3.6	10	10	2.2	2.4	2.6	2.7
Sulfate	5	.	12	.	4.1	.	5.3	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

40

Sampling Point . Location . Date Sampled	GW-621				GW-626			
	BG				BG			
	09/20/93		12/20/93		03/10/93		04/26/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	3	<0.02	1.9	<0.02	<0.02	0.023	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.045	0.023	0.019	0.019	0.14	0.14	0.13	0.13
Beryllium	0.0007	<0.0003	0.00033	<0.0003	<0.0003	0.00038	<0.0003	<0.0003
Boron	0.035	0.037	0.024	0.011	0.0088	0.0052	<0.004	0.0045
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	0.18	<0.01	0.051	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	0.17	<0.01	0.034	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.0055	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	4	<0.005	2	<0.005	0.011	<0.005	<0.005	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.14	0.015	0.072	0.03	0.024	0.02	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.0065
Strontium	0.077	0.073	0.064	0.059	0.1	0.11	0.09	0.087
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.006	0.006	0.002	0.002	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.02	0.0076	0.015	<0.002	0.0042	0.0044	0.0033	0.0069
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	167	.	157	.	109	.	103	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	64	61	56	53	41	42	36	36
Chloride	7.8	.	4.8	.	12.6	.	7.5	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	0.1	.
Magnesium	13	12	11	9.8	2.7	2.8	2.6	2.6
Manganese	0.26	0.0067	0.11	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrate-N	10.12	.	4	.	<0.2	.	<0.2	.
Potassium	1.7	0.94	1.4	1.6	1	1.1	<0.6	0.86
Sodium	3.6	3.5	2.3	2.5	3.9	4.1	4.1	3.9
Sulfate	8	.	3.1	.	3.9	.	3.5	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

41

Sampling Point . Location . Date Sampled	GW-626				GW-627			
	BG				BG			
	08/02/93		10/20/93		03/09/93		04/23/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.14	0.14	0.14	0.15	0.039	0.038	0.041	0.19
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.0087	<0.004	0.0088	0.0067	0.5	0.49	0.49	0.087
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.027	0.012	0.0094	<0.005	0.17	0.086	0.15	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	0.00024	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.093	0.093	0.098	0.1	0.08	0.077	0.07	0.52
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.004	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0057	0.0056	0.0036	0.0068	0.0036	0.0059	0.0089	0.0026
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	108	.	112	.	469	.	447	.
Alkalinity-CO3	<1	.	<1	.	66	.	80	.
Calcium	38	38	43	45	0.98	1	0.96	53
Chloride	6.1	.	10	.	22	.	22	.
Fluoride	<0.1	.	<0.1	.	4.8	.	5.6	.
Magnesium	2.9	2.9	3.1	3.2	0.18	0.18	0.23	24
Manganese	0.0014	0.0016	<0.001	0.0012	0.0092	0.0092	0.0057	0.0011
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	0.9	1.2	1.1	1.1	1.4	1.4	1	2.2
Sodium	4.1	4.1	3.8	4	290	280	270	7.9
Sulfate	3.1	.	3	.	32	.	31	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

42

Sampling Point . Location . Date Sampled	GW-627				GW-636			
	BG				OLF			
	07/28/93		10/20/93		03/26/93		06/27/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	<0.02	<0.02	0.17	<0.02	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.04	0.038	0.039	0.038	0.21	0.2	0.23	0.22
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.47	0.46	0.46	0.45	0.34	0.34	0.38	0.37
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	0.15	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.62	0.066	0.35	0.051	1.4	0.086	0.69	0.15
Lead (AAS)	0.0043	<0.004	0.0069	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	0.15	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.072	0.07	0.072	0.072	0.52	0.52	0.57	0.55
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0064	0.0057	0.0094	0.01	0.0026	0.0047	0.0063	0.014
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	541	.	480	.	163	.	179	.
Alkalinity-CO3	<1	.	62	.	6	.	2	.
Calcium	1.1	1	0.9	0.89	7.7	7.4	8.2	7.8
Chloride	33	.	26	.	6	.	7.9	.
Fluoride	6	.	6	.	0.2	.	0.1	.
Magnesium	0.35	0.34	0.21	0.2	2.5	2.3	2.7	2.6
Manganese	0.013	0.0082	0.011	0.008	0.018	0.011	0.018	0.015
Nitrate-N	0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	1.8	1.4	1.7	1.3	5.1	5.3	5	4.6
Sodium	280	270	280	280	70	70	70	68
Sulfate	38	.	30	.	9.3	.	6.7	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

43

Sampling Point . Location . Date Sampled	GW-636				GW-637			
	OLF				OLF			
	09/18/93		12/18/93		03/25/93		06/26/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	<0.02	<0.02	0.11	<0.02	0.043	0.024
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.25	0.24	0.25	0.26	0.14	0.13	0.13	0.13
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.42	0.4	0.38	0.38	0.023	0.029	0.017	0.013
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	1.1	0.11	0.92	0.063	0.14	0.075	0.047	0.014
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.61	0.6	0.6	0.62	0.18	0.17	0.18	0.18
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	0.001	0.001	0.001	0.002
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0052	<0.005
Zinc	0.0044	0.0089	0.0023	<0.002	0.0062	0.0077	0.0063	0.0082
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	179	.	174	.	205	.	213	.
Alkalinity-CO3	<1	.	4	.	<1	.	<1	.
Calcium	8.1	7.7	8.8	9	73	72	75	76
Chloride	7	.	9	.	2.5	.	2.8	.
Fluoride	0.2	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	2.6	2.6	2.8	2.9	5.5	5.2	5.6	5.9
Manganese	0.016	0.012	0.014	0.0089	0.033	0.032	0.022	0.021
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	5.3	5.2	4.6	4.8	1.7	1.8	0.98	1.3
Sodium	78	75	69	72	2.6	2.7	2.3	2.4
Sulfate	5	.	4	.	7.5	.	8.8	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

44

Sampling Point . Location . Date Sampled	GW-637				GW-638			
	OLF				OLF			
	09/17/93		12/18/93		03/25/93		06/26/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.036	0.021	0.024	0.023	2.6	<0.02	28	0.038
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.13	0.14	0.15	0.16	0.1	0.062	0.51	0.1
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0019	<0.0003
Boron	0.023	0.025	0.025	0.025	0.028	0.046	0.061	0.06
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0094	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.067	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.075	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.018	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	0.0067	<0.004	0.054	0.0069
Iron	0.093	0.048	0.023	<0.005	3.7	0.0073	49	0.015
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.031	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.00026	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.061	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.18	0.19	0.19	0.19	0.16	0.15	0.25	0.23
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	0.001	0.002	0.007	0.006	0.016	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	0.0051	<0.005	0.071	<0.005
Zinc	0.0075	0.0068	0.0084	0.0049	0.033	0.025	0.1	0.037
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	216	.	212	.	164	.	202	.
Alkalinity-CO3	1	.	<1	.	<1	.	<1	.
Calcium	80	79	76	74	67	63	100	100
Chloride	3	.	3	.	1.9	.	1.3	.
Fluoride	<0.1	.	<0.1	.	0.3	.	0.3	.
Magnesium	5.3	5.5	6.1	6.1	7.4	7	15	12
Manganese	0.019	0.02	0.025	0.028	0.024	0.0017	0.26	0.013
Nitrate-N	<0.2	.	<0.2	.	0.23	.	0.38	.
Potassium	1.5	1.5	1.5	1.6	3.2	1.6	9.5	2.7
Sodium	2.7	2.8	2.7	2.7	5.4	5.5	4.8	4.6
Sulfate	6	.	6	.	46	.	64.8	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

45

Sampling Point . Location . Date Sampled	GW-638				GW-639			
	OLF				BG			
	09/17/93		12/18/93		02/24/93		05/24/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	2.1	0.028	2.2	<0.02	0.31	<0.02	0.43	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.12	0.11	0.076	0.06	0.081	0.061	0.057	0.052
Beryllium	0.00035	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.044	0.041	0.021	0.019	0.65	0.59	0.54	0.53
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	0.0037	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.085	0.046	0.011	0.0081	<0.004	<0.004	0.0043	0.0044
Iron	2.4	0.0062	2.3	<0.005	1.6	<0.005	0.53	0.0054
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.29	0.28	0.16	0.16	0.12	0.094	0.082	0.08
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.018	0.018	0.015	0.01	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	0.0053	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.16	0.11	0.02	0.0064	0.011	0.0031	0.0079	0.0069
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	205	.	201	.	320	.	345	.
Alkalinity-CO3	<1	.	<1	.	80	.	72	.
Calcium	130	130	77	77	2.5	1.5	0.93	0.79
Chloride	<1	.	1	.	10	.	10	.
Fluoride	0.4	.	0.2	.	2.3	.	2.4	.
Magnesium	17	17	11	11	0.75	0.32	0.34	0.24
Manganese	0.014	0.0029	0.016	0.0012	0.012	<0.001	0.0051	<0.001
Nitrate-N	0.4	.	<0.2	.	<0.2	.	<0.2	.
Potassium	4.3	3.8	2.9	2.4	1.9	1.8	2.2	1.5
Sodium	4.9	3.3	4.3	4.4	240	210	200	200
Sulfate	178	.	44	.	15	.	29.3	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

46

Sampling Point . Location . Date Sampled	GW-639				GW-640			
	BG				BG			
	07/11/93		10/15/93		02/22/93		05/24/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.24	<0.02	0.43	<0.02	0.037	<0.02	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.06	0.054	0.065	0.059	0.063	0.061	0.075	0.074
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.56	0.55	0.56	0.58	0.014	0.011	0.011	0.016
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.0052	<0.004	<0.004	<0.004	0.0047	0.0047	<0.004	0.018
Iron	0.24	<0.005	1	0.005	0.1	0.0052	0.061	<0.005
Lead (AAS)	<0.004	<0.004	0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.083	0.078	0.091	0.09	0.043	0.042	0.056	0.056
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0097	0.0028	0.0067	0.0054	0.01	0.01	0.011	0.018
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	346	.	352	.	43	.	50	.
Alkalinity-CO ₃	76	.	64	.	<1	.	<1	.
Calcium	0.85	0.75	1.2	0.84	15	14	14	14
Chloride	9.9	.	10	.	1.2	.	1.1	.
Fluoride	3.1	.	2.6	.	<0.1	.	<0.1	.
Magnesium	0.32	0.22	0.42	0.28	1.5	1.5	1.6	1.6
Manganese	0.0012	<0.001	0.012	<0.001	0.0093	0.0064	0.0065	0.0047
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	1.3	1.3	1.9	1.7	1.4	1.1	0.85	0.93
Sodium	210	200	210	220	4.1	4.1	3.5	3.7
Sulfate	29.9	.	27	.	1.8	.	2.9	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

47

Sampling Point . Location . Date Sampled	GW-640				GW-641			
	BG				BG			
	07/10/93		10/14/93		02/22/93		05/24/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.085	<0.02	0.072	<0.02	0.21	<0.02	0.16	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.064	0.065	0.073	0.072	0.043	0.031	0.046	0.05
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.013	0.0062	0.025	0.011	<0.004	0.025	0.013	0.0043
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	0.0046	<0.004	0.016
Iron	0.12	0.0051	0.077	<0.005	0.31	<0.005	0.37	0.0093
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	0.014	0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.044	0.045	0.05	0.05	0.014	0.0095	0.017	0.017
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0056	0.0074	0.0054	0.0074	0.017	0.021	0.059	0.12
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	49	.	49	.	16	.	20	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	15	15	18	18	3.8	2.2	5.6	4.8
Chloride	1.2	.	2	.	<1	.	<1	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	1.5	1.5	1.7	1.7	1.2	0.85	0.95	0.92
Manganese	0.0098	0.0072	0.0052	0.0048	0.04	0.013	0.038	0.008
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	0.64	0.62	0.77	0.62	<0.6	1	0.8	0.7
Sodium	3.6	3.7	3.7	3.7	2.2	1.8	2.4	2.5
Sulfate	2.2	.	2	.	<1	.	2	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

48

Sampling Point . Location . Date Sampled	GW-641				GW-642			
	BG				BG			
	07/10/93		10/14/93		02/08/93		05/11/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	0.31	<0.02	0.079	<0.02	0.3	0.037
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.04	0.039	0.046	0.04	0.12	0.12	0.13	0.12
Beryllium	<0.0003	<0.0003	0.00037	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.0095	<0.004	0.0056	0.0056	0.011	0.021	0.027	0.03
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.022	0.013
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.0047	0.0064	0.0058	<0.004	<0.004	<0.004	0.0069	<0.004
Iron	0.028	0.02	0.44	0.033	3.1	2.8	2.6	2.3
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	0.03	0.033	0.036	0.043
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.014	0.013	0.016	0.014	0.021	0.021	0.027	0.023
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.038	0.032	0.044	0.03	0.0095	0.0087	0.038	0.026
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	18	.	18	.	60	.	58	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	4.1	4	5	4.4	7.3	7.1	8.9	7.5
Chloride	<1	.	1	.	<1	.	1.7	.
Fluoride	<0.1	.	<0.1	.	0.3	.	0.4	.
Magnesium	0.87	0.86	0.89	0.81	7.6	7.6	7.6	7.4
Manganese	0.0056	0.0041	0.033	0.0053	1.3	1.2	1.8	1.3
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	<0.6	<0.6	0.65	<0.6	1.8	1.7	2	1.8
Sodium	2.2	2.2	2.3	2.2	7.4	7.3	7.7	7.6
Sulfate	<1	.	<1	.	10.8	.	16	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

49

Sampling Point . Location . Date Sampled	GW-642				GW-643			
	BG				BG			
	07/01/93		10/10/93		02/16/93		05/19/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.079	<0.02	13	0.13	4.9	<0.02	0.62	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.12	0.11	0.96	0.045	0.081	0.025	0.051	0.036
Beryllium	<0.0003	<0.0003	0.0011	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.031	0.04	0.032	0.013	0.0064	0.018	0.016	0.03
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	0.0074	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	0.29	<0.01	0.024	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	0.18	<0.01	0.02	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	0.023	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	0.049	<0.004	0.015	0.0061	<0.004	<0.004
Iron	3.1	2.2	93	2.1	5.7	0.013	0.74	<0.005
Lead (AAS)	<0.004	<0.004	0.031	<0.004	0.0052	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	0.00024	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.022	0.023	0.12	0.027	0.014	<0.01	0.015	0.018
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.022	0.022	0.053	0.023	0.015	0.0096	0.016	0.014
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	0.002	0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	0.058	<0.005	0.0087	<0.005	<0.005	<0.005
Zinc	0.042	0.015	0.11	<0.002	0.022	0.018	0.033	0.028
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	57	.	57	.	12	.	14	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	7	6.9	16	9.2	4	2.6	4.5	3.9
Chloride	1.2	.	1.5	.	1.4	.	1.9	.
Fluoride	0.4	.	0.4	.	<0.1	.	<0.1	.
Magnesium	7.4	7.5	12	7.2	2	1.1	1.8	1.5
Manganese	1.4	1.3	2.4	1.2	0.087	0.03	0.03	0.018
Nitrate-N	<0.2	.	<0.2	.	0.29	.	<0.2	.
Potassium	1.9	1.8	4.5	1.5	2.7	1	1.2	0.88
Sodium	7.8	7.9	7.8	7.8	8.1	8	6.4	6
Sulfate	12	.	9.8	.	14.4	.	16	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

50

Sampling Point . Location . Date Sampled	GW-643				GW-644			
	BG				OLF			
	07/08/93		10/12/93		03/25/93		06/25/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	7	0.024	1.5	<0.02	0.051	<0.02	1.9	0.025
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.15	0.098	0.063	0.042	0.06	0.06	0.091	0.079
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.016	0.025	0.015	0.011	0.036	0.0089	0.0046	0.018
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	0.0036	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	0.027	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	0.024	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.013	0.0044	0.0069	<0.004	<0.004	0.0041	<0.004	<0.004
Iron	8	0.057	1.9	0.0082	0.22	0.016	1.9	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	0.00025	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.027	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.073	0.061	0.025	0.018	0.041	0.041	0.067	0.067
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.022	0.015	0.035	0.043	0.022	0.022	0.012	0.0089
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	82	.	14	.	58	.	108	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	25	22	8.9	6.1	19	19	34	34
Chloride	2.6	.	2	.	2.2	.	2.7	.
Fluoride	0.2	.	0.1	.	0.1	.	<0.1	.
Magnesium	9.6	7.4	3.3	2.2	1.5	1.5	2.5	2.2
Manganese	0.29	0.13	0.061	0.03	0.0037	0.0022	0.066	0.0029
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	3.9	2.2	1.7	0.91	0.99	0.65	<0.6	<0.6
Sodium	14	13	8	7	3.7	3.8	3.1	3.3
Sulfate	40.4	.	15	.	2.1	.	7.1	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

91

Sampling Point . Location . Date Sampled	GW-644				GW-647			
	OLF				OLF			
	09/17/93		12/18/93		02/08/93		05/17/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	17	<0.02	1.2	<0.02	0.24	<0.02	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	0.058	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.17	0.061	0.086	0.08	0.033	0.024	0.025	0.026
Beryllium	0.0014	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.028	0.011	0.0078	0.0091	0.038	0.023	0.041	0.04
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	0.0064	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	0.046	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	0.12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	0.012	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.044	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	23	0.0077	1.1	<0.005	0.52	<0.005	0.24	0.011
Lead (AAS)	0.021	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.063	<0.01	<0.01	<0.01	<0.01	<0.01	0.024	0.018
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.079	0.054	0.06	0.061	1.2	1.1	1.1	1.2
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	0.024	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.095	0.007	0.0068	0.0055	0.012	0.009	0.023	0.014
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	136	.	86	.	177	.	179	.
Alkalinity-CO3	1	.	<1	.	<1	.	<1	.
Calcium	37	26	29	30	63	63	60	60
Chloride	3	.	3	.	1.2	.	1.2	.
Fluoride	0.1	.	<0.1	.	0.4	.	0.4	.
Magnesium	5.4	1.7	2.2	2	32	33	30	31
Manganese	0.34	0.0043	0.032	<0.001	0.0094	0.0026	0.0089	0.0025
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	4.4	<0.6	1.2	<0.6	3.1	2.7	2.7	2.8
Sodium	3.8	3.7	3.5	3.6	2.4	1.9	2	2
Sulfate	<1	.	<1	.	118	.	105	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

52

Sampling Point . Location . Date Sampled	GW-647				GW-651			
	OLF				BG			
	09/25/93		12/10/93		03/01/93		04/19/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.061	0.029	0.029	<0.02	0.03	0.038	0.24	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05
Barium	0.032	0.032	0.031	0.031	0.047	0.048	0.049	0.046
Beryllium	0.00033	0.00043	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.052	0.047	0.028	0.026	0.046	0.057	0.044	0.035
Cadmium (AAS)	<0.002	<0.002	0.0074	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	0.0034	<0.003	0.0072	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	0.0084	<0.004	<0.004	0.078	0.01	<0.004
Iron	0.16	<0.005	0.086	<0.005	0.045	0.016	0.3	0.014
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	1.2	1.2	1.2	1.1	0.29	0.29	0.28	0.28
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.035	0.021	0.018	0.0083	<0.002	0.028	0.038	0.022
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	185	.	178	.	184	.	192	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	62	62	64	61	57	55	62	59
Chloride	1.9	.	1	.	3.2	.	3	.
Fluoride	0.4	.	0.4	.	<0.1	.	<0.1	.
Magnesium	33	33	33	32	9.5	9.2	9.9	9.7
Manganese	0.0053	<0.001	0.0037	<0.001	0.016	0.011	0.029	0.012
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	3	2.9	3.3	3.2	5.2	6.2	2.8	2.9
Sodium	2.1	2.1	2.3	2.2	2	2.2	1.5	1.7
Sulfate	103	.	88	.	10.2	.	10.4	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

53

Sampling Point . Location . Date Sampled	GW-651				GW-652			
	BQ				BQ			
	07/10/93		10/10/93		03/01/93		04/19/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	8.5	0.044	2.2	0.03	1.1	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.048	0.047	0.15	0.053	0.18	0.15	0.15	0.15
Beryllium	<0.0003	<0.0003	0.00053	0.00043	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.04	0.035	0.017	0.04	0.026	0.029	0.022	0.017
Cadmium (AAS)	<0.002	<0.002	0.0045	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	0.0064	0.0079	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	0.0051	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.049	<0.005	7	0.06	3.6	<0.005	1.7	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	0.0083	<0.006	<0.006	<0.006	<0.006
Strontium	0.28	0.26	0.036	0.31	0.18	0.18	0.15	0.15
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	0.012	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0088	0.0083	0.027	0.019	<0.002	<0.002	0.011	0.0075
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	196	.	203	.	193	.	187	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	56	52	2.8	66	76	74	69	69
Chloride	3.4	.	3.2	.	4.4	.	5.8	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	9.7	9	2.6	11	6.7	6.7	5.8	6
Manganese	0.011	0.0049	0.25	0.028	0.1	0.0027	0.064	<0.001
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	4.3	5.3	2.4	3.1	3.1	2.8	2.8	2.3
Sodium	1.8	1.9	3	1.5	0.95	0.96	0.92	1
Sulfate	9.9	.	9.2	.	7.5	.	8.3	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

54

Sampling Point . Location . Date Sampled	GW-652				GW-653			
	BG				BG			
	07/10/93		10/18/93		03/01/93		04/20/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.63	<0.02	0.18	0.042	5.3	<0.02	1.5	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.16	0.15	0.16	0.16	0.12	0.024	0.049	0.027
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	0.0007	<0.0003	<0.0003	<0.0003
Boron	0.02	0.016	0.03	0.025	0.022	0.0069	0.0075	0.0049
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.0049	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.0049
Iron	0.92	<0.005	0.23	<0.005	3.9	<0.005	1.3	0.011
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	0.0077	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.15	0.15	0.2	0.19	0.038	0.017	0.019	0.015
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	0.001	0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.011	0.0056	0.011	0.011	0.0098	<0.002	0.012	0.011
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	208	.	208	.	86	.	14	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	76	73	78	77	3.7	1.9	2.2	1.9
Chloride	5.7	.	5.9	.	1.1	.	1.1	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	6.5	6.3	8	7.7	2.3	1	1.3	0.95
Manganese	0.04	0.001	0.0055	<0.001	0.13	0.0029	0.049	0.0029
Nitrate-N	<0.2	.	0.45	.	<0.2	.	<0.2	.
Potassium	2.7	2.4	2.8	2.7	1.5	0.83	<0.6	<0.6
Sodium	0.98	0.87	1.2	1.2	3	2.6	2.5	2.5
Sulfate	8.8	.	7.9	.	2.7	.	2.2	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-653				GW-654			
	BG				BG			
	07/10/93		10/10/93		02/24/93		04/16/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	2.6	<0.02	<0.02	<0.02	0.33	<0.02	0.27	0.022
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.072	0.026	0.052	0.027	0.12	0.091	0.093	0.087
Beryllium	<0.0003	<0.0003	0.00032	<0.0003	0.0022	<0.0003	<0.0003	<0.0003
Boron	0.0057	0.0075	0.04	0.0068	0.051	0.05	0.045	0.045
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	0.018	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	0.0047	<0.004	0.0063	0.0062
Iron	2.2	0.006	0.018	<0.005	1.1	0.07	0.47	0.094
Lead (AAS)	<0.004	<0.004	0.0095	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	0.013	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.024	0.016	0.31	0.016	0.19	0.18	0.18	0.18
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.001	0.011	0.005	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.011	0.0079	0.018	0.0095	0.023	0.0027	0.02	0.021
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	14	.	14	.	100	.	108	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	2.5	1.8	65	1.7	15	14	16	15
Chloride	1	.	1.2	.	<1	.	1.5	.
Fluoride	<0.1	.	<0.1	.	0.3	.	0.4	.
Magnesium	1.6	1	11	1	3.5	3.5	3.6	3.6
Manganese	0.082	0.0019	0.02	0.0018	0.59	0.15	0.21	0.2
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	0.86	0.74	3.2	<0.6	1.4	1.4	1.4	1.3
Sodium	2.6	2.5	1.6	2.5	29	29	31	30
Sulfate	2.1	.	2.9	.	11	.	16	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-654				GW-655			
	BG				BG			
	07/01/93		10/07/93		02/05/93		05/10/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.26	<0.02	0.1	<0.02	1.1	<0.02	16	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.084	0.078	0.11	0.11	0.16	0.14	0.52	0.13
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.00037	0.0015	<0.0003
Boron	0.067	0.064	0.068	0.068	0.02	0.0077	0.064	0.022
Cadmium (AAS)	<0.002	0.0021	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	0.0039	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.038	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.037	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0092	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	0.0058	<0.004	0.02	<0.004
Iron	0.5	0.19	0.33	0.15	1.8	0.35	30	0.32
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.017	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.16	0.18	0.21	0.22	0.02	0.019	0.047	0.019
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.04	<0.005
Zinc	0.0097	0.012	0.025	0.023	0.014	0.0098	0.063	0.0097
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	115	.	127	.	34	.	32	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	11	13	15	16	3.2	3	5.7	3
Chloride	<1	.	<1	.	<1	.	1.3	.
Fluoride	0.5	.	0.5	.	0.2	.	0.2	.
Magnesium	2.8	3.3	4.1	4.3	5.6	5.2	10	4.9
Manganese	0.094	0.15	0.25	0.27	0.034	0.029	0.15	0.034
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	1	1.7	1.7	1.7	1.6	1.3	4.4	1.5
Sodium	47	44	39	37	5.9	5.8	6.2	5.7
Sulfate	16	.	15	.	9.2	.	14	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-655				GW-683			
	BG				EXP			
	07/01/93		10/06/93		03/04/93		04/23/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.29	<0.02	0.5	<0.02	<0.02	<0.02	0.025	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.15	0.13	0.16	0.12	0.06	0.06	0.058	0.057
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.0062	0.0055	0.0075	0.0082	0.061	0.039	0.011	0.016
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.75	0.11	1.5	0.18	0.0075	<0.005	0.042	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.00022	<0.00022	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.021	0.021	0.02	0.016	0.058	0.057	0.047	0.046
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	0.022	0.022	0.013	0.014
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.017	0.021	0.044	0.013	0.0077	0.0085	0.012	0.0074
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	34	.	36	.	138	.	132	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	3.2	3.5	3.5	2.9	38	38	35	34
Chloride	<1	.	<1	.	7.1	.	5.7	.
Fluoride	0.2	.	0.1	.	0.1	.	0.1	.
Magnesium	5.6	5.6	5.7	4.9	15	15	14	14
Manganese	0.032	0.026	0.042	0.028	<0.001	<0.001	0.0015	0.0015
Nitrate-N	<0.2	.	<0.2	.	2.7	.	2.3	.
Potassium	1.9	1.9	2.1	1.1	1.4	1.3	0.92	0.96
Sodium	6.5	6.7	6.2	5.8	3.6	3.6	3.4	3.4
Sulfate	10	.	8	.	7.1	.	11	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-683				GW-684			
	EXP				EXP			
	07/12/93		10/12/93		03/03/93		04/22/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	0.055	0.042	0.026	<0.02	0.038	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.1	0.1	0.15	0.15	0.072	0.071	0.074	0.072
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.11	0.088	0.12	0.13	0.027	0.03	0.03	0.036
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.012	<0.005	0.18	0.014	0.02	<0.005	0.038	0.016
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.00022	<0.00022	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.12	0.11	0.2	0.2	0.095	0.094	0.082	0.081
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.061	0.048	0.11	0.109	0.026	0.025	0.019	0.019
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0078	0.006	0.012	0.011	0.0064	0.0062	0.0085	0.0055
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	191	.	214	.	129	.	126	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	63	61	94	94	42	40	32	32
Chloride	14.4	.	31	.	17	.	16	.
Fluoride	0.2	.	0.2	.	0.1	.	0.2	.
Magnesium	20	19	23	23	13	13	12	12
Manganese	0.0089	0.0095	0.0055	0.0028	0.0026	<0.001	0.0024	0.003
Nitrate-N	10.01	.	32	.	4.3	.	4.1	.
Potassium	2.7	3.6	2.3	2.3	15	15	20	20
Sodium	8.6	8.6	14	14	6	5.7	6.4	6.3
Sulfate	16.9	.	26	.	13	.	14	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-684				GW-685			
	EXP				EXP			
	07/11/93		10/12/93		03/02/93		04/21/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	0.074	<0.02	0.29	<0.02	0.32	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.099	0.099	0.13	0.13	0.12	0.12	0.11	0.093
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.098	0.096	0.093	0.092	0.04	0.037	0.029	0.24
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.042	0.011	0.24	<0.005	6.3	0.097	1.5	0.04
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.00022	<0.00022	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	0.015	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.13	0.13	0.19	0.19	0.13	0.13	0.11	0.11
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.062	0.066	0.114	0.075	0.002	0.003	0.003	0.003
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0065	0.0051	0.0083	0.0089	0.0057	<0.002	0.012	0.0046
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	170	.	174	.	250	.	245	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	56	56	66	65	82	84	79	76
Chloride	20.8	.	28	.	69	.	94	.
Fluoride	0.3	.	0.2	.	<0.1	.	0.1	.
Magnesium	17	17	18	18	23	24	23	21
Manganese	0.0053	0.0051	0.013	0.01	0.14	0.079	0.12	0.041
Nitrate-N	10.3	.	18.9	.	1.7	.	1.63	.
Potassium	17	16	14	14	1.8	1.7	1.1	1.3
Sodium	10	10	18	18	33	34	28	28
Sulfate	16.7	.	<20	.	19	.	18.3	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

60

Sampling Point . Location . Date Sampled	GW-685				GW-694			
	EXP				EXP			
	07/11/93		10/11/93		03/23/93		06/06/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.051	<0.02	0.091	0.029	<0.02	<0.02	0.023	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.099	0.098	0.1	0.1	0.11	0.1	0.17	0.16
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	0.00035	<0.0003	<0.0003	<0.0003
Boron	0.03	0.054	0.057	0.052	0.1	0.11	0.17	0.2
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	0.0034	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.16	<0.005	2.2	0.44	0.62	0.045	1.3	0.58
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	0.017	0.017	<0.01	0.018
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.11	0.11	0.12	0.12	0.17	0.17	0.29	0.28
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.003	0.003	0.005	0.005	0.115	0.111	0.121	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.014	0.0097	0.014	0.0071	0.0062	0.0044	<0.002	0.002
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	253	.	252	.	202	.	218	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	82	81	79	83	79	79	110	100
Chloride	48.9	.	50	.	30	.	33	.
Fluoride	0.1	.	0.1	.	0.3	.	0.4	.
Magnesium	24	24	23	24	17	17	21	21
Manganese	0.065	0.043	0.1	0.083	0.062	0.059	0.053	0.055
Nitrate-N	2.1	.	4	.	10	.	29.25	.
Potassium	1.6	1.3	1.7	1.7	2.2	2.1	3	3
Sodium	21	22	21	22	14	14	20	20
Sulfate	19.6	.	21	.	21	.	30.2	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

61

Sampling Point . Location . Date Sampled	GW-694				GW-695			
	EXP				EXP			
	09/22/93		12/28/93		03/24/93		06/09/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	0.038	<0.02	<0.02	0.057	0.036	1.6	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.18	0.18	0.16	0.15	0.025	0.023	0.028	0.022
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.22	0.22	0.14	0.15	0.049	0.059	0.069	0.039
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	0.0076	<0.004	<0.004	<0.004	0.0065	0.0059
Iron	1.9	1.8	0.47	0.29	0.025	<0.005	0.74	0.013
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.011
Nickel	<0.01	0.023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.35	0.35	0.33	0.32	0.061	0.059	0.06	0.05
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.198	0.194	0.3	0.31	0.002	0.002	0.003	0.002
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0063	0.0081	<0.002	0.0047	0.0036	0.0036	0.018	0.013
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	262	.	232	.	170	.	179	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	120	120	120	120	28	27	38	29
Chloride	40	.	28.5	.	7.3	.	9.2	.
Fluoride	0.5	.	0.4	.	0.1	.	0.1	.
Magnesium	24	24	22	22	15	15	19	15
Manganese	0.046	0.045	0.12	0.12	<0.001	0.001	0.0053	0.0012
Nitrate-N	31	.	29.2	.	5.7	.	16	.
Potassium	4.2	4.1	3.2	3	8.8	8.4	4.7	5.5
Sodium	25	25	16	16	29	28	33	42
Sulfate	36	.	40.6	.	12	.	12	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

62

Sampling Point . Location . Date Sampled	GW-695				GW-703			
	EXP				EXP			
	09/22/93		12/21/93		03/20/93		06/03/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	2.13	0.023	2.6	<0.02	0.036	0.043	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.025	0.026	0.026	0.02	0.082	0.081	0.03	0.21
Beryllium	0.00047	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.043	0.057	0.045	0.041	0.12	0.11	0.069	0.099
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	0.011	<0.01	0.013	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	0.0071	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	1	0.035	2.5	<0.005	0.37	0.017	4.7	<0.005
Lead (AAS)	<0.004	<0.004	0.0065	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	0.012	0.011	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.057
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.057	0.061	0.064	0.051	0.24	0.24	0.14	0.36
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.003	0.002	0.002	0.002	0.002	0.003	0.001	0.001
Vanadium	<0.005	<0.005	0.0063	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.027	0.011	0.013	<0.002	0.0068	0.0054	0.0052	<0.002
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	175	.	183	.	201	.	176	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	29	32	39	23	72	70	40	42
Chloride	6.1	.	9.7	.	22	.	15	.
Fluoride	0.2	.	0.1	.	0.2	.	0.1	.
Magnesium	16	18	16	13	32	32	28	29
Manganese	0.008	0.0046	0.016	<0.001	0.0033	0.002	0.1	0.072
Nitrate-N	6.2	.	7.7	.	22.36	.	9.6	.
Potassium	9.9	7.1	9.7	10	1.6	1.3	1.6	2.2
Sodium	35	27	40	43	11	10	8.2	32
Sulfate	14	.	9.7	.	23.1	.	18	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

63

Sampling Point . Location . Date Sampled	GW-703				GW-704			
	EXP				EXP			
	09/20/93		12/21/93		03/22/93		06/04/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	0.027	<0.02	0.021	0.025	0.15	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	0.086	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.066	0.058	0.095	0.093	0.08	0.077	0.11	0.068
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.094	0.093	0.094	0.12	0.09	0.094	0.26	0.08
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.68	<0.005	0.69	<0.005	2.3	0.33	23	0.045
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.012	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.22	0.22	0.23	0.23	0.38	0.38	0.35	0.33
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.002	0.002	0.004	0.003	0.001	0.001	0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.013	0.014	0.0065	0.0038	0.0064	0.0061	0.023	0.0074
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	199	.	212	.	185	.	184	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	61	59	74	74	63	63	57	55
Chloride	20.5	.	22.5	.	19.6	.	22	.
Fluoride	0.2	.	0.1	.	0.2	.	0.2	.
Magnesium	31	31	32	32	29	29	28	27
Manganese	0.034	0.04	0.017	0.0028	0.066	0.062	0.11	0.043
Nitrate-N	21.8	.	22.6	.	14.28	.	15	.
Potassium	3.8	4.4	2.1	2	1.4	1.4	1.3	1.3
Sodium	9.8	10	11	11	11	11	10	10
Sulfate	19.1	.	21.9	.	20.7	.	20	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

64

Sampling Point . Location . Date Sampled	GW-704				GW-706			
	EXP				EXP			
	09/22/93		12/22/93		03/23/93		06/11/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.06	<0.02	<0.02	0.023	0.04	0.039	0.024	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	0.062	<0.05	<0.05
Barium	0.098	0.082	0.017	0.015	0.016	0.014	0.16	0.16
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	0.00061	0.00061	<0.0003	<0.0003
Boron	0.095	0.088	0.052	0.091	0.18	0.17	0.17	0.16
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	0.0054	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	0.0064	<0.004	0.0048	<0.004
Iron	14	0.26	9.7	0.063	3.9	0.016	0.64	0.5
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.4	0.4	0.072	0.069	0.067	0.062	0.3	0.3
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.002	<0.001	<0.001	0.002	0.005	0.137	0.158
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.013	0.0057	<0.002	<0.002	0.01	0.0055	0.013	0.0052
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	195	.	125	.	93	.	241	.
Alkalinity-CO ₃	<1	.	2	.	8	.	<1	.
Calcium	65	64	15	14	11	11	110	110
Chloride	21	.	21.7	.	31	.	36	.
Fluoride	0.2	.	0.1	.	0.2	.	0.3	.
Magnesium	30	30	29	29	22	21	23	22
Manganese	0.094	0.045	0.16	0.088	0.11	0.05	0.02	0.018
Nitrate-N	17	.	0.23	.	<0.2	.	32	.
Potassium	1.5	1.5	1.3	1.3	6.6	6.4	5.3	5
Sodium	12	12	12	11	20	20	19	19
Sulfate	23	.	18.6	.	33	.	30	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

65

Sampling Point . Location . Date Sampled	GW-706				GW-710			
	EXP				EXP			
	09/23/93		12/28/93		03/21/93		04/30/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.045	<0.02	<0.02	<0.02	<0.2	<0.2	0.22	0.34
Antimony	<0.05	<0.05	<0.05	<0.05	<0.5	<0.5	<0.25	<0.25
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.5	<0.5	<0.25	<0.25
Barium	0.02	0.016	0.15	0.14	0.012	<0.01	0.013	0.0094
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.003	<0.003	<0.0015	<0.0015
Boron	0.14	0.13	0.15	0.21	0.31	0.32	0.33	0.34
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	0.0066	<0.003	<0.003	<0.003	<0.03	<0.03	0.015	<0.015
Chromium (AAS)	<0.01	<0.01	0.043	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.05	<0.05
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05	<0.025	<0.025
Copper	0.01	<0.004	<0.004	<0.004	<0.04	<0.04	<0.02	<0.02
Iron	13	<0.005	0.5	0.3	12	11	4.7	4.4
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.05	<0.05
Nickel	0.012	<0.01	<0.01	<0.01	<0.1	<0.1	<0.05	<0.05
Selenium	<0.05	<0.05	<0.05	<0.05	<0.5	<0.5	<0.25	<0.25
Silver	<0.006	<0.006	<0.006	<0.006	<0.06	<0.06	<0.03	0.046
Strontium	0.062	0.058	0.32	0.3	9.7	9.7	8.4	8.2
Thorium	<0.2	<0.2	<0.2	<0.2	<2	<2	<1	<1
Uranium (Fluor)	0.008	0.006	0.23	0.27	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05	<0.025	<0.025
Zinc	0.015	0.0037	0.0049	<0.002	<0.02	<0.02	0.025	0.02
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	101	.	243	.	156	.	162	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	13	13	120	120	630	640	570	550
Chloride	25	.	26	.	365	.	349	.
Fluoride	0.2	.	0.4	.	1.6	.	1.7	.
Magnesium	20	20	22	21	200	200	180	180
Manganese	0.18	0.08	0.0079	0.0058	0.22	0.2	0.081	0.081
Nitrate-N	<0.2	.	28.9	.	<11.3	.	74.9	.
Potassium	5.8	5.8	3.8	3.6	11	12	9.1	8.9
Sodium	18	18	16	15	270	270	230	220
Sulfate	26	.	39.4	.	1800	.	2100	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

66

Sampling Point . Location . Date Sampled	GW-710				GW-711			
	EXP				EXP			
	08/01/93		11/09/93		03/20/93		04/29/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.04	0.042	0.048	<0.04	0.27	<0.2	<0.1	0.29
Antimony	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.25	<0.5
Arsenic	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.25	<0.5
Barium	0.007	0.0074	0.0079	0.0076	0.017	<0.01	0.0069	0.027
Beryllium	<0.0006	<0.0006	<0.0006	<0.0006	<0.003	<0.003	<0.0015	<0.003
Boron	0.25	0.24	0.25	0.25	1.3	1.2	0.83	1.3
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.006	<0.006	<0.006	<0.006	<0.03	<0.03	<0.015	<0.03
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.02	<0.02	<0.02	<0.02	<0.1	<0.1	<0.05	<0.1
Cobalt	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.025	<0.05
Copper	<0.008	<0.008	<0.008	<0.008	<0.04	<0.04	<0.02	<0.04
Iron	11	9.7	11	10	13	10	12	8.3
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.02	<0.02	<0.02	<0.02	<0.1	<0.1	<0.05	<0.1
Nickel	<0.02	<0.02	<0.02	<0.02	<0.1	<0.1	<0.05	0.17
Selenium	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.25	<0.5
Silver	<0.012	<0.012	<0.012	<0.012	<0.06	<0.06	<0.03	<0.06
Strontium	8.6	8.4	8.3	8.2	15	15	13	13
Thorium	<0.4	<0.4	<0.4	<0.4	<2	<2	<1	<2
Uranium (Fluor)	<0.001	0.002	0.002	0.004	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.025	<0.05
Zinc	0.026	0.017	<0.004	<0.004	<0.02	<0.02	<0.01	0.026
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	155	.	154	.	143	.	141	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	580	580	590	580	610	610	550	530
Chloride	295	.	339	.	1580	.	2180	.
Fluoride	1.7	.	1.8	.	1.5	.	1.6	.
Magnesium	190	190	180	180	250	250	240	260
Manganese	0.23	0.21	0.27	0.25	0.16	0.12	0.28	0.27
Nitrate-N	<0.2	.	<0.2	.	<11.3	.	<23	.
Potassium	10	10	12	11	24	23	26	27
Sodium	230	230	220	220	1300	1200	1100	1200
Sulfate	1540	.	1854	.	1790	.	2148	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

67

Sampling Point . Location . Date Sampled	GW-711				GW-712			
	EXP				EXP			
	07/30/93		11/07/93		03/18/93		04/28/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)								
Aluminum	<0.2	<0.2	<0.04	0.07	0.034	0.12	<0.02	<0.02
Antimony	<0.5	<0.5	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.5	<0.5	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Barium	<0.01	<0.01	0.0092	0.0099	0.064	0.068	0.064	0.063
Beryllium	<0.003	<0.003	<0.0006	<0.0006	<0.0003	<0.0003	<0.0003	<0.0003
Boron	1.2	1.2	1.2	1.2	0.15	0.15	0.11	0.1
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.03	<0.03	<0.006	<0.006	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.1	<0.1	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.05	<0.05	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005
Copper	<0.04	<0.04	<0.008	<0.008	<0.004	<0.004	<0.004	0.011
Iron	9.2	6.4	9.5	6.8	1.3	1.1	0.96	0.86
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.1	<0.1	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01
Nickel	<0.1	<0.1	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01
Selenium	<0.5	<0.5	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Silver	<0.06	<0.06	<0.012	<0.012	<0.006	<0.006	<0.006	<0.006
Strontium	14	14	13	13	2.3	2.5	2.3	2.2
Thorium	<2	<2	<0.4	<0.4	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.05	<0.05	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005
Zinc	0.037	0.028	<0.004	<0.004	0.0092	0.0063	0.0044	0.035
MAJOR IONS (mg/L)								
Alkalinity-HCO3	148	.	157	.	176	.	183	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	590	590	550	530	93	99	89	86
Chloride	2090	.	2027	.	29	.	27	.
Fluoride	1.7	.	1.7	.	0.7	.	0.7	.
Magnesium	240	240	220	220	40	43	42	40
Manganese	0.2	0.098	0.086	0.071	0.015	0.018	0.014	0.013
Nitrate-N	<2	.	<22.5	.	<0.2	.	0.24	.
Potassium	26	31	23	24	2.9	3.1	2.4	2.8
Sodium	1200	1200	1100	1100	27	28	27	27
Sulfate	1820	.	1580	.	265	.	234	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

68

Sampling Point . Location . Date Sampled	GW-712				GW-713			
	EXP				EXP			
	07/29/93		11/06/93		03/19/93		04/30/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.026
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.06	0.06	0.056	0.057	0.051	0.051	0.04	0.039
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.12	0.11	0.11	0.11	0.1	0.11	0.063	0.069
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.99	0.89	1	0.9	2.5	1.5	2	1.2
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	2.3	2.3	2.1	2.1	1.8	1.8	1.3	1.2
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.01	0.0088	<0.002	<0.002	0.014	0.031	0.01	0.015
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	183	.	184	.	183	.	187	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	92	91	80	81	80	80	65	63
Chloride	21	.	29.9	.	1.7	.	29	.
Fluoride	0.8	.	0.7	.	0.7	.	0.6	.
Magnesium	40	40	37	37	36	36	30	30
Manganese	0.013	0.012	0.027	0.028	0.029	0.025	0.043	0.038
Nitrate-N	0.2	.	0.2	.	<0.2	.	1.4	.
Potassium	3.1	2.7	3	3	2.3	2.2	2	2.1
Sodium	28	28	25	26	14	14	10	9.9
Sulfate	191	.	285	.	18	.	269	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

69

Sampling Point . Location . Date Sampled	GW-713				GW-714			
	EXP				EXP			
	07/31/93		11/09/93		03/21/93		04/29/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	<0.02	<0.02	0.064	<0.02	0.2	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.046	0.045	0.05	0.049	0.059	0.058	0.07	0.065
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.072	0.073	0.14	0.098	0.085	0.1	0.072	0.081
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.042	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	2.6	1.9	1.9	1.6	1.1	0.089	8.2	0.006
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	1.8	1.8	1.9	1.8	0.2	0.19	0.19	0.18
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.002	0.002	0.001	0.002	0.002	0.002	0.001	0.002
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.084	0.0092	0.0098	0.024	0.0092	0.0082	0.0076	0.0046
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	184	.	187	.	198	.	191	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	70	70	61	61	57	56	53	53
Chloride	14.2	.	16	.	8.7	.	9.9	.
Fluoride	0.7	.	0.8	.	0.2	.	0.2	.
Magnesium	32	32	29	29	20	20	21	21
Manganese	0.026	0.024	0.036	0.035	0.052	0.049	0.043	0.0083
Nitrate-N	<0.2	.	<0.2	.	4.16	.	4.8	.
Potassium	2.9	2.1	2.3	2.8	0.99	0.99	1.1	1.3
Sodium	16	16	18	17	3.1	3.1	3.6	3.2
Sulfate	125	.	107	.	23.2	.	21	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-714				GW-715			
	EXP				EXP			
	08/01/93		11/09/93		03/21/93		04/29/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.046	0.022	0.066	<0.02	0.027	<0.02	0.033	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.065	0.064	0.062	0.057	0.086	0.088	0.082	0.082
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.067	0.063	0.1	0.077	0.045	0.055	0.055	0.045
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	0.0035	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	0.0044	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.68	0.0052	9.3	0.58	0.069	<0.005	0.35	0.012
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.033	0.032
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.2	0.2	0.17	0.17	0.1	0.097	0.09	0.092
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.001	0.002	0.002	0.001	0.001	0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0084	0.0047	0.0066	0.0049	0.013	0.013	0.01	0.0081
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	195	.	180	.	203	.	203	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	57	57	49	49	71	72	61	63
Chloride	9	.	10	.	62	.	109	.
Fluoride	0.1	.	0.2	.	0.1	.	<0.1	.
Magnesium	22	22	21	22	15	15	15	15
Manganese	0.0099	0.0094	0.12	0.084	0.14	0.11	0.13	0.094
Nitrate-N	4.03	.	3.2	.	0.6	.	0.82	.
Potassium	0.88	1.3	0.88	1.5	2.6	2.6	4.3	4
Sodium	3.4	3.3	4.2	4.2	25	25	17	18
Sulfate	22.5	.	22	.	7.5	.	6.8	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-715				GW-723			
	EXP				EXP			
	08/01/93		11/11/93		02/12/93		05/18/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.34	<0.02	0.061	<0.02	<0.02	<0.02	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.08	0.075	0.081	0.081	0.1	0.062	0.056	0.054
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.04	0.036	0.065	0.031	0.049	0.046	0.082	0.081
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	0.064	<0.01	0.019	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	0.061	<0.01	0.018	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.0063	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	1.2	0.0059	0.32	0.058	42	<0.005	1.8	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.033	0.021	0.038	0.053	<0.01	<0.01	0.017	0.011
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.094	0.094	0.081	0.082	0.78	0.71	1.2	1.2
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.003	0.001	0.001	0.003	0.003	0.002	0.002
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.012	0.0068	0.0082	0.058	0.017	0.0035	0.018	0.016
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	224	.	236	.	223	.	197	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	73	74	74	74	84	78	52	50
Chloride	51	.	45.6	.	11	.	7.5	.
Fluoride	<0.1	.	<0.1	.	0.3	.	0.4	.
Magnesium	17	17	18	18	27	26	26	26
Manganese	0.33	0.14	0.11	0.11	0.38	0.055	0.02	0.0068
Nitrate-N	1.1	.	0.66	.	20	.	6.39	.
Potassium	2	2.5	2.2	1.7	2.9	2.9	2.4	2.4
Sodium	17	17	19	19	7	6.7	6.3	6.2
Sulfate	8.2	.	6.1	.	28	.	30.3	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-723				GW-724			
	EXP				EXP			
	09/27/93		12/14/93		02/10/93		05/18/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.037	0.03	0.035	0.03	<0.02	<0.02	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.067	0.058	0.06	0.056	0.15	0.15	0.16	0.16
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.094	0.094	0.1	0.08	0.057	0.072	0.088	0.082
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	0.0076	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	0.0054	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	0.0087	<0.004	<0.004	<0.004
Iron	16	<0.005	2.6	<0.005	0.67	0.45	0.83	0.52
Lead (AAS)	0.0046	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.016	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	1.6	1.6	1.5	1.5	1.2	1.2	1.2	1.2
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.001	0.001	0.001	0.001	0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.035	0.0074	0.004	<0.002	0.0033	0.0058	0.03	0.12
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	196	.	190	.	201	.	213	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	51	52	49	49	99	99	98	98
Chloride	9.1	.	10	.	48	.	48	.
Fluoride	0.5	.	0.5	.	0.2	.	0.2	.
Magnesium	31	31	31	31	41	41	40	40
Manganese	0.17	0.018	0.047	0.01	0.036	0.037	0.036	0.035
Nitrate-N	9.6	.	10.6	.	62	.	37	.
Potassium	2.6	2.7	2.7	3.1	1.4	2	1.6	1.7
Sodium	8.1	8.2	8.7	8.7	21	21	19	19
Sulfate	33.5	.	33	.	26	.	23	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-724				GW-725			
	EXP				EXP			
	09/29/93		12/14/93		02/12/93		05/19/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	0.029	<0.02	0.037	0.043	0.075	0.047	0.067
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.051	<0.05
Barium	0.17	0.18	0.16	0.16	0.28	0.28	0.28	0.27
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.094	0.097	0.078	0.089	0.044	0.052	0.063	0.053
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	0.0035	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	1	0.66	2.5	0.99	1.8	0.53	0.21	0.036
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	1.3	1.3	1.2	1.2	0.5	0.51	0.56	0.55
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	0.001	0.001	0.001	0.004	0.003	0.003	0.003
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0066	0.011	<0.002	<0.002	0.0055	0.0059	0.017	0.019
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	203	.	203	.	292	.	284	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	97	100	96	100	170	170	170	170
Chloride	54	.	45	.	78	.	50	.
Fluoride	0.2	.	0.2	.	0.1	.	<0.1	.
Magnesium	40	42	41	43	27	27	30	30
Manganese	0.054	0.061	0.11	0.11	0.063	0.055	0.029	0.029
Nitrate-N	50.1	.	46.4	.	61	.	55	.
Potassium	2.1	2.1	2.3	2.6	2.9	2.8	2.6	2.3
Sodium	21	22	21	21	17	17	17	16
Sulfate	23	.	21	.	59	.	34	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-725				GW-736			
	EXP				EXP			
	09/28/93		12/15/93		02/11/93		05/18/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.054	0.056	0.029	0.03	0.066	0.067	<0.02	0.046
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.25	0.25	0.26	0.25	0.22	0.22	0.21	0.21
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.00038	<0.0003	<0.0003
Boron	0.047	0.051	0.051	0.04	0.044	0.041	0.056	0.043
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.042	0.013	0.26	0.11	0.028	<0.005	0.019	0.0069
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.39	0.4	0.46	0.45	0.36	0.36	0.34	0.35
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.006	0.004	0.006	0.005	0.007	0.008	0.003	0.007
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0077	0.0091	<0.002	<0.002	0.0068	0.0074	0.01	0.0088
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	289	.	303	.	312	.	313	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	170	170	180	170	180	180	170	180
Chloride	52	.	52	.	49	.	50	.
Fluoride	<0.1	.	<0.1	.	0.3	.	0.2	.
Magnesium	26	26	28	27	22	23	22	22
Manganese	0.97	0.96	0.37	0.36	0.5	0.52	0.53	0.54
Nitrate-N	49.9	.	46.2	.	61	.	42	.
Potassium	3.1	3	3.4	3.6	3.3	3.2	2.8	3
Sodium	21	22	21	21	22	22	19	20
Sulfate	38	.	31	.	40	.	38	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-736				GW-737			
	EXP				EXP			
	09/28/93		12/15/93		02/11/93		05/19/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.041	0.044	0.033	0.032	0.051	0.055	0.023	0.054
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.28	0.29	0.22	0.23	0.25	0.25	0.23	0.23
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.067	0.059	0.044	0.049	0.042	0.041	0.054	0.044
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.85	0.7	<0.005	<0.005	0.29	<0.005	0.023	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.025	0.015
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.56	0.57	0.34	0.35	0.37	0.36	0.36	0.36
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.006	0.005	0.008	0.008	0.009	0.008	0.009	0.006
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0071	0.0088	<0.002	<0.002	0.021	0.0094	0.011	0.0065
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	317	.	316	.	312	.	319	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	170	170	170	190	180	170	180	180
Chloride	65	.	55	.	52	.	51	.
Fluoride	0.2	.	0.2	.	0.2	.	0.1	.
Magnesium	29	29	24	25	24	23	23	23
Manganese	0.19	0.19	0.9	0.97	0.94	0.77	0.86	0.82
Nitrate-N	43.8	.	42.4	.	57	.	37	.
Potassium	3.1	3	3.8	3.6	3.4	3.3	3.1	3
Sodium	20	20	23	24	23	24	21	20
Sulfate	40	.	32	.	40	.	41	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

76

Sampling Point . Location . Date Sampled	GW-737				GW-738			
	EXP				EXP			
	09/28/93		12/15/93		02/10/93		05/18/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.056	0.056	0.025	0.021	0.19	<0.02	0.18	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.24	0.23	0.23	0.24	0.044	0.043	0.044	0.043
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.051	0.05	0.043	0.038	0.019	0.022	0.03	0.027
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	0.014	<0.004	<0.004	<0.004
Iron	0.028	<0.005	<0.005	<0.005	0.21	<0.005	0.2	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.39	0.38	0.36	0.36	0.1	0.1	0.1	0.1
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.005	0.006	0.008	0.008	0.002	0.002	0.002	0.002
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0068	0.0059	<0.002	<0.002	0.016	0.0069	0.0087	0.0076
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	307	.	310	.	279	.	283	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	180	180	170	170	120	120	110	110
Chloride	54	.	53	.	14	.	15	.
Fluoride	0.1	.	0.1	.	<0.1	.	<0.1	.
Magnesium	25	25	25	25	25	25	24	23
Manganese	0.94	0.93	0.94	0.94	0.0068	0.0011	0.004	<0.001
Nitrate-N	49.9	.	44.3	.	22	.	15	.
Potassium	3.3	3.2	3.5	3.4	2.8	2	1.6	1.7
Sodium	24	23	23	22	6.7	6.8	5.6	5.6
Sulfate	38	.	30	.	30	.	27	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

77

Sampling Point . Location . Date Sampled	GW-738				GW-739			
	EXP				EXP			
	09/27/93		12/14/93		02/10/93		05/18/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.5	0.042	0.27	0.026	<0.02	0.02	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.058	0.055	0.054	0.054	0.031	0.029	0.039	0.038
Beryllium	<0.0003	0.00033	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.04	0.038	0.03	0.043	0.016	0.012	0.032	0.033
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	0.0035	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	0.032	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.48	0.11	0.22	<0.005	7.1	0.023	0.4	0.022
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	0.044	<0.01	<0.01	<0.01	<0.01	0.017	0.014
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.13	0.13	0.12	0.12	0.087	0.085	0.096	0.095
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.002	0.003	0.003	0.003	0.001	0.001	0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.013	0.0072	<0.002	0.0024	0.013	0.0045	0.009	0.0079
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	292	.	286	.	222	.	219	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	130	130	130	130	61	60	58	57
Chloride	34	.	20	.	5.3	.	5	.
Fluoride	<0.1	.	<0.1	.	0.2	.	0.2	.
Magnesium	27	27	26	27	27	27	26	25
Manganese	0.017	0.0081	0.0092	<0.001	0.09	0.056	0.022	0.019
Nitrate-N	40.4	.	24.8	.	7.4	.	4.17	.
Potassium	2.1	2.1	2.8	2.2	<0.6	1.3	1.1	1.2
Sodium	8.3	8.2	8.7	8.8	1.7	1.8	1.9	1.9
Sulfate	26.9	.	25	.	18	.	12.7	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

78

Sampling Point . Location . Date Sampled	GW-739				GW-740			
	EXP				EXP			
	09/27/93		12/13/93		02/09/93		05/17/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.039	0.024	0.032	0.023	<0.02	<0.02	<0.02	0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.044	0.044	0.038	0.037	0.072	0.072	0.079	0.079
Beryllium	0.00043	0.00033	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.033	0.036	0.035	0.024	0.015	0.0047	0.022	0.039
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.007	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.95	0.07	1.6	0.071	0.35	0.11	0.21	0.047
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.11	0.11	0.11	0.1	0.043	0.043	0.048	0.048
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.002	0.004	<0.001	0.001	<0.001	0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.012	0.0078	<0.002	<0.002	0.0048	0.0034	0.011	0.01
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	235	.	236	.	237	.	242	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	63	63	68	68	59	61	60	60
Chloride	6.4	.	7.3	.	5.8	.	6.1	.
Fluoride	0.2	.	0.2	.	0.2	.	0.2	.
Magnesium	29	29	30	30	29	29	28	28
Manganese	0.049	0.043	0.087	0.079	0.015	0.015	0.0089	0.012
Nitrate-N	8.6	.	8.76	.	3.5	.	3.32	.
Potassium	1.3	1.2	1.5	1.6	2.4	0.6	1.3	1.3
Sodium	2.4	2.5	2.7	2.6	1.4	1.4	1.6	1.7
Sulfate	12.3	.	13.3	.	17	.	12.4	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

79

Sampling Point . Location . Date Sampled	GW-740				GW-793			
	RXP				AGLLSF			
	09/27/93		12/11/93		02/26/93		05/25/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	0.032	0.029	0.028	<0.02	<0.02	0.039	0.023
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.093	0.092	0.088	0.088	0.14	0.13	0.13	0.13
Beryllium	<0.0003	0.00033	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.038	0.032	0.043	0.026	0.027	<0.004	0.014	0.022
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	0.0033	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	0.0042	<0.004	0.0064	0.0052	0.0093	<0.004
Iron	0.17	0.093	0.22	0.054	0.056	<0.005	0.079	0.012
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.055	0.055	0.05	0.05	0.089	0.089	0.091	0.085
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	0.001	0.001	0.001	0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.012	0.012	<0.002	<0.002	0.0098	0.0087	0.017	0.012
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	261	.	253	.	150	.	150	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	67	67	67	68	59	59	51	48
Chloride	7.2	.	8.2	.	<1	.	<1	.
Fluoride	0.1	.	0.2	.	0.1	.	0.1	.
Magnesium	32	32	32	32	4.7	4.7	4.3	4.3
Manganese	0.0074	0.0067	0.0094	0.0081	0.097	0.092	0.11	0.11
Nitrate-N	4.8	.	4.78	.	<0.2	.	<0.2	.
Potassium	1.3	1.4	1.6	1.8	1.3	<0.6	0.85	0.73
Sodium	2.1	2.1	2.2	2.3	3.8	3.7	3.5	3.4
Sulfate	13.3	.	11.9	.	6	.	4.6	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

80

Sampling Point . Location . Date Sampled	GW-793				GW-794			
	AGLLSF				AGLLSF			
	07/11/93		10/18/93		03/01/93		05/25/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.57	<0.02	0.12	<0.02	9.6	0.022	0.23	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05
Barium	0.14	0.13	0.15	0.15	0.19	0.084	0.091	0.091
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.003	<0.0003	<0.0003	<0.0003
Boron	0.018	0.0069	0.01	0.012	0.13	0.038	0.052	0.047
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	0.032	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01
Cobalt	0.0054	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005
Copper	0.012	<0.004	0.0041	<0.004	<0.04	0.0046	0.0084	<0.004
Iron	0.91	<0.005	0.19	0.022	17	0.0093	0.36	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	0.013	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.06	<0.006	<0.006	<0.006
Strontium	0.088	0.086	0.096	0.094	0.35	0.16	0.16	0.16
Thorium	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	<0.001	<0.001	<0.001	0.002	0.001	0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005
Zinc	0.011	0.006	0.0068	0.0062	0.069	0.0091	0.016	0.013
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	154	.	164	.	222	.	209	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	49	49	55	53	190	97	90	85
Chloride	<1	.	1	.	9.5	.	11.5	.
Fluoride	0.2	.	0.1	.	0.2	.	<0.1	.
Magnesium	4.5	4.3	4.7	4.6	19	6.5	6.7	6.6
Manganese	0.16	0.1	0.15	0.13	0.58	0.028	0.031	0.039
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	<0.6	0.64	0.69	1	11	2.1	1.7	1.6
Sodium	3.4	3.3	3.5	3.5	0.23	3.2	3	3
Sulfate	5.2	.	3.9	.	39.1	.	20.4	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-794				GW-795			
	AQLLSF				AQLLSF			
	07/11/93		10/18/93		03/02/93		05/25/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.29	<0.02	0.28	<0.02	0.024	<0.02	0.024	0.036
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.1	0.12	0.1	0.1	0.052	0.051	0.053	0.053
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.03	0.04	0.044	0.041	0.028	0.026	0.033	0.031
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	0.0067	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	0.0059	<0.004	<0.004	<0.004	<0.004
Iron	0.37	<0.005	0.53	0.046	0.021	<0.005	0.012	<0.005
Lead (AAS)	<0.004	<0.004	0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.16	0.16	0.17	0.16	0.13	0.13	0.13	0.13
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.011	0.0083	0.011	0.013	0.0095	0.013	0.019	0.022
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	222	.	229	.	178	.	195	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	81	66	91	87	90	89	79	79
Chloride	11.3	.	11.8	.	4.9	.	4.7	.
Fluoride	0.1	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	8.6	12	7.6	7.6	3.5	3.5	3.3	3.2
Manganese	0.013	0.0037	0.023	0.0073	0.015	0.0064	0.022	0.023
Nitrate-N	0.3	.	0.37	.	<0.2	.	<0.2	.
Potassium	3.1	3	2.7	2.9	0.87	0.67	0.71	0.74
Sodium	2.7	1.9	3	3.1	2.1	2.2	2.2	2.2
Sulfate	23.5	.	19.2	.	20.3	.	22.2	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

82

Sampling Point . Location . Date Sampled	GW-795				GW-800			
	AGLLSF				OLF			
	07/12/93		10/18/93		05/11/93		09/14/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.031	<0.02	<0.02	<0.02	0.065	<0.02	2.4	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.058	0.058	0.071	0.07	0.09	0.09	0.17	0.15
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.026	0.028	0.029	0.031	0.033	0.029	0.037	0.037
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.011	0.0053
Iron	0.015	<0.005	0.023	<0.005	0.051	<0.005	3.5	<0.005
Lead (AAS)	<0.004	<0.004	0.0043	<0.004	<0.004	<0.004	0.0089	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	0.023	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.13	0.14	0.16	0.16	0.15	0.15	0.31	0.29
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.001	0.003	0.003	0.001	0.001	0.002	.
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0086	<0.005
Zinc	0.0078	0.0069	0.011	0.0099	0.074	0.067	0.041	0.031
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	204	.	215	.	183	.	276	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	81	82	94	95	47	47	72	71
Chloride	4.3	.	6.7	.	1.5	.	2.4	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	0.1	.
Magnesium	3.5	3.5	4.5	4.5	17	17	34	31
Manganese	0.052	0.047	0.018	0.016	0.0019	0.0033	0.21	<0.001
Nitrate-N	<0.2	.	5.2	.	<0.2	.	<0.2	.
Potassium	1.2	1.1	1.2	1.1	1.9	1.8	3.4	3.4
Sodium	1.9	2	3	3	0.81	0.84	1.2	1.2
Sulfate	20.9	.	21	.	13	.	21	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

83

Sampling Point . Location . Date Sampled	GW-800	
	OLF	
	10/22/93	
	TOT	DIS
METALS (mg/L)	.	.
	.	.
Aluminum	0.42	<0.02
Antimony	<0.05	<0.05
Arsenic	<0.05	<0.05
Barium	0.13	0.13
Beryllium	<0.0003	<0.0003
Boron	0.019	0.019
Cadmium (AAS)	<0.002	<0.002
Cadmium	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01
Chromium	<0.01	<0.01
Cobalt	<0.005	<0.005
Copper	<0.004	<0.004
Iron	0.43	0.006
Lead (AAS)	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002
Molybdenum	<0.01	<0.01
Nickel	<0.01	<0.01
Selenium	<0.05	<0.05
Silver	<0.006	<0.006
Strontium	0.18	0.17
Thorium	<0.2	<0.2
Uranium (Fluor)	0.001	0.001
Vanadium	<0.005	<0.005
Zinc	0.018	0.015
	.	.
MAJOR IONS (mg/L)	.	.
	.	.
Alkalinity-HCO ₃	248	.
Alkalinity-CO ₃	<1	.
Calcium	59	58
Chloride	2	.
Fluoride	0.1	.
Magnesium	23	23
Manganese	0.044	<0.001
Nitrate-N	<0.2	.
Potassium	2.9	2.6
Sodium	0.87	0.87
Sulfate	16	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

84

Sampling Point . Location . Date Sampled	BCK-00.63							
	EXP							
	03/09/93		05/03/93		08/16/93		11/08/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.17	0.038	0.066	<0.02	0.25	<0.02	0.076	0.039
Antimony	<0.05	<0.05	0.057	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.044	0.042	0.048	0.045	0.073	0.05	0.078	0.071
Beryllium	0.00043	0.00056	<0.0003	<0.0003	<0.0003	<0.0003	0.0062	<0.0003
Boron	0.048	0.049	0.082	0.056	0.092	0.087	0.092	0.073
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0082	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0064	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.011	<0.004
Iron	0.13	0.02	0.097	0.019	0.25	0.014	0.096	0.033
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.056	0.057	0.055	0.061	0.092	0.1	0.13	0.12
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.015	0.019	0.018	0.017	0.032	0.033	0.03	0.03
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0056	<0.005
Zinc	0.0032	0.0075	0.0079	0.015	0.0049	<0.002	0.0032	<0.002
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	95	.	111	.	169	.	163	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	30	31	31	31	55	57	59	58
Chloride	4.8	.	5.1	.	10.9	.	13	.
Fluoride	<0.1	.	<0.1	.	0.1	.	0.2	.
Magnesium	8.3	8.4	9.3	9.5	16	15	14	14
Manganese	0.012	0.019	0.014	0.011	0.031	0.0095	0.013	0.0065
Nitrate-N	2	.	2.2	.	5.1	.	9.9	.
Potassium	0.97	1	1.2	1.1	1.8	1.5	2	2
Sodium	3.2	3.3	3.3	3.2	6.3	6.6	8	8
Sulfate	13	.	10	.	12.5	.	20	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

85

Sampling Point . Location . Date Sampled	BCK-04.55							
	EXP							
	03/09/93		05/03/93		08/16/93		11/08/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.091	<0.02	0.035	<0.02	0.087	<0.02	0.077	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.045	0.044	0.05	0.047	0.071	0.073	0.081	0.073
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0072	0.00069
Boron	0.06	0.046	0.05	0.06	0.085	0.082	0.085	0.13
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0097	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0083	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	0.005	0.014	<0.004
Iron	0.09	0.014	0.071	0.019	0.11	<0.005	0.082	0.01
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.0061	<0.006
Strontium	0.057	0.055	0.058	0.057	0.085	0.089	0.13	0.13
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.019	0.02	0.021	0.02	0.03	0.026	0.045	0.046
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0069	<0.005
Zinc	0.0049	0.0035	0.017	0.0083	0.008	0.014	0.0087	<0.002
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	102	.	118	.	165	.	164	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	32	31	33	32	52	53	62	58
Chloride	5.1	.	5.2	.	11.9	.	14	.
Fluoride	<0.1	.	<0.1	.	0.1	.	0.2	.
Magnesium	9	8.9	10	9.8	16	17	15	15
Manganese	0.012	0.014	0.016	0.011	0.034	0.022	0.015	0.0066
Nitrate-N	2.3	.	2.6	.	6.3	.	10.3	.
Potassium	1.1	0.99	1.1	1.2	1.7	1.7	2.3	2
Sodium	3.3	3.2	3.5	3.3	6	6.3	8.2	8.5
Sulfate	13	.	11	.	13.1	.	19	.

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APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

86

Sampling Point . Location . Date Sampled	BCK-09.40						
	EXP						
	03/09/93		05/03/93		08/16/93	11/08/93	
	TOT	DIS	TOT	DIS	TOT	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.
	.	.	.	.	.	.	.
Aluminum	0.063	0.056	0.074	0.022	0.057	0.086	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.08	0.079	0.092	0.088	0.12	0.025	0.025
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.15	0.15	0.16	0.15	0.43	0.059	0.065
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.11	0.026	0.15	0.028	0.16	0.07	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.14	0.14	0.15	0.14	0.22	0.024	0.022
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.074	0.073	0.087	0.08	0.129	0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.004	0.0037	0.0049	0.012	0.01	0.0089	0.014
	.	.	.	.	.	.	.
MAJOR IONS (mg/L)	.	.	.	.	.	.	.
	.	.	.	.	.	.	.
Alkalinity-HCO ₃	122	.	146	.	187	130	.
Alkalinity-CO ₃	<1	.	<1	.	<1	<1	.
Calcium	54	54	59	57	89	29	29
Chloride	12	.	15	.	24.3	1	.
Fluoride	0.2	.	0.2	.	0.3	0.1	.
Magnesium	10	10	12	11	16	15	15
Manganese	0.046	0.041	0.058	0.046	0.07	0.0038	0.0016
Nitrate-N	11	.	13	.	18.8	<0.2	.
Potassium	1.6	1.6	1.8	1.8	3	0.77	0.72
Sodium	7.8	7.8	8.9	8.5	15	0.75	0.72
Sulfate	21	.	18	.	25.2	5	.

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	NT-01							
	EXP							
	03/09/93		05/03/93		08/16/93		11/08/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.79	0.11	0.55	0.047	0.13	0.91	0.79	0.15
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.48	0.41	0.084	0.088	0.71	0.7	0.61	0.58
Beryllium	<0.0003	0.00059	<0.0003	<0.0003	<0.0003	0.00031	0.00031	<0.0003
Boron	0.041	0.036	0.05	0.053	0.11	0.095	0.12	0.09
Cadmium (AAS)	0.017	0.014	<0.002	<0.002	0.017	0.013	0.024	0.022
Cadmium	0.016	0.013	<0.003	<0.003	0.016	0.013	0.02	0.019
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	0.019	<0.01	<0.01
Chromium	0.012	<0.01	<0.01	<0.01	<0.01	0.023	<0.01	<0.01
Cobalt	0.0076	0.0075	<0.005	<0.005	0.0071	0.02	0.008	0.0083
Copper	<0.004	<0.004	<0.004	<0.004	0.0042	0.044	<0.004	<0.004
Iron	0.19	<0.005	0.75	<0.005	0.0064	11	0.19	0.047
Lead (AAS)	<0.004	<0.004	0.0073	<0.004	<0.004	0.018	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.082	0.061	<0.01	0.012	0.075	0.24	0.077	0.075
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.48	0.41	0.42	0.43	1	1	0.92	0.89
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.012	0.013	0.031	0.035	0.18	0.113	0.185	0.207
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.01	0.0076	0.018	0.0096	0.013	0.082	0.021	0.02
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	100	.	328	.	205	.	245	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	150	140	170	180	320	330	270	260
Chloride	9.9	.	44	.	41.6	.	29	.
Fluoride	0.8	.	0.1	.	1.5	.	1.4	.
Magnesium	20	19	17	18	44	49	38	37
Manganese	3.3	2.8	0.1	0.011	3.2	3.7	3.6	3.5
Nitrate-N	112	.	31	.	286.1	.	259	.
Potassium	2.5	2	3.1	3.2	6.2	5.9	5.2	5
Sodium	18	16	14	14	50	50	40	40
Sulfate	23	.	59	.	66.8	.	74	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	NT-13							
	EXP							
	03/09/93		05/03/93		08/16/93		11/08/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.27	<0.02	0.37	<0.02	<0.02	<0.02	5.8	0.1
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.035	0.025	0.043	0.037	0.13	0.13	0.17	0.071
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0004	<0.0003
Boron	0.015	0.032	0.023	0.022	0.021	0.027	0.03	0.019
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0044	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.012	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.0072	<0.004
Iron	0.37	0.073	0.6	0.11	1.8	0.12	10	0.22
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.0068	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.021	0.023	0.029	0.029	0.12	0.12	0.063	0.059
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01	<0.005
Zinc	0.0042	0.0035	0.0068	0.0042	<0.002	<0.002	0.066	0.037
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	17	.	26	.	119	.	16	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	5.5	6.4	7.5	7.8	34	33	21	20
Chloride	1.7	.	1.6	.	1	.	2	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	1.3	1.4	1.6	1.7	4.4	4.3	4.2	3.4
Manganese	0.068	0.059	0.12	0.11	1.5	1.5	2.1	0.19
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	1.1	1.1	1	1.1	1.9	1.2	3.1	1.6
Sodium	1.7	1.8	2.1	2.1	7.4	7.5	4.2	4.2
Sulfate	12	.	10	.	4.6	.	57	.

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	SS-1							
	EXP							
	03/09/93		05/03/93		08/16/93		11/08/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.04	<0.02	0.39	0.097	0.89	0.047	0.13	0.058
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.081	0.093	0.66	0.61	0.11	0.12	0.11	0.11
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.048	0.045	0.046	0.039	0.057	0.044	0.079	0.1
Cadmium (AAS)	<0.002	<0.002	0.024	0.022	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	0.017	0.016	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	0.014	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	0.0068	<0.005	<0.005	<0.005	<0.005
Copper	0.0043	<0.004	<0.004	<0.004	0.0071	0.0081	<0.004	<0.004
Iron	<0.005	<0.005	0.23	0.0058	1.5	0.031	0.16	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	0.08	0.09	<0.01	0.015	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.4	0.39	0.6	0.58	0.55	0.53	0.56	0.57
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.031	0.034	0.016	0.019	0.045	0.056	0.04	0.04
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.007	0.0033	0.012	0.011	0.01	0.059	0.016	0.0021
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	324	.	126	.	354	.	361	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	180	170	200	190	220	220	220	220
Chloride	40	.	14	.	77.1	.	80	.
Fluoride	0.2	.	0.8	.	0.2	.	0.3	.
Magnesium	16	15	29	28	20	21	20	20
Manganese	0.016	0.019	4	3.7	0.1	0.022	0.017	0.005
Nitrate-N	31	.	142	.	44.2	.	54.9	.
Potassium	3.7	3	2.9	3	4.4	4.1	4.2	4.3
Sodium	14	13	23	22	25	24	26	26
Sulfate	54	.	19	.	56.7	.	57	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	SS-4							
	EXP							
	03/09/93		05/03/93		08/16/93		11/08/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.16	0.035	0.12	<0.02	0.2	<0.02	0.15	0.041
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.1	0.089	0.11	0.11	0.17	0.17	0.17	0.17
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.12	0.088	0.14	0.12	0.15	0.16	0.1	0.12
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	0.0053	<0.004	<0.004
Iron	0.17	<0.005	0.16	0.0065	0.22	<0.005	0.15	<0.005
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	0.022	0.018	0.012	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.15	0.15	0.16	0.17	0.33	0.33	0.36	0.37
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.084	0.087	0.112	0.107	0.181	0.177	0.24	0.12
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0055	0.0034	0.0069	0.0063	<0.002	<0.002	<0.002	<0.002
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	192	.	203	.	227	.	237	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	70	71	70	74	120	120	130	140
Chloride	16	.	21	.	35.8	.	31	.
Fluoride	0.3	.	0.3	.	0.4	.	0.6	.
Magnesium	18	18	18	19	23	23	23	23
Manganese	0.12	0.13	0.086	0.0071	0.11	0.0023	0.057	0.0013
Nitrate-N	9.3	.	15	.	41.3	.	67.6	.
Potassium	2	2.1	2.3	2.3	3.9	3.7	3.4	3.3
Sodium	9.8	11	12	12	25	25	23	22
Sulfate	21	.	23	.	31.2	.	45	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	SS-5							
	EXP							
	03/09/93		05/03/93		08/16/93		11/08/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.094	0.042	0.056	<0.02	0.039	<0.02	0.14	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.049	0.045	0.053	0.054	0.11	0.11	0.12	0.11
Beryllium	0.0003	0.00043	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.18	0.026	0.033	0.039	0.14	0.11	0.13	0.081
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	0.0044	<0.004	<0.004
Iron	0.052	<0.005	0.028	0.011	0.036	0.031	0.15	0.0076
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.052	0.059	0.062	0.064	0.18	0.18	0.2	0.2
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.018	0.019	0.025	0.026	0.098	0.078	0.1	0.11
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0036	0.0044	0.0036	0.0036	<0.002	0.0063	0.01	<0.002
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	127	.	138	.	204	.	192	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	36	39	39	40	84	81	86	86
Chloride	5.4	.	6.8	.	23.9	.	22	.
Fluoride	<0.1	.	0.1	.	0.2	.	0.3	.
Magnesium	13	13	13	13	20	19	17	17
Manganese	0.0051	0.0032	0.0055	0.0052	0.0049	0.027	0.0059	0.001
Nitrate-N	2.5	.	4.5	.	15.2	.	24.8	.
Potassium	0.88	0.97	1.1	0.99	1.8	1.8	2.4	2.5
Sodium	3.4	3.3	4.1	4.3	14	14	14	14
Sulfate	13	.	12	.	22.7	.	29	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

92

Sampling Point . Location . Date Sampled	SS-6							
	EXP							
	03/09/93		05/03/93		08/16/93		11/08/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.042	0.032	0.039	<0.02	0.025	<0.02	0.069	0.053
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.025	0.037	0.027	0.027	0.025	0.027	0.13	0.13
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.009	0.015	0.014	0.0094	0.012	0.025	0.28	0.25
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.038	0.017	0.051	0.011	0.031	0.0078	0.15	0.023
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	0.017	<0.01	<0.01	<0.01	<0.01	<0.01	0.013
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.016	0.025	0.016	0.016	0.021	0.023	0.28	0.28
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	0.001	<0.001	<0.001	<0.001	0.001	0.15	0.17
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.009	0.0059	0.013	0.012	0.038	0.029	0.0045	0.0081
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	90	.	109	.	150	.	197	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	20	23	21	20	33	34	100	100
Chloride	1.7	.	1.5	.	<1	.	25	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	0.4	.
Magnesium	10	11	13	12	18	18	17	17
Manganese	0.012	0.072	0.026	0.022	0.0044	0.0031	0.067	0.058
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	37.8	.
Potassium	<0.6	0.73	<0.6	0.62	<0.6	0.64	3.1	3
Sodium	0.45	0.74	0.47	0.48	0.56	0.78	18	17
Sulfate	9.1	.	6.5	.	2.3	.	29	.

(CONTINUED)

APPENDIX E.1
Groundwater and Surface-Water Quality Data, 1993

93

Sampling Point . Location . Date Sampled	SS-8							
	EXP							
	03/09/93		05/03/93		08/16/93		11/08/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.16	<0.02	0.074	<0.02	0.025	<0.02	0.14	0.023
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.03	0.031	0.033	0.031	0.054	0.07	0.052	0.051
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.018	0.016	0.031	0.018	0.023	0.017	0.036	0.014
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.15	<0.005	0.063	0.016	0.035	0.1	0.15	0.0073
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	0.017	0.011	<0.01	0.013	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.024	0.026	0.027	0.028	0.037	0.065	0.052	0.051
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	0.001	<0.001	0.001	<0.001	0.014	0.001	0.002
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.004	0.0025	0.01	0.0053	<0.002	<0.002	<0.002	<0.002
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	97	.	110	.	161	.	144	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	25	25	27	27	39	46	39	39
Chloride	3.8	.	2.9	.	2.9	.	6	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	0.1	.
Magnesium	8.6	8.8	9.1	9	16	16	12	12
Manganese	0.0084	0.0046	0.0035	0.0029	0.0062	0.13	0.0016	<0.001
Nitrate-N	0.36	.	0.32	.	1.2	.	0.3	.
Potassium	0.67	<0.6	0.9	0.78	0.86	0.8	1.2	1.3
Sodium	1.8	1.9	1.7	1.7	1.9	2.8	3.8	3.7
Sulfate	8.3	.	6.4	.	2.4	.	7	.

APPENDIX E.2
VOLATILE ORGANIC COMPOUNDS

APPENDIX E.2
VOC Data Summary

Compound	Number of Samples				Total
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	
Total Samples	91	91	90	97	369
Not Detected	25	36	43	25	129
VOCs Detected	66	55	47	72	240
Methylene chloride	46	24	24	56	150
Trichloroethene	24	24	26	24	98
1,2-Dichloroethene	24	18	21	21	84
2-Butanone	6	8	0	48	62
4-Methyl-2-pentanone	38	18	0	5	61
Acetone	16	2	2	39	59
Tetrachloroethene	13	12	10	14	49
Chloroform	12	8	12	9	41
Carbon tetrachloride	9	3	3	8	23
1,1,1-Trichloroethane	4	6	7	6	23
1,1-Dichloroethene	5	4	6	7	22
1,1-Dichloroethane	5	2	4	5	16
Vinyl chloride	2	2	2	1	7
Benzene	0	0	1	3	4
Bromodichloromethane	1	1	1	1	4
Toluene	0	0	1	2	3
Chlorobenzene	1	0	0	1	2
1,2-Dichloroethane	0	1	0	1	2
Vinyl acetate	2	0	0	0	2
Carbon disulfide	1	0	0	0	1
Ethylbenzene	1	0	0	0	1
2-Hexanone	1	0	0	0	1
Styrene	1	0	0	0	1
1,1,2-Trichloroethane	1	0	0	0	1
Xylenes	1	0	0	1	2
Bromoform	0	0	0	0	0
Bromomethane	0	0	0	0	0
Chlorodibromomethane	0	0	0	0	0
Chloroethane	0	0	0	0	0
Chloromethane	0	0	0	0	0
1,2-Dichloropropane	0	0	0	0	0
cis-1,3-Dichloropropene	0	0	0	0	0
trans-1,3-Dichloropropene	0	0	0	0	0
1,1,2,2-Tetrachloroethane	0	0	0	0	0

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

2

Sampling Point . Location . Date Sampled	GW-013				GW-040			
	OLF				BG			
	03/29/93	06/17/93	09/17/93	12/19/93	03/25/93	05/11/93	07/02/93	10/09/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	2	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	4	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	2	10U	10U	1	10U	10U	10U	10U
Methylene chloride	3	5U	5U	1	5U	1	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

3

Sampling Point	GW-042	GW-043				GW-044		
Location	BG	OLF				OLF		
Date Sampled	12/29/93	02/04/93	05/10/93	09/11/93	10/19/93	02/04/93	05/10/93	09/11/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	2	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	9	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	1	10U	10U	10U	1	10U	10U
Methylene chloride	5U	1	5U	1	3	1	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

4

Sampling Point	GW-044	GW-052		GW-056				GW-057
Location	OLF	BG		BG				EXP
Date Sampled	10/19/93	03/25/93	04/26/93	03/04/93	04/22/93	07/09/93	10/09/93	03/04/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	3	10U	10U	10U	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	12	10U	10U	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	2	5U	5U	1	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

5

Sampling Point . Location . Date Sampled	GW-057			GW-063	GW-064			
	EXP			OLF	OLF			
	04/22/93	07/09/93	10/09/93	02/23/93	02/09/93	05/12/93	09/11/93	10/20/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	5	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	4	2	2	2
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	3	2	2	2
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	0.9	9	6	7	6
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	2	10U	10U	10U
Methylene chloride	5U	1	5U	1	2	1	1	2
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	1	1	1	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	1	0.8	0.9	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	16	100	79	94	85
Vinyl acetate	10U	10U	10U	10U	3	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

6

Sampling Point . Location . Date Sampled	GW-069				GW-079	GW-080	GW-082	
	BG				BG	BG	BG	
	03/03/93	04/21/93	07/25/93	10/10/93	10/18/93	10/10/93	03/10/93	04/21/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	2	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	41	50
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	0.8	1	5U	2	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	1	10U	10U	10U	10U	30	31
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

7

Sampling Point . Location . Date Sampled	GW-082		GW-084				GW-085	
	BG		OLF				OLF	
	07/25/93	10/18/93	02/04/93	05/10/93	09/11/93	10/20/93	02/11/93	05/12/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	2	10U	10U	10U	3	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10	10U	10U	10U	8	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	29	23	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	1	2	5U	5U	5U	3	1	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	8	13	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

8

Sampling Point	GW-085		GW-086				GW-115	
Location	OLF		OLF				S3	
Date Sampled	09/14/93	10/22/93	02/05/93	05/11/93	09/12/93	10/21/93	01/28/93	05/25/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	1	10U	10U	2	10U
Methylene chloride	1	5U	5U	5U	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

9

Sampling Point . Location . Date Sampled	GW-115		GW-118				GW-162	GW-286
	S3		BG				BG	BG
	09/11/93	10/19/93	03/04/93	04/21/93	07/25/93	10/10/93	10/10/93	02/25/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	7	10U	10U
Benzene	5U	5U	5U	5U	2	1	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	8	10U	10U	10U	11	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	1	10U	10U
Methylene chloride	2	2	5U	5U	5U	6	5U	1
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	2	2	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

10

Sampling Point . Location . Date Sampled	GW-286			GW-287				GW-311
	BG			BG				RS
	04/19/93	07/10/93	10/07/93	02/24/93	04/16/93	07/10/93	10/07/93	02/08/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	5	4	10U	10U	10U	3	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10	10U	10U	10U	11	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	0.9
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	1
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	0.8	3	2	5U	5U	3	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	0.7	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	3	5U	5U	5U	5U	5U	5U	13
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

11

Sampling Point . Location . Date Sampled	GW-311			GW-312				GW-315
	RS			RS				SPI
	05/11/93	09/12/93	10/21/93	02/08/93	05/11/93	09/12/93	10/21/93	02/03/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	10U	3	2
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	2
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	2	1	3	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	0.8	1	1	1	5U	5U	7
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	1	10U	10U	10U	10U	10U	10U	2
Methylene chloride	5U	1	5U	5U	5U	5U	3	2
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	8
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	21	15	19	62	83	10	49	4
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

12

Sampling Point . Location . Date Sampled	GW-315			GW-316				GW-317
	SPI			SPI				SPI
	06/03/93	09/14/93	10/27/93	02/02/93	06/01/93	09/13/93	10/24/93	02/02/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	10U	1	3	10U	10U	10U	3
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	2	2	1	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	7	6	10U	10U	10U	8
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	9	8	6	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	2	7	5	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	2	10U	10U	10U	2
Methylene chloride	1	5U	2	5U	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5	10	7	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	2	5	4	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

13

Sampling Point . Location . Date Sampled	GW-317			GW-323				GW-324
	SPI			SPI				S3
	05/28/93	09/13/93	10/24/93	02/02/93	05/28/93	09/12/93	10/23/93	01/29/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	2	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	4	10U	10U	6	3	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	2	10U	10U	10U	10U
Methylene chloride	1	5U	5U	5U	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

14

Sampling Point . Location . Date Sampled	GW-324			GW-325				GW-342
	S3			S3				BG
	05/25/93	09/11/93	10/19/93	02/01/93	05/25/93	09/11/93	10/21/93	10/07/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	10U	2	10U	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	8	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	0.6	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	1	10U	10U	10U	10U
Methylene chloride	5U	1	2	5U	5U	1	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

15

Sampling Point . Location . Date Sampled	GW-345				GW-347			
	S3				S3			
	02/03/93	06/01/93	09/14/93	10/26/93	02/01/93	05/27/93	09/12/93	10/22/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	2	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	6	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	2	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	2	10U	10U	10U	2	10U	10U	10U
Methylene chloride	2	5U	5	2	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

16

Sampling Point . Location . Date Sampled	GW-348				GW-364			
	S3				OLF			
	02/01/93	05/27/93	09/12/93	10/22/93	03/27/93	06/27/93	09/19/93	12/18/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	2	10U	10U	10U	5
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	7	10U	10U	10U	9
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	2	5U	3	2
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5	2
1,2-Dichloroethene	5U	5U	5U	5U	5U	6	7	4
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	2	10U	10U	10U	10U	1	10U	10U
Methylene chloride	5U	5U	5U	2	5U	5U	1	0.6
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	0.3
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	2	1
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	6	16	15	8
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

17

Sampling Point . Location . Date Sampled	GW-365				GW-370			
	OLF				BG			
	03/28/93	06/27/93	09/19/93	12/19/93	02/17/93	05/21/93	07/10/93	10/14/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	4	10U	10U	3
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	9	10U	10U	10U	9
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	1	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5	5U	4	4	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	21	20	14	13	5U	5U	5U	5U
1,2-Dichloroethene	23	19	14	12	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	2	10U	10U	10U	3	10U	10U	10U
Methylene chloride	3	5U	5U	0.6	2	5U	5U	3
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	2	5U	1	1	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	11	5	2	2	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	89	77	46	39	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

18

Sampling Point . Location . Date Sampled	GW-371				GW-372			
	BG				BG			
	02/16/93	05/21/93	07/09/93	10/13/93	02/09/93	05/19/93	07/02/93	10/12/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	5	10U	1	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	0.6	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	3	10U	10U	10U
Methylene chloride	5U	5U	1	5U	2	5U	5U	0.7
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

19

Sampling Point . Location . Date Sampled	GW-373				GW-526			
	BG				S3			
	02/11/93	05/14/93	07/02/93	10/11/93	02/03/93	06/03/93	09/14/93	10/26/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	2	10U	10U	3	4	10U	10U	2
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	9	10U	10U	10U	8
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	2
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	1	2	10U	10U	2	10U	10U	10U
Methylene chloride	2	2	5U	3	2	5U	5U	5
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

20

Sampling Point . Location . Date Sampled	GW-537				GW-601			
	OLF				OLF			
	02/11/93	05/12/93	09/14/93	10/22/93	03/28/93	06/27/93	09/19/93	12/21/94
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	5
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	4	5U	2	3
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	0.8	0.8	0.9	5U	1	5U	0.6	0.7
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	0.7	0.8
1,2-Dichloroethene	5U	5U	5U	5U	2	5U	5U	1
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	2	3	10U	10U
Methylene chloride	5U	5U	1	5U	3	5U	5U	0.6
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	1	5U	1	1
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	0.5	0.5
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	140	140	120	120
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

21

Sampling Point	GW-613	GW-614	GW-621				GW-626	
Location	S3	S3	BG				BG	
Date Sampled	10/20/93	10/20/93	03/20/93	06/02/93	09/20/93	12/20/93	03/10/93	04/26/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	2	1	10U	10U	10U	10U	100U	20U
Benzene	5U	5U	5U	5U	5U	0.3	50U	10U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	50U	10U
Bromoform	5U	5U	5U	5U	5U	5U	50U	10U
Bromomethane	10U	10U	10U	10U	10U	10U	100U	20U
2-Butanone	7	9	10U	10U	10U	10	100U	20U
Carbon disulfide	5U	5U	5U	5U	5U	5U	50U	10U
Carbon tetrachloride	5U	5U	5U	5U	5U	2	50U	10U
Chlorobenzene	5U	5U	5U	5U	5U	5U	50U	10U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	50U	10U
Chloroethane	10U	10U	10U	10U	10U	10U	100U	20U
Chloroform	5U	5U	5U	5U	5U	5U	50U	10U
Chloromethane	10U	10U	10U	10U	10U	10U	100U	20U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	51	18
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	50U	4
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	28	6
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	1200	400
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	50U	10U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	50U	10U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	50U	10U
Ethylbenzene	5U	5U	5U	5U	5U	5U	50U	10U
2-Hexanone	10U	10U	10U	10U	10U	10U	100U	20U
4-Methyl-2-pentanone	10U	10U	3	10U	10U	10U	100U	20U
Methylene chloride	3	2	2	0.9	5U	5U	50U	3
Styrene	5U	5U	5U	5U	5U	5U	50U	10U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	50U	10U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	140	29
Toluene	5U	5U	5U	5U	5U	5U	50U	10U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	17	4
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	50U	10U
Trichloroethene	5U	5U	5U	5U	2	5U	110	34
Vinyl acetate	10U	10U	10U	10U	10U	10U	100U	20U
Vinyl chloride	10U	10U	10U	10U	10U	10U	72	20U
Xylenes	5U	5U	5U	5U	5U	5U	50U	10U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

22

Sampling Point . Location . Date Sampled	GW-626		GW-627				GW-636	
	BG		BG				OLF	
	08/02/93	10/20/93	03/09/93	04/23/93	07/28/93	10/20/93	03/26/93	06/27/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	20U	5	10U	10U	10U	3	10U	10U
Benzene	10U	10U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	10U	10U	5U	5U	5U	5U	5U	5U
Bromoform	10U	10U	5U	5U	5U	5U	5U	5U
Bromomethane	20U	20U	10U	10U	10U	10U	10U	10U
2-Butanone	20U	23	10U	10U	10U	9	10U	10U
Carbon disulfide	10U	10U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	10U	10U	5U	5U	5U	5U	5U	5U
Chlorobenzene	10U	10U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	10U	10U	5U	5U	5U	5U	5U	5U
Chloroethane	20U	20U	10U	10U	10U	10U	10U	10U
Chloroform	10U	10U	5U	5U	5U	5U	5U	5U
Chloromethane	20U	20U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	19	19	3	5	6	3	5U	5U
1,2-Dichloroethane	10U	3	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	9	12	5U	5U	1	5U	5U	5U
1,2-Dichloroethene	250	330	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	10U	10U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	10U	10U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	10U	10U	5U	5U	5U	5U	5U	5U
Ethylbenzene	10U	10U	5U	5U	5U	5U	5U	5U
2-Hexanone	20U	20U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	20U	20U	2	10U	10U	10U	10U	10U
Methylene chloride	10U	7	5U	5U	1	3	5U	5U
Styrene	10U	10U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	10U	10U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	29	32	39	51	74	37	5U	5U
Toluene	10U	10U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	6	6	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	10U	10U	5U	5U	5U	5U	5U	5U
Trichloroethene	35	36	6	7	10	5	5U	5U
Vinyl acetate	20U	20U	10U	10U	10U	10U	10U	10U
Vinyl chloride	20U	20U	10U	10U	0.8	10U	10U	10U
Xylenes	10U	10U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

23

Sampling Point Location Date Sampled	GW-636		GW-637				GW-638	
	OLF		OLF				OLF	
	09/18/93	12/18/93	03/25/93	06/26/93	09/17/93	12/18/93	03/25/93	06/26/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	3	10U	10U	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	9	10U	10U	10U	11	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	0.9	0.6	5U	5U	5U	0.7	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

24

Sampling Point	GW-638		GW-639				GW-640	
Location	OLF		BG				BG	
Date Sampled	09/17/93	12/18/93	02/24/93	05/24/93	07/11/93	10/15/93	02/22/93	05/24/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	11	10U	4	10U	10U	10U	4
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	1	10U	10U	10U	10U
Methylene chloride	5U	5U	1	5U	5U	5U	1	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

25

Sampling Point . Location . Date Sampled	GW-640		GW-641				GW-642	
	BG		BG				BG	
	07/10/93	10/14/93	02/22/93	05/24/93	07/10/93	10/14/93	02/08/93	05/11/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	3	10U	10U	10U	2	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	8	10U	3	10U	8	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	2	1	5U	5U	2	5U	1
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

26

Sampling Point . Location . Date Sampled	GW-642		GW-643				GW-644	
	BG		BG				OLF	
	07/01/93	10/10/93	02/16/93	05/19/93	07/08/93	10/12/93	03/25/93	06/25/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	2	10U	10U	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	8	10U	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	3	1	5U	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	2	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

27

Sampling Point . Location . Date Sampled	GW-644		GW-647				GW-651	
	OLF		OLF				BG	
	09/17/93	12/18/93	02/08/93	05/17/93	09/25/93	12/10/93	03/01/93	04/19/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	5U	5U	5U	5U	1	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

28

Sampling Point	GW-651		GW-652				GW-653	
Location	BG		BG				BG	
Date Sampled	07/10/93	10/10/93	03/01/93	04/19/93	07/10/93	10/18/93	03/01/93	04/20/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	7	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	1
Methylene chloride	5U	5U	5U	5U	0.8	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	2	2
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethene	5U	5U	5U	9	5U	5U	5U	5U
ethyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2

29

Groundwater and Surface-Water Quality Data, 1993

Sampling Point	GW-653		GW-654				GW-655	
Location	BG		BG				BG	
Date Sampled	07/10/93	10/10/93	02/24/93	04/16/93	07/01/93	10/07/93	02/05/93	05/10/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	4	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	11	11	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	3	7	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	5U	1	5U	5U	3	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	2	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-655		GW-683				GW-684	
	BG		EXP				EXP	
	07/01/93	10/06/93	03/04/93	04/23/93	07/12/93	10/12/93	03/03/93	04/22/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	2	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	5U	5U	5U	5U	3	5U	1
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point	GW-684		GW-685				GW-694	
Location	EXP		EXP				EXP	
Date Sampled	07/11/93	10/12/93	03/02/93	04/21/93	07/11/93	10/11/93	03/23/93	06/06/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	2	10U	10U	10U	3	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	9	10U	10U	10U	11	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	2	2	2	5U	9	11
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	2	10U
Methylene chloride	0.8	3	5U	5U	5U	3	2	1
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	0.5
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	14	14
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

32

Sampling Point . Location . Date Sampled	GW-694		GW-695				GW-703	
	EXP		EXP				EXP	
	09/22/93	12/28/93	03/24/93	06/09/93	09/22/93	12/21/93	03/20/93	06/03/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	4	10U	10U	10U	10U	2	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	7	10U	10U	10U	6	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	0.5	2	1
1,2-Dichloroethene	11	13	2	5U	5U	2	8	7
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	2	10U
Methylene chloride	5U	1	5U	5U	5U	0.8	2	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	11	15	4	5U	4	4	28	23
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2

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Groundwater and Surface-Water Quality Data, 1993

Sampling Point . Location . Date Sampled	GW-703		GW-704				GW-706	
	EXP		EXP				EXP	
	09/20/93	12/21/93	03/22/93	06/04/93	09/22/93	12/22/93	03/23/93	06/11/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	2	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	7	10U	10U	10U	3	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	0.4	2	1	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	0.5	0.5	5U	0.4	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	0.5	1	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	2	6	6	6	4	5U	5U
1,2-Dichloroethene	6	13	3	3	4	2	7	5
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	6	10U	10U	10U	4	10U
Methylene chloride	5U	0.6	1	1	5U	5U	2	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	0.5	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	0.5	0.9	2	2	2	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	21	22	120	92	86	55	9	6
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-706		GW-710				GW-711	
	EXP		EXP				EXP	
	09/23/93	12/28/93	03/21/93	04/30/93	08/01/93	11/09/93	03/20/93	04/29/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	2	10U	10U	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	6	10U	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	1	5U	2	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

35

Sampling Point . Location . Date Sampled	GW-711		GW-712				GW-713	
	EXP		EXP				EXP	
	07/30/93	11/07/93	03/18/93	04/28/93	07/29/93	11/06/93	03/19/93	04/30/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	10U	7	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	2
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	2	10U
Methylene chloride	1	1	5U	5U	1	5U	2	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	1
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-713		GW-714				GW-715	
	EXP		EXP				EXP	
	07/31/93	11/09/93	03/21/93	04/29/93	08/01/93	11/09/93	03/21/93	04/29/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	1	1	2	5U	1	0.9	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

37

Sampling Point	GW-715		GW-723				GW-724	
Location	EXP		EXP				EXP	
Date Sampled	08/01/93	11/11/93	02/12/93	05/18/93	09/27/93	12/14/93	02/10/93	05/18/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	2	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	1	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	2	5U	5U	5U	2	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	1	10U	10U	10U	10U	10U
Methylene chloride	5U	1	3	5U	5U	5U	1	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	2	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	21	3	4	5	95	46
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point Location Date Sampled	GW-724		GW-725				GW-736	
	EXP		EXP				EXP	
	09/29/93	12/14/93	02/12/93	05/19/93	09/28/93	12/15/93	02/11/93	05/18/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	1	10U	10U	4	10U	10U
Benzene	5U	5U	5U	5U	5U	1	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	2	10U	10U	7	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	2	5U
Carbon tetrachloride	5U	2	5U	5U	5U	5U	2	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	1	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	7	5U	5U	5U	5U	5U	2	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	2	5U
1,2-Dichloroethene	5U	3	2	3	2	3	7	5
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	2	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	1	10U	10U	1	1	10U
Methylene chloride	5U	5U	2	5U	5U	2	2	5U
Styrene	5U	5U	5U	5U	5U	5U	1	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	3	5U	5U	0.8	1	7	3
Toluene	5U	5U	5U	5U	5U	2	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	1	5U
Trichloroethene	3	140	19	53	47	53	12	12
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

39

Sampling Point . Location . Date Sampled	GW-736		GW-737				GW-738	
	EXP		EXP				EXP	
	09/28/93	12/15/93	02/11/93	05/19/93	09/28/93	12/15/93	02/10/93	05/18/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	4	2	10U	10U	4	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	7	10U	10U	10U	8	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	1	5U	5U	5U	1	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	2	2	1	5U	2	2
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	3	5	4	4	3	4	4	3
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	1	1	10U	10U	1	10U	10U
Methylene chloride	5U	2	2	5U	5U	2	1	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	1	3	4	3	3	3	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	9	13	9	9	9	11	55	51
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

40

Sampling Point . Location . Date Sampled	GW-738		GW-739				GW-740	
	EXP		EXP				EXP	
	09/27/93	12/14/93	02/10/93	05/18/93	09/27/93	12/13/93	02/09/93	05/17/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	1	5U	5U	5U	1	1	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	1	2	5U	5U	5U	1	2	2
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	3	3	2	5U	2	2	4	2
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	2	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	2	10U	10U	10U	2	10U
Methylene chloride	5U	5U	2	5U	5U	5U	2	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	0.7	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	44	50	32	33	39	42	50	38
Vinyl acetate	10U	10U	1	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

41

Sampling Point . Location . Date Sampled	GW-740		GW-793				GW-794	
	EXP		AGLLSF				AGLLSF	
	09/27/93	12/11/93	02/26/93	05/25/93	07/11/93	10/18/93	03/01/93	05/25/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	2	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	3	10U	9	10U	5
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	1	1	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	2	2	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	2	10U	10U	10U	1
Methylene chloride	5U	1	5U	5U	5U	2	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	33	35	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

42

Sampling Point . Location . Date Sampled	GW-794		GW-795				GW-800	
	AGLLSF		AGLLSF				OLF	
	07/11/93	10/18/93	03/02/93	05/25/93	07/12/93	10/18/93	05/11/93	09/14/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	2	1	10U	10U	1	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10	10U	10U	10U	8	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	2	10U	10U	10U	10U	10U
Methylene chloride	5U	3	1	5U	5U	2	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

43

Sampling Point	GW-800
Location	OLF
Date Sampled	10/22/93
VOLATILE ORGANICS (ug/L)	.
Acetone	10U
Benzene	5U
Bromodichloromethane	5U
Bromoform	5U
Bromomethane	10U
2-Butanone	10U
Carbon disulfide	5U
Carbon tetrachloride	5U
Chlorobenzene	5U
Chlorodibromomethane	5U
Chloroethane	10U
Chloroform	5U
Chloromethane	10U
1,1-Dichloroethane	5U
1,2-Dichloroethane	5U
1,1-Dichloroethene	5U
1,2-Dichloroethene	5U
1,2-Dichloropropane	5U
cis-1,3-Dichloropropene	5U
trans-1,3-Dichloropropene	5U
Ethylbenzene	5U
2-Hexanone	10U
4-Methyl-2-pentanone	10U
Methylene chloride	5U
Styrene	5U
1,1,2,2-Tetrachloroethane	5U
Tetrachloroethene	5U
Toluene	5U
1,1,1-Trichloroethane	5U
1,1,2-Trichloroethane	5U
Trichloroethene	5U
Vinyl acetate	10U
Vinyl chloride	10U
Xylenes	5U

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

44

Sampling Point . Location . Date Sampled	BCK-00.63				BCK-04.55			
	EXP				EXP			
	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	1	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	2	1	10U	10U	2	1	10U	10U
Methylene chloride	2	2	5U	1	2	2	5U	1
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

45

Sampling Point . Location . Date Sampled	BCK-09.40				NT-01			
	EXP				EXP			
	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	3	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	8	9	1	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	1	10U	10U	10U	2	10U	10U
Methylene chloride	5U	2	1	5U	1	2	1	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	1	1	5U	5U	4	1	2	3
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	0.7	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

46

Sampling Point . Location . Date Sampled	NT-13				SS-1			
	EXP				EXP			
	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	1	10U	10U	10U	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	0.7	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	2	1	10U	10U	10U	1	10U	10U
Methylene chloride	2	2	5U	1	0.9	2	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	2	3	5U	1
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

47

Sampling Point . Location . Date Sampled	SS-4				SS-5			
	EXP				EXP			
	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	2	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	2	4	7	3	5U	5U	2	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	1	10U	10U	10U	1	10U	10U
Methylene chloride	5U	2	1	5U	5U	2	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	4	4	4	4	5U	5U	2	1
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX E.2
Groundwater and Surface-Water Quality Data, 1993

48

Sampling Point . Location . Date Sampled	SS-6				SS-8			
	EXP				EXP			
	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	7	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	2	10U	10U	10U	3	1	10U	10U
Methylene chloride	2	2	5U	5U	2	2	5U	1
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	1	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	1	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

APPENDIX E.3

**FIELD, MISCELLANEOUS, AND
GROSS ALPHA AND GROSS BETA ACTIVITIES**

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

1

Sampling Point . Location . Date Sampled	GW-013				GW-040			
	OLF				BG			
	03/29/93	06/17/93	09/17/93	12/19/93	03/25/93	05/11/93	07/02/93	10/09/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	2.33	5.4	6.5	5.3	11.55	18.93	21.2	21.2
Water Temp (degrees C)	12.5	16.8	20.1	14	16.2	17.1	18.1	16.8
pH (pH units)	6.6	6.3	6.5	6.6	6.9	5.8	6.4	5.5
Sp. Cond. (umho/cm)	582	498	590	510	148	133	142	156
Dissolved Oxygen (ppm)	1.9	1.7	5.9	4.3	6.3	4.4	4.5	1.7
Oxidation/Reduction (mV)	40	45	206	44	205	204	56	142
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	6.9	7.4	7	7	6.3	6.7	6.7	6.4
Sp. Cond. (umho/cm)	585	554	576	567	150	148	151	158
TDS (mg/L)	354	336	338	334	216	344	232	228
TSS (mg/L)	4	2	4	6	726	422	159	78
Turbidity (NTU)	12	4.8	11	4.1	1000	300	180	120
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	2.17	-3.47	-0.01	-0.37	9.99	-1.19	5.67	-1.96
Gross Alpha (CE+/-)	1.70	1200.00	3.00	1.00	4.80	1.80	5.50	1.80
Gross Beta (pCi/L)	1.76	-12.50	2.65	-2.53	22.70	-3.19	-8.38	2.97
Gross Beta (CE+/-)	2.60	2400.00	4.80	2.90	6.30	6.00	12.00	2.80

(CONTINUED)

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

2

Sampling Point	GW-042	GW-043				GW-044		
Location	BQ	OLF				OLF		
Date Sampled	12/29/93	02/04/93	05/10/93	09/11/93	10/19/93	02/04/93	05/10/93	09/11/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
Depth to Water (ft)	20.1	14.21	17.13	28.92	31	23.77	16.31	30.75
Water Temp (degrees C)	15.3	14.1	15.3	15	16.2	13.8	15	14
pH (pH units)	6.2	7	6.5	6.1	7.2	7.4	7.3	7.1
Sp. Cond. (umho/cm)	138	305	123	137	171	287	227	253
Dissolved Oxygen (ppm)	1.1	4.1	4.4	3.5	7.3	4.1	4.6	3.3
Oxidation/Reduction (mV)	202	158	228	204	170	180	219	180
.	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
pH (pH units)	6.4	7.7	7	6.7	6.8	8.1	8	7.6
Sp. Cond. (umho/cm)	58	184	125	138	144	300	268	268
TDS (mg/L)	56	132	106	120	132	212	178	188
TSS (mg/L)	<1	3	3	5	17	1	<1	<1
Turbidity (NTU)	1.4	6	8.6	15	20	1.2	3.2	1.2
.	.	.	.	.	.	.	.	.
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-2.48	2.01	1.69	-2.48	-0.62	1.29	2.13	-1.95
Gross Alpha (CE+/-)	1.90	1.30	0.80	2.30	2.10	1.30	0.78	2.60
Gross Beta (pCi/L)	-4.77	2.81	0.22	-13.90	-7.90	1.82	4.49	-9.66
Gross Beta (CE+/-)	3.20	2.60	1.40	5.80	5.80	2.60	1.60	5.70

(CONTINUED)

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

3

Sampling Point	GW-044	GW-052		GW-056				GW-057
Location	OLF	BG		BG				EXP
Date Sampled	10/19/93	03/25/93	04/26/93	03/04/93	04/22/93	07/09/93	10/09/93	03/04/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	32.9	3.75	7.22	5.9	6.41	8.85	8.2	3.9
Water Temp (degrees C)	14.8	9.5	12	13.3	13.7	16.5	15.3	13.5
pH (pH units)	7.2	6.8	7.4	7.6	7.4	7	7.3	7.2
Sp. Cond. (umho/cm)	293	370	341	713	1191	978	866	1560
Dissolved Oxygen (ppm)	7.1	7.9	5.5	7	5	4.4	5.4	6.1
Oxidation/Reduction (mV)	255	106	164	62	141	58	34	169
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.5	7.1	7.1	8	7.9	7.7	7.3	7.9
Sp. Cond. (umho/cm)	270	376	370	1080	1410	1050	969	1530
TDS (mg/L)	210	216	286	584	746	598	630	734
TSS (mg/L)	<1	17	153	27	19	13	29	3
Turbidity (NTU)	1.5	8.5	105	11	18	14	15	4.9
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	0.61	20.00	32.70	3.82	2.70	4.54	1.19	6.76
Gross Alpha (CE+/-)	2.50	4.10	7.00	2.00	2.50	2.90	2.50	2.80
Gross Beta (pCi/L)	-8.81	30.30	44.40	7.04	4.33	6.70	4.71	8.14
Gross Beta (CE+/-)	5.60	4.10	7.50	3.50	2.90	3.10	3.20	3.60

(CONTINUED)

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

4

Sampling Point . Location . Date Sampled	GW-057			GW-063	GW-064			
	EXP			OLF	OLF			
	04/22/93	07/09/93	10/09/93	02/23/93	02/09/93	05/12/93	09/11/93	10/20/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	5.16	7.15	6.98	23.83	25.8	26.51	28.3	27.68
Water Temp (degrees C)	13	16.9	17.7	12.6	13.4	15.6	14.9	15.2
pH (pH units)	7.2	6.8	6.9	7.1	7.1	7.3	7.5	7.1
Sp. Cond. (umho/cm)	780	1039	940	452	635	559	571	669
Dissolved Oxygen (ppm)	4.3	4.9	6	9	2.4	2.5	2.8	7.8
Oxidation/Reduction (mV)	134	68	143	204	203	155	114	222
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.7	7.5	7.1	7.2	7.2	7.8	7.6	7.3
Sp. Cond. (umho/cm)	920	1090	1050	474	703	636	660	658
TDS (mg/L)	532	616	686	258	430	372	428	428
TSS (mg/L)	2	2	<1	20	3	5	2	9
Turbidity (NTU)	2.5	2.6	1.1	16	16	9.5	5.8	13
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	1.60	1.98	1.93	1.53	0.67	-2.70	-1.87	-0.20
Gross Alpha (CE+/-)	3.80	2.70	2.80	2.10	2.90	4.20	3.10	1.30
Gross Beta (pCi/L)	6.43	4.92	3.23	5.84	11.90	15.40	4.71	13.80
Gross Beta (CE+/-)	3.20	3.10	3.10	3.00	3.60	6.50	6.20	3.40

(CONTINUED)

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

5

Sampling Point . Location . Date Sampled	GW-069				GW-079	GW-080	GW-082	
	BG				BG	BG	BG	
	03/03/93	04/21/93	07/25/93	10/10/93	10/18/93	10/10/93	03/10/93	04/21/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	8.13	7.8	10.98	11.15	25.65	25.85	20.11	19.65
Water Temp (degrees C)	14.3	14	16.2	14.6	15.7	13.9	15.3	13.6
pH (pH units)	9.2	8.8	8.7	8.4	8.1	6.4	7.5	7.6
Sp. Cond. (umho/cm)	358	330	408	389	235	133	327	316
Dissolved Oxygen (ppm)	2.4	3	1.5	0.7	1.3	0.4	3.5	2.3
Oxidation/Reduction (mV)	-112	-47	-155	-133	70	-18	178	48
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	9.2	8.8	8.6	8.6	8.1	6.9	7.5	7.8
Sp. Cond. (umho/cm)	380	375	400	396	210	132	396	359
TDS (mg/L)	236	204	232	292	130	180	248	208
TSS (mg/L)	<1	<1	<1	<1	<1	129	8	<1
Turbidity (NTU)	0.5	1	1.2	0.4	1.2	85	2.1	2.4
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	3.45	0.17	-4.90	-0.32	-0.93	2.06	1.57	0.00
Gross Alpha (CE+/-)	1.70	1.60	2.50	1.80	2.00	2.30	3.90	1.70
Gross Beta (pCi/L)	7.78	1.75	0.00	3.72	-3.07	0.90	3.32	-2.40
Gross Beta (CE+/-)	3.40	2.90	3.00	3.00	6.00	2.60	5.40	2.70

(CONTINUED)

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

6

Sampling Point	GW-082		GW-084				GW-085	
Location	BG		OLF				OLF	
Date Sampled	07/25/93	10/18/93	02/04/93	05/10/93	09/11/93	10/20/93	02/11/93	05/12/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Depth to Water (ft)	20.85	20.95	15	14.91	17.3	17	13.84	13.51
Water Temp (degrees C)	15.7	14.8	15.3	16.2	15.8	16.1	14.7	17.9
pH (pH units)	7.9	7.4	7.8	7.7	7.7	7.6	7.2	7.1
Sp. Cond. (umho/cm)	361	341	279	256	277	306	1908	2090
Dissolved Oxygen (ppm)	2.1	2.1	2.8	1.2	2	8	1.7	1.2
Oxidation/Reduction (mV)	14	121	141	170	157	195	184	157
	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
pH (pH units)	7.7	7.7	8.3	8.3	7.4	7.8	7.2	7.8
Sp. Cond. (umho/cm)	404	370	317	304	302	295	2130	2330
TDS (mg/L)	270	210	218	208	206	216	1500	1768
TSS (mg/L)	5	<1	47	43	30	17	5	8
Turbidity (NTU)	10	0.8	22	21	12	11	2.2	3
	.	.	.	.	.	.	.	.
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-3.42	-1.30	3.57	0.20	-0.66	0.77	17.30	-2.24
Gross Alpha (CE+/-)	2.50	2.40	1.80	0.74	2.90	1.40	4.10	7.20
Gross Beta (pCi/L)	-1.66	-7.74	7.67	-1.12	-7.51	5.16	120.00	144.00
Gross Beta (CE+/-)	2.90	5.60	3.00	1.30	5.80	2.70	7.00	12.00

(CONTINUED)

APPENDIX E.3

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Groundwater and Surface-Water Quality Data, 1993

Sampling Point . Location . Date Sampled	GW-085		GW-086				GW-115	
	OLF		OLF				S3	
	09/14/93	10/22/93	02/05/93	05/11/93	09/12/93	10/21/93	01/28/93	05/25/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Depth to Water (ft)	15.35	14.7	13.52	13.72	15.4	14.88	8.2	10.3
Water Temp (degrees C)	18.7	11.2	15.6	18.7	16.3	17.5	16	16.7
pH (pH units)	7.2	7.2	6.7	6.3	6.1	6	7.5	7.4
Sp. Cond. (umho/cm)	2400	2410	252	215	245	253	414	361
Dissolved Oxygen (ppm)	4.5	6	9.6	2.5	1.9	6.7	2	1.5
Oxidation/Reduction (mV)	274	250	192	209	239	256	-99	-99
	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
pH (pH units)	7.5	7.2	6.3	6.7	6.4	6.5	7.9	7.6
Sp. Cond. (umho/cm)	2650	2490	267	245	238	259	435	463
TDS (mg/L)	1950	1872	268	280	208	252	276	292
TSS (mg/L)	1	3	511	1050	812	1318	<1	1
Turbidity (NTU)	1.8	0.7	320	480	360	620	1.9	4.1
	.	.	.	.	.	.	.	.
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-3.08	0.44	5.10	9.27	8.75	7.92	2.35	-1.99
Gross Alpha (CE+/-)	3.30	2.10	2.30	2.30	5.20	6.40	1.80	3.30
Gross Beta (pCi/L)	116.00	77.60	8.10	24.70	16.10	7.98	5.65	-3.68
Gross Beta (CE+/-)	16.00	9.60	4.30	3.40	7.00	10.00	3.00	5.40

(CONTINUED)

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

8

Sampling Point	GW-115		GW-118				GW-162	GW-286
Location	S3		BG				BG	BG
Date Sampled	09/11/93	10/19/93	03/04/93	04/21/93	07/25/93	10/10/93	10/10/93	02/25/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	10.4	14.2	9.21	7.2	4.25	3.55	22.45	9.2
Water Temp (degrees C)	16.2	17.4	13.6	13.1	17.3	16	14.2	7.1
pH (pH units)	7.4	7.6	10.5	10	10.4	10	8.3	7.6
Sp. Cond. (umho/cm)	413	439	8530	8080	9170	8930	224	279
Dissolved Oxygen (ppm)	1.6	0.9	1.3	0.9	0.9	1.1	1.1	6.8
Oxidation/Reduction (mV)	-34	18	60	2	-75	-147	173	187
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.8	7.7	9.2	9.8	10.2	10.1	8.1	7.9
Sp. Cond. (umho/cm)	465	462	9440	9120	9210	9020	243	312
TDS (mg/L)	298	310	5054	5016	5064	5116	236	202
TSS (mg/L)	<1	<1	24	54	28	8	6	42
Turbidity (NTU)	4.9	2.7	10	6	17	1	20	16
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	0.18	1.43	6.60	-2.52	-52.30	9.63	-0.31	-0.33
Gross Alpha (CE+/-)	1.10	1.60	3.90	11.00	29.00	22.00	2.10	1.50
Gross Beta (pCi/L)	-0.64	4.06	5.51	-1.49	-21.30	14.90	-0.33	-0.70
Gross Beta (CE+/-)	2.60	2.60	6.60	12.00	29.00	54.00	2.60	2.60

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APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-286			GW-2P7				GW-311
	BG			BG				RS
	04/19/93	07/10/93	10/07/93	02/24/93	04/16/93	07/10/93	10/07/93	02/08/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	9.25	9.2	9.98	9	8.9	9.8	9.15	36.25
Water Temp (degrees C)	16.2	16.7	16.9	4.5	11	18.7	18.1	14.1
pH (pH units)	7.7	7.5	7.8	6.9	7.2	6.9	7	7.5
Sp. Cond. (umho/cm)	272	243	271	229	252	218	241	403
Dissolved Oxygen (ppm)	2.5	4	5.2	8.2	5.1	7.4	5.8	5.3
Oxidation/Reduction (mV)	140	99	211	246	171	202	209	200
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	8	8.1	7.9	7.5	7.2	7.7	7.6	7.8
Sp. Cond. (umho/cm)	281	277	288	255	261	272	288	453
TDS (mg/L)	192	178	248	156	142	166	254	288
TSS (mg/L)	7	<1	2	7	3	3	11	51
Turbidity (NTU)	80	14	4.2	22	9	9	15	54
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	0.87	1.64	4.59	-0.48	5.38	1.48	0.00	-0.74
Gross Alpha (CE+/-)	1.70	1.70	2.50	1.40	1.20	1.70	1.70	2.20
Gross Beta (pCi/L)	-1.66	-0.08	7.39	0.17	7.54	0.33	2.22	10.10
Gross Beta (CE+/-)	2.70	2.60	3.20	2.60	1.40	2.60	2.90	3.40

(CONTINUED)

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-311			GW-312				GW-315
	RS			RS				SPI
	05/11/93	09/12/93	10/21/93	02/08/93	05/11/93	09/12/93	10/21/93	02/03/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
Depth to Water (ft)	37.02	41.35	40	34.65	35.21	39.65	38	53.35
Water Temp (degrees C)	18.6	17.3	15.9	14.2	16.9	17.2	15.5	14.8
pH (pH units)	7.5	7.7	7.5	12.2	12.1	12.1	12.1	7.1
Sp. Cond. (umho/cm)	359	385	428	1556	1333	2350	2630	510
Dissolved Oxygen (ppm)	6.6	5.1	7	3.4	1.4	2.9	6	6.5
Oxidation/Reduction (mV)	181	182	266	-62	-78	-10	-28	179
.	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
pH (pH units)	7.9	7.9	7.4	11.7	12	12	12	7.1
Sp. Cond. (umho/cm)	426	399	417	1110	1980	1920	2350	517
TDS (mg/L)	242	260	264	396	470	522	682	346
TSS (mg/L)	<1	7	40	81	4	4	25	4
Turbidity (NTU)	2.5	3.3	68	16	3.6	1.2	3.5	0.5
.	.	.	.	.	.	.	.	.
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-0.00	-2.75	1.00	-0.55	-0.35	-1.88	-0.20	5.35
Gross Alpha (CE+/-)	0.56	2.60	1.50	3.30	0.55	3.10	1.40	3.40
Gross Beta (pCi/L)	-1.65	-7.51	-0.41	7.36	1.43	-5.53	7.27	12.90
Gross Beta (CE+/-)	1.40	5.70	2.40	3.40	1.40	5.70	2.90	3.40

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Groundwater and Surface-Water Quality Data, 1993

Sampling Point . Location . Date Sampled	GW-315			GW-316				GW-317
	SPI			SPI				SPI
	06/03/93	09/14/93	10/27/93	02/02/93	06/01/93	09/13/93	10/24/93	02/02/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Depth to Water (ft)	58.92	62.33	61.15	52.9	58.52	59.57	60.7	69.28
Water Temp (degrees C)	16.9	16.7	14.5	12.7	18	18.5	12	11.7
pH (pH units)	7.2	6.9	6.5	7.4	8.1	7.7	7.8	7.5
Sp. Cond. (umho/cm)	457	582	569	335	368	381	354	355
Dissolved Oxygen (ppm)	6.4	2.5	2.5	7.8	7.2	6.8	8.4	8.8
Oxidation/Reduction (mV)	203	161	212	157	113	205	230	207
	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
pH (pH units)	7.8	7.4	7.2	7.9	8	8	8	7.9
Sp. Cond. (umho/cm)	530	599	628	389	364	390	406	419
TDS (mg/L)	322	380	412	208	204	208	226	222
TSS (mg/L)	<1	<1	<1	<1	<1	1	<1	<1
Turbidity (NTU)	1	0.9	0.5	0.9	2.7	8	2.4	1.5
	.	.	.	.	.	.	.	.
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-2.46	0.33	2.54	2.21	1.75	-0.01	-0.45	1.55
Gross Alpha (CE+/-)	4.60	1.50	2.60	1.50	3.60	0.95	2.10	1.40
Gross Beta (pCi/L)	15.70	31.30	53.80	2.16	5.42	-0.97	2.64	3.58
Gross Beta (CE+/-)	7.10	5.00	4.90	2.60	5.00	2.60	2.70	2.70

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APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-317			GW-323				GW-324
	SPI			SPI				S3
	05/28/93	09/13/93	10/24/93	02/02/93	05/28/93	09/12/93	10/23/93	01/29/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
Depth to Water (ft)	74.83	78.64	77.51	86	86	97.9	86.21	9.35
Water Temp (degrees C)	17.3	15	11.8	12	15.3	15.2	11.9	13.8
pH (pH units)	7.8	7.7	7.9	7.5	7.6	7.4	7.5	7.9
Sp. Cond. (umho/cm)	346	380	323	365	339	366	325	206
Dissolved Oxygen (ppm)	7.7	6.9	8.9	8.4	8.3	7.6	8.8	0.6
Oxidation/Reduction (mV)	149	14	227	204	193	163	233	-87
.	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
pH (pH units)	8	8	7.9	7.8	7.9	8	7.9	8.2
Sp. Cond. (umho/cm)	374	419	360	419	377	375	409	202
TDS (mg/L)	178	222	226	216	186	208	228	158
TSS (mg/L)	<1	3	<1	<1	<1	<1	<1	<1
Turbidity (NTU)	1	2.4	2.3	0.4	2.5	0.9	0.7	1
.	.	.	.	.	.	.	.	.
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	2.94	0.16	-1.64	2.20	2.08	0.68	0.75	1.59
Gross Alpha (CE+/-)	3.80	1.40	1.90	1.50	3.70	1.20	2.30	1.30
Gross Beta (pCi/L)	7.40	-1.43	1.98	2.16	6.92	-1.21	1.81	0.75
Gross Beta (CE+/-)	5.10	2.30	2.70	2.60	5.10	2.60	2.60	2.60

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APPENDIX E.3

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Groundwater and Surface-Water Quality Data, 1993

Sampling Point . Location . Date Sampled	GW-324			GW-325				GW-342
	S3			S3				BG
	05/25/93	09/11/93	10/19/93	02/01/93	05/25/93	09/11/93	10/21/93	10/07/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	15.15	17.9	17.85	12.1	16.05	17.9	17.9	13.74
Water Temp (degrees C)	14.9	14.5	15.2	13.5	14.5	18.9	15.7	17.7
pH (pH units)	7.8	7.9	7.5	5.2	5.3	5.3	5.9	6
Sp. Cond. (umho/cm)	168	193	207	49	35	42	50	94
Dissolved Oxygen (ppm)	0.3	0.5	0.5	6	4.5	6.7	3	5.7
Oxidation/Reduction (mV)	-105	14	-8	-232	226	175	196	8
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	8.1	8.2	8	5.7	5.8	6.1	5.9	7.7
Sp. Cond. (umho/cm)	212	210	210	46	37	36	41	129
TDS (mg/L)	128	148	150	56	50	74	88	152
TSS (mg/L)	1	<1	<1	2	6	194	57	11
Turbidity (NTU)	0.7	0.9	0.9	11	27	50	800	7.5
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	0.00	0.33	-0.32	1.12	0.56	0.29	10.80	0.00
Gross Alpha (CE+/-)	3.10	1.10	2.20	1.60	3.20	0.94	3.20	2.00
Gross Beta (pCi/L)	-3.77	-2.66	-7.50	4.41	-1.63	-0.10	15.50	1.97
Gross Beta (CE+/-)	5.20	2.50	5.70	2.70	5.30	2.90	3.50	2.70

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APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-345				GW-347			
	S3				S3			
	02/03/93	06/01/93	09/14/93	10/26/93	02/01/93	05/27/93	09/12/93	10/22/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Depth to Water (ft)	18.6	18.1	19.6	20.52	17.4	18.65	19.55	19.55
Water Temp (degrees C)	12	19.7	15.3	14.8	13.5	15.2	14.2	13
pH (pH units)	5.2	5.9	5	4.6	6.6	7.2	6.9	7.4
Sp. Cond. (umho/cm)	188	105	134	152	133	151	286	229
Dissolved Oxygen (ppm)	2.4	5.8	2.6	3.2	8.6	7.6	6.7	8.6
Oxidation/Reduction (mV)	249	195	239	234	198	153	200	201
	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
pH (pH units)	5.6	6.2	5.9	6	7.3	7.6	7.8	7.6
Sp. Cond. (umho/cm)	114	121	246	686	156	168	295	214
TDS (mg/L)	98	84	216	514	116	92	178	132
TSS (mg/L)	2	4	4	12	24	4	15	39
Turbidity (NTU)	11	3.9	4.1	7.2	34	4	12	64
	.	.	.	.	.	.	.	.
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	3.33	-1.70	0.47	-14.00	1.81	0.85	2.50	3.64
Gross Alpha (CE+/-)	2.00	2.90	1.40	27.00	1.90	3.40	1.60	2.70
Gross Beta (pCi/L)	25.70	8.99	15.10	13.70	4.71	5.24	5.53	11.10
Gross Beta (CE+/-)	3.90	5.20	3.60	27.00	2.70	4.90	3.10	3.20

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APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-348				GW-364			
	S3				OLF			
	02/01/93	05/27/93	09/12/93	10/22/93	03/27/93	06/27/93	09/19/93	12/18/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	21.95	23.9	25.7	24.8	5.47	23.05	21.31	15.05
Water Temp (degrees C)	14.6	16	14.8	14	12.4	19.4	14	11.3
pH (pH units)	7.5	7.4	7.1	7	7.6	7.3	7.6	8
Sp. Cond. (umho/cm)	546	497	525	556	403	563	616	477
Dissolved Oxygen (ppm)	2.1	4.7	1.3	1.1	3.7	2.2	5.1	4.6
Oxidation/Reduction (mV)	148	94	163	206	158	185	237	185
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.5	7.7	7.7	7.6	7.8	7.7	7.5	7.7
Sp. Cond. (umho/cm)	576	544	563	586	427	602	647	461
TDS (mg/L)	336	314	338	344	260	408	468	284
TSS (mg/L)	<1	<1	<1	<1	8	34	241	6
Turbidity (NTU)	1.2	1	1	2.7	29	250	320	11
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	2.42	0.00	1.42	0.31	1.65	-1.34	2.77	3.73
Gross Alpha (CE+/-)	2.50	3.40	1.40	2.30	2.10	3.00	3.60	2.00
Gross Beta (pCi/L)	37.30	31.60	18.40	29.80	5.26	1.25	22.30	4.16
Gross Beta (CE+/-)	4.40	6.50	4.00	4.00	2.90	5.00	6.30	3.20

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APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-365				GW-370			
	OLF				BG			
	03/28/93	06/27/93	09/19/93	12/19/93	02/17/93	05/21/93	07/10/93	10/14/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	3.1	14.1	15.37	8.8	13	13.75	14.9	16.1
Water Temp (degrees C)	13	14.9	15.8	11.9	14.2	14.2	18.5	17.2
pH (pH units)	7	7	7.1	7.2	6.8	7.2	6.6	6.1
Sp. Cond. (umho/cm)	911	929	956	919	200	170	192	169
Dissolved Oxygen (ppm)	0.9	1	1.3	0.4	3.9	6.9	2.8	5.1
Oxidation/Reduction (mV)	-38	-30	82	-80	171	116	175	183
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.9	7.4	7.1	7.2	7.4	7	7.4	6.9
Sp. Cond. (umho/cm)	890	929	943	928	263	190	202	173
TDS (mg/L)	572	586	584	558	170	200	180	212
TSS (mg/L)	5	2	1	1	18	307	53	135
Turbidity (NTU)	9.5	7	2	5	7.8	5.5	14	38
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	4.29	-2.17	-2.10	-0.47	0.20	4.67	4.88	4.93
Gross Alpha (CE+/-)	3.90	3.10	2.40	1.30	2.80	2.70	3.30	2.10
Gross Beta (pCi/L)	4.41	1.40	4.40	0.89	2.99	5.12	-8.69	3.08
Gross Beta (CE+/-)	3.10	4.90	4.90	3.10	3.30	3.10	5.60	2.90

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APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-371				GW-372			
	BG				BG			
	02/16/93	05/21/93	07/09/93	10/13/93	02/09/93	05/19/93	07/02/93	10/12/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	16.1	16.22	17.65	18.05	20.75	19.3	23.55	27.54
Water Temp (degrees C)	13.2	14.3	19.3	15.6	16	15.3	18.3	11.8
pH (pH units)	7.5	6.4	7.3	6.7	7.4	7.6	7.7	7.3
Sp. Cond. (umho/cm)	481	397	451	532	425	333	373	397
Dissolved Oxygen (ppm)	8.1	3.2	0.7	1.9	9.5	6.6	7.7	5.6
Oxidation/Reduction (mV)	-3	152	-58	-9	160	192	91	142
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.4	7.4	7.6	7.6	7.6	8	7.8	7.7
Sp. Cond. (umho/cm)	570	590	566	569	430	403	401	420
TDS (mg/L)	326	328	348	372	282	244	266	328
TSS (mg/L)	9	4	13	<1	4	5	3	4
Turbidity (NTU)	4.9	120	2.7	4.7	2.5	12	4.4	16
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-1.32	-3.06	0.38	2.80	-1.05	1.42	0.70	-0.01
Gross Alpha (CE+/-)	2.10	2.10	1.30	1.90	2.00	3.60	1.30	2.40
Gross Beta (pCi/L)	0.92	-1.35	-3.87	4.86	-0.25	-5.73	-4.29	-4.94
Gross Beta (CE+/-)	3.20	2.80	2.70	3.10	2.90	5.60	2.70	5.60

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Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-373				GW-526			
	BG				S3			
	02/11/93	05/14/93	07/02/93	10/11/93	02/03/93	06/03/93	09/14/93	10/26/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	18.25	16.74	18.8	20.83	11.97	12	13.08	13.35
Water Temp (degrees C)	14.3	14.7	17.6	14.4	14.5	15.1	17.6	15.5
pH (pH units)	9.2	8.1	8.8	9.1	8.2	7.7	8.2	8.4
Sp. Cond. (umho/cm)	476	441	418	462	7270	5870	7500	7100
Dissolved Oxygen (ppm)	8.4	4.5	12	4.8	5.3	5.3	0.5	1.2
Oxidation/Reduction (mV)	158	172	157	123	118	168	101	189
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	9.1	9	9.1	9.1	8.1	8.2	8.1	8.1
Sp. Cond. (umho/cm)	484	494	468	480	7580	6940	7470	7620
TDS (mg/L)	290	306	306	358	6214	6028	6246	6320
TSS (mg/L)	3	15	12	10	14	9	8	28
Turbidity (NTU)	3.5	5.1	6.5	17	6.3	7.4	12	26
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	0.76	-1.57	0.18	-1.92	2.04	121.00	-14.20	0.79
Gross Alpha (CE+/-)	1.70	4.00	1.20	2.10	1.40	80.00	24.00	2.40
Gross Beta (pCi/L)	0.79	-2.33	-4.66	0.08	3.53	287.00	-22.10	44.70
Gross Beta (CE+/-)	2.40	5.50	2.70	2.70	2.70	120.00	46.00	4.60

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APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-537				GW-601			
	OLF				OLF			
	02/11/93	05/12/93	09/14/93	10/22/93	03/28/93	06/27/93	09/19/93	12/21/94
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	6.8	6.45	8.1	7.47	59.6	71.33	71.27	67.35
Water Temp (degrees C)	14.7	16.2	17.1	15.6	14	16.1	14.6	11.7
pH (pH units)	6.6	6.8	6.9	6.9	7.6	7.3	7.7	7.9
Sp. Cond. (umho/cm)	5430	4890	5180	5400	894	896	912	924
Dissolved Oxygen (ppm)	1.1	1.1	3.6	4	4.2	4.2	1.3	1.4
Oxidation/Reduction (mV)	108	178	264	220	180	173	140	162
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	6.8	7.6	7.1	6.9	8.1	7.9	7.7	7.6
Sp. Cond. (umho/cm)	6080	5660	5480	5710	904	948	980	1010
TDS (mg/L)	4700	4682	4438	4478	540	542	584	560
TSS (mg/L)	4	5	4	5	1	13	<1	<1
Turbidity (NTU)	1.9	1.1	1.6	1.9	0.8	0.5	0.5	0.7
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	39.80	0.00	16.60	19.70	1.48	-2.15	0.33	2.08
Gross Alpha (CE+/-)	14.00	20.00	33.00	12.00	2.70	3.00	3.10	1.80
Gross Beta (pCi/L)	287.00	373.00	426.00	432.00	15.50	18.70	23.40	21.80
Gross Beta (CE+/-)	23.00	42.00	80.00	27.00	3.50	6.20	6.40	4.20

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APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point	GW-613	GW-614	GW-621				GW-626	
Location	83	83	BG				BG	
Date Sampled	10/20/93	10/20/93	03/20/93	06/02/93	09/20/93	12/20/93	03/10/93	04/26/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	16.25	10.1	10.35	13.66	19.35	12.58	23.72	21.8
Water Temp (degrees C)	14.8	14.8	12.6	14.2	15	12.6	14.8	14.1
pH (pH units)	6.8	6.9	7.3	7.5	7.6	7.7	8.1	8.2
Sp. Cond. (umho/cm)	176	327	302	309	360	316	246	194
Dissolved Oxygen (ppm)	2.2	0.3	7.6	4.2	5.3	5.3	2.9	3.8
Oxidation/Reduction (mV)	235	123	195	190	190	180	65	171
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.3	7.8	7.7	8.1	7.7	7.9	8	8
Sp. Cond. (umho/cm)	180	329	359	347	408	358	267	225
TDS (mg/L)	144	224	222	232	272	198	166	162
TSS (mg/L)	8	5	5	23	37	34	1	1
Turbidity (NTU)	3.1	2	14	34	35	26	0.5	0.8
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	1.79	1.23	0.00	1.47	3.51	2.41	2.38	0.16
Gross Alpha (CE+/-)	1.60	1.50	1.80	4.90	4.50	1.70	3.90	1.40
Gross Beta (pCi/L)	2.82	2.92	5.13	7.89	24.10	5.79	2.97	0.26
Gross Beta (CE+/-)	2.50	2.60	2.80	6.60	6.30	3.30	5.30	2.60

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Groundwater and Surface-Water Quality Data, 1993

Sampling Point	GW-626		GW-627				GW-636	
Location	BG		BG				OLF	
Date Sampled	08/02/93	10/20/93	03/09/93	04/23/93	07/28/93	10/20/93	03/26/93	06/27/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	26.55	28.45	22.43	22.4	24.58	25.1	1.65	8.25
Water Temp (degrees C)	16.2	15.8	15.3	16	18.4	16	13.8	14.5
pH (pH units)	8	8	9.2	8.9	9.1	8.6	8.4	8.1
Sp. Cond. (umho/cm)	250	242	1183	1053	1204	1208	304	315
Dissolved Oxygen (ppm)	3.3	2.7	0.4	1.1	1.1	0.6	4.1	0.4
Oxidation/Reduction (mV)	196	107	-105	-18	-115	-62	141	152
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.9	8	9.1	9	9.1	9.2	8.5	8.5
Sp. Cond. (umho/cm)	234	247	1190	1130	1180	1120	365	359
TDS (mg/L)	146	182	704	732	728	738	226	230
TSS (mg/L)	<1	<1	<1	<1	<1	2	7	<1
Turbidity (NTU)	0.8	0.3	1	1	2.7	0.9	5.5	2
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-22.30	-1.59	1.25	-0.38	-6.24	-0.82	0.00	-2.87
Gross Alpha (CE+/-)	33.00	2.30	1.30	3.10	3.60	3.20	1.60	2.50
Gross Beta (pCi/L)	17.90	-8.32	5.84	1.70	-0.96	-6.67	6.37	-1.61
Gross Beta (CE+/-)	52.00	5.70	3.40	2.90	3.00	5.50	2.90	4.80

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APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-636		GW-637				GW-638	
	OLF		OLF				OLF	
	09/18/93	12/18/93	03/25/93	06/26/93	09/17/93	12/18/93	03/25/93	06/26/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Depth to Water (ft)	10.15	3.99	5.9	12.92	14.45	7.6	5.6	11
Water Temp (degrees C)	14.5	12.8	13.7	14.6	16.5	12.1	13.3	19.4
pH (pH units)	8.4	8.2	7.5	7.3	7.2	7.3	7	6.9
Sp. Cond. (umho/cm)	360	364	389	377	430	413	387	503
Dissolved Oxygen (ppm)	3.1	0.3	2.9	4.3	4.4	3.5	6.2	7.1
Oxidation/Reduction (mV)	169	69	111	164	173	119	176	231
	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
pH (pH units)	8.5	8.5	7.6	7.9	7.7	7.7	7.4	7.5
Sp. Cond. (umho/cm)	364	358	409	414	433	410	419	499
TDS (mg/L)	240	236	252	254	258	262	308	550
TSS (mg/L)	1	14	4	2	<1	15	48	5405
Turbidity (NTU)	1.5	0.9	6	1.5	5.7	1.8	54	3100
	.	.	.	.	.	.	.	.
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-0.72	-0.60	-0.19	-2.42	-0.72	1.39	5.01	5.67
Gross Alpha (CE+/-)	2.80	1.00	1.80	2.60	2.80	1.50	4.20	4.30
Gross Beta (pCi/L)	3.44	-1.66	2.89	-2.73	0.46	-2.56	15.60	8.17
Gross Beta (CE+/-)	4.80	2.90	2.70	4.80	4.60	2.90	5.90	5.50

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Groundwater and Surface-Water Quality Data, 1993

Sampling Point . Location . Date Sampled	GW-638		GW-639				GW-640	
	OLF		BG				BG	
	09/17/93	12/18/93	02/24/93	05/24/93	07/11/93	10/15/93	02/22/93	05/24/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	5.9	5.99	10.11	11.4	12.85	13.25	15.7	18
Water Temp (degrees C)	20.3	9.8	12.7	15.7	18.1	14.5	13.7	15
pH (pH units)	7	7.1	9.2	9	9.3	9	6.2	6.1
Sp. Cond. (umho/cm)	657	449	768	757	775	859	97	86
Dissolved Oxygen (ppm)	6.2	10.01	1.5	1.6	2.3	4.1	3.7	3.5
Oxidation/Reduction (mV)	314	211	99	152	6	88	172	273
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.6	7.5	9.2	9.3	9.2	9.2	6.8	6.7
Sp. Cond. (umho/cm)	697	454	868	870	868	860	100	102
TDS (mg/L)	516	312	542	562	546	564	70	76
TSS (mg/L)	91	31	21	24	6	12	7	4
Turbidity (NTU)	370	37	14	60	6.9	80	2.4	3.1
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	8.70	9.13	0.46	0.00	0.43	-0.77	0.59	-0.56
Gross Alpha (CE+/-)	4.40	3.00	2.20	3.80	1.50	3.00	1.50	3.00
Gross Beta (pCi/L)	13.50	2.14	0.72	0.17	-4.58	-7.74	7.60	-1.47
Gross Beta (CE+/-)	5.70	3.10	2.80	5.60	2.80	5.40	3.00	5.40

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Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-640		GW-641				GW-642	
	BG		BG				BG	
	07/10/93	10/14/93	02/22/93	05/24/93	07/10/93	10/14/93	02/08/93	05/11/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	20.22	20.67	16.9	18.95	21.08	22	19.66	19.83
Water Temp (degrees C)	15.8	15.3	13.7	15.2	19.6	16	14.5	17.8
pH (pH units)	6.3	5.6	5.7	5.4	5.7	4.7	6.6	5.8
Sp. Cond. (umho/cm)	93	107	56	33	44	46	168	125
Dissolved Oxygen (ppm)	3.1	3.3	5.7	5.6	4.5	5.2	9.5	5.4
Oxidation/Reduction (mV)	186	251	202	265	163	255	-8	94
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.3	6.7	6.3	6.1	6.4	6	6.9	6.7
Sp. Cond. (umho/cm)	102	112	37	46	43	45	162	145
TDS (mg/L)	78	130	42	48	36	110	136	110
TSS (mg/L)	5	5	83	3	3	9	9	5
Turbidity (NTU)	3.1	2.2	7	4.5	0.9	39	19	5.4
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-0.16	0.44	1.00	-0.84	0.15	1.27	-1.00	-0.62
Gross Alpha (CE+/-)	0.93	1.30	1.50	2.90	0.99	2.10	1.60	0.43
Gross Beta (pCi/L)	-4.22	0.26	1.11	-2.28	-4.96	-1.31	0.08	-2.64
Gross Beta (CE+/-)	2.90	2.80	2.70	5.30	3.00	2.70	2.80	1.40

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Groundwater and Surface-Water Quality Data, 1993

Sampling Point . Location . Date Sampled	GW-642		GW-643				GW-644	
	BG		BG				OLF	
	07/01/93	10/10/93	02/16/93	05/19/93	07/08/93	10/12/93	03/25/93	06/25/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	22.45	23.25	15.65	16.27	21.1	23.8	7.1	11.16
Water Temp (degrees C)	18.6	15	14.2	15.2	15.8	13.4	13.5	14.5
pH (pH units)	6.4	6	5.7	6.1	6	4.9	6.2	6.3
Sp. Cond. (umho/cm)	125	138	104	67	227	67	125	156
Dissolved Oxygen (ppm)	2.8	0.9	10.1	4.4	1.5	5.8	4.1	4.5
Oxidation/Reduction (mV)	-9	-10	225	244	250	246	188	208
.	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	6.8	7.1	6	6.4	7.2	6.1	6.4	7.1
Sp. Cond. (umho/cm)	136	137	65	74	273	73	123	203
TDS (mg/L)	106	186	82	86	168	188	106	152
TSS (mg/L)	3	540	135	51	35	50	2	49
Turbidity (NTU)	12	60	56	25	11	27	2.9	19
.	.	.	.	.	.	.	.	.
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-2.38	2.10	2.73	-0.14	0.82	1.61	-0.29	0.95
Gross Alpha (CE+/-)	2.40	2.40	3.60	2.00	1.30	1.50	1.40	2.60
Gross Beta (pCi/L)	0.64	3.30	1.57	1.72	-3.49	1.28	0.66	-6.95
Gross Beta (CE+/-)	5.10	2.80	3.30	2.90	2.80	2.80	2.50	5.60

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Groundwater and Surface-Water Quality Data, 1993

Sampling Point . Location . Date Sampled	GW-644		GW-647				GW-651	
	OLF		OLF				BG	
	09/17/93	12/18/93	02/08/93	05/17/93	09/25/93	12/10/93	03/01/93	04/19/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
Depth to Water (ft)	11.55	9	69.08	68.9	69	69	5.1	5.43
Water Temp (degrees C)	16.2	14.2	14.7	15.4	15	13	9.9	15.5
pH (pH units)	6.8	6	7.8	7.5	7	7.4	7.6	7.6
Sp. Cond. (umho/cm)	316	175	566	448	520	506	404	392
Dissolved Oxygen (ppm)	3.5	0.8	2.1	0.9	3.1	2.8	7.4	6.3
Oxidation/Reduction (mV)	223	216	181	198	128	193	216	158
.	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
pH (pH units)	7.1	6.8	7.9	7.7	7.8	7.7	7.7	8
Sp. Cond. (umho/cm)	248	169	573	570	545	500	405	400
TDS (mg/L)	168	126	406	366	340	372	248	236
TSS (mg/L)	53	27	16	<1	1	1	2	85
Turbidity (NTU)	19	14	9.3	1	5	1.6	2.4	1.1
.	.	.	.	.	.	.	.	.
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	0.69	-0.01	-1.70	3.74	2.11	0.34	-0.37	1.71
Gross Alpha (CE+/-)	3.10	1.10	1.80	3.90	4.00	2.50	2.30	2.00
Gross Beta (pCi/L)	5.01	-2.98	1.01	-4.59	9.41	3.31	2.98	2.03
Gross Beta (CE+/-)	5.00	2.90	2.90	5.60	5.50	3.10	3.60	3.00

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Groundwater and Surface-Water Quality Data, 1993

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Sampling Point	GW-651		GW-652				GW-653	
Location	BG		BG				BG	
Date Sampled	07/10/93	10/10/93	03/01/93	04/19/93	07/10/93	10/18/93	03/01/93	04/20/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	8.8	10.8	9.25	9.49	12.32	11.3	20.5	19.95
Water Temp (degrees C)	17.6	12.6	12.6	13.7	14.1	15.5	14.5	14.3
pH (pH units)	7.5	7.7	7.3	7.3	7.1	7.5	5.6	5.3
Sp. Cond. (umho/cm)	338	369	407	394	352	433	34	31
Dissolved Oxygen (ppm)	8	6.2	5.3	3.5	5.2	5.7	7.7	7.3
Oxidation/Reduction (mV)	181	188	210	177	176	170	309	299
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	8.1	7.9	7.6	7.8	7.9	7.6	5.7	5.8
Sp. Cond. (umho/cm)	372	401	407	408	406	406	34	33
TDS (mg/L)	234	326	284	266	250	282	70	56
TSS (mg/L)	<1	4	17	12	5	<1	314	82
Turbidity (NTU)	2.4	5.6	44	1.9	11	28	70	29
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	1.21	0.30	0.22	1.67	0.47	0.31	12.90	3.93
Gross Alpha (CE+/-)	1.70	1.80	2.80	2.20	1.60	2.80	5.60	3.50
Gross Beta (pCi/L)	4.87	0.94	9.19	0.89	0.66	0.30	11.60	-3.09
Gross Beta (CE+/-)	2.90	2.80	3.90	2.90	2.60	6.00	7.20	5.30

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APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-653		GW-654				GW-655	
	BG		BG				BG	
	07/10/93	10/10/93	02/24/93	04/16/93	07/01/93	10/07/93	02/05/93	05/10/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	23.73	24.63	6.4	6.1	7.95	8.7	28.2	23.69
Water Temp (degrees C)	15.1	13.3	8.3	11.3	17.8	17	14.3	16.3
pH (pH units)	5.1	5.6	7	7.3	7	7.2	6.5	6
Sp. Cond. (umho/cm)	28	32	239	244	221	256	99	78
Dissolved Oxygen (ppm)	7.4	7.4	6.8	5.7	3.3	5.8	5.2	12.2
Oxidation/Reduction (mV)	286	284	107	10	-4	163	92	144
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	6.6	6.1	7.7	7.4	7.6	7.4	6.5	6.8
Sp. Cond. (umho/cm)	32	32	233	248	262	284	96	95
TDS (mg/L)	46	142	154	154	182	258	92	150
TSS (mg/L)	<1	158	4	5	<1	<1	22	624
Turbidity (NTU)	12	42	18	13	2.4	3.5	22	180
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	6.36	8.56	0.31	3.52	-2.58	3.44	2.18	14.10
Gross Alpha (CE+/-)	3.80	8.00	1.50	1.00	2.60	2.30	1.60	3.90
Gross Beta (pCi/L)	6.73	16.00	1.89	1.31	-3.20	4.14	-4.35	13.70
Gross Beta (CE+/-)	5.60	12.00	2.70	1.30	4.70	3.00	3.70	5.90

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APPENDIX E.3

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Groundwater and Surface-Water Quality Data, 1993

Sampling Point	GW-655		GW-683				GW-684	
Location	BG		EXP				EXP	
Date Sampled	07/01/93	10/06/93	03/04/93	04/23/93	07/12/93	10/12/93	03/03/93	04/22/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	30.25	35.95	87.5	87.99	88.92	88.8	15.15	14.85
Water Temp (degrees C)	18.6	16.5	11.9	13.4	16	13.3	13.1	12.5
pH (pH units)	6.1	6.2	7.1	7.3	7.3	7.3	7.5	7.9
Sp. Cond. (umho/cm)	87	92	417	267	484	602	453	310
Dissolved Oxygen (ppm)	2.5	4.6	9.2	6.9	6.9	7.8	6	5.5
Oxidation/Reduction (mV)	25	151	283	216	143	233	196	177
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	6.9	6.7	7.9	7.3	7.5	7.4	7.8	8.1
Sp. Cond. (umho/cm)	93	93	335	305	515	710	350	371
TDS (mg/L)	74	64	178	160	308	504	226	222
TSS (mg/L)	13	54	2	1	<1	2	<1	<1
Turbidity (NTU)	11	16	2	1.3	0.9	2.5	3.9	1.5
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-2.03	0.43	7.31	5.33	12.50	35.80	9.05	5.89
Gross Alpha (CE+/-)	2.40	1.70	2.30	2.30	5.50	5.10	2.50	2.50
Gross Beta (pCi/L)	-1.65	2.21	15.80	10.60	26.20	64.40	20.90	27.50
Gross Beta (CE+/-)	5.00	2.70	3.80	3.20	7.70	5.50	4.00	4.00

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APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-684		GW-685				GW-694	
	EXP		EXP				EXP	
	07/11/93	10/12/93	03/02/93	04/21/93	07/11/93	10/11/93	03/23/93	06/06/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	15.61	15.55	7.28	7.35	8.7	8.14	25.44	29.14
Water Temp (degrees C)	15.6	13.2	12.8	13.3	18.5	14.3	13.6	14.6
pH (pH units)	7.3	7.8	7.2	7.2	7.3	7.5	6.9	6.7
Sp. Cond. (umho/cm)	459	494	707	620	590	634	603	748
Dissolved Oxygen (ppm)	7.6	7	10.6	7.3	10.3	5.4	3.6	1.1
Oxidation/Reduction (mV)	103	180	80	25	67	16	46	-37
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.9	7.7	7.6	7.8	7.7	7.7	7.2	7.8
Sp. Cond. (umho/cm)	510	591	723	724	665	680	620	822
TDS (mg/L)	322	432	412	422	388	456	360	514
TSS (mg/L)	<1	3	12	10	2	5	3	3
Turbidity (NTU)	1	4.5	52	12	2.9	18	2.7	5.4
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	21.20	38.20	0.75	1.93	3.21	4.48	31.80	56.90
Gross Alpha (CE+/-)	4.00	5.20	3.30	3.30	2.30	2.20	5.10	9.20
Gross Beta (pCi/L)	46.60	63.60	3.16	5.21	7.10	10.90	34.60	88.40
Gross Beta (CE+/-)	4.70	5.50	3.70	3.30	3.10	3.40	4.20	9.40

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APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point	GW-694		GW-695				GW-703	
Location	EXP		EXP				EXP	
Date Sampled	09/22/93	12/28/93	03/24/93	06/09/93	09/22/93	12/21/93	03/20/93	06/03/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	30.9	28.3	23.85	29.65	31	26.52	39	42.8
Water Temp (degrees C)	15.3	12.7	14.6	18.8	16.4	9.3	10	15.3
pH (pH units)	6.7	6.7	8.4	7.9	8.3	8.3	7.7	8
Sp. Cond. (umho/cm)	930	758	389	438	417	373	608	427
Dissolved Oxygen (ppm)	0.7	5.3	7.2	7.2	11	7.5	8.4	1.5
Oxidation/Reduction (mV)	2	70	146	162	98	207	174	175
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.1	7.2	8.3	8.3	8.3	8.2	7.8	8.4
Sp. Cond. (umho/cm)	918	815	407	438	416	441	708	475
TDS (mg/L)	568	488	252	280	272	286	400	284
TSS (mg/L)	1	2	12	149	83	325	<1	8
Turbidity (NTU)	2	2.7	3.1	40	20	200	2.6	8.7
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	50.90	108.00	3.49	4.46	5.77	10.90	0.19	-2.64
Gross Alpha (CE+/-)	13.00	8.90	2.30	4.20	5.00	3.40	2.30	4.30
Gross Beta (pCi/L)	112.00	161.00	15.70	14.50	30.90	16.90	6.39	-3.95
Gross Beta (CE+/-)	17.00	8.00	3.40	6.10	6.70	4.10	2.90	6.00

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Groundwater and Surface-Water Quality Data, 1993

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Sampling Point	GW-703		GW-704				GW-706	
Location	EXP		EXP				EXP	
Date Sampled	09/20/93	12/21/93	03/22/93	06/04/93	09/22/93	12/22/93	03/23/93	06/11/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	45.45	41.45	28.3	33.82	36.5	32	12.57	17.46
Water Temp (degrees C)	15	11.6	13.4	18.2	14.4	11	14	17.7
pH (pH units)	8	8	7.5	7.5	7.7	8.4	5.2	7.2
Sp. Cond. (umho/cm)	538	552	578	527	594	333	680	745
Dissolved Oxygen (ppm)	5.5	5.1	5	1.5	2.4	1.6	4.5	1
Oxidation/Reduction (mV)	108	196	40	85	-60	25	-16	-61
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	8	7.9	8.1	8	7.8	8.3	8.6	7.4
Sp. Cond. (umho/cm)	5.83	675	606	588	612	350	363	845
TDS (mg/L)	354	396	348	258	344	180	190	544
TSS (mg/L)	2	2	3	52	24	21	7	1
Turbidity (NTU)	8.2	2.5	15	125	38	17	15	2
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-0.66	2.91	-1.48	0.92	1.30	0.82	0.00	54.40
Gross Alpha (CE+/-)	5.00	1.80	3.30	3.80	4.20	1.20	1.50	9.00
Gross Beta (pCi/L)	28.60	42.70	4.94	9.93	13.90	3.64	7.42	97.90
Gross Beta (CE+/-)	7.10	6.10	5.20	5.90	5.80	2.70	2.90	9.80

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Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-706		GW-710				GW-711	
	EXP		EXP				EXP	
	09/23/93	12/28/93	03/21/93	04/30/93	08/01/93	11/09/93	03/20/93	04/29/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	18.55	15.6	66.85	64.59	67.93	68.7	61.1	59.8
Water Temp (degrees C)	16.1	12.9	12.2	16	15.6	13	12.2	13.3
pH (pH units)	8	7.2	7.6	7.3	7.5	7.5	7.7	7.5
Sp. Cond. (umho/cm)	852	783	3850	3590	3600	3520	6680	7410
Dissolved Oxygen (ppm)	2	1.9	0.5	0.5	2	9.5	1.5	2.5
Oxidation/Reduction (mV)	22	60	-120	-111	-119	-53	-107	-101
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	8.4	7.5	7	6.5	7.6	7.4	7.1	7.6
Sp. Cond. (umho/cm)	333	835	4190	4050	3990	4060	8610	8660
TDS (mg/L)	168	508	3862	3782	3758	3738	6526	6344
TSS (mg/L)	27	<1	12	2	7	9	23	23
Turbidity (NTU)	120	3.9	20	27	11	5	21	38
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	11.70	99.20	1.00	-4.53	-6.39	-6.99	1.45	3.24
Gross Alpha (CE+/-)	7.40	8.50	4.20	3.10	41.00	22.00	4.60	3.80
Gross Beta (pCi/L)	0.00	150.00	7.84	-11.80	15.00	-20.10	16.80	8.84
Gross Beta (CE+/-)	11.00	7.70	3.20	2.90	53.00	28.00	3.70	3.40

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Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-711		GW-712				GW-713	
	EXP		EXP				EXP	
	07/30/93	11/07/93	03/18/93	04/28/93	07/29/93	11/06/93	03/19/93	04/30/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	51.21	66	32	31.2	35.49	34.35	36.25	35.01
Water Temp (degrees C)	14.7	12.3	11.2	15	15.1	12.2	11.4	13.7
pH (pH units)	7.2	7.4	7.6	7.3	7.6	7.5	7.6	7.5
Sp. Cond. (umho/cm)	7240	7640	809	753	833	749	685	511
Dissolved Oxygen (ppm)	1.1	0.4	0.9	4.2	0.7	0.5	1.5	0.3
Oxidation/Reduction (mV)	-103	-85	-8	70	-133	62	-32	-83
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.4	7.4	8	8.1	7.8	7.7	7.5	7.8
Sp. Cond. (umho/cm)	8560	8340	853	832	836	828	732	628
TDS (mg/L)	6132	6164	642	596	652	568	502	424
TSS (mg/L)	15	14	4	2	<1	1	4	4
Turbidity (NTU)	15	32	11	7	4.3	12	7.7	18
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	3.52	-6.49	1.71	5.37	-2.80	-0.19	-0.53	-1.16
Gross Alpha (CE+/-)	47.00	28.00	1.80	2.50	37.00	2.50	2.00	2.00
Gross Beta (pCi/L)	18.60	3.59	3.37	-8.64	31.00	1.15	3.30	-8.13
Gross Beta (CE+/-)	54.00	31.00	2.90	2.70	53.00	3.10	2.70	2.80

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Groundwater and Surface-Water Quality Data, 1993

Sampling Point . Location . Date Sampled	GW-713		GW-714				GW-715	
	EXP		EXP				EXP	
	07/31/93	11/09/93	03/21/93	04/29/93	08/01/93	11/09/93	03/21/93	04/29/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Depth to Water (ft)	41.6	38.25	23.22	25.89	31.7	31.12	22.44	23.75
Water Temp (degrees C)	15.5	12.2	12.2	16.8	18	12.6	13.2	15.5
pH (pH units)	7.8	7.4	7.6	7.6	7.9	7.6	7.1	7.2
Sp. Cond. (umho/cm)	683	562	509	436	489	392	586	496
Dissolved Oxygen (ppm)	1.1	0.3	2	9	6	1.3	6.6	0.9
Oxidation/Reduction (mV)	-136	-10	81	148	85	-69	118	99
	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
pH (pH units)	7.7	7.8	7.6	8.2	8.1	7.9	7.2	8
Sp. Cond. (umho/cm)	668	633	473	466	454	432	638	555
TDS (mg/L)	476	438	276	264	274	256	376	298
TSS (mg/L)	5	4	6	20	<1	12	1	6
Turbidity (NTU)	24	15	3.8	54	3.8	18	3	3
	.	.	.	.	.	.	.	.
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-22.30	-0.17	2.23	-3.05	-2.80	0.93	-0.35	-3.15
Gross Alpha (CE+/-)	33.00	2.20	2.40	1.60	37.00	2.20	2.10	1.80
Gross Beta (pCi/L)	-17.90	1.13	2.94	-3.17	-22.80	6.28	5.66	-4.22
Gross Beta (CE+/-)	50.00	3.00	2.70	3.00	49.00	3.30	2.90	2.90

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Groundwater and Surface-Water Quality Data, 1993

Sampling Point . Location . Date Sampled	GW-715		GW-723				GW-724	
	EXP		EXP				EXP	
	08/01/93	11/11/93	02/12/93	05/18/93	09/27/93	12/14/93	02/10/93	05/18/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
Depth to Water (ft)	30.1	29.15	70.5	69.97	76.45	71.55	29.65	31.35
Water Temp (degrees C)	14.5	12.8	14.4	15.8	14.6	12.2	13.6	15.8
pH (pH units)	7.1	7	7.4	7.9	7.8	8.4	7.1	7.3
Sp. Cond. (umho/cm)	552	454	652	509	493	512	899	762
Dissolved Oxygen (ppm)	1.1	1.9	9.1	8.4	7.9	11.2	2.4	3.4
Oxidation/Reduction (mV)	119	182	138	184	71	179	22	-45
.	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
pH (pH units)	7.8	7.1	7.7	7.9	7.4	7.9	7.5	7.5
Sp. Cond. (umho/cm)	566	552	649	516	507	497	990	934
TDS (mg/L)	334	354	358	298	280	304	546	604
TSS (mg/L)	6	1	89	9	<1	6	3	2
Turbidity (NTU)	9.9	54	80	14	36	9.2	7.8	9.1
.	.	.	.	.	.	.	.	.
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-33.80	0.17	0.54	3.24	-1.51	0.64	4.97	2.08
Gross Alpha (CE+/-)	32.00	1.30	7.80	4.00	3.50	2.40	2.80	3.80
Gross Beta (pCi/L)	-11.40	2.65	4.96	10.70	9.41	9.78	11.10	40.40
Gross Beta (CE+/-)	50.00	2.50	6.90	6.50	5.50	3.40	3.50	7.90

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Groundwater and Surface-Water Quality Data, 1993

Sampling Point . Location . Date Sampled	GW-724		GW-725				GW-736	
	EXP		EXP				EXP	
	09/29/93	12/14/93	02/12/93	05/19/93	09/28/93	12/15/93	02/11/93	05/18/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	34.15	28.77	11.02	13.25	13.65	10.65	9.95	10.9
Water Temp (degrees C)	15.2	10.8	15	15.5	15.1	13.3	13.2	16
pH (pH units)	7.5	7.3	7	7.1	6.8	7	6.8	6.8
Sp. Cond. (umho/cm)	1262	814	1182	1069	1077	740	1080	915
Dissolved Oxygen (ppm)	7.3	1	2.2	1.7	0.4	3.1	2.2	1.3
Oxidation/Reduction (mV)	33	-60	-1	105	20	98	182	175
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.7	7.6	7.2	7.3	7.2	7.3	6.9	7
Sp. Cond. (umho/cm)	312	930	1180	1180	1130	1140	1180	1100
TDS (mg/L)	494	556	722	760	576	764	710	700
TSS (mg/L)	<1	3	4	1	<1	1	1	<1
Turbidity (NTU)	7	16	10	2	0.8	1.5	0.7	1.4
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	0.92	-0.36	0.26	2.06	0.63	4.61	7.80	2.04
Gross Alpha (CE+/-)	3.40	2.60	3.70	3.80	3.80	3.50	4.50	3.70
Gross Beta (pCi/L)	41.80	32.00	24.20	41.60	46.50	53.70	22.90	45.20
Gross Beta (CE+/-)	4.90	4.40	4.40	7.90	5.20	5.30	3.90	8.00

(CONTINUED)

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-736		GW-737				GW-738	
	EXP		EXP				EXP	
	09/28/93	12/15/93	02/11/93	05/19/93	09/28/93	12/15/93	02/10/93	05/18/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Depth to Water (ft)	13.07	11.12	12.65	11.2	13.6	12	28.97	28.75
Water Temp (degrees C)	15.3	13.3	13.6	14.7	16.5	12.8	14	15.9
pH (pH units)	6.8	7	6.9	6.7	7.1	7	6.2	7.1
Sp. Cond. (umho/cm)	1166	1050	1122	878	1197	1050	745	595
Dissolved Oxygen (ppm)	0.8	3	4.1	1.1	0.7	4.2	1.2	2.1
Oxidation/Reduction (mV)	178	157	183	197	155	167	186	167
	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
pH (pH units)	7.4	7.2	7	7.2	7.4	7.3	7.3	7
Sp. Cond. (umho/cm)	1120	1120	1220	1120	1120	1110	804	727
TDS (mg/L)	696	740	712	760	694	726	492	440
TSS (mg/L)	<1	<1	1	<1	<1	<1	3	3
Turbidity (NTU)	0.9	0.6	1	1.1	1.4	0.8	3.9	4.9
	.	.	.	.	.	.	.	.
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	3.51	4.12	9.66	0.95	0.00	5.85	7.81	0.59
Gross Alpha (CE+/-)	4.00	3.40	4.80	3.50	3.70	3.60	3.30	2.50
Gross Beta (pCi/L)	57.90	52.00	23.60	42.00	52.80	60.80	41.40	30.20
Gross Beta (CE+/-)	5.50	5.20	3.90	4.90	5.40	5.50	4.80	7.40

(CONTINUED)

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-738		GW-739				GW-740	
	EXP		EXP				EXP	
	09/27/93	12/14/93	02/10/93	05/18/93	09/27/93	12/13/93	02/09/93	05/17/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	30.1	27.78	75	74.95	77.45	71.95	69.45	70.86
Water Temp (degrees C)	14.7	13.3	13	15	14	13	14.5	15.3
pH (pH units)	7.3	6.9	7.5	7.4	7.3	7.7	7.3	7.3
Sp. Cond. (umho/cm)	786	772	502	426	491	487	529	428
Dissolved Oxygen (ppm)	1.4	3.2	2.7	3.3	2.3	5.8	3.5	3.3
Oxidation/Reduction (mV)	54	161	143	193	82	129	55	102
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.4	7.3	7.6	7.7	7.6	7.7	7.5	7.6
Sp. Cond. (umho/cm)	824	848	530	496	535	522	529	527
TDS (mg/L)	478	496	312	292	280	314	306	292
TSS (mg/L)	<1	4	16	3	1	5	3	<1
Turbidity (NTU)	7.9	3.2	22	3	3.7	6.7	3.4	2.3
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	0.33	0.18	1.57	2.33	-1.22	-0.96	0.17	0.28
Gross Alpha (CE+/-)	4.10	2.60	1.50	3.80	3.60	2.20	1.30	3.40
Gross Beta (pCi/L)	47.50	60.10	1.08	7.72	14.20	9.51	0.17	0.33
Gross Beta (CE+/-)	7.50	5.40	2.80	6.30	5.80	3.40	2.80	5.90

(CONTINUED)

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	GW-740		GW-793				GW-794	
	EXP		AGLLSF				AGLLSF	
	09/27/93	12/11/93	02/26/93	05/25/93	07/11/93	10/18/93	03/01/93	05/25/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Depth to Water (ft)	72.65	67.8	7.15	8.5	10.05	10.07	9	16.1
Water Temp (degrees C)	14.3	12.1	13.3	14.5	16.5	16.3	12.3	13.6
pH (pH units)	7.7	7.5	7.1	6.8	7.2	6.8	7.4	7.4
Sp. Cond. (umho/cm)	538	488	282	240	252	265	441	403
Dissolved Oxygen (ppm)	3	2.7	0.5	0.6	0.4	0.6	8.5	5.4
Oxidation/Reduction (mV)	-35	18	140	170	106	157	109	177
	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
pH (pH units)	7.7	7.6	7.5	7.3	7.6	7.6	7.6	7.7
Sp. Cond. (umho/cm)	559	537	295	296	292	308	523	483
TDS (mg/L)	302	324	198	188	186	192	372	296
TSS (mg/L)	<1	<1	5	1	16	5	224	15
Turbidity (NTU)	2.3	1.2	2.8	1.1	7	2.5	110	16
	.	.	.	.	.	.	.	.
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	1.85	0.65	0.49	-5.55	-4.03	-0.15	2.55	-5.92
Gross Alpha (CE+/-)	4.10	2.40	1.40	4.40	7.90	2.20	2.00	4.70
Gross Beta (pCi/L)	16.90	8.40	0.95	3.98	-0.98	3.21	4.57	1.00
Gross Beta (CE+/-)	5.90	3.30	2.70	5.50	11.00	3.10	2.90	5.40

(CONTINUED)

APPENDIX E.3

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Groundwater and Surface-Water Quality Data, 1993

Sampling Point . Location . Date Sampled	GW-794		GW-795				GW-800	
	AGLLSF		AGLLSF				OLF	
	07/11/93	10/18/93	03/02/93	05/25/93	07/12/93	10/18/93	05/11/93	09/14/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	20.8	20.25	3.65	6.3	10.25	10.46	18.76	21.93
Water Temp (degrees C)	17.8	15.8	11.7	13.3	15.7	17.2	15.7	15.7
pH (pH units)	7.7	7.2	7.1	7	7.2	6.7	7.4	7.2
Sp. Cond. (umho/cm)	436	432	396	344	370	434	326	505
Dissolved Oxygen (ppm)	9	8.2	2.8	0.6	0.6	0.6	5.8	6.7
Oxidation/Reduction (mV)	89	187	181	260	170	164	154	254
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.8	7.8	7.3	7.4	7.3	7.5	7.7	7.4
Sp. Cond. (umho/cm)	479	482	480	428	426	484	369	547
TDS (mg/L)	298	300	266	262	268	302	180	334
TSS (mg/L)	11	10	<1	<1	<1	<1	<1	66
Turbidity (NTU)	15	13	1.1	1.1	1.8	1	1.1	66
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-4.51	2.20	0.35	-6.19	0.00	3.24	-0.18	-2.26
Gross Alpha (CE+/-)	7.60	2.60	1.50	4.30	8.30	2.70	0.57	3.00
Gross Beta (pCi/L)	-3.27	7.15	2.28	2.32	-8.51	10.00	0.31	-6.00
Gross Beta (CE+/-)	11.00	3.40	2.80	5.40	11.00	3.50	1.40	5.70

(CONTINUED)

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point	GW-800
. Location	OLF
. Date Sampled	10/22/93
FIELD MEASUREMENTS	.
	.
Depth to Water (ft)	19.1
Water Temp (degrees C)	12.5
pH (pH units)	6.9
Sp. Cond. (umho/cm)	475
Dissolved Oxygen (ppm)	7.7
Oxidation/Reduction (mV)	250
	.
MISCELLANEOUS PARAMETERS	.
	.
pH (pH units)	7.3
Sp. Cond. (umho/cm)	508
TDS (mg/L)	284
TSS (mg/L)	8
Turbidity (NTU)	25
	.
RADIOCHEMICAL PARAMETERS	.
	.
Gross Alpha (pCi/L)	1.88
Gross Alpha (CE+/-)	1.70
Gross Beta (pCi/L)	4.08
Gross Beta (CE+/-)	2.70

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	BCK-00.63				BCK-04.55			
	EXP				EXP			
	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water Temp (degrees C)	7	14	17.7	5.7	8	14	16.8	6.5
pH (pH units)	8	8.1	7.6	7.9	7.7	7.9	7.5	7.5
Sp. Cond. (umho/cm)	162	200	360	290	170	222	350	307
Dissolved Oxygen (ppm)	7.8	9.2	8.5	10.8	10.7	8.8	7.4	9.8
Oxidation/Reduction (mV)	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.7	7.9	8.1	8.1	7.8	7.9	7.9	8
Sp. Cond. (umho/cm)	241	278	412	447	258	289	410	457
TDS (mg/L)	130	176	258	384	136	162	264	376
TSS (mg/L)	2	2	4	<1	2	1	1	<1
Turbidity (NTU)	4	3.2	2.5	3	3.4	3	2.3	2.9
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	6.99	5.06	18.30	13.80	7.94	5.81	11.70	12.10
Gross Alpha (CE+/-)	2.70	2.40	8.70	3.60	2.90	2.60	7.80	3.40
Gross Beta (pCi/L)	10.50	10.20	21.50	32.40	13.90	8.17	21.80	30.50
Gross Beta (CE+/-)	3.30	3.10	12.00	5.30	3.40	3.00	12.00	5.10

(CONTINUED)

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	BCK-09.40				NT-01			
	EXP				EXP			
	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water Temp (degrees C)	7	15	.	5.8	9	15	25.6	6.7
pH (pH units)	7.7	8.2	.	7.7	7	7.4	7	7.1
Sp. Cond. (umho/cm)	230	350	.	480	690	820	2330	1110
Dissolved Oxygen (ppm)	11.7	8.4	.	10.6	8.1	6.6	6.8	9.9
Oxidation/Reduction (mV)	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	8.1	8.1	7.8	8.1	7	7.6	7.5	7.7
Sp. Cond. (umho/cm)	418	478	645	250	1170	1110	2280	1760
TDS (mg/L)	230	288	424	254	772	772	1746	1382
TSS (mg/L)	2	1	2	4	5	7	4	8
Turbidity (NTU)	2.8	3	2.6	4.1	7.1	1.3	2.2	3.3
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	26.80	19.10	41.00	-0.01	8.78	16.30	45.50	72.80
Gross Alpha (CE+/-)	4.80	4.40	12.00	1.00	5.10	7.10	7.20	8.70
Gross Beta (pCi/L)	41.30	43.80	95.50	-1.47	63.60	64.40	384.00	318.00
Gross Beta (CE+/-)	4.60	4.70	16.00	2.70	6.00	8.60	12.00	11.00

(CONTINUED)

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	NT-13				SS-1			
	EXP				EXP			
	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water Temp (degrees C)	6	13	21.3	8.3	8	18	20.6	12.6
pH (pH units)	7.3	8.2	7.5	5.8	6.8	6.8	7.5	7.3
Sp. Cond. (umho/cm)	30	60	230	140	760	1220	705	1000
Dissolved Oxygen (ppm)	11.1	9.4	7	8.4	10.1	7.6	7.1	6.9
Oxidation/Reduction (mV)	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.1	7.5	7.6	6.9	7.6	7.2	7.9	7.8
Sp. Cond. (umho/cm)	57	72	239	170	1100	1540	1330	1290
TDS (mg/L)	40	52	166	230	670	1052	942	1070
TSS (mg/L)	4	3	1	38	<1	9	5	10
Turbidity (NTU)	6.9	8.4	6.7	44	0.8	3	1.3	1.6
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	0.28	0.00	1.73	0.81	12.90	15.10	18.90	18.20
Gross Alpha (CE+/-)	1.60	1.40	6.00	1.30	3.50	3.60	4.10	4.50
Gross Beta (pCi/L)	1.55	2.46	-2.04	0.23	27.10	178.00	52.60	63.60
Gross Beta (CE+/-)	2.70	2.60	11.00	2.80	4.50	8.30	5.00	5.40

(CONTINUED)

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	SS-4				SS-5			
	EXP				EXP			
	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water Temp (degrees C)	10	15	16.9	10.3	12	12	13.9	12.4
pH (pH units)	7.3	7.6	7.8	7.6	7	7.6	7.8	7
Sp. Cond. (umho/cm)	381	475	780	700	220	260	500	495
Dissolved Oxygen (ppm)	8.7	8.8	8.4	9.2	7.8	6.6	5.4	5.6
Oxidation/Reduction (mV)	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.8	7.8	8.1	8	7.3	7.5	7.5	7.4
Sp. Cond. (umho/cm)	550	625	920	959	309	353	633	629
TDS (mg/L)	306	334	616	788	166	194	380	494
TSS (mg/L)	10	6	10	41	3	<1	<1	5
Turbidity (NTU)	2.5	2.4	2.7	2	3	2.1	2.2	4
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	25.80	29.60	57.00	55.10	8.69	6.11	30.60	32.80
Gross Alpha (CE+/-)	5.00	6.20	14.00	9.10	3.00	2.70	11.00	6.10
Gross Beta (pCi/L)	37.10	44.30	118.00	143.00	12.50	15.70	65.20	73.30
Gross Beta (CE+/-)	4.50	4.80	17.00	16.00	3.40	3.50	15.00	9.20

(CONTINUED)

APPENDIX E.3
Groundwater and Surface-Water Quality Data, 1993

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Sampling Point . Location . Date Sampled	SS-6				SS-8			
	EXP				EXP			
	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water Temp (degrees C)	8	13	16	9.8	11	12	13.2	12.3
pH (pH units)	7.6	8.4	7.7	7.6	7.5	7.9	7.5	7.1
Sp. Cond. (umho/cm)	132	170	238	182	155	172	248	230
Dissolved Oxygen (ppm)	10.2	9.3	7.9	10.3	9	9.4	6.5	7.2
Oxidation/Reduction (mV)	.	.	.	.	.	.	.	.
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	8	8.1	7.9	8	7.3	7.5	7.6	7.6
Sp. Cond. (umho/cm)	189	219	288	728	213	232	317	297
TDS (mg/L)	94	104	172	580	104	120	184	280
TSS (mg/L)	<1	3	2	3	1	3	4	<1
Turbidity (NTU)	1.9	2	2.3	2.4	2.1	2.2	2.4	3.5
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-0.15	-0.90	2.29	54.30	0.00	0.48	6.91	-0.66
Gross Alpha (CE+/-)	1.60	1.30	6.10	8.70	1.70	1.70	6.90	0.81
Gross Beta (pCi/L)	0.82	0.34	-1.70	126.00	1.65	-1.38	6.47	-1.70
Gross Beta (CE+/-)	2.70	2.50	11.00	14.00	2.80	2.40	11.00	2.70

APPENDIX E.4
RADIONUCLIDES

APPENDIX E.4

1

Groundwater and Surface-Water Quality Data, 1993

Sampling Point	GW-040	GW-042	GW-043	GW-044	GW-079	GW-080	GW-084	GW-115
Location	BG	BG	OLF	OLF	BG	BG	OLF	S3
Date Sampled	10/09/93	12/29/93	10/19/93	10/19/93	10/18/93	10/10/93	10/20/93	10/19/93
Gross Alpha (pCi/L)	-1.96	-2.48	-0.62	0.61	-0.93	2.06	0.77	1.43
Gross Alpha (CE+/-)	1.80	1.90	2.10	2.50	2.00	2.30	1.40	1.60
Gross Beta (pCi/L)	2.97	-4.77	-7.90	-8.81	-3.07	0.90	5.16	4.06
Gross Beta (CE+/-)	2.80	3.20	5.80	5.60	6.00	2.60	2.70	2.60
	.	.	.	.	.	.	.	.
RADIONUCLIDES	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Americium 241 (pCi/L)	0.00	0.89	0.00	-3.54	-1.46	-1.63	-1.15	0.68
Americium 241 (CE+/-)	8.20	1.00	6.30	7.90	5.00	7.30	2.60	3.00
Cesium 137 (pCi/l)	.	0.08	13.10	18.60	4.51	.	.	.
Cesium 137 (CE +/-)	.	0.06	35.20	42.00	35.30	.	.	.
Iodine 129 (pCi/L)	0.01	0.10	0.10	0.10	0.10	0.10	0.02	0.10
Iodine 129 (CE +/-)	0.75	1.00	3.30	3.50	-0.05	1.50	0.32	2.90
Iodine 131 (pCi/L)	-0.02	0.05	-0.06	0.04	1.70	-0.02	0.10	0.01
Iodine 131 (CE +/-)	0.10	0.16	0.34	0.22	0.29	0.19	2.20	0.34
Neptunium 237 (pCi/L)	-0.55	0.00	17.80	-5.47	-5.51	1.10	0.00	0.00
Neptunium 237 (CE+/-)	2.20	0.49	31.00	19.00	19.00	2.20	1.80	1.80
Potassium 40 (pCi/L)	.	.	.	.	.	.	.	.
Potassium 40 (CE+/-)	.	.	.	.	.	.	.	.
Plutonium 238 (pCi/L)	-0.69	0.22	0.00	13.60	6.87	0.00	0.00	0.00
Plutonium 238 (CE+/-)	3.10	0.75	42.00	43.00	41.00	3.40	2.20	2.20
Plutonium 239 (pCi/L)	0.00	0.00	14.80	-6.82	0.00	0.00	0.00	0.64
Plutonium 239 (CE+/-)	2.40	0.75	30.00	27.00	19.00	2.40	2.20	1.30
Protactinium (pCi/L)	.	.	2050.00	1960.00	2360.00	.	.	.
Protactinium (CE+/-)	.	.	6440.00	7260.00	6040.00	.	.	.
Radium (Bq/L)	0.06	0.24	0.00	0.01	0.02	0.12	0.03	0.02
Radium (CE+/-)	0.05	0.08	0.03	0.03	0.03	0.04	0.04	0.03
Ruthenium 106 (pCi/L)	.	0.38	.	.	.	.	.	.
Ruthenium 106 (CE +/-)	.	0.80	.	.	.	.	.	.
Strontium (pCi/L)	38.10	34.80	35.70	57.90	57.90	60.50	51.20	33.60
Strontium (CE+/-)	22.00	25.00	23.00	25.00	25.00	24.00	25.00	23.00
Technetium 99 (pCi/L)	38.20	109.00	53.00	18.00	53.80	47.50	25.40	37.10
Technetium 99 (CE+/-)	59.00	62.00	60.20	59.10	60.30	61.00	59.00	60.00
Thorium 234 (pCi/l)	.	7.90	-207.00	998.00	327.00	.	.	.
Thorium 234 (CE +/-)	.	1.90	575.00	346.00	608.00	.	.	.
Thorium 228 (pCi/l)	.	7.43	.	.	1390.00	.	.	.
Thorium 228 (CE +/-)	.	8.10	.	.	1930.00	.	.	.
Tritium (Bq/L)	25.00	8.00	12.00	-5.00	26.00	9.00	1.00	11.00
Tritium (CE+/-)	26.00	22.00	24.00	23.00	24.00	25.00	24.00	26.00
Uranium 234 (pCi/L)	0.86	1.86	9.14	-7.23	0.00	0.90	4.15	7.30
Uranium 234 (CE+/-)	1.20	1.20	32.00	29.00	21.00	1.30	3.70	4.90
Uranium 235 (pCi/L)	-6.59	0.03	-1.85	43.40	-42.80	10.50	16.90	121.00
Uranium 235 (CE+/-)	59.00	0.36	68.10	90.40	68.50	70.00	58.00	170.00
Uranium 238 (pCi/L)	0.00	-0.19	9.14	21.70	7.30	0.00	5.81	0.00
Uranium 238 (CE+/-)	1.50	0.74	18.00	25.00	15.00	1.60	5.00	2.30

(CONTINUED)

APPENDIX E.4

2

Groundwater and Surface-Water Quality Data, 1993

Sampling Point	GW-162	GW-324	GW-325	GW-342	GW-372	GW-373	GW-537	
Location	BG	S3	S3	BG	BG	BG	OLF	
Date Sampled	10/10/93	10/19/93	10/21/93	10/07/93	10/12/93	10/11/93	02/11/93	05/12/93
Gross Alpha (pCi/L)	-0.31	-0.32	10.80	0.00	-0.01	-1.92	39.80	0.00
Gross Alpha (CE+/-)	2.10	2.20	3.20	2.00	2.40	2.10	14.00	20.00
Gross Beta (pCi/L)	-0.33	-7.50	15.50	1.97	-4.94	0.08	287.00	373.00
Gross Beta (CE+/-)	2.60	5.70	3.50	2.70	5.60	2.70	23.00	42.00
RADIONUCLIDES	.	.	.	.	.	.	.	.
Americium 241 (pCi/L)	-5.22	10.40	1.23	-4.82	0.00	3.92	.	.
Americium 241 (CE+/-)	8.50	13.00	3.00	7.90	6.80	11.00	.	.
Cesium 137 (pCi/L)	.	-7.53	.	.	28.50	.	.	.
Cesium 137 (CE +/-)	.	84.80	.	.	26.00	.	.	.
Iodine 129 (pCi/L)	-0.42	0.10	-0.04	0.10	0.01	0.10	.	.
Iodine 129 (CE +/-)	0.98	2.10	0.24	1.00	0.77	2.30	.	.
Iodine 131 (pCi/L)	-0.07	0.02	0.10	0.01	-0.02	0.06	.	.
Iodine 131 (CE +/-)	0.19	0.24	2.10	0.15	0.10	0.23	.	.
Neptunium 237 (pCi/L)	0.55	0.00	0.00	0.59	-11.90	0.00	.	.
Neptunium 237 (CE+/-)	1.90	22.00	1.80	2.10	27.00	1.50	.	.
Potassium 40 (pCi/L)	.	.	.	.	.	.	.	.
Potassium 40 (CE+/-)	.	.	.	.	.	.	.	.
Plutonium 238 (pCi/L)	0.68	-27.50	0.00	-1.48	0.00	-0.68	.	.
Plutonium 238 (CE+/-)	3.60	36.00	2.30	3.00	42.00	3.00	.	.
Plutonium 239 (pCi/L)	0.00	13.70	0.00	0.74	-7.38	0.68	.	.
Plutonium 239 (CE+/-)	2.40	27.00	2.30	1.50	30.00	1.40	.	.
Protactinium (pCi/L)	.	579.00	.	.	-781.00	.	.	.
Protactinium (CE+/-)	.	13700.00	.	.	4620.00	.	.	.
Radium (Bq/L)	0.07	0.00	0.05	0.06	0.08	0.04	.	.
Radium (CE+/-)	0.04	0.03	0.05	0.05	0.06	0.05	.	.
Ruthenium 106 (pCi/L)	363.00	.	.	.	.	.	.	.
Ruthenium 106 (CE +/-)	350.00	.	.	.	.	.	.	.
Strontium (pCi/L)	24.80	60.60	0.13	51.40	14.70	49.40	0.35	-3.71
Strontium (CE+/-)	20.00	25.00	19.00	23.00	21.00	23.00	21.00	18.00
Technetium 99 (pCi/L)	20.20	103.00	99.10	55.20	78.00	11.00	1260.00	1300.00
Technetium 99 (CE+/-)	60.00	61.80	61.00	61.00	61.00	58.00	1400.00	2700.00
Thorium 234 (pCi/L)	.	-219.00	.	.	186.00	.	.	.
Thorium 234 (CE +/-)	.	3050.00	.	.	488.00	.	.	.
Thorium 228 (pCi/L)	.	.	.	.	.	.	.	.
Thorium 228 (CE +/-)	.	.	.	.	.	.	.	.
Tritium (Bq/L)	17.00	-2.00	-7.00	0.00	6.00	-1.00	-3.00	16.00
Tritium (CE+/-)	25.00	23.00	23.00	22.00	24.00	23.00	24.00	34.00
Uranium 234 (pCi/L)	0.00	0.00	3.08	1.77	8.27	5.52	.	.
Uranium 234 (CE+/-)	1.90	21.00	3.10	1.80	29.00	4.20	.	.
Uranium 235 (pCi/L)	0.22	94.90	3.49	17.60	18.10	200.00	.	.
Uranium 235 (CE+/-)	68.00	167.00	70.00	170.00	58.90	160.00	.	.
Uranium 238 (pCi/L)	2.78	7.55	2.31	3.10	16.50	0.79	.	.
Uranium 238 (CE+/-)	2.50	15.00	3.40	2.30	23.00	1.60	.	.

(CONTINUED)

APPENDIX E.4

3

Groundwater and Surface-Water Quality Data, 1993

Sampling Point	GW-537		GW-613	GW-614	GW-642	GW-694		
Location	OLF		S3	S3	BG	EXP		
Date Sampled	09/14/93	10/22/93	10/20/93	10/20/93	10/10/93	03/23/93	06/06/93	09/22/93
Gross Alpha (pCi/L)	16.60	19.70	1.79	1.23	2.10	31.80	56.90	50.90
Gross Alpha (CE+/-)	33.00	12.00	1.60	1.50	2.40	5.10	9.20	13.00
Gross Beta (pCi/L)	426.00	432.00	2.82	2.92	3.30	34.60	88.40	112.00
Gross Beta (CE+/-)	80.00	27.00	2.50	2.60	2.80	4.20	9.40	17.00
RADIONUCLIDES	.	.	.	.	.	.	.	.
Americium 241 (pCi/L)	.	.	0.00	10.40	-3.88	.	.	.
Americium 241 (CE+/-)	.	.	2.30	6.90	7.80	.	.	.
Cesium 137 (pCi/L)	.	.	.	.	.	.	.	.
Cesium 137 (CE +/-)	.	.	.	.	.	.	.	.
Iodine 129 (pCi/L)	.	.	0.10	0.10	0.10	.	.	.
Iodine 129 (CE +/-)	.	.	2.30	2.20	1.00	.	.	.
Iodine 131 (pCi/L)	.	.	-0.03	-0.05	0.01	.	.	.
Iodine 131 (CE +/-)	.	.	0.36	0.29	0.13	.	.	.
Neptunium 237 (pCi/L)	.	.	0.00	0.00	0.59	.	.	.
Neptunium 237 (CE+/-)	.	.	1.70	1.80	2.10	.	.	.
Potassium 40 (pCi/L)	.	.	.	.	.	.	.	.
Potassium 40 (CE+/-)	.	.	.	.	.	.	.	.
Plutonium 238 (pCi/L)	.	.	0.00	0.00	0.00	.	.	.
Plutonium 238 (CE+/-)	.	.	2.20	2.30	3.60	.	.	.
Plutonium 239 (pCi/L)	.	.	0.63	0.00	0.74	.	.	.
Plutonium 239 (CE+/-)	.	.	1.30	2.30	1.50	.	.	.
Protactinium (pCi/L)	.	.	.	.	.	.	.	.
Protactinium (CE+/-)	.	.	.	.	.	.	.	.
Radium (Bq/L)	.	.	0.04	0.03	0.05	.	.	.
Radium (CE+/-)	.	.	0.05	0.04	0.04	.	.	.
Ruthenium 106 (pCi/L)	.	.	.	.	.	.	.	.
Ruthenium 106 (CE +/-)	.	.	.	.	.	.	.	.
Strontium (pCi/L)	22.90	36.90	41.50	0.07	5.51	-12.70	4.17	17.20
Strontium (CE+/-)	23.00	22.00	24.00	19.00	18.00	17.00	20.00	22.00
Technetium 99 (pCi/L)	1190.00	1040.00	55.10	68.10	46.50	4290.00	-2430.00	280.00
Technetium 99 (CE+/-)	89.00	87.00	60.00	61.00	61.00	3500.00	3300.00	66.00
Thorium 234 (pCi/L)	.	.	.	.	.	.	.	.
Thorium 234 (CE +/-)	.	.	.	.	.	.	.	.
Thorium 228 (pCi/L)	.	.	.	.	.	.	.	.
Thorium 228 (CE +/-)	.	.	.	.	.	.	.	.
Tritium (Bq/L)	120.00	13.00	.	0.00	5.00	26.00	7.00	12.00
Tritium (CE+/-)	.	28.00	.	23.00	23.00	31.00	41.00	.
Uranium 234 (pCi/L)	.	.	5.46	5.89	2.19	.	.	.
Uranium 234 (CE+/-)	.	.	4.90	4.50	2.50	.	.	.
Uranium 235 (pCi/L)	.	.	5.27	-13.80	13.60	.	.	.
Uranium 235 (CE+/-)	.	.	170.00	68.00	90.00	.	.	.
Uranium 238 (pCi/L)	.	.	1.09	0.00	1.46	.	.	.
Uranium 238 (CE+/-)	.	.	3.80	2.40	2.10	.	.	.

(CONTINUED)

APPENDIX E.4
Groundwater and Surface-Water Quality Data, 1993

4

Sampling Point	GW-694	GW-706				GW-710	GW-711	GW-712
Location	EXP	EXP				EXP	EXP	EXP
Date Sampled	12/28/93	03/23/93	06/11/93	09/23/93	12/28/93	11/09/93	11/07/93	11/06/93
Gross Alpha (pCi/L)	108.00	0.00	54.40	11.70	99.20	-6.99	-6.49	-0.19
Gross Alpha (CE+/-)	8.90	1.50	9.00	7.40	8.50	22.00	28.00	2.50
Gross Beta (pCi/L)	161.00	7.42	97.90	0.00	150.00	-20.10	3.59	1.15
Gross Beta (CE+/-)	8.00	2.90	9.80	11.00	7.70	28.00	31.00	3.10
RADIONUCLIDES								
Americium 241 (pCi/L)	.	.	.	.	.	0.00	2.13	0.00
Americium 241 (CE+/-)	.	.	.	.	.	4.00	4.30	5.10
Cesium 137 (pCi/L)	.	.	.	.	.	.	.	.
Cesium 137 (CE +/-)	.	.	.	.	.	.	.	.
Iodine 129 (pCi/L)	.	.	.	.	.	0.10	0.01	0.10
Iodine 129 (CE +/-)	.	.	.	.	.	1.70	0.73	1.50
Iodine 131 (pCi/L)	.	.	.	.	.	-0.01	0.02	-0.01
Iodine 131 (CE +/-)	.	.	.	.	.	0.23	0.11	0.19
Neptunium 237 (pCi/L)	.	.	.	.	.	0.00	0.00	-0.26
Neptunium 237 (CE+/-)	.	.	.	.	.	1.50	1.50	1.10
Potassium 40 (pCi/L)	.	.	.	.	.	.	465.00	.
Potassium 40 (CE+/-)	.	.	.	.	.	.	1100.00	.
Plutonium 238 (pCi/L)	.	.	.	.	.	0.67	0.00	0.33
Plutonium 238 (CE+/-)	.	.	.	.	.	1.30	2.30	0.66
Plutonium 239 (pCi/L)	.	.	.	.	.	0.00	0.00	0.99
Plutonium 239 (CE+/-)	.	.	.	.	.	1.90	1.90	1.50
Protactinium (pCi/L)	.	.	.	.	.	.	.	.
Protactinium (CE+/-)	.	.	.	.	.	.	.	.
Radium (Bq/L)	.	.	.	.	.	0.20	0.17	0.06
Radium (CE+/-)	.	.	.	.	.	0.07	0.07	0.05
Ruthenium 106 (pCi/L)	.	.	.	.	.	113.00	.	.
Ruthenium 106 (CE +/-)	.	.	.	.	.	390.00	.	.
Strontium (pCi/L)	2.17	-7.08	-19.00	14.70	8.11	41.80	44.60	23.50
Strontium (CE+/-)	22.00	18.00	17.00	22.00	23.00	21.00	21.00	19.00
Technetium 99 (pCi/L)	351.00	131.00	-1660.00	686.00	288.00	311.00	290.00	31.40
Technetium 99 (CE+/-)	69.00	3400.00	3300.00	67.00	67.00	110.00	110.00	60.00
Thorium 234 (pCi/L)	.	.	.	.	.	.	574.00	742.00
Thorium 234 (CE +/-)	.	.	.	.	.	.	130.00	410.00
Thorium 228 (pCi/L)	.	.	.	.	.	.	.	.
Thorium 228 (CE +/-)	.	.	.	.	.	.	.	.
Tritium (Bq/L)	20.00	1100.00	-9.70	21.00	11.00	3.00	4.00	-5.00
Tritium (CE+/-)	22.00	100.00	0.10	.	22.00	25.00	25.00	23.00
Uranium 234 (pCi/L)	.	.	.	.	.	0.50	-0.32	0.96
Uranium 234 (CE+/-)	.	.	.	.	.	0.99	1.30	1.40
Uranium 235 (pCi/L)	.	.	.	.	.	17.70	5.72	-27.30
Uranium 235 (CE+/-)	.	.	.	.	.	59.00	90.00	68.00
Uranium 238 (pCi/L)	.	.	.	.	.	0.25	0.00	0.00
Uranium 238 (CE+/-)	.	.	.	.	.	0.50	1.10	1.10

(CONTINUED)

APPENDIX E.4

5

Groundwater and Surface-Water Quality Data, 1993

Sampling Point	GW-713	GW-714	GW-715	GW-793				GW-794
Location	EXP	EXP	EXP	AGLLSF				AGLLSF
Date Sampled	11/09/93	11/09/93	11/11/93	02/26/93	05/25/93	07/11/93	10/18/93	03/01/93
Gross Alpha (pCi/L)	-0.17	0.93	0.17	0.49	-5.55	-4.03	-0.15	2.55
Gross Alpha (CE+/-)	2.20	2.20	1.30	1.40	4.40	7.90	2.20	2.00
Gross Beta (pCi/L)	1.13	6.28	2.65	0.95	3.98	-0.98	3.21	4.57
Gross Beta (CE+/-)	3.00	3.30	2.50	2.70	5.50	11.00	3.10	2.90
RADIONUCLIDES	.	.	.	.	.	.	.	.
Americium 241 (pCi/L)	1.28	2.05	22.60	.	.	.	.	.
Americium 241 (CE+/-)	2.60	4.10	11.00	.	.	.	.	.
Cesium 137 (pCi/L)	.	.	34.80	.	.	.	.	.
Cesium 137 (CE +/-)	.	.	36.00	.	.	.	.	.
Iodine 129 (pCi/L)	0.10	0.10	0.10	.	.	.	.	.
Iodine 129 (CE +/-)	1.40	1.70	1.60	.	.	.	.	.
Iodine 131 (pCi/L)	-0.07	0.05	-0.01	.	.	.	.	.
Iodine 131 (CE +/-)	0.26	0.24	0.23	.	.	.	.	.
Neptunium 237 (pCi/L)	0.00	-0.27	1.71	.	.	.	.	.
Neptunium 237 (CE+/-)	0.73	1.10	3.40	.	.	.	.	.
Potassium 40 (pCi/L)	.	353.00	332.00	.	.	558.00	.	.
Potassium 40 (CE+/-)	.	950.00	950.00	.	.	1100.00	.	.
Plutonium 238 (pCi/L)	0.00	0.34	-12.80	.	.	.	.	.
Plutonium 238 (CE+/-)	1.10	0.68	13.00	.	.	.	.	.
Plutonium 239 (pCi/L)	-0.32	-0.34	-4.27	.	.	.	.	.
Plutonium 239 (CE+/-)	1.30	1.40	9.50	.	.	.	.	.
Protactinium (pCi/L)	.	.	.	.	.	.	.	.
Protactinium (CE+/-)	.	.	.	.	.	.	.	.
Radium (Bq/L)	0.03	0.10	0.04	.	.	.	.	.
Radium (CE+/-)	0.04	0.05	0.04	.	.	.	.	.
Ruthenium 106 (pCi/L)	.	182.00	214.00	.	.	.	.	.
Ruthenium 106 (CE +/-)	.	350.00	360.00	.	.	.	.	.
Strontium (pCi/L)	34.10	50.20	18.30	.	.	.	.	.
Strontium (CE+/-)	20.00	22.00	26.00	.	.	.	.	.
Technetium 99 (pCi/L)	301.00	152.00	7.60	.	.	.	.	.
Technetium 99 (CE+/-)	68.00	63.00	59.00	.	.	.	.	.
Thorium 234 (pCi/L)	.	.	.	.	.	.	.	.
Thorium 234 (CE +/-)	.	.	.	.	.	.	.	.
Thorium 228 (pCi/L)	.	.	.	.	.	.	.	.
Thorium 228 (CE +/-)	.	.	.	.	.	.	.	.
Tritium (Bq/L)	50.00	-2.00	42.00	.	.	.	.	.
Tritium (CE+/-)	27.00	23.00	26.00	.	.	.	.	.
Uranium 234 (pCi/L)	0.38	1.84	0.45	0.00	6.65	13.20	-10.80	8.34
Uranium 234 (CE+/-)	1.30	1.90	0.90	16.00	13.00	19.00	49.00	12.00
Uranium 235 (pCi/L)	10.70	11.90	15.90	50.50	12.80	24.70	21.80	-23.60
Uranium 235 (CE+/-)	59.00	68.00	69.00	81.00	90.00	90.00	59.00	70.00
Uranium 238 (pCi/L)	0.38	0.73	-0.22	25.60	6.65	6.59	0.00	-17.50
Uranium 238 (CE+/-)	0.75	1.00	0.90	36.00	13.00	35.00	38.00	60.00

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APPENDIX E.4

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Groundwater and Surface-Water Quality Data, 1993

Sampling Point . Location . Date Sampled	GW-794			GW-795			
	AGLLSF			AGLLSF			
	05/25/93	07/11/93	10/18/93	03/02/93	05/25/93	07/12/93	10/18/93
Gross Alpha (pCi/L)	-5.92	-4.51	2.20	0.35	-6.19	0.00	3.24
Gross Alpha (CE+/-)	4.70	7.60	2.60	1.50	4.30	8.30	2.70
Gross Beta (pCi/L)	1.00	-3.27	7.15	2.28	2.32	-8.51	10.00
Gross Beta (CE+/-)	5.40	11.00	3.40	2.80	5.40	11.00	3.50
RADIONUCLIDES	.	.	.	.	.	.	.
Americium 241 (pCi/L)	.	.	.	.	.	.	.
Americium 241 (CE+/-)	.	.	.	.	.	.	.
Cesium 137 (pCi/l)	.	.	33.10	.	.	.	.
Cesium 137 (CE +/-)	.	.	36.00	.	.	.	.
Iodine 129 (pCi/L)	.	.	.	.	.	.	.
Iodine 129 (CE +/-)	.	.	.	.	.	.	.
Iodine 131 (pCi/L)	.	.	.	.	.	.	.
Iodine 131 (CE +/-)	.	.	.	.	.	.	.
Neptunium 237 (pCi/L)	.	.	.	.	.	.	.
Neptunium 237 (CE+/-)	.	.	.	.	.	.	.
Potassium 40 (pCi/L)	.	.	.	.	.	.	.
Potassium 40 (CE+/-)	.	.	.	.	.	.	.
Plutonium 238 (pCi/L)	.	.	.	.	.	.	.
Plutonium 238 (CE+/-)	.	.	.	.	.	.	.
Plutonium 239 (pCi/L)	.	.	.	.	.	.	.
Plutonium 239 (CE+/-)	.	.	.	.	.	.	.
Protactinium (pCi/L)	.	9570.00	.	.	.	.	.
Protactinium (CE+/-)	.	4600.00	.	.	.	.	.
Radium (Bq/L)	.	.	.	.	.	.	.
Radium (CE+/-)	.	.	.	.	.	.	.
Ruthenium 106 (pCi/L)	.	.	.	.	.	.	.
Ruthenium 106 (CE +/-)	.	.	.	.	.	.	.
Strontium (pCi/L)	.	.	.	.	.	.	.
Strontium (CE+/-)	.	.	.	.	.	.	.
Technetium 99 (pCi/L)	.	.	.	.	.	.	.
Technetium 99 (CE+/-)	.	.	.	.	.	.	.
Thorium 234 (pCi/l)	.	.	.	.	.	.	.
Thorium 234 (CE +/-)	.	.	.	.	.	.	.
Thorium 228 (pCi/l)	.	.	.	.	.	.	.
Thorium 228 (CE +/-)	.	.	.	.	.	.	.
Tritium (Bq/L)	.	.	.	.	.	.	.
Tritium (CE+/-)	.	.	.	.	.	.	.
Uranium 234 (pCi/L)	15.90	278.00	6.15	60.50	20.30	0.00	7.11
Uranium 234 (CE+/-)	18.00	100.00	33.00	32.00	23.00	19.00	38.00
Uranium 235 (pCi/L)	57.40	67.50	-6.51	66.80	16.80	46.70	-1.06
Uranium 235 (CE+/-)	62.00	62.00	68.00	61.00	90.00	90.00	90.00
Uranium 238 (pCi/L)	5.31	74.00	43.10	34.60	13.50	-16.60	7.11
Uranium 238 (CE+/-)	11.00	69.00	33.00	49.00	19.00	27.00	14.00

APPENDIX E.4

7

Groundwater and Surface-Water Quality Data, 1993

Sampling Point . Location . Date Sampled	NT-01				SS-1			
	EXP				EXP			
	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93
Gross Alpha (pCi/L)	8.78	16.30	45.50	72.80	12.90	15.10	18.90	18.20
Gross Alpha (CE+/-)	5.10	7.10	7.20	8.70	3.50	3.60	4.10	4.50
Gross Beta (pCi/L)	63.60	64.40	384.00	318.00	27.10	178.00	52.60	63.60
Gross Beta (CE+/-)	6.00	8.60	12.00	11.00	4.50	8.30	5.00	5.40
RADIONUCLIDES	.	.	.	.	.	.	.	.
Americium 241 (pCi/L)	.	.	.	.	.	.	.	.
Americium 241 (CE+/-)	.	.	.	.	.	.	.	.
Cesium 137 (pCi/L)	.	.	.	.	.	.	.	.
Cesium 137 (CE +/-)	.	.	.	.	.	.	.	.
Iodine 129 (pCi/L)	.	.	.	.	.	.	.	.
Iodine 129 (CE +/-)	.	.	.	.	.	.	.	.
Iodine 131 (pCi/L)	.	.	.	.	.	.	.	.
Iodine 131 (CE +/-)	.	.	.	.	.	.	.	.
Neptunium 237 (pCi/L)	.	.	.	.	.	.	.	.
Neptunium 237 (CE+/-)	.	.	.	.	.	.	.	.
Potassium 40 (pCi/L)	.	.	.	.	.	.	.	.
Potassium 40 (CE+/-)	.	.	.	.	.	.	.	.
Plutonium 238 (pCi/L)	.	.	.	.	.	.	.	.
Plutonium 238 (CE+/-)	.	.	.	.	.	.	.	.
Plutonium 239 (pCi/L)	.	.	.	.	.	.	.	.
Plutonium 239 (CE+/-)	.	.	.	.	.	.	.	.
Protactinium (pCi/L)	.	.	.	.	.	.	.	.
Protactinium (CE+/-)	.	.	.	.	.	.	.	.
Radium (Bq/L)	.	.	.	.	.	.	.	.
Radium (CE+/-)	.	.	.	.	.	.	.	.
Ruthenium 106 (pCi/L)	.	.	.	.	.	.	.	.
Ruthenium 106 (CE +/-)	.	.	.	.	.	.	.	.
Strontium (pCi/L)	6.35	-4.76	-1.82	3.44	15.80	13.60	-16.10	0.58
Strontium (CE+/-)	17.00	18.00	24.00	25.00	19.00	20.00	23.00	25.00
Technetium 99 (pCi/L)	323.00	678.00	1120.00	708.00	-124.00	945.00	275.00	254.00
Technetium 99 (CE+/-)	2000.00	2000.00	89.00	79.00	2000.00	2000.00	68.00	66.00
Thorium 234 (pCi/L)	.	.	.	.	.	.	.	.
Thorium 234 (CE +/-)	.	.	.	.	.	.	.	.
Thorium 228 (pCi/L)	.	.	.	.	.	.	.	.
Thorium 228 (CE +/-)	.	.	.	.	.	.	.	.
Tritium (Bq/L)	230.00	19.00	14.00	25.00	17.00	18.00	9.00	-13.00
Tritium (CE+/-)	40.00	31.00	26.00	26.00	78.00	23.00	26.00	23.00
Uranium 234 (pCi/L)	.	.	.	.	.	.	.	.
Uranium 234 (CE+/-)	.	.	.	.	.	.	.	.
Uranium 235 (pCi/L)	.	.	.	.	.	.	.	.
Uranium 235 (CE+/-)	.	.	.	.	.	.	.	.
Uranium 238 (pCi/L)	.	.	.	.	.	.	.	.
Uranium 238 (CE+/-)	.	.	.	.	.	.	.	.

APPENDIX F
FIELD DUPLICATE DATA

EXPLANATION

SAMPLING POINT:

BCK - Bear Creek Kilometer
GW - Monitoring Well
NT - North Tributary to Bear Creek
SS - Spring

LOCATION:

AGLLSF - Above Grade Low Level Storage Facility
BG - Bear Creek Burial Grounds WMA
EXP - Exit-Pathway Monitoring
OLF - Oil Landfarm WMA
RS - Rust Spoil Area
S3 - S-3 Site
SPI - Spoil Area I

ALL DATA:

- Not Analyzed

VOLATILE ORGANIC COMPOUNDS:

All results in micrograms per Liter (ug/L).

U - Compound not detected at the reported minimum attainable detection limit.

METALS, MAJOR IONS, MISCELLANEOUS, AND RADIOCHEMICAL PARAMETERS:

All analyses are by Inductively Coupled Plasma (ICP) Spectroscopy
unless otherwise noted.

Bicarbonate and carbonate alkalinity reported as CaCO_3 .

< - Compound analyzed but not detected at the reported
minimum attainable detection limit
mg/L - milligrams per Liter
AAS - Atomic Absorption Spectroscopy
CVAA - Cold Vapor Atomic Absorption
DIS - Dissolved Concentration (Filtered Sample)
TOT - Total Concentration (Unfiltered Sample)

EXPLANATION (cont'd)

Fluor	-	Fluorometric
TDS	-	Total Dissolved Solids
TSS	-	Total Suspended Solids
Sp. Cond.	-	Specific Conductance
ppm	-	parts per million
umho/cm	-	micromhos per centimeter
NTU	-	Nephelometric Turbidity Unit
mV	-	millivolts
pCi/L	-	picoCuries per liter
Bq/L	-	Becquerels per liter
CE +/-	-	Counting Error (two standard deviations)

APPENDIX F.1

TRACE METALS AND MAJOR IONS

APPENDIX F.1
Field Duplicate Groundwater Quality Data, 1993

1

Sampling Point . Location . Date Sampled	GW-044		GW-069		GW-115			
	OLF		BG		S3			
	09/11/93		10/10/93		05/25/93		09/11/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.022	<0.02	<0.02	0.022	0.028	0.024	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.23	0.23	0.41	0.42	0.23	0.23	0.24	0.24
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.0076	0.029	0.11	0.12	0.023	0.036	0.01	0.013
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.01	0.0046	<0.004	<0.004	<0.004	<0.004	0.0042	<0.004
Iron	0.044	<0.005	0.018	0.0096	0.42	0.42	0.4	0.31
Lead (AAS)	0.0089	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.077	0.076	0.91	0.95	0.11	0.11	0.12	0.12
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.025	0.03	0.0043	0.0042	0.0035	0.011	0.0063	0.0029
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	132	.	133	.	226	.	235	.
Alkalinity-CO3	<1	.	6	.	<1	.	<1	.
Calcium	51	50	11	12	67	68	73	71
Chloride	1	.	53.6	.	4	.	3.8	.
Fluoride	0.1	.	<0.1	.	0.1	.	<0.1	.
Magnesium	3.3	3.2	6.1	6.5	11	11	11	11
Manganese	0.024	<0.001	0.0028	0.0037	0.3	0.3	0.31	0.27
Nitrate-N	<0.2	.	0.26	.	<0.2	.	<0.2	.
Potassium	<0.6	<0.6	4.4	4.7	2	1.7	1.7	3
Sodium	4.7	4.7	64	66	9.5	9.5	10	10
Sulfate	6.7	.	1.8	.	17.5	.	15.8	.

(CONTINUED)

APPENDIX F.1
Field Duplicate Groundwater Quality Data, 1993

2

Sampling Point	GW-315		GW-324		GW-371		GW-373	
Location	SPI		S3		BG		BG	
Date Sampled	10/27/93		01/29/93		10/13/93		02/11/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.031	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.06	0.056	0.2	0.2	0.14	0.14	0.052	0.042
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.019	0.015	0.012	0.0084	0.04	0.042	0.16	0.16
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.022	<0.005	0.086	0.032	1.4	0.44	0.63	0.022
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.17	0.17	0.22	0.21	1.5	1.5	0.06	0.056
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.002	0.002	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.02	0.011	0.0096	0.0071	0.002	0.0071	0.0028	0.002
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	221	.	100	.	299	.	181	.
Alkalinity-CO3	<1	.	<1	.	<1	.	24	.
Calcium	100	100	28	28	75	78	1.5	1.2
Chloride	13	.	1	.	1	.	2.2	.
Fluoride	<0.1	.	0.1	.	<0.1	.	1.5	.
Magnesium	10	10	5.2	5.2	20	21	0.15	0.13
Manganese	0.0014	<0.001	0.015	0.015	0.027	0.031	0.0086	0.002
Nitrate-N	20.5	.	<0.2	.	<0.2	.	<0.2	.
Potassium	3.6	3.3	<0.6	0.78	3.1	3.3	0.75	<0.6
Sodium	7	7	5	5	18	18	110	100
Sulfate	19	.	8.9	.	15	.	30	.

(CONTINUED)

APPENDIX F.1
Field Duplicate Groundwater Quality Data, 1993

3

Sampling Point . Location . Date Sampled	GW-537				GW-626			
	OLF				BG			
	02/11/93		05/12/93		03/10/93		08/02/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.2	<0.2	0.29	0.63	<0.02	0.036	<0.02	<0.02
Antimony	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05
Barium	2.8	2.1	2.4	2.5	0.13	0.14	0.14	0.14
Beryllium	<0.003	<0.003	<0.003	<0.003	<0.0003	0.0005	<0.0003	<0.0003
Boron	<0.04	<0.04	<0.04	<0.04	0.0067	0.035	<0.004	<0.004
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.03	<0.03	<0.03	<0.03	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	0.23	0.9	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.05	0.053	<0.05	<0.05	<0.005	<0.005	<0.005	<0.005
Copper	<0.04	<0.04	<0.04	<0.04	<0.004	<0.004	<0.004	<0.004
Iron	1	3.8	<0.05	<0.05	0.0077	0.0056	0.016	0.0089
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01
Nickel	0.56	1.2	<0.1	<0.1	<0.01	0.023	<0.01	<0.01
Selenium	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05
Silver	<0.06	<0.06	<0.06	<0.06	<0.006	<0.006	<0.006	<0.006
Strontium	3.2	2.4	2.9	3	0.096	0.1	0.094	0.093
Thorium	<2	<2	<2	<2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.002	0.002	0.001	0.001	<0.001	<0.001	0.001	0.001
Vanadium	<0.05	<0.05	<0.05	<0.05	<0.005	<0.005	<0.005	<0.005
Zinc	0.053	0.049	<0.02	<0.02	0.0057	0.0058	0.0047	0.0061
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	233	.	246	.	107	.	109	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	1300	1000	1100	1100	38	41	38	38
Chloride	28	.	33	.	14.5	.	6	.
Fluoride	<0.1	.	<0.1	.	<0.1	.	<0.1	.
Magnesium	84	66	73	74	2.5	2.7	2.9	2.9
Manganese	0.05	0.14	<0.01	<0.01	<0.001	<0.001	0.0013	0.0015
Nitrate-N	677	.	769	.	<0.2	.	<0.2	.
Potassium	<6	10	<6	<6	1	1.1	1.1	0.93
Sodium	35	27	30	30	3.8	4.5	4.1	4.1
Sulfate	<10	.	2	.	3.9	.	2.8	.

(CONTINUED)

APPENDIX F.1
Field Duplicate Groundwater Quality Data, 1993

4

Sampling Point . Location . Date Sampled	GW-627		GW-636					
	BG		OLF					
	04/23/93		03/26/93		06/27/93		09/18/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.041	0.041	0.21	0.2	0.23	0.21	0.24	0.24
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.46	0.48	0.2	0.33	0.38	0.37	0.39	0.39
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.19	0.04	1.4	0.098	0.71	0.22	1.3	0.13
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.07	0.07	0.51	0.52	0.57	0.55	0.6	0.61
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0049	0.0066	0.003	0.004	0.0041	<0.002	0.0077	0.027
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	443	.	164	.	179	.	177	.
Alkalinity-CO3	82	.	6	.	2	.	<1	.
Calcium	0.96	0.9	7.4	7.4	8.1	7.4	7.6	7.7
Chloride	22	.	6.2	.	8	.	7	.
Fluoride	5.6	.	0.2	.	0.1	.	0.2	.
Magnesium	0.23	0.2	2.4	2.4	2.7	2.5	2.6	2.6
Manganese	0.0063	0.0045	0.019	0.01	0.018	0.015	0.021	0.012
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	1.5	1.1	5.5	5	5.1	5.4	5.1	5.4
Sodium	270	270	69	70	70	67	74	76
Sulfate	31	.	9.3	.	5.2	.	4	.

(CONTINUED)

APPENDIX F.1

5

Field Duplicate Groundwater Quality Data, 1993

Sampling Point . Location . Date Sampled	GW-636		GW-639					
	OLF		BG					
	12/18/93		02/24/93		05/24/93		07/11/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	<0.02	<0.02	0.7	<0.02	0.48	<0.02	0.27	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.25	0.25	0.078	0.06	0.056	0.058	0.058	0.056
Beryllium	<0.0003	<0.0003	0.00053	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.38	0.38	0.59	0.59	0.52	0.6	0.57	0.57
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	0.0032	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	0.0064	<0.004	0.0044	<0.004	<0.004	<0.004
Iron	0.68	0.058	1.9	0.0092	0.6	0.014	0.21	0.0083
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	0.016	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.61	0.61	0.1	0.092	0.079	0.086	0.082	0.081
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0023	<0.002	0.013	0.0045	0.008	0.0062	0.0052	0.0061
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	173	.	336	.	342	.	354	.
Alkalinity-CO3	4	.	68	.	78	.	72	.
Calcium	8.8	8.7	1.6	1.2	0.89	0.84	0.79	0.75
Chloride	9	.	10	.	9.9	.	9.9	.
Fluoride	<0.1	.	2.3	.	2.4	.	2.8	.
Magnesium	2.8	2.8	0.52	0.3	0.34	0.23	0.31	0.23
Manganese	0.013	0.0085	0.019	<0.001	0.0057	<0.001	0.0013	<0.001
Nitrate-N	<0.2	.	<0.2	.	<0.2	.	<0.2	.
Potassium	4.9	4.9	1.9	1.3	2.2	1.7	1.3	1.3
Sodium	70	69	220	210	190	210	200	200
Sulfate	4	.	15	.	27.4	.	29.4	.

(CONTINUED)

APPENDIX F.1
Field Duplicate Groundwater Quality Data, 1993

6

Sampling Point . Location . Date Sampled	GW-684				GW-685			
	EXP				EXP			
	07/11/93		10/12/93		03/02/93		04/21/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.028	0.025	0.091	<0.02	0.26	<0.02	0.27	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.1	0.1	0.13	0.13	0.12	0.11	0.1	0.097
Beryllium	<0.0003	<0.0003	<0.0003	0.00033	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.14	0.12	0.088	0.085	0.041	0.045	0.14	0.1
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	0.027	0.012	0.24	<0.005	5.3	0.1	1.5	0.042
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.00022	<0.00022	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	0.02	0.017	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.14	0.13	0.19	0.19	0.13	0.12	0.11	0.11
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.071	0.072	0.067	0.082	0.002	0.002	0.002	0.003
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.0052	0.0047	0.01	0.025	0.015	<0.002	0.012	0.0054
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	169	.	173	.	251	.	250	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	56	58	64	64	82	81	76	81
Chloride	21.3	.	28	.	71	.	71	.
Fluoride	0.3	.	0.2	.	0.1	.	0.1	.
Magnesium	17	18	18	17	23	23	21	23
Manganese	0.0052	0.0049	0.014	0.01	0.14	0.076	0.12	0.043
Nitrate-N	10.4	.	19.6	.	1.8	.	1.9	.
Potassium	16	16	14	14	1.7	1.7	1.4	1.6
Sodium	10	10	17	17	33	33	27	29
Sulfate	18	.	<20	.	20	.	21	.

(CONTINUED)

APPENDIX F.1
Field Duplicate Groundwater Quality Data, 1993

7

Sampling Point . Location . Date Sampled	GW-704							
	EXP							
	03/22/93		06/04/93		09/22/93		12/22/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)								
Aluminum	0.036	0.043	0.18	0.032	0.04	<0.02	<0.02	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.082	0.078	0.11	0.071	0.098	0.084	0.017	0.014
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.078	0.087	0.089	0.083	0.086	0.083	0.097	0.14
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	0.0035	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.0052	<0.004	0.0041	<0.004	<0.004	<0.004	<0.004	0.0095
Iron	2.7	0.34	23	0.039	14	0.25	8.8	0.063
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	0.015	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.39	0.39	0.35	0.34	0.4	0.41	0.07	0.08
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.001	0.001	0.001	0.001	0.002	0.001	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.013	0.0056	0.021	0.0055	0.014	0.0037	<0.002	<0.002
MAJOR IONS (mg/L)								
Alkalinity-HCO3	187	.	185	.	194	.	123	.
Alkalinity-CO3	<1	.	<1	.	<1	.	2	.
Calcium	63	64	58	56	65	66	15	15
Chloride	19.2	.	23	.	22	.	22.6	.
Fluoride	0.2	.	0.2	.	0.2	.	0.1	.
Magnesium	29	29	28	27	30	30	28	30
Manganese	0.07	0.663	0.11	0.042	0.095	0.045	0.15	0.091
Nitrate-N	14.01	.	17	.	17	.	0.23	.
Potassium	1.5	1.5	1.2	1.2	1.6	1.5	1.4	1.6
Sodium	11	11	10	10	12	12	11	12
Sulfate	20.3	.	20	.	23	.	18.9	.

(CONTINUED)

APPENDIX F.1
Field Duplicate Groundwater Quality Data, 1993

Sampling Point . Location . Date Sampled	GW-712				GW-713		GW-714	
	EXP				EXP		EXP	
	03/18/93		04/28/93		07/31/93		11/09/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.094	0.12	<0.02	<0.02	<0.02	<0.02	0.068	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.067	0.068	0.063	0.063	0.045	0.045	0.059	0.057
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Boron	0.15	0.14	0.11	0.11	0.075	0.073	0.099	0.11
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	0.016	<0.004	<0.004	<0.004	0.0051	<0.004	<0.004	<0.004
Iron	1.3	1.1	0.98	0.89	2.3	1.9	6	0.59
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	0.00032	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	2.4	2.5	2.2	2.2	1.7	1.7	0.17	0.17
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.003
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.012	0.0066	0.0088	0.0073	0.012	0.0087	0.0068	0.0038
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO3	179	.	176	.	185	.	188	.
Alkalinity-CO3	<1	.	<1	.	<1	.	<1	.
Calcium	96	99	89	88	69	70	49	49
Chloride	34	.	28	.	14.1	.	10	.
Fluoride	0.7	.	0.7	.	0.7	.	0.2	.
Magnesium	42	43	41	41	32	32	22	22
Manganese	0.017	0.017	0.014	0.014	0.024	0.023	0.11	0.084
Nitrate-N	<0.2	.	0.24	.	<0.2	.	3.2	.
Potassium	2.9	3	3.5	2.9	2.6	2.4	1.1	1.4
Sodium	28	29	27	27	16	16	4.1	4.2
Sulfate	308	.	247	.	124	.	22	.

(CONTINUED)

APPENDIX F.1
Field Duplicate Groundwater Quality Data, 1993

9

Sampling Point . Location . Date Sampled	GW-725				GW-736		GW-740	
	EXP				EXP		EXP	
	02/12/93		05/19/93		12/15/93		09/27/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
METALS (mg/L)	.	.	.	.	.	.	.	.
Aluminum	0.059	<0.02	0.058	0.055	0.029	0.022	0.027	<0.02
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	0.29	0.29	0.29	0.28	0.22	0.23	0.092	0.091
Beryllium	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.00033	0.00032
Boron	0.045	0.061	0.051	0.072	0.037	0.048	0.033	0.033
Cadmium (AAS)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Iron	1.7	0.51	0.091	0.041	<0.005	<0.005	0.19	0.092
Lead (AAS)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Strontium	0.51	0.52	0.58	0.57	0.34	0.35	0.055	0.054
Thorium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Uranium (Fluor)	0.004	0.004	0.004	0.003	0.008	0.01	<0.001	<0.001
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.011	0.0025	0.017	0.0066	<0.002	<0.002	0.0074	0.0081
MAJOR IONS (mg/L)	.	.	.	.	.	.	.	.
Alkalinity-HCO ₃	290	.	285	.	314	.	259	.
Alkalinity-CO ₃	<1	.	<1	.	<1	.	<1	.
Calcium	170	170	180	170	170	170	66	66
Chloride	74	.	51	.	54	.	7.1	.
Fluoride	0.1	.	0.1	.	0.2	.	0.1	.
Magnesium	27	27	31	31	24	24	32	31
Manganese	0.062	0.055	0.03	0.03	0.94	0.92	0.006	0.006
Nitrate-N	58	.	62	.	42.3	.	4.9	.
Potassium	3.1	2.7	2.7	2.5	3.7	3.1	1.4	1.4
Sodium	18	17	17	17	23	24	2.1	2.1
Sulfate	61	.	36	.	31	.	11.9	.

(CONTINUED)

APPENDIX F.1
Field Duplicate Groundwater Quality Data, 1993

10

Sampling Point . Location . Date Sampled	GW-800	
	OLF	
	10/22/93	
	TOT	DIS
METALS (mg/L)	.	.
	.	.
Aluminum	0.33	<0.02
Antimony	<0.05	<0.05
Arsenic	<0.05	<0.05
Barium	0.13	0.13
Beryllium	<0.0003	<0.0003
Boron	0.021	0.02
Cadmium (AAS)	<0.002	<0.002
Cadmium	<0.003	<0.003
Chromium (AAS)	<0.01	<0.01
Chromium	<0.01	<0.01
Cobalt	<0.005	<0.005
Copper	<0.004	<0.004
Iron	0.46	<0.005
Lead (AAS)	<0.004	<0.004
Mercury (CVAA)	<0.0002	<0.0002
Molybdenum	<0.01	<0.01
Nickel	<0.01	<0.01
Selenium	<0.05	<0.05
Silver	<0.006	<0.006
Strontium	0.18	0.17
Thorium	<0.2	<0.2
Uranium (Fluor)	0.001	0.001
Vanadium	<0.005	<0.005
Zinc	0.022	0.017
	.	.
MAJOR IONS (mg/L)	.	.
	.	.
Alkalinity-HCO ₃	237	.
Alkalinity-CO ₃	<1	.
Calcium	61	57
Chloride	2	.
Fluoride	0.1	.
Magnesium	24	23
Manganese	0.047	<0.001
Nitrate-N	<0.2	.
Potassium	2.3	2.6
Sodium	0.9	0.88
Sulfate	16	.

APPENDIX F.2
VOLATILE ORGANIC COMPOUNDS

APPENDIX F.2
Field Duplicate Data, 1993

1

Sampling Point	GW-044	GW-069	GW-115		GW-315	GW-324	GW-371	GW-373
Location	OLF	BG	S3		SPI	S3	BG	BG
Date Sampled	09/11/93	10/10/93	05/25/93	09/11/93	10/27/93	01/29/93	10/13/93	02/11/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	2	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	1	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	6	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	6	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	2
Methylene chloride	1	5U	5U	1	2	5U	5U	2
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	8	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	4	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX F.2
Field Duplicate Data, 1993

2

Sampling Point . Location . Date Sampled	GW-537		GW-626		GW-627	GW-636		
	OLF		BG		BG	OLF		
	02/11/93	05/12/93	03/10/93	08/02/93	04/23/93	03/26/93	06/27/93	09/18/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	10U	100U	20U	10U	10U	10U	10U
Benzene	5U	5U	50U	10U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	50U	10U	5U	5U	5U	5U
Bromoform	5U	5U	50U	10U	5U	5U	5U	5U
Bromomethane	10U	10U	100U	20U	10U	10U	10U	10U
2-Butanone	10U	10U	100U	20U	10U	10U	10U	10U
Carbon disulfide	5U	5U	50U	10U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	50U	10U	5U	5U	5U	5U
Chlorobenzene	5U	5U	50U	10U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	50U	10U	5U	5U	5U	5U
Chloroethane	10U	10U	100U	20U	10U	10U	10U	10U
Chloroform	1	0.8	50U	10U	5U	5U	5U	5U
Chloromethane	10U	10U	100U	20U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	51	19	5	5U	5U	5U
1,2-Dichloroethane	5U	5U	50U	10U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	28	8	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	1300	240	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	50U	10U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	50U	10U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	50U	10U	5U	5U	5U	5U
Ethylbenzene	5U	5U	50U	10U	5U	5U	5U	5U
2-Hexanone	10U	10U	100U	20U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	100U	20U	10U	10U	10U	10U
Methylene chloride	2	1	14	10U	5U	5U	5U	0.8
Styrene	5U	5U	50U	10U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	50U	10U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	130	28	52	5U	5U	5U
Toluene	5U	5U	50U	10U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	17	6	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	50U	10U	5U	5U	5U	5U
Trichloroethene	5U	5U	120	33	7	5U	5U	5U
Vinyl acetate	10U	10U	100U	20U	10U	10U	10U	10U
Vinyl chloride	10U	10U	71	20U	10U	10U	10U	10U
Xylenes	5U	5U	50U	10U	5U	5U	5U	5U

(CONTINUED)

APPENDIX F.2
Field Duplicate Data, 1993

3

Sampling Point	GW-636	GW-639			GW-684		GW-685	
Location	OLF	BG			EXP		EXP	
Date Sampled	12/18/93	02/24/93	05/24/93	07/11/93	07/11/93	10/12/93	03/02/93	04/21/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	10U	3	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	8	10U	5	10U	10U	9	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	2	1
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	1	10U	10U	10U	10U	10U
Methylene chloride	0.6	2	5U	5U	0.8	3	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX F.2
Field Duplicate Data, 1993

4

Sampling Point . Location . Date Sampled	GW-704				GW-712		GW-713	GW-714
	EXP				EXP		EXP	EXP
	03/22/93	06/04/93	09/22/93	12/22/93	03/18/93	04/28/93	07/31/93	11/09/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	4	10U	10U	10U	10U
Benzene	5U	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	3	10U	10U	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U	5U	5U	5U
Carbon tetrachloride	2	2	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	0.5	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	1	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	6	7	6	6	5U	5U	5U	5U
1,2-Dichloroethene	3	3	4	2	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	5	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	1	1	5U	5U	5U	5U	5U	1
Styrene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	0.5	5U	1	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	2	2	2	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	120	100	86	56	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX F.2
Field Duplicate Data, 1993

5

Sampling Point	GW-725		GW-736	GW-740	GW-800
Location	EXP		EXP	EXP	OLF
Date Sampled	02/12/93	05/19/93	12/15/93	09/27/93	10/22/93
VOLATILE ORGANICS (ug/L)	.	.	.	.	.
	.	.	.	.	.
Acetone	10U	10U	3	10U	10U
Benzene	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U
2-Butanone	10U	10U	8	10U	10U
Carbon disulfide	5U	5U	5U	5U	5U
Carbon tetrachloride	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U
Chlorodibromomethane	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	1	5U
Chloromethane	10U	10U	10U	10U	10U
1,1-Dichloroethane	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U
1,2-Dichloroethene	2	3	5	2	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	2	10U	1	10U	10U
Methylene chloride	2	5U	1	5U	5U
Styrene	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U
Tetrachloroethene	5U	5U	3	5U	5U
Toluene	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U
Trichloroethene	19	53	13	32	5U
Vinyl acetate	10U	10U	10U	10U	10U
Vinyl chloride	10U	10U	10U	10U	10U
Xylenes	5U	5U	5U	5U	5U

APPENDIX F.3

**FIELD, MISCELLANEOUS, AND
GROSS ALPHA AND GROSS BETA ACTIVITIES**

APPENDIX F.3
Field Duplicate Groundwater Data, 1993

1

Sampling Point	GW-044	GW-069	GW-115		GW-315	GW-324	GW-371	GW-373
Location	OLF	BQ	S3		SPI	S3	BQ	BQ
Date Sampled	09/11/93	10/10/93	05/25/93	09/11/93	10/27/93	01/29/93	10/13/93	02/11/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water Temp (degrees C)	14.2	14.5	16.7	16.6	14.5	14	15.2	14.1
pH (pH units)	7.2	8.5	7.4	7.3	6.5	7.9	6.7	9.1
Sp. Cond. (umho/cm)	252	386	360	414	569	205	521	471
Dissolved Oxygen (ppm)	3.7	0.5	1.4	2.2	2.5	0.5	1.2	7.5
Oxidation/Reduction (mV)	180	-137	-104	-35	213	-85	-5	161
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	7.6	8.5	7.6	7.8	7.2	8.2	7.6	9.1
Sp. Cond. (umho/cm)	267	396	464	465	640	202	571	484
TDS (mg/L)	188	290	286	298	402	148	368	288
TSS (mg/L)	<1	<1	2	<1	<1	<1	<1	4
Turbidity (NTU)	1.1	0.3	4.3	3.8	0.6	1	4.5	3.4
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-1.62	1.75	0.00	0.18	4.53	1.23	0.66	2.24
Gross Alpha (CE+/-)	2.70	2.10	3.50	1.10	2.90	1.20	1.50	1.90
Gross Beta (pCi/L)	-6.59	5.44	-1.17	-1.82	54.80	1.99	0.35	2.97
Gross Beta (CE+/-)	5.90	3.10	5.50	2.50	5.00	2.70	2.80	2.50

(CONTINUED)

APPENDIX F.3
Field Duplicate Groundwater Data, 1993

2

Sampling Point	GW-537		GW-626		GW-627	GW-636		
Location	OLF		BG		BG	OLF		
Date Sampled	02/11/93	05/12/93	03/10/93	08/02/93	04/23/93	03/26/93	06/27/93	09/18/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water Temp (degrees C)	14.7	16.3	14.8	16.4	15.8	13.8	14.3	14.4
pH (pH units)	6.6	6.8	8.2	8	9	8.4	7.9	8.3
Sp. Cond. (umho/cm)	5480	4960	247	250	1017	303	310	349
Dissolved Oxygen (ppm)	1.3	1.1	2.7	3.3	0.6	4.7	0.5	3.9
Oxidation/Reduction (mV)	120	172	74	157	-14	139	152	171
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	6.8	7.6	8	8.1	9	8.5	8.5	8.5
p. Cond. (umho/cm)	5920	5670	268	235	1140	364	361	362
TDS (mg/L)	4578	4612	154	144	730	232	244	244
TSS (mg/L)	5	3	<1	<1	<1	6	1	3
Turbidity (NTU)	2	1	0.7	0.6	1.4	5.5	2.5	1.5
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	38.40	0.00	-0.59	-13.90	3.90	0.50	-3.04	-1.27
Gross Alpha (CE+/-)	14.00	20.00	3.40	35.00	3.80	1.70	2.60	2.40
Gross Beta (pCi/L)	262.00	458.00	-0.16	19.60	-0.09	3.27	5.22	3.83
Gross Beta (CE+/-)	22.00	46.00	5.10	52.00	2.80	2.70	5.20	5.00

(CONTINUED)

APPENDIX F.3
Field Duplicate Groundwater Data, 1993

3

Sampling Point	GW-636	GW-639			GW-684		GW-685	
Location	OLF	BG			EXP		EXP	
Date Sampled	12/18/93	02/24/93	05/24/93	07/11/93	07/11/93	10/12/93	03/02/93	04/21/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water Temp (degrees C)	13	12.9	15.6	16.7	15.2	13.2	13.3	13.6
pH (pH units)	8.2	9.3	9.1	9.3	7.4	7.7	7.1	7.3
Sp. Cond. (umho/cm)	374	778	722	760	433	508	736	636
Dissolved Oxygen (ppm)	0.4	1.4	1.5	0.7	7.6	7.1	9.3	8.8
Oxidation/Reduction (mV)	68	100	154	-1	114	184	104	43
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	8.5	9.2	9.3	9.3	7.9	7.7	7.6	7.8
Sp. Cond. (umho/cm)	356	871	872	870	510	594	722	726
TDS (mg/L)	240	538	562	554	322	442	414	414
TSS (mg/L)	4	13	30	6	<1	2	13	8
Turbidity (NTU)	0.8	12	30	6.3	1	3.8	56	11
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-0.01	-0.45	-1.10	-0.44	22.60	29.80	-0.77	-0.28
Gross Alpha (CE+/-)	1.20	2.00	3.80	1.20	4.20	4.60	3.10	2.40
Gross Beta (pCi/L)	-1.19	1.44	-3.05	-3.87	46.20	57.60	3.35	2.30
Gross Beta (CE+/-)	2.90	2.80	5.50	2.80	4.70	5.30	3.70	3.10

(CONTINUED)

APPENDIX F.3
Field Duplicate Groundwater Data, 1993

4

Sampling Point . Location . Date Sampled	GW-704				GW-712		GW-713	GW-714
	EXP				EXP		EXP	EXP
	03/22/93	06/04/93	09/22/93	12/22/93	03/18/93	04/28/93	07/31/93	11/09/93
FIELD MEASUREMENTS	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water Temp (degrees C)	13.3	15.7	14.3	12.1	11.3	14.9	15	12.6
pH (pH units)	7.4	7.4	7.7	8.5	7.6	7.4	7.8	7.6
Sp. Cond. (umho/cm)	578	508	598	327	867	738	641	402
Dissolved Oxygen (ppm)	5.5	1.6	2.3	1	1.1	3.5	0.7	1.3
Oxidation/Reduction (mV)	42	65	-72	19	-25	55	-137	-67
MISCELLANEOUS PARAMETERS	.	.	.	.	.	.	.	.
pH (pH units)	8.1	8	7.8	8.3	8	8	7.7	7.9
Sp. Cond. (umho/cm)	609	584	611	348	856	846	666	432
TDS (mg/L)	344	254	342	174	636	592	482	260
TSS (mg/L)	4	48	21	19	2	1	5	13
Turbidity (NTU)	16	130	39	17	14	5.9	22	18
RADIOCHEMICAL PARAMETERS	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	-1.93	0.00	3.12	0.49	2.63	-1.53	-27.90	2.14
Gross Alpha (CE+/-)	3.50	3.60	4.30	1.10	1.90	1.90	33.00	2.30
Gross Beta (pCi/L)	3.83	6.27	17.10	1.82	2.92	-6.84	-3.26	3.61
Gross Beta (CE+/-)	5.20	5.60	5.90	2.60	2.90	2.80	51.00	3.10

(CONTINUED)

APPENDIX F.3
Field Duplicate Groundwater Data, 1993

5

Sampling Point	GW-725		GW-736	GW-740	GW-800
Location	EXP		EXP	EXP	OLF
Date Sampled	02/12/93	05/19/93	12/15/93	09/27/93	10/22/93
FIELD MEASUREMENTS	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.
Water Temp (degrees C)	15	15.6	13.4	14.2	14.1
pH (pH units)	6.9	7.1	7	7.5	6.9
Sp. Cond. (umho/cm)	1140	1039	1070	497	444
Dissolved Oxygen (ppm)	2.3	1.8	3.4	3.2	7.8
Oxidation/Reduction (mV)	-4	98	156	-36	251
MISCELLANEOUS PARAMETERS	.	.	.	.	.
pH (pH units)	7.2	7.3	7.2	7.6	7.2
Sp. Cond. (umho/cm)	1180	1190	1120	563	501
TDS (mg/L)	714	758	752	306	286
TSS (mg/L)	4	1	<1	<1	43
Turbidity (NTU)	10	2.1	0.5	2.3	440
RADIOCHEMICAL PARAMETERS	.	.	.	.	.
Gross Alpha (pCi/L)	3.78	1.74	4.92	4.98	0.67
Gross Alpha (CE+/-)	3.50	3.70	3.50	4.60	1.50
Gross Beta (pCi/L)	39.90	45.80	61.80	13.10	2.91
Gross Beta (CE+/-)	4.90	8.10	5.50	5.70	2.60

APPENDIX F.4
RADIONUCLIDES

APPENDIX F.4

1

Field Duplicate Groundwater Quality Data, 1993

Sampling Point . Location . Date Sampled	GW-537		GW-714
	OLF		EXP
	02/11/93	05/12/93	11/09/93
Gross Alpha (pCi/L)	38.40	0.00	2.14
Gross Alpha (CE+/-)	14.00	20.00	2.30
Gross Beta (pCi/L)	262.00	458.00	3.61
Gross Beta (CE+/-)	22.00	46.00	3.10
RADIONUCLIDES	.	.	.
Americium 241 (pCi/L)	.	.	5.51
Americium 241 (CE+/-)	.	.	5.50
Iodine 129 (pCi/L)	.	.	0.10
Iodine 129 (CE +/-)	.	.	1.10
Iodine 131 (pCi/L)	.	.	0.04
Iodine 131 (CE +/-)	.	.	0.15
Neptunium 237 (pCi/L)	.	.	0.54
Neptunium 237 (CE+/-)	.	.	1.10
Plutonium 238 (pCi/L)	.	.	0.34
Plutonium 238 (CE+/-)	.	.	0.67
Plutonium 239 (pCi/L)	.	.	0.00
Plutonium 239 (CE+/-)	.	.	0.95
Radium (Bq/L)	.	.	0.03
Radium (CE+/-)	.	.	0.03
Strontium (pCi/L)	-12.50	-4.85	90.80
Strontium (CE+/-)	19.00	18.00	26.00
Technetium 99 (pCi/L)	1810.00	920.00	138.00
Technetium 99 (CE+/-)	1400.00	2700.00	63.00
Tritium (Bq/L)	-2.00	15.00	88.00
Tritium (CE+/-)	24.00	23.00	29.00
Uranium 234 (pCi/L)	.	.	-0.27
Uranium 234 (CE+/-)	.	.	1.10
Uranium 235 (pCi/L)	.	.	34.60
Uranium 235 (CE+/-)	.	.	90.00
Uranium 238 (pCi/L)	.	.	0.00
Uranium 238 (CE+/-)	.	.	0.93

APPENDIX G

ION-CHARGE BALANCE CALCULATIONS

EXPLANATION

SAMPLING POINT:

BCK	-	Bear Creek Kilometer
GW	-	Monitoring Well
NT	-	North Tributary to Bear Creek
SS	-	Spring

LOCATION:

AGLLSF	-	Above Grade Low Level Storage Facility
BG	-	Bear Creek Burial Grounds WMA
EXP	-	Exit-Pathway Monitoring
OLF	-	Oil Landfarm WMA
RS	-	Rust Spoil Area
S3	-	S-3 Site
SPI	-	Spoil Area I

NOTES:

mg/L	-	milligrams per Liter
meq/L	-	milliequivalents per Liter
TDS	-	Total Dissolved Solids
TSS	-	Total Suspended Solids
NTU	-	Nephelometric Turbidity Unit

Bicarbonate and carbonate alkalinities (reported as CaCO_3) were converted to HCO_3 and CO_3 as described in Mercier and Turner (1990).

Charge balances for each sample were evaluated by computing a relative percent difference (RPD) in the summed milliequivalent concentrations of the principal cations and anions using the following formula:

$$RPD \text{ (\%)} = \left(\frac{\sum \text{cations} - \sum \text{anions}}{\sum \text{cations} + \sum \text{anions}} \right) \times 100$$

EXPLANATION

Using this formula, the RPD calculated for the following samples exceeded 10%:

Monitoring Well	Location	Sampling Date	RPD
GW-042	BG	12/29/93	-17.8
GW-057	EXP	3/4/93	-12.8
GW-064	OLF	9/11/93	19.9
GW-085	OLF	2/11/93	-77.8
GW-118	BG	7/25/93	-15.9
GW-312	RS	2/8/93	13.9
GW-312	RS	5/11/93	-19.6
GW-312	RS	10/21/93	-14.8
GW-345	S3	2/3/93	-28.3
GW-345	S3	10/26/93	87.2
GW-347	S3	10/22/93	-15.9
GW-526	S3	10/26/93	-85.3
GW-537	OLF	9/14/93	17.9
GW-601	OLF	6/27/93	-11.6
GW-627	BG	4/23/93	-41.4
GW-643	BG	10/12/93	10.9
GW-644	OLF	9/17/93	-27.8
GW-653	BG	3/1/93	-70.4
GW-653	BG	4/20/93	-11.5
GW-653	BG	10/10/93	-15
GW-710	EXP	8/1/93	11.4
GW-711	EXP	3/20/93	10.1
GW-712	EXP	11/6/93	-11.8
GW-713	EXP	3/19/93	29.8
GW-713	EXP	4/30/93	-25.6
GW-715	EXP	4/29/93	-16.4
NT-01	EXP	11/8/93	-18.2

APPENDIX G
Ion-Charge Balance Calculations, 1993

1

Sampling Point Location Date Sampled	GW-013				GW-040				GW-042	GW-043				GW-044
	OLF				BG				BG	OLF				OLF
	03/29/93	06/17/93	09/17/93	12/19/93	03/25/93	05/11/93	07/02/93	10/09/93	12/29/93	02/04/93	05/10/93	09/11/93	10/19/93	02/04/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	4.54	4.79	5.49	4.99	0.33	0.29	0.28	0.38	0.12	1.05	0.70	0.75	0.90	2.40
Magnesium	0.90	0.99	1.07	0.99	0.50	0.51	0.55	0.59	0.23	0.30	0.20	0.24	0.27	0.26
Potassium	0.05	0.03	0.04	0.04	0.04	0.04	0.05	0.05	0.00	0.02	0.02	0.02	0.02	0.02
Sodium	0.16	0.16	0.20	0.18	0.48	0.48	0.52	0.52	0.10	0.29	0.31	0.29	0.31	0.20
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	5.65	5.96	6.80	6.20	1.35	1.33	1.41	1.54	0.45	1.66	1.23	1.30	1.50	2.88
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	5.98	5.84	5.68	6.19	0.76	0.74	0.82	0.76	0.50	1.50	1.04	1.24	1.24	2.86
Chloride	0.12	0.12	0.11	0.14	0.08	0.06	0.05	0.06	0.04	0.03	0.05	0.03	0.03	0.03
Fluoride	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.01
Nitrate Nitrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfate	0.08	0.12	0.08	0.06	0.62	0.62	0.65	0.60	0.10	0.23	0.16	0.26	0.19	0.19
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	6.18	6.08	5.87	6.40	1.48	1.44	1.53	1.44	0.65	1.76	1.25	1.53	1.45	3.08
CHARGE BALANCE (%)	-4	-1	7	-2	-5	-4	-4	4	-18	-3	-1	-8	1	-3
TDS (mg/L)	354	336	338	334	216	344	232	228	56	132	106	120	132	212
TSS (mg/L)	4	2	4	6	726	422	159	78	<1	3	3	5	17	1
Turbidity (NTU)	12	4.8	11	4.1	1000	300	180	120	1.4	6	8.6	15	20	1.2

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

2

Sampling Point	GW-044			GW-052		GW-056				GW-057				GW-063
Location	OLF			BG		BG				EXP				OLF
Date Sampled	05/10/93	09/11/93	10/19/93	03/25/93	04/26/93	03/04/93	04/22/93	07/09/93	10/09/93	03/04/93	04/22/93	07/09/93	10/09/93	02/23/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	2.25	2.45	2.45	2.35	2.35	4.59	4.84	5.49	5.49	4.39	4.39	5.49	5.99	2.99
Magnesium	0.24	0.26	0.24	0.57	0.63	1.73	1.65	1.81	1.73	1.40	1.32	1.97	1.81	1.48
Potassium	0.02	0.00	0.02	0.04	0.04	0.08	0.05	0.05	0.05	0.04	0.04	0.06	0.05	0.05
Sodium	0.21	0.20	0.20	0.43	0.40	4.31	6.09	3.18	2.26	5.22	2.61	3.31	3.13	0.13
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	2.71	2.91	2.90	3.38	3.43	10.70	12.62	10.52	9.53	11.05	8.35	10.83	10.98	4.66
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	2.56	2.70	2.82	2.10	2.30	4.34	4.40	5.50	6.27	4.16	4.36	5.32	6.04	4.36
Chloride	0.03	0.03	0.03	0.51	0.52	6.46	8.49	5.28	3.05	9.62	3.67	5.22	3.75	0.13
Fluoride	0.00	0.01	0.00	0.02	0.02	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.01
Nitrate Nitrogen	0.00	0.00	0.00	0.45	0.86	0.00	0.02	0.00	0.00	0.02	0.02	0.00	0.02	0.13
Sulfate	0.18	0.14	0.17	0.42	0.39	0.54	0.54	0.54	0.75	0.50	0.54	0.60	0.87	0.19
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	2.77	2.87	3.01	3.49	4.09	11.34	13.45	11.32	10.07	14.30	8.59	11.14	10.68	4.81
CHARGE BALANCE (%)	-1	1	-2	-2	-9	-3	-3	-4	-3	-13	-1	-1	1	-2
TDS (mg/L)	178	188	210	216	286	584	746	598	630	734	532	616	686	258
TSS (mg/L)	<1	<1	<1	17	153	27	19	13	29	3	2	2	<1	20
Turbidity (NTU)	3.2	1.2	1.5	8.5	105	11	18	14	15	4.9	2.5	2.6	1.1	16

(CONTINUED)

APPENDIX G

3

Ion-Charge Balance Calculations, 1993

Sampling Point	GW-064				GW-069				GW-079	GW-080	GW-082			
Location	OLF				BG				BG	BG	BG			
Date Sampled	02/09/93	05/12/93	09/11/93	10/20/93	03/03/93	04/21/93	07/25/93	10/10/93	10/18/93	10/10/93	03/10/93	04/21/93	07/25/93	10/18/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	4.99	5.49	5.49	5.99	0.37	0.43	0.55	0.60	1.20	0.22	3.29	2.84	3.14	2.99
Magnesium	1.32	1.40	1.32	1.32	0.46	0.44	0.49	0.51	0.37	0.40	0.53	0.53	0.61	0.58
Potassium	0.05	0.05	0.13	0.05	0.11	0.12	0.12	0.11	0.07	0.07	0.03	0.04	0.04	0.05
Sodium	0.20	0.20	0.21	0.22	2.57	2.48	2.74	2.78	0.23	0.61	0.20	0.19	0.20	0.20
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	6.56	7.14	7.14	7.57	3.51	3.47	3.91	4.01	1.87	1.30	4.05	3.60	4.00	3.82
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.40	0.20	0.12	0.16	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	5.72	5.70	3.42	5.86	2.22	2.22	2.62	2.64	2.06	0.86	3.62	3.20	3.52	3.46
Chloride	0.31	0.34	0.32	0.42	1.10	1.02	1.10	1.38	0.03	0.06	0.37	0.21	0.48	0.50
Fluoride	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Nitrate Nitrogen	0.59	0.34	0.55	0.64	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Sulfate	0.52	0.35	0.48	0.52	0.04	0.16	0.08	0.05	0.14	0.44	0.15	0.27	0.15	0.14
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	7.14	6.72	4.77	7.44	3.78	3.61	3.92	4.25	2.24	1.36	4.15	3.69	4.16	4.11
CHARGE BALANCE (%)	-4	3	20	1	-4	-2	-0	-3	-9	-2	-1	-1	-2	-4
TDS (mg/L)	430	372	428	428	236	204	232	292	130	180	248	208	270	210
TSS (mg/L)	3	5	2	9	<1	<1	<1	<1	<1	129	8	<1	5	<1
Turbidity (NTU)	16	9.5	5.8	13	0.5	1	1.2	0.4	1.2	85	2.1	2.4	10	0.8

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

4

Sampling Point Location Date Sampled	GW-084				GW-085				GW-086				GW-115	
	OLF				OLF				OLF				S3	
	02/04/93	05/10/93	09/11/93	10/20/93	02/11/93	05/12/93	09/14/93	10/22/93	02/05/93	05/11/93	09/12/93	10/21/93	01/28/93	05/25/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	2.50	2.64	2.79	2.74	16.97	20.46	21.96	20.46	1.95	2.05	2.10	1.85	3.44	3.44
Magnesium	0.30	0.30	0.31	0.29	1.81	2.06	2.30	2.22	0.24	0.24	0.26	0.24	0.78	0.90
Potassium	0.04	0.02	0.00	0.02	0.04	0.05	0.07	0.06	0.03	0.03	0.02	0.03	0.05	0.05
Sodium	0.23	0.23	0.23	0.23	0.61	0.52	0.57	0.61	0.22	0.22	0.23	0.22	0.38	0.43
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	3.07	3.18	3.34	3.29	19.43	23.09	24.89	23.35	2.44	2.53	2.60	2.34	4.66	4.83
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	2.98	2.98	3.06	3.06	2.46	2.48	2.56	2.42	1.92	1.90	1.82	1.84	4.24	4.48
Chloride	0.00	0.00	0.00	0.03	0.45	0.45	0.39	0.42	0.04	0.05	0.04	0.06	0.10	0.12
Fluoride	0.01	0.00	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01
Nitrate Nitrogen	0.00	0.00	0.00	0.00	152.73	17.14	21.71	22.32	0.32	0.22	0.35	0.40	0.00	0.00
Sulfate	0.19	0.17	0.16	0.15	0.23	0.16	0.23	0.00	0.29	0.31	0.23	0.19	0.37	0.37
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	3.17	3.15	3.23	3.24	155.88	20.23	24.89	25.17	2.57	2.48	2.44	2.48	4.72	4.97
CHARGE BALANCE (%)	-2	1	2	1	-78	7	0	-4	-3	1	3	-3	-1	-1
TDS (mg/L)	218	208	206	216	1500	1768	1950	1872	268	280	208	252	276	292
TSS (mg/L)	47	43	30	17	5	8	1	3	511	1050	812	1318	<1	1
Turbidity (NTU)	22	21	12	11	2.2	3	1.8	0.7	320	480	360	620	1.9	4.1

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

5

Sampling Point	GW-115		GW-118				GW-162	GW-286				GW-287		
Location	S3		BG				BG	BG				BG		
Date Sampled	09/11/93	10/19/93	03/04/93	04/21/93	07/25/93	10/10/93	10/10/93	02/25/93	04/19/93	07/10/93	10/07/93	02/24/93	04/16/93	07/10/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	3.59	3.49	0.12	0.15	0.06	0.05	1.35	2.45	2.20	2.35	2.35	1.90	1.80	1.70
Magnesium	0.90	0.99	0.15	0.38	0.05	0.00	0.36	0.38	0.34	0.38	0.37	0.47	0.44	0.44
Potassium	0.07	0.05	0.61	0.56	0.87	0.66	0.08	0.02	0.02	0.02	0.02	0.03	0.02	0.03
Sodium	0.43	0.43	87.00	78.30	82.65	82.65	0.65	0.22	0.20	0.20	0.21	0.17	0.16	0.15
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	5.00	4.95	87.88	79.39	83.63	83.36	2.44	3.06	2.75	2.95	2.94	2.57	2.42	2.32
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	3.04	3.52	3.88	3.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	4.70	4.70	1.98	1.42	0.86	0.98	2.30	2.80	2.70	2.82	2.84	2.40	2.30	2.50
Chloride	0.11	0.11	90.84	86.32	110.30	89.14	0.08	0.03	0.04	0.04	0.06	0.07	0.08	0.07
Fluoride	0.00	0.00	0.09	0.09	0.08	0.06	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Nitrate Nitrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfate	0.33	0.31	0.00	0.00	0.00	0.00	0.18	0.13	0.13	0.15	0.12	0.17	0.23	0.13
Hydroxyl Ion	0.00	0.00	0.02	0.06	0.16	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	5.14	5.12	95.96	91.41	115.27	94.15	2.57	2.96	2.87	3.02	3.03	2.65	2.61	2.72
CHARGE BALANCE (%)	-1	-2	-4	-7	-16	-6	-3	2	-2	-1	-1	-2	-4	-8
TDS (mg/L)	298	310	5054	5016	5064	5116	236	202	192	178	248	156	142	166
TSS (mg/L)	<1	<1	24	54	28	8	6	42	7	<1	2	7	3	3
Turbidity (NTU)	4.9	2.7	10	6	17	1	20	16	80	14	4.2	22	9	9

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

6

Sampling Point	GW-287	GW-311				GW-312				GW-315				GW-316
Location	BG	RS				RS				SPI				SPI
Date Sampled	10/07/93	02/08/93	05/11/93	09/12/93	10/21/93	02/08/93	05/11/93	09/12/93	10/21/93	02/03/93	06/03/93	09/14/93	10/27/93	02/02/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	2.00	4.39	3.89	4.09	3.79	7.49	6.99	9.98	7.49	4.29	4.39	4.99	4.99	2.05
Magnesium	0.44	0.44	0.42	0.39	0.39	0.02	0.00	0.00	0.00	0.65	0.76	0.90	0.82	1.73
Potassium	0.03	0.04	0.04	0.02	0.03	0.26	0.22	0.23	0.25	0.09	0.07	0.08	0.09	0.06
Sodium	0.20	0.09	0.08	0.07	0.07	0.41	0.41	0.70	0.57	0.28	0.22	0.25	0.30	0.10
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	2.66	4.96	4.43	4.57	4.27	8.17	7.62	10.91	8.30	5.31	5.44	6.22	6.20	3.93
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	1.00	1.04	0.96	1.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	2.74	4.52	4.28	4.20	4.18	0.00	0.00	0.00	0.00	3.58	4.32	4.58	4.36	3.82
Chloride	0.08	0.06	0.07	0.08	0.08	0.04	0.05	0.04	0.03	0.31	0.24	0.23	0.37	0.05
Fluoride	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.01
Nitrate Nitrogen	0.00	0.03	0.04	0.04	0.04	0.00	0.02	0.02	0.01	0.56	0.64	1.07	1.41	0.03
Sulfate	0.15	0.09	0.20	0.08	0.06	0.12	0.21	0.08	0.12	0.79	0.56	0.46	0.42	0.08
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	5.01	10.00	10.00	10.00	0.00	0.00	0.00	0.00	0.00
Total Anions	2.98	4.69	4.59	4.39	4.36	6.18	11.33	11.11	11.18	5.24	5.75	6.34	6.55	3.98
CHARGE BALANCE (%)	-6	3	-2	2	-1	14	-20	-1	-15	1	-3	-1	-3	-1
TDS (mg/L)	254	288	242	260	264	396	470	522	682	346	322	380	412	208
TSS (mg/L)	11	51	<1	7	40	81	4	4	25	4	<1	<1	<1	<1
Turbidity (NTU)	15	54	2.5	3.3	68	16	3.6	1.2	3.5	0.5	1	0.9	0.5	0.9

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

7

Sampling Point	GW-316			GW-317				GW-323				GW-324		
Location	SPI			SPI				SPI				83		
Date Sampled	06/01/93	09/13/93	10/24/93	02/02/93	05/28/93	09/13/93	10/24/93	02/02/93	05/28/93	09/12/93	10/23/93	01/29/93	05/25/93	09/11/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	2.25	2.25	2.05	2.30	2.25	2.50	2.10	2.10	2.20	2.10	2.10	1.40	1.45	1.55
Magnesium	1.97	1.89	1.89	1.65	1.65	1.97	1.73	2.06	2.14	2.06	2.22	0.43	0.45	0.47
Potassium	0.05	0.05	0.06	0.04	0.02	0.03	0.02	0.04	0.03	0.03	0.03	0.03	0.00	0.02
Sodium	0.06	0.11	0.06	0.15	0.19	0.08	0.30	0.04	0.07	0.06	0.08	0.22	0.21	0.23
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	4.33	4.29	4.05	4.12	4.10	4.58	4.15	4.23	4.43	4.24	4.43	2.07	2.11	2.26
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	3.94	4.18	3.96	4.12	3.94	4.42	3.94	4.24	4.14	4.10	4.30	2.00	2.04	2.08
Chloride	0.04	0.04	0.06	0.00	0.00	0.00	0.03	0.00	0.03	0.03	0.03	0.04	0.03	0.00
Fluoride	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
Nitrate Nitrogen	0.02	0.02	0.02	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfate	0.04	0.08	0.08	0.11	0.12	0.11	0.08	0.04	0.05	0.05	0.04	0.19	0.19	0.15
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	4.04	4.32	4.12	4.25	4.05	4.53	4.06	4.28	4.21	4.18	4.37	2.24	2.27	2.23
CHARGE BALANCE (%)	3	-0	-1	-1	1	1	1	-1	3	1	1	-4	-4	1
TDS (mg/L)	204	208	226	222	178	222	226	216	186	208	228	158	128	148
TSS (mg/L)	<1	1	<1	<1	<1	3	<1	<1	<1	<1	<1	<1	1	<1
Turbidity (NTU)	2.7	8	2.4	1.5	1	2.4	2.3	0.4	2.5	0.9	0.7	1	0.7	0.9

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

8

Sampling Point	GW-324	GW-325				GW-342	GW-345				GW-347			
Location	S3	S3				BG	S3				S3			
Date Sampled	10/19/93	02/01/93	05/25/93	09/11/93	10/21/93	10/07/93	02/03/93	06/01/93	09/14/93	10/26/93	02/01/93	05/27/93	09/12/93	10/22/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	1.50	0.13	0.12	0.17	0.16	0.18	0.24	0.55	1.65	6.49	1.20	1.40	2.89	1.15
Magnesium	0.49	0.12	0.10	0.09	0.10	0.42	0.14	0.21	0.46	4.28	0.16	0.17	0.42	0.15
Potassium	0.02	0.03	0.00	0.02	0.02	0.06	0.05	0.08	0.17	0.43	0.09	0.08	0.10	0.07
Sodium	0.23	0.16	0.07	0.06	0.07	0.24	0.30	0.30	0.34	69.60	0.04	0.04	0.05	0.03
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	2.24	0.44	0.29	0.35	0.34	0.90	0.75	1.15	2.62	80.80	1.48	1.69	3.46	1.40
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	2.06	0.18	0.16	0.24	0.18	0.76	0.40	0.48	0.54	0.44	1.48	1.66	3.12	1.86
Chloride	0.03	0.05	0.05	0.05	0.06	0.00	0.13	0.14	0.15	0.20	0.00	0.00	0.00	0.00
Fluoride	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Nitrate Nitrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.24	1.43	4.71	0.00	0.00	0.00	0.00
Sulfate	0.15	0.16	0.11	0.06	0.06	0.12	0.25	0.18	0.29	0.19	0.02	0.03	0.13	0.06
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	2.23	0.38	0.31	0.35	0.30	0.90	1.33	1.03	2.41	5.54	1.50	1.69	3.25	1.93
CHARGE BALANCE (%)	0	8	-4	-0	7	0	-28	5	4	87	-1	0	3	-16
TDS (mg/L)	150	56	50	74	88	152	98	84	216	514	116	92	178	132
TSS (mg/L)	<1	2	6	194	57	11	2	4	4	12	24	4	15	39
Turbidity (NTU)	0.9	11	27	50	800	7.5	11	3.9	4.1	7.2	34	4	12	64

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APPENDIX G
Ion-Charge Balance Calculations, 1993

9

Sampling Point	GW-348				GW-364				GW-365				GW-370	
Location	S3				OLF				OLF				BG	
Date Sampled	02/01/93	05/27/93	09/12/93	10/22/93	03/27/93	06/27/93	09/19/93	12/18/93	03/28/93	06/27/93	09/19/93	12/19/93	02/17/93	05/21/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	4.04	4.19	4.34	4.09	2.84	4.34	4.69	3.64	6.99	6.49	6.99	6.99	1.80	1.10
Magnesium	1.40	1.48	1.48	1.56	0.81	1.40	1.48	0.99	2.14	2.06	2.14	2.22	0.27	0.20
Potassium	0.05	0.04	0.04	0.04	0.04	0.07	0.07	0.05	0.08	0.08	0.09	0.08	0.00	0.00
Sodium	0.13	0.12	0.14	0.14	0.17	0.27	0.38	0.18	0.65	0.65	0.74	0.74	0.43	0.43
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	5.62	5.83	6.00	5.83	3.85	6.08	6.62	4.86	9.86	9.28	9.96	10.03	2.50	1.73
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	4.64	4.64	4.96	4.88	3.38	4.74	4.52	3.86	6.67	6.95	6.87	6.91	2.26	1.56
Chloride	0.26	0.25	0.25	0.28	0.44	1.18	1.10	0.48	2.06	2.45	2.62	2.43	0.04	0.04
Fluoride	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Nitrate Nitrogen	0.69	0.61	0.67	0.81	0.09	0.08	0.73	0.20	0.21	0.29	0.37	0.28	0.00	0.00
Sulfate	0.11	0.15	0.12	0.12	0.35	0.62	0.61	0.35	0.91	0.90	0.83	0.87	0.23	0.23
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	5.70	5.66	5.99	6.10	4.26	6.62	6.96	4.89	9.85	10.60	10.70	10.49	2.53	1.83
CHARGE BALANCE (%)	-1	1	0	-2	-5	-4	-2	-0	0	-7	-4	-2	-1	-3
TDS (mg/L)	336	314	338	344	260	408	468	284	572	586	584	558	170	200
TSS (mg/L)	<1	<1	<1	<1	8	34	241	6	5	2	1	1	18	307
Turbidity (NTU)	1.2	1	1	2.7	29	250	320	11	9.5	7	2	5	7.8	5.5

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

10

Sampling Point Location Date Sampled	GW-370		GW-371				GW-372				GW-373			
	BG		BG				BG				BG			
	07/10/93	10/14/93	02/16/93	05/21/93	07/09/93	10/13/93	02/09/93	05/19/93	07/02/93	10/12/93	02/11/93	05/14/93	07/02/93	10/11/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	1.30	1.20	3.54	4.04	3.74	3.69	2.94	2.84	2.89	3.09	0.06	0.05	0.05	0.05
Magnesium	0.23	0.21	1.56	1.73	1.65	1.65	0.90	0.90	0.90	0.90	0.01	0.04	0.01	0.01
Potassium	0.00	0.00	0.08	0.09	0.08	0.09	0.04	0.04	0.04	0.04	0.03	0.02	0.04	0.03
Sodium	0.43	0.43	0.74	0.78	0.78	0.74	0.37	0.37	0.40	0.40	4.35	4.78	4.78	4.78
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	1.96	1.83	5.92	6.64	6.25	6.17	4.26	4.16	4.24	4.44	4.46	4.90	4.88	4.87
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.48	0.52	0.00
Alkalinity-HCO3	1.82	1.52	5.82	5.94	6.08	5.98	3.68	3.60	3.64	3.68	3.56	3.72	3.76	3.66
Chloride	0.04	0.03	0.03	0.04	0.03	0.03	0.08	0.06	0.05	0.06	0.06	0.04	0.03	0.03
Fluoride	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.08	0.07	0.09	0.08
Nitrate Nitrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfate	0.26	0.21	0.32	0.37	0.35	0.35	0.69	0.65	0.65	0.65	0.62	0.60	0.65	0.56
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Total Anions	2.12	1.76	6.17	6.35	6.47	6.36	4.45	4.31	4.35	4.39	4.86	4.93	5.06	4.34
CHARGE BALANCE (%)	-4	2	-2	2	-2	-2	-2	-2	-1	1	-4	-0	-2	6
TDS (mg/L)	180	212	326	328	348	372	282	244	266	328	290	306	306	358
TSS (mg/L)	53	135	9	4	13	<1	4	5	3	4	3	15	12	10
Turbidity (NTU)	14	38	4.9	120	2.7	4.7	2.5	12	4.4	16	3.5	5.1	6.5	17

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

Sampling Point	GW-526				GW-537				GW-601				GW-613	GW-614
Location	S3				OLF				OLF				S3	S3
Date Sampled	02/03/93	06/03/93	09/14/93	10/26/93	02/11/93	05/12/93	09/14/93	10/22/93	03/28/93	06/27/93	09/19/93	12/21/94	10/20/93	10/20/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	5.49	4.99	5.99	4.99	49.90	54.89	54.89	54.89	3.79	4.09	4.44	4.09	1.50	2.35
Magnesium	3.87	3.21	3.78	1.15	5.43	6.00	5.92	6.09	3.04	3.37	3.54	3.45	0.25	0.82
Potassium	0.59	0.33	0.43	0.10	0.00	0.00	0.08	0.11	0.06	0.05	0.06	0.06	0.00	0.04
Sodium	56.55	60.90	65.25	0.52	1.17	1.30	1.26	1.30	1.52	1.65	2.00	2.00	0.16	0.43
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	66.49	69.43	75.46	6.77	56.50	62.20	62.16	62.39	8.42	9.17	10.04	9.61	1.90	3.64
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	1.00	0.98	0.86	0.96	4.92	4.94	5.04	5.04	3.76	3.90	3.86	3.84	1.76	3.36
Chloride	0.54	0.16	0.59	0.54	0.85	0.90	0.73	0.93	2.43	3.70	2.57	2.85	0.03	0.03
Fluoride	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.01	0.01	0.00
Nitrate Nitrogen	58.98	71.83	60.41	83.61	55.84	49.41	37.49	56.52	2.29	2.97	2.18	2.28	0.00	0.00
Sulfate	0.00	0.09	0.23	0.15	0.00	0.05	0.00	0.06	0.93	0.99	1.04	0.95	0.10	0.25
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	60.52	73.10	62.09	85.26	61.60	55.31	43.26	62.55	9.42	11.57	9.66	9.92	1.90	3.64
CHARGE BALANCE (%)	5	-3	10	-85	-4	6	18	-0	-6	-12	2	-2	0	0
TDS (mg/L)	6214	6028	6246	6320	4700	4682	4438	4478	540	542	584	560	144	224
TSS (mg/L)	14	9	8	28	4	5	4	5	1	13	<1	<1	8	5
Turbidity (NTU)	6.3	7.4	12	26	1.9	1.1	1.6	1.9	0.8	0.5	0.5	0.7	3.1	2

(CONTINUED)

APPENDIX G

12

Ion-Charge ce Calculations, 1993

Sampling Point Location Date Sampled	GW-621				GW-626				GW-627				GW-636	
	BG				BG				BG				OLF	
	03/20/93	06/02/93	09/20/93	12/20/93	03/10/93	04/26/93	08/02/93	10/20/93	03/09/93	04/23/93	07/28/93	10/20/93	03/26/93	06/27/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	2.64	2.64	3.04	2.64	2.10	1.80	1.90	2.25	0.05	2.64	0.05	0.04	0.37	0.39
Magnesium	0.76	0.75	0.99	0.81	0.23	0.21	0.24	0.26	0.01	1.97	0.03	0.02	0.19	0.21
Potassium	0.03	0.04	0.02	0.04	0.03	0.02	0.03	0.03	0.04	0.06	0.04	0.03	0.14	0.12
Sodium	0.10	0.12	0.15	0.11	0.18	0.17	0.18	0.17	12.18	0.34	11.75	12.18	3.04	2.96
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	3.54	3.55	4.21	3.60	2.53	2.20	2.34	2.71	12.28	5.02	11.86	12.27	3.74	3.68
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32	1.60	0.00	1.24	0.12	0.04
Alkalinity-HCO3	3.02	3.04	3.34	3.14	2.18	2.06	2.16	2.24	9.37	8.93	10.81	9.59	3.26	3.58
Chloride	0.10	0.15	0.22	0.14	0.36	0.21	0.17	0.28	0.62	0.62	0.93	0.73	0.17	0.22
Fluoride	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.25	0.29	0.32	0.32	0.01	0.01
Nitrate Nitrogen	0.32	0.43	0.72	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Sulfate	0.09	0.11	0.17	0.06	0.08	0.07	0.06	0.06	0.67	0.65	0.79	0.62	0.19	0.14
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.00
Total Anions	3.53	3.72	4.45	3.62	2.62	2.35	2.40	2.58	12.24	12.10	12.88	12.52	3.75	3.99
CHARGE BALANCE (%)	0	-2	-3	-0	-2	-3	-1	2	0	-41	-4	-1	-0	-4
TDS (mg/L)	222	232	272	198	166	162	146	182	704	732	728	738	226	230
TSS (mg/L)	5	23	37	34	1	1	<1	<1	<1	<1	<1	2	7	<1
Turbidity (NTU)	14	34	35	26	0.5	0.8	0.8	0.3	1	1	2.7	0.9	5.5	2

(CONTINUED)

APPENDIX G

13

Ion-Charge Balance Calculations, 1993

Sampling Point Location Date Sampled	GW-636		GW-637				GW-638				GW-639			
	OLF		OLF				OLF				BG			
	09/18/93	12/18/93	03/25/93	06/26/93	09/17/93	12/18/93	03/25/93	06/26/93	09/17/93	12/18/93	02/24/93	05/24/93	07/11/93	10/15/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	0.38	0.45	3.59	3.79	3.94	3.69	3.14	4.99	6.49	3.84	0.07	0.04	0.04	0.04
Magnesium	0.21	0.24	0.43	0.49	0.45	0.50	0.58	0.99	1.40	0.90	0.03	0.02	0.02	0.02
Potassium	0.13	0.12	0.05	0.03	0.04	0.04	0.04	0.07	0.10	0.06	0.05	0.04	0.03	0.04
Sodium	3.26	3.13	0.12	0.10	0.12	0.12	0.24	0.20	0.14	0.19	9.14	8.70	8.70	9.57
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	3.99	3.94	4.18	4.42	4.55	4.35	4.00	6.25	8.13	5.00	9.28	8.80	8.79	9.68
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.08	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	1.60	1.44	1.52	1.28
Alkalinity-HCO3	3.58	3.48	4.10	4.26	4.32	4.24	3.28	4.04	4.10	4.02	6.39	6.89	6.91	7.03
Chloride	0.20	0.25	0.07	0.08	0.08	0.08	0.05	0.04	0.00	0.03	0.28	0.28	0.28	0.28
Fluoride	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.01	0.12	0.13	0.16	0.14
Nitrate Nitrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.03	0.00	0.00	0.00	0.00	0.00
Sulfate	0.10	0.08	0.16	0.18	0.12	0.12	0.96	1.35	3.71	0.92	0.31	0.61	0.62	0.56
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02
Total Anions	3.89	3.90	4.32	4.52	4.55	4.45	4.32	5.47	7.85	4.97	8.72	9.37	9.51	9.31
CHARGE BALANCE (%)	1	1	-2	-1	0	-1	-4	7	2	0	3	-3	-4	2
TDS (mg/L)	240	236	252	254	258	262	308	550	516	312	542	562	546	564
TSS (mg/L)	1	14	4	2	<1	15	48	5405	91	31	21	24	6	12
Turbidity (NTU)	1.5	0.9	6	1.5	5.7	1.8	54	3100	370	37	14	60	6.9	80

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

14

Sampling Point . Location . Date Sampled	GW-640				GW-641				GW-642				GW-643	
	BG				BG				BG				BG	
	02/22/93	05/24/93	07/10/93	10/14/93	02/22/93	05/24/93	07/10/93	10/14/93	02/08/93	05/11/93	07/01/93	10/10/93	02/16/93	05/19/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	0.70	0.70	0.75	0.90	0.11	0.24	0.20	0.22	0.35	0.37	0.34	0.46	0.13	0.19
Magnesium	0.12	0.13	0.12	0.14	0.07	0.08	0.07	0.07	0.63	0.61	0.62	0.59	0.09	0.12
Potassium	0.03	0.02	0.02	0.02	0.03	0.02	0.00	0.00	0.04	0.05	0.05	0.04	0.03	0.02
Sodium	0.18	0.16	0.16	0.16	0.08	0.11	0.10	0.10	0.32	0.33	0.34	0.34	0.35	0.26
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	1.03	1.02	1.05	1.22	0.28	0.44	0.37	0.38	1.34	1.36	1.35	1.43	0.59	0.60
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	0.86	1.00	0.98	0.98	0.32	0.40	0.36	0.36	1.20	1.16	1.14	1.14	0.24	0.28
Chloride	0.03	0.03	0.03	0.06	0.00	0.00	0.00	0.03	0.00	0.05	0.03	0.04	0.04	0.05
Fluoride	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00
Nitrate Nitrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Sulfate	0.04	0.06	0.05	0.04	0.00	0.04	0.00	0.00	0.22	0.33	0.25	0.20	0.30	0.33
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	0.93	1.09	1.06	1.08	0.32	0.44	0.36	0.39	1.44	1.56	1.44	1.41	0.60	0.67
CHARGE BALANCE (%)	5	-4	-0	6	-6	0	1	-1	-4	-7	-3	1	-0	-5
TDS (mg/L)	70	76	78	130	42	48	36	110	136	110	106	186	82	86
TSS (mg/L)	7	4	5	5	83	3	3	9	9	5	3	540	135	51
Turbidity (NTU)	2.4	3.1	3.1	2.2	7	4.5	0.9	39	19	5.4	12	60	56	25

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

Sampling Point Location Date Sampled	GW-643		GW-644				GW-647				GW-651			
	BG		OLF				OLF				BG			
	07/08/93	10/12/93	03/25/93	06/25/93	09/17/93	12/18/93	02/08/93	05/17/93	09/25/93	12/10/93	03/01/93	04/19/93	07/10/93	10/10/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	1.10	0.30	0.95	1.70	1.30	1.50	3.14	2.99	3.09	3.04	2.74	2.94	2.59	3.29
Magnesium	0.61	0.18	0.12	0.18	0.14	0.16	2.71	2.55	2.71	2.63	0.76	0.80	0.74	0.90
Potassium	0.06	0.02	0.02	0.00	0.00	0.00	0.07	0.07	0.07	0.08	0.16	0.07	0.14	0.08
Sodium	0.57	0.30	0.17	0.14	0.16	0.16	0.08	0.09	0.09	0.10	0.10	0.07	0.08	0.07
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	2.33	0.81	1.25	2.02	1.60	1.82	6.01	5.70	5.97	5.85	3.76	3.89	3.55	4.34
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	1.64	0.28	1.16	2.16	2.72	1.72	3.54	3.58	3.70	3.56	3.68	3.84	3.92	4.06
Chloride	0.07	0.06	0.06	0.08	0.08	0.08	0.03	0.03	0.05	0.03	0.09	0.08	0.10	0.09
Fluoride	0.01	0.01	0.01	0.00	0.01	0.00	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
Nitrate Nitrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfate	0.84	0.31	0.04	0.15	0.00	0.00	2.46	2.19	2.15	1.83	0.21	0.22	0.21	0.19
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	2.56	0.65	1.27	2.38	2.83	1.80	6.05	5.82	5.92	5.44	3.98	4.14	4.22	4.34
CHARGE BALANCE (%)	-5	11	-1	-8	-28	0	-0	-1	0	4	-3	-3	-9	0
TDS (mg/L)	168	188	106	152	168	126	406	366	340	372	248	236	234	326
TSS (mg/L)	35	50	2	49	53	27	16	<1	1	1	2	85	<1	4
Turbidity (NTU)	11	27	2.9	19	19	14	9.3	1	5	1.6	2.4	1.1	2.4	5.6

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

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Sampling Point Location Date Sampled	GW-652				GW-653				GW-654				GW-655	
	BG				BG				BG				BG	
	03/01/93	04/19/93	07/10/93	10/18/93	03/01/93	04/20/93	07/10/93	10/10/93	02/24/93	04/16/93	07/01/93	10/07/93	02/05/93	05/10/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	3.69	3.44	3.64	3.84	0.09	0.09	0.09	0.08	0.70	0.75	0.65	0.80	0.15	0.15
Magnesium	0.55	0.49	0.52	0.63	0.08	0.08	0.08	0.08	0.29	0.30	0.27	0.35	0.43	0.40
Potassium	0.07	0.06	0.06	0.07	0.02	0.00	0.02	0.00	0.04	0.03	0.04	0.04	0.03	0.04
Sodium	0.04	0.04	0.04	0.05	0.11	0.11	0.11	0.11	1.26	1.30	1.91	1.61	0.25	0.25
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	4.36	4.04	4.26	4.60	0.31	0.28	0.30	0.28	2.28	2.38	2.88	2.81	0.86	0.84
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	3.86	3.74	4.16	4.16	1.72	0.28	0.28	0.28	2.00	2.16	2.30	2.54	0.68	0.64
Chloride	0.12	0.16	0.16	0.17	0.03	0.03	0.03	0.03	0.00	0.04	0.00	0.00	0.00	0.04
Fluoride	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.03	0.03	0.01	0.01
Nitrate Nitrogen	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfate	0.16	0.17	0.18	0.16	0.06	0.05	0.04	0.06	0.23	0.33	0.33	0.31	0.19	0.29
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	4.14	4.07	4.50	4.52	1.81	0.36	0.35	0.37	2.24	2.56	2.66	2.88	0.88	0.98
CHARGE BALANCE (%)	3	-0	-3	1	-70	-11	-8	-15	1	-3	4	-1	-1	-8
TDS (mg/L)	284	266	250	282	70	56	46	142	154	154	182	258	92	150
TSS (mg/L)	17	12	5	<1	314	82	<1	158	4	5	<1	<1	22	624
Turbidity (NTU)	44	1.9	11	28	70	29	12	42	18	13	2.4	3.5	22	180

(CONTINUED)

APPENDIX G

17

Ion-Charge Balance Calculations, 1993

Sampling Point Location Date Sampled	GW-655		GW-683				GW-684				GW-685			
	BG		EXP				EXP				EXP			
	07/01/93	10/06/93	03/04/93	04/23/93	07/12/93	10/12/93	03/03/93	04/22/93	07/11/93	10/12/93	03/02/93	04/21/93	07/11/93	10/11/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	0.17	0.14	1.90	1.70	3.04	4.69	2.00	1.60	2.79	3.24	4.19	3.79	4.04	4.14
Magnesium	0.46	0.40	1.23	1.15	1.56	1.89	1.07	0.99	1.40	1.48	1.97	1.73	1.97	1.97
Potassium	0.05	0.03	0.03	0.02	0.09	0.06	0.38	0.51	0.41	0.36	0.04	0.03	0.03	0.04
Sodium	0.29	0.25	0.16	0.15	0.37	0.61	0.25	0.27	0.43	0.78	1.48	1.22	0.96	0.96
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	0.98	0.83	3.32	3.02	5.07	7.25	3.70	3.37	5.04	5.87	7.69	6.77	7.01	7.12
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	0.68	0.72	2.76	2.64	3.82	4.28	2.58	2.52	3.40	3.48	5.00	4.90	5.06	5.04
Chloride	0.00	0.00	0.20	0.16	0.41	0.87	0.48	0.45	0.59	0.79	1.95	2.65	1.38	1.41
Fluoride	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.00	0.01	0.01	0.01
Nitrate Nitrogen	0.00	0.00	0.19	0.16	0.71	2.28	0.31	0.29	0.74	1.35	0.12	0.12	0.15	0.29
Sulfate	0.21	0.17	0.15	0.23	0.35	0.54	0.27	0.29	0.35	0.00	0.40	0.38	0.41	0.44
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	0.90	0.89	3.30	3.20	5.30	7.99	3.64	3.57	5.08	5.63	7.46	8.05	7.00	7.18
CHARGE BALANCE (%)	4	-4	0	-3	-2	-5	1	-3	-0	2	2	-9	0	-0
TDS (mg/L)	74	64	178	160	308	504	226	222	322	432	412	422	388	456
TSS (mg/L)	13	54	2	1	<1	2	<1	<1	<1	3	12	10	2	5
Turbidity (NTU)	11	16	2	1.3	0.9	2.5	3.9	1.5	1	4.5	52	12	2.9	18

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

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Sampling Point Location Date Sampled	GW-694				GW-695				GW-703				GW-704	
	EXP				EXP				EXP				EXP	
	03/23/93	06/06/93	09/22/93	12/28/93	03/24/93	06/09/93	09/22/93	12/21/93	03/20/93	06/03/93	09/20/93	12/21/93	03/22/93	06/04/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	3.94	4.99	5.99	5.99	1.35	1.45	1.60	1.15	3.49	2.10	2.94	3.69	3.14	2.74
Magnesium	1.40	1.73	1.97	1.81	1.23	1.23	1.48	1.07	2.63	2.39	2.55	2.63	2.39	2.22
Potassium	0.05	0.08	0.10	0.08	0.21	0.14	0.18	0.26	0.03	0.06	0.11	0.05	0.04	0.03
Sodium	0.61	0.87	1.09	0.70	1.22	1.83	1.17	1.87	0.43	1.39	0.43	0.48	0.48	0.43
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	6.00	7.66	9.15	8.57	4.01	4.65	4.43	4.34	6.59	5.93	6.04	6.85	6.04	5.43
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	4.04	4.36	5.24	4.64	3.40	3.58	3.50	3.66	4.02	3.52	3.98	4.24	3.70	3.68
Chloride	0.85	0.93	1.13	0.80	0.21	0.26	0.17	0.27	0.62	0.42	0.58	0.63	0.55	0.62
Fluoride	0.02	0.02	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Nitrate Nitrogen	0.71	2.09	2.21	2.09	0.41	1.14	0.44	0.55	1.60	0.69	1.56	1.61	1.02	1.07
Sulfate	0.44	0.63	0.75	0.85	0.25	0.25	0.29	0.20	0.48	0.37	0.40	0.46	0.43	0.42
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	6.05	8.03	9.35	8.39	4.27	5.24	4.42	4.69	6.73	5.01	6.52	6.95	5.71	5.80
CHARGE BALANCE (%)	-0	-2	-1	1	-3	-6	0	-4	-1	8	-4	-1	3	-3
TDS (mg/L)	360	514	568	488	252	280	272	286	400	284	354	396	348	258
TSS (mg/L)	3	3	1	2	12	149	83	325	<1	8	2	2	3	52
Turbidity (NTU)	2.7	5.4	2	2.7	3.1	40	20	200	2.6	8.7	8.2	2.5	15	125

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APPENDIX G

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Ion-Charge Balance Calculations, 1993

Sampling Point Location Date Sampled	GW-704		GW-706				GW-710				GW-711			
	EXP		EXP				EXP				EXP			
	09/22/93	12/22/93	03/23/93	06/11/93	09/23/93	12/28/93	03/21/93	04/30/93	08/01/93	11/09/93	03/20/93	04/29/93	07/30/93	11/07/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	3.19	0.70	0.55	5.49	0.65	5.99	31.94	27.44	28.94	28.94	30.44	26.45	29.44	26.45
Magnesium	2.47	2.39	1.73	1.81	1.65	1.73	16.45	14.81	15.63	14.81	20.57	21.39	19.74	18.10
Potassium	0.04	0.05	0.16	0.13	0.15	0.09	0.31	0.23	0.26	0.28	0.59	0.69	0.79	0.61
Sodium	0.52	0.48	0.87	0.83	0.78	0.65	11.75	9.57	10.00	9.57	52.20	52.20	52.20	47.85
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	6.22	3.61	3.31	8.25	3.23	8.46	60.44	52.05	54.83	53.60	103.79	100.73	102.18	93.01
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.04	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	3.90	2.50	1.86	4.82	2.02	4.86	3.12	3.24	3.10	3.08	2.86	2.82	2.96	3.14
Chloride	0.59	0.61	0.87	1.02	0.71	0.73	10.30	9.85	8.32	9.56	44.57	61.50	58.96	57.18
Fluoride	0.01	0.01	0.01	0.02	0.01	0.02	0.08	0.09	0.09	0.09	0.08	0.08	0.09	0.09
Nitrate Nitrogen	1.21	0.02	0.00	2.28	0.00	2.06	0.00	5.35	0.00	0.00	0.00	0.00	0.00	0.00
Sulfate	0.48	0.39	0.69	0.62	0.54	0.82	37.49	43.74	32.08	38.62	37.29	44.74	37.91	32.91
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	6.19	3.56	3.59	8.76	3.28	8.50	50.99	62.26	43.59	51.35	84.79	109.14	99.92	93.32
CHARGE BALANCE (%)	0	1	-4	-3	-1	-0	8	-9	11	2	10	-4	1	-0
TDS (mg/L)	344	180	190	544	168	508	3862	3782	3758	3738	6526	6344	6132	6164
TSS (mg/L)	24	21	7	1	27	<1	12	2	7	9	23	23	15	14
Turbidity (NTU)	38	17	15	2	120	3.9	20	27	11	5	21	38	15	32

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APPENDIX G
Ion-Charge Balance Calculations, 1993

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Sampling Point . Location . Date Sampled	GW-712				GW-713				GW-714				GW-715	
	EXP				EXP				EXP				EXP	
	03/18/93	04/28/93	07/29/93	11/06/93	03/19/93	04/30/93	07/31/93	11/09/93	03/21/93	04/29/93	08/01/93	11/09/93	03/21/93	04/29/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	4.94	4.29	4.54	4.04	3.99	3.14	3.49	3.04	2.79	2.64	2.84	2.45	3.59	3.14
Magnesium	3.54	3.29	3.29	3.04	2.96	2.47	2.63	2.39	1.65	1.73	1.81	1.81	1.23	1.23
Potassium	0.08	0.07	0.07	0.08	0.06	0.05	0.05	0.07	0.03	0.03	0.03	0.04	0.07	0.10
Sodium	1.22	1.17	1.22	1.13	0.61	0.43	0.70	0.74	0.13	0.14	0.14	0.18	1.09	0.78
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	9.77	8.83	9.12	8.29	7.62	6.10	6.88	6.24	4.60	4.54	4.83	4.48	5.98	5.26
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	3.52	3.66	3.66	3.68	3.66	3.74	3.68	3.74	3.96	3.82	3.90	3.60	4.06	4.06
Chloride	0.82	0.76	0.59	0.84	0.05	0.82	0.40	0.45	0.25	0.28	0.25	0.28	1.75	3.07
Fluoride	0.04	0.04	0.04	0.04	0.04	0.03	0.04	0.04	0.01	0.01	0.01	0.01	0.01	0.00
Nitrate Nitrogen	0.00	0.02	0.01	0.01	0.00	0.10	0.00	0.00	0.30	0.34	0.29	0.23	0.04	0.06
Sulfate	5.52	4.87	3.98	5.94	0.37	5.60	2.60	2.23	0.48	0.44	0.47	0.46	0.16	0.14
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	9.89	9.35	8.28	10.51	4.12	10.29	6.72	6.46	4.99	4.89	4.91	4.58	6.01	7.33
CHARGE BALANCE (%)	-1	-3	5	-12	30	-26	1	-2	-4	-4	-1	-1	-0	-16
TDS (mg/L)	642	596	652	568	502	424	476	438	276	264	274	256	376	298
TSS (mg/L)	4	2	<1	1	4	4	5	4	6	20	<1	12	1	6
Turbidity (NTU)	11	7	4.3	12	7.7	18	24	15	3.8	54	3.8	18	3	3

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APPENDIX G

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Ion-Charge Balance Calculations, 1993

Sampling Point Location Date Sampled	GW-715		GW-723				GW-724				GW-725			
	EXP		EXP				EXP				EXP			
	08/01/93	11/11/93	02/12/93	05/18/93	09/27/93	12/14/93	02/10/93	05/18/93	09/29/93	12/14/93	02/12/93	05/19/93	09/28/93	12/15/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	3.69	3.69	3.89	2.50	2.59	2.45	4.94	4.89	4.99	4.99	8.48	8.48	8.48	8.48
Magnesium	1.40	1.48	2.14	2.14	2.55	2.55	3.37	3.29	3.45	3.54	2.22	2.47	2.14	2.22
Potassium	0.06	0.04	0.07	0.06	0.07	0.08	0.05	0.04	0.05	0.07	0.07	0.06	0.08	0.09
Sodium	0.74	0.83	0.29	0.27	0.36	0.38	0.91	0.83	0.96	0.91	0.74	0.70	0.96	0.91
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	5.89	6.04	6.40	4.96	5.57	5.45	9.28	9.05	9.46	9.51	11.52	11.71	11.66	11.71
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	4.48	4.72	4.46	3.94	3.92	3.80	4.02	4.26	4.06	4.06	5.84	5.68	5.78	6.06
Chloride	1.44	1.29	0.31	0.21	0.26	0.28	1.35	1.35	1.52	1.27	2.20	1.41	1.47	1.47
Fluoride	0.00	0.00	0.02	0.02	0.03	0.03	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Nitrate Nitrogen	0.08	0.05	1.43	0.46	0.69	0.76	4.43	2.64	3.58	3.31	4.36	3.93	3.56	3.30
Sulfate	0.17	0.13	0.58	0.63	0.70	0.69	0.54	0.48	0.48	0.44	1.23	0.71	0.79	0.65
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	6.17	6.18	6.79	5.26	5.58	5.55	10.35	8.74	9.65	9.09	13.63	11.72	11.60	11.47
CHARGE BALANCE (%)	-2	-1	-3	-3	-0	-1	-5	2	-1	2	-8	-0	0	1
TDS (mg/L)	334	354	358	298	280	304	546	604	494	556	722	760	576	764
TSS (mg/L)	6	1	89	9	<1	6	3	2	<1	3	4	1	<1	1
Turbidity (NTU)	9.9	54	80	14	36	9.2	7.8	9.1	7	16	10	2	0.8	1.5

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

22

Sampling Point Location Date Sampled	GW-736				GW-737				GW-738				GW-739	
	EXP				EXP				EXP				EXP	
	02/11/93	05/18/93	09/28/93	12/15/93	02/11/93	05/19/93	09/28/93	12/15/93	02/10/93	05/18/93	09/27/93	12/14/93	02/10/93	05/18/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	8.98	8.98	8.48	9.48	8.48	8.98	8.98	8.48	5.99	5.49	6.49	6.49	2.99	2.84
Magnesium	1.89	1.81	2.39	2.06	1.89	1.89	2.06	2.06	2.06	1.89	2.22	2.22	2.22	2.06
Potassium	0.08	0.08	0.08	0.09	0.08	0.08	0.08	0.09	0.05	0.04	0.05	0.06	0.03	0.03
Sodium	0.96	0.87	0.87	1.04	1.04	0.87	1.00	0.96	0.30	0.24	0.36	0.38	0.08	0.08
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	11.91	11.74	11.82	12.67	11.50	11.82	12.12	11.58	8.39	7.67	9.12	9.15	5.33	5.01
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	6.23	6.25	6.33	6.31	6.23	6.37	6.13	6.19	5.58	5.66	5.84	5.72	4.44	4.38
Chloride	1.38	1.41	1.83	1.55	1.47	1.44	1.52	1.50	0.39	0.42	0.96	0.56	0.15	0.14
Fluoride	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01
Nitrate Nitrogen	4.36	3.00	3.13	3.03	4.07	2.64	3.56	3.16	1.57	1.07	2.88	1.77	0.53	0.30
Sulfate	0.83	0.79	0.83	0.67	0.83	0.85	0.79	0.62	0.62	0.56	0.56	0.52	0.37	0.26
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	12.82	11.47	12.14	11.57	12.62	11.31	12.02	11.48	8.17	7.71	10.24	8.57	5.50	5.09
CHARGE BALANCE (%)	-4	1	-1	5	-5	2	0	0	1	-0	-6	3	-2	-1
TDS (mg/L)	710	700	696	740	712	760	694	726	492	440	478	496	312	292
TSS (mg/L)	1	<1	<1	<1	1	<1	<1	<1	3	3	<1	4	16	3
Turbidity (NTU)	0.7	1.4	0.9	0.6	1	1.1	1.4	0.8	3.9	4.9	7.9	3.2	22	3

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APPENDIX G

23

Ion-Charge Balance Calculations, 1993

Sampling Point	GW-739		GW-740				GW-793				GW-794			
Location	EXP		EXP				AGLLSF				AGLLSF			
Date Sampled	09/27/93	12/13/93	02/09/93	05/17/93	09/27/93	12/11/93	02/26/93	05/25/93	07/11/93	10/18/93	03/01/93	05/25/93	07/11/93	10/18/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	3.14	3.39	3.04	2.99	3.34	3.39	2.94	2.40	2.45	2.64	4.84	4.24	3.29	4.34
Magnesium	2.39	2.47	2.39	2.30	2.63	2.63	0.39	0.35	0.35	0.38	0.53	0.54	0.99	0.63
Potassium	0.03	0.04	0.02	0.03	0.04	0.05	0.00	0.02	0.02	0.03	0.05	0.04	0.08	0.07
Sodium	0.11	0.11	0.06	0.07	0.09	0.10	0.16	0.15	0.14	0.15	0.14	0.13	0.08	0.13
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	5.67	6.02	5.51	5.40	6.10	6.17	3.49	2.92	2.96	3.20	5.57	4.96	4.44	5.18
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	4.70	4.72	4.74	4.84	5.22	5.06	3.00	3.00	3.08	3.28	4.44	4.18	4.44	4.58
Chloride	0.18	0.21	0.16	0.17	0.20	0.23	0.00	0.00	0.00	0.03	0.27	0.32	0.32	0.33
Fluoride	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.00
Nitrate Nitrogen	0.61	0.63	0.25	0.24	0.34	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03
Sulfate	0.26	0.28	0.35	0.26	0.28	0.25	0.12	0.10	0.11	0.08	0.81	0.42	0.49	0.40
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	5.76	5.84	5.51	5.51	6.04	5.89	3.13	3.10	3.20	3.39	5.53	4.93	5.27	5.34
CHARGE BALANCE (%)	-1	2	-0	-1	0	2	5	-3	-4	-3	0	0	-9	-2
TDS (mg/L)	280	314	306	292	302	324	198	188	186	192	372	296	298	300
TSS (mg/L)	1	5	3	<1	<1	<1	5	1	16	5	224	15	11	10
Turbidity (NTU)	3.7	6.7	3.4	2.3	2.3	1.2	2.8	1.1	7	2.5	110	16	15	13

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

Sampling Point . Location . Date Sampled	GW-795				GW-800		
	AGLLSF				OLF		
	03/02/93	05/25/93	07/12/93	10/18/93	05/11/93	09/14/93	10/22/93
CATIONS (meq/L)	.	.	.	.	.	.	.
	.	.	.	.	.	.	.
Calcium	4.44	3.94	4.09	4.74	2.35	3.54	2.89
Magnesium	0.29	0.26	0.29	0.37	1.40	2.55	1.89
Potassium	0.02	0.02	0.03	0.03	0.05	0.09	0.07
Sodium	0.10	0.10	0.09	0.13	0.04	0.05	0.04
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00
.	.	.	.	.	.	.	.
Total Cations	4.84	4.32	4.49	5.27	3.83	6.23	4.89
	.	.	.	.	.	.	.
ANIONS (meq/L)	.	.	.	.	.	.	.
	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	3.56	3.90	4.08	4.30	3.66	5.52	4.96
Chloride	0.14	0.13	0.12	0.19	0.04	0.07	0.06
Fluoride	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Nitrate Nitrogen	0.00	0.00	0.00	0.37	0.00	0.00	0.00
Sulfate	0.42	0.46	0.44	0.44	0.27	0.44	0.33
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00
.	.	.	.	.	.	.	.
Total Anions	4.12	4.49	4.63	5.29	3.97	6.03	5.35
	.	.	.	.	.	.	.
CHARGE BALANCE (%)	8	-2	-2	-0	-2	2	-4
	.	.	.	.	.	.	.
TDS (mg/L)	266	262	268	302	180	334	284
TSS (mg/L)	<1	<1	<1	<1	<1	66	8
Turbidity (NTU)	1.1	1.1	1.8	1	1.1	66	25

APPENDIX G
Ion-Charge Balance Calculations, 1993

Sampling Point Location Date Sampled	BCK-00.63				BCK-04.55				BCK-09.40			NT-01		
	EXP				EXP				EXP			EXP		
	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	11/08/93	03/09/93	05/03/93	08/16/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	1.55	1.55	2.84	2.89	1.55	1.60	2.64	2.89	2.69	2.84	1.45	6.99	8.98	16.47
Magnesium	0.69	0.78	1.23	1.15	0.73	0.81	1.40	1.23	0.82	0.90	1.23	1.56	1.48	4.03
Potassium	0.03	0.03	0.04	0.05	0.03	0.03	0.04	0.05	0.04	0.05	0.02	0.05	0.08	0.15
Sodium	0.14	0.14	0.29	0.35	0.14	0.14	0.27	0.37	0.34	0.37	0.03	0.70	0.61	2.17
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	2.41	2.50	4.40	4.44	2.44	2.58	4.36	4.55	3.90	4.16	2.73	9.30	11.15	22.82
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	1.90	2.22	3.38	3.26	2.04	2.36	3.30	3.28	2.44	2.92	2.60	2.00	6.55	4.10
Chloride	0.14	0.14	0.31	0.37	0.14	0.15	0.34	0.39	0.34	0.42	0.03	0.28	1.24	1.17
Fluoride	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.04	0.01	0.08
Nitrate Nitrogen	0.14	0.16	0.36	0.71	0.16	0.19	0.45	0.74	0.79	0.93	0.00	8.00	2.21	20.43
Sulfate	0.27	0.21	0.26	0.42	0.27	0.23	0.27	0.40	0.44	0.37	0.10	0.48	1.23	1.39
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	2.45	2.73	4.32	4.76	2.62	2.92	4.36	4.82	4.01	4.66	2.74	10.80	11.24	27.17
CHARGE BALANCE (%)	-1	-4	1	-3	-3	-6	-0	-3	-1	-6	-0	-7	-0	-9
TDS (mg/L)	130	176	258	384	136	162	264	376	230	288	254	772	772	1746
TSS (mg/L)	2	2	4	<1	2	1	1	<1	2	1	4	5	7	4
Turbidity (NTU)	4	3.2	2.5	3	3.4	3	2.3	2.9	2.8	3	4.1	7.1	1.3	2.2

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

26

Sampling Point	NT-01	NT-13				SS-1				SS-4				SS-5
Location	EXP	EXP				EXP				EXP				EXP
Date Sampled	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calcium	12.97	0.32	0.39	1.65	1.00	8.48	9.48	10.98	10.98	3.54	3.69	5.99	6.99	1.95
Magnesium	3.04	0.12	0.14	0.35	0.28	1.23	2.30	1.73	1.65	1.48	1.56	1.89	1.89	1.07
Potassium	0.13	0.03	0.03	0.03	0.04	0.08	0.08	0.10	0.11	0.05	0.06	0.09	0.08	0.02
Sodium	1.74	0.08	0.09	0.33	0.18	0.57	0.96	1.04	1.13	0.48	0.52	1.09	0.96	0.14
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	17.89	0.54	0.65	2.36	1.50	10.36	12.82	13.85	13.86	5.56	5.84	9.06	9.92	3.18
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	4.90	0.34	0.52	2.38	0.32	6.47	2.52	7.07	7.21	3.84	4.06	4.54	4.74	2.54
Chloride	0.82	0.05	0.05	0.03	0.06	1.13	0.39	2.17	2.26	0.45	0.59	1.01	0.87	0.15
Fluoride	0.07	0.00	0.00	0.00	0.00	0.01	0.04	0.01	0.02	0.02	0.02	0.02	0.03	0.00
Nitrate Nitrogen	18.49	0.00	0.00	0.00	0.00	2.21	10.14	3.16	3.92	0.66	1.07	2.95	4.83	0.18
Sulfate	1.54	0.25	0.21	0.10	1.19	1.12	0.40	1.18	1.19	0.44	0.48	0.65	0.94	0.27
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	25.82	0.64	0.77	2.50	1.56	10.95	13.49	13.60	14.59	5.41	6.22	9.17	11.41	3.14
CHARGE BALANCE (%)	-18	-8	-9	-3	-2	-3	-3	1	-3	1	-3	-1	-7	1
TDS (mg/L)	1382	40	52	166	230	670	1052	942	1070	306	334	616	788	166
TSS (mg/L)	8	4	3	1	38	<1	9	5	10	10	6	10	41	3
Turbidity (NTU)	3.3	6.9	8.4	6.7	44	0.8	3	1.3	1.6	2.5	2.4	2.7	2	3

(CONTINUED)

APPENDIX G
Ion-Charge Balance Calculations, 1993

Sampling Point . Location . Date Sampled	SS-5			SS-6				SS-8			
	EXP			EXP				EXP			
	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93	03/09/93	05/03/93	08/16/93	11/08/93
CATIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.
Calcium	2.00	4.04	4.29	1.15	1.00	1.70	4.99	1.25	1.35	2.30	1.95
Magnesium	1.07	1.56	1.40	0.90	0.99	1.48	1.40	0.72	0.74	1.32	0.99
Potassium	0.03	0.05	0.06	0.02	0.02	0.02	0.08	0.00	0.02	0.02	0.03
Sodium	0.19	0.61	0.61	0.03	0.02	0.03	0.74	0.08	0.07	0.12	0.16
Hydrogen Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cations	3.28	6.26	6.36	2.10	2.02	3.23	7.20	2.05	2.18	3.75	3.13
ANIONS (meq/L)	.	.	.	.	.	.	.	.	.	.	.
Alkalinity-CO3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity-HCO3	2.76	4.08	3.84	1.80	2.18	3.00	3.94	1.94	2.20	3.22	2.88
Chloride	0.19	0.67	0.62	0.05	0.04	0.00	0.71	0.11	0.08	0.08	0.17
Fluoride	0.01	0.01	0.02	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.01
Nitrate Nitrogen	0.32	1.09	1.77	0.00	0.00	0.00	2.70	0.03	0.02	0.09	0.02
Sulfate	0.25	0.47	0.60	0.19	0.14	0.05	0.60	0.17	0.13	0.05	0.15
Hydroxyl Ion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Anions	3.53	6.32	6.85	2.04	2.36	3.05	7.97	2.24	2.44	3.44	3.22
CHARGE BALANCE (%)	-4	-0	-4	2	-8	3	-5	-4	-6	4	-1
TDS (mg/L)	194	380	494	94	104	172	580	194	120	184	280
TSS (mg/L)	<1	<1	5	<1	3	2	3	1	3	4	<1
Turbidity (NTU)	2.1	2.2	4	1.9	2	2.3	2.4	2.1	2.2	2.4	3.5

APPENDIX H
TRACE METAL DATA SUMMARY

EXPLANATION

SAMPLING POINT:

BCK - Bear Creek Kilometer
GW - Monitoring Well
NT - North Tributary to Bear Creek
SS - Spring

LOCATION:

AGLLSF - Above Grade Low Level Storage Facility
BG - Bear Creek Burial Grounds WMA
EXP - Exit-Pathway Monitoring
OLF - Oil Landfarm WMA
RS - Rust Spoil Area
S3 - S-3 Site
SPI - Spoil Area I

NOTES:

mg/L - milligrams per Liter
- Concentration less than the Maximum Contaminant Level (MCL)
TOT - Total Concentration (Unfiltered Sample)
DIS - Dissolved Concentration (Filtered Sample)
TSS - Total Suspended Solids

MCLs:

<u>Metal</u>	<u>Maximum Contaminant Level (mg/L)</u>
Barium (ICP)	2.0
Cadmium (AAS)	0.005
Chromium (AAS)	0.10
Lead (AAS)	0.05
Mercury (CVAA)	0.002

Because of inherent analytical interferences, ICP results for arsenic, selenium, and silver were not evaluated with respect to MCLs. Historical AAS results for these metals have shown only isolated and sporadic occurrences where concentrations exceeded MCLs.

EXPLANATION (cont'd)

SCREENING LEVELS:

<u>Metal (ICP)</u>	<u>Screening Level (mg/L)</u>
Aluminum	8.3
Beryllium	0.0066
Boron	1.1
Cobalt	0.012
Copper	0.44
Iron	13.91
Manganese	2.4
Molybdenum	0.023
Nickel	0.18
Strontium	0.88
Thorium	<0.2
Uranium	0.01
Vanadium	0.064
Zinc	0.14

Values represent the maximum total concentration (in mg/L) that would be expected in uncontaminated, unfiltered groundwater samples collected from monitoring wells located upgradient from waste-management sites at the Y-12 Plant.

APPENDIX H.1

**TRACE METAL CONCENTRATIONS THAT EXCEED
MAXIMUM CONTAMINANT LEVELS**

Trace Metal Concentrations That Exceed Maximum Contaminant Levels, 1993

Sampling Point . Location . Date Sampled	GW-040				GW-042		GW-043		GW-052		GW-056		GW-345	
	BG				BG		OLF		BG		BG		S3	
	03/25/93		10/09/93		12/29/93		09/11/93		04/26/93		04/22/93		10/26/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Barium	.	.	.	.	.	.	.	.	.	.	.	.	13	13
Cadmium (AAS)	.	.	0.031	0.0041	0.066	0.077	0.0078	0.0069	0.033	0.0022	.	.	.	.
Chromium (AAS)	0.22	<0.01	0.12	<0.01	.	.	.	.	.	.	0.23	<0.01	.	.
Lead (AAS)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Mercury (CVAA)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	726	.	78	.	<1	.	5	.	153	.	19	.	12	.
Turbidity (NTU)	1000	.	120	.	1.4	.	15	.	105	.	18	.	7.2	.

(CONTINUED)

Sampling Point . Location . Date Sampled	GW-526						GW-537							
	S3						OLF							
	02/03/93		06/03/93		09/14/93		09/14/93		02/11/93		05/12/93		10/22/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Barium	11	10	11	10	11	11	2.3	2.3	2.3	2.2	2.5	2.5	2.4	2.3
Cadmium (AAS)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Chromium (AAS)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lead (AAS)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Mercury (CVAA)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	14	.	9	.	8	.	4	.	4	.	5	.	5	.
Turbidity (NTU)	6.3	.	7.4	.	12	.	1.6	.	1.9	.	1.1	.	1.9	.

(CONTINUED)

APPENDIX H.1

2

Trace Metal Concentrations That Exceed Maximum Contaminant Levels, 1993

Sampling Point . Location . Date Sampled	GW-621				GW-642		GW-647		SS-1		NT-01			
	BG				BG		OLF		EXP		EXP			
	06/02/93		09/20/93		10/10/93		12/10/93		05/03/93		03/09/93		08/16/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Barium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cadmium (AAS)	.	.	.	.	.	.	0.0074	<0.002	0.024	0.022	0.017	0.014	0.017	0.013
Chromium (AAS)	0.22	0.036	0.18	<0.01	0.29	<0.01	.	.	.	.	.	.	.	.
Lead (AAS)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Mercury (CVAA)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	23	.	37	.	540	.	1	.	9	.	5	.	4	.
Turbidity (NTU)	34	.	35	.	60	.	1.6	.	3	.	7.1	.	2.2	.

(CONTINUED)

Sampling Point . Location . Date Sampled	NT-01	
	EXP	
	11/08/93	
	TOT	DIS
Barium	.	.
Cadmium (AAS)	0.024	0.022
Chromium (AAS)	.	.
Lead (AAS)	.	.
Mercury (CVAA)	.	.
.	.	.
TSS (mg/L)	8	.
Turbidity (NTU)	3.3	.

APPENDIX H.2

TRACE METAL CONCENTRATIONS THAT EXCEED SCREENING LEVELS

APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

1

Sampling Point Location Date Sampled	GW-040								GW-052				GW-056	
	BG								BG				BG	
	03/25/93		05/11/93		07/02/93		10/09/93		03/25/93		04/26/93		04/22/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Aluminum	23	0.027	15	0.054	11	0.025	13	0.27	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cobalt	0.018	<0.005	.	.	.	.	0.015	0.0065	.	.	.	.	.	.
Iron	33	0.15	16	0.14	19	0.14	22	0.54	.	.	.	.	.	.
Manganese	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Molybdenum	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Nickel	.	.	.	.	.	.	.	.	.	.	.	.	0.22	0.2
Strontium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Thorium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Uranium	.	.	.	.	.	.	.	.	0.042	0.043	0.064	0.046	.	.
Vanadium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Zinc	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	726	.	422	.	159	.	78	.	17	.	153	.	19	.
Turbidity (NTU)	1000	.	300	.	180	.	120	.	8.5	.	105	.	18	.

(CONTINUED)

APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

2

Sampling Point . Location . Date Sampled	GW-069						GW-085						GW-086	
	BG						OLF						OLF	
	03/03/93		07/25/93		10/10/93		05/12/93		09/14/93		10/22/93		02/05/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Aluminum	.	.	.	.	.	.	.	.	.	.	.	.	16	0.12
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cobalt	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Iron	.	.	.	.	.	.	.	.	.	.	.	.	16	0.1
Manganese	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Molybdenum	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Nickel	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	0.94	0.92	0.91	0.9	0.99	0.93	0.94	0.9	0.97	0.97	0.95	0.96	.	.
Thorium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Uranium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vanadium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Zinc	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	<1	.	<1	.	<1	.	8	.	1	.	3	.	511	.
Turbidity (NTU)	0.5	.	1.2	.	0.4	.	3	.	1.8	.	0.7	.	320	.

(CONTINUED)

APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

3

Sampling Point Location Date Sampled	GW-086						GW-118							
	OLF						BG							
	05/11/93		09/12/93		10/21/93		03/04/93		04/21/93		07/25/93		10/10/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Aluminum	9.4	0.06	22	<0.02	22	0.022	.	.	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cobalt	.	.	0.019	<0.005	0.026	<0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.025	<0.025
Iron	.	.	28	<0.005	32	<0.005	.	.	19	<0.05	14	<0.05	25	0.046
Manganese	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Molybdenum	.	.	.	.	.	.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	0.054
Nickel	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	.	.	.	.	.	.	0.93	1.1	1.6	1.7	.	.	.	.
Thorium	.	.	.	.	.	.	<2	<2	<2	<2	<2	<2	<1	<1
Uranium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vanadium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Zinc	.	.	0.16	0.094	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	1050	.	812	.	1318	.	24	.	54	.	28	.	8	.
Turbidity (NTU)	480	.	360	.	620	.	10	.	6	.	17	.	1	.

(CONTINUED)

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APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

Sampling Point Location Date Sampled	GW-162		GW-325		GW-345		GW-364		GW-371					
	BG		S3		S3		OLF		BG					
	10/10/93		10/21/93		10/26/93		09/19/93		02/16/93		05/21/93		07/09/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Aluminum	.	.	44	0.042	.	.	12	0.035	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cobalt	.	.	0.021	<0.005	<0.05	<0.05	.	.	.	.	.	.	.	.
Iron	15	0.0086	46	0.016	15	<0.05	.	.	.	.	.	.	.	.
Manganese	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Molybdenum	.	.	.	.	<0.1	<0.1	.	.	.	.	.	.	.	.
Nickel	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	.	.	.	.	16	15	.	.	1.4	1.4	1.6	1.5	1.5	1.5
Thorium	.	.	.	.	<2	<2	.	.	.	.	.	.	.	.
Uranium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vanadium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Zinc	.	.	.	.	.	.	0.19	0.069	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	6	.	57	.	12	.	241	.	9	.	4	.	13	.
Turbidity (NTU)	20	.	800	.	7.2	.	320	.	4.9	.	120	.	2.7	.

(CONTINUED)

APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

Sampling Point Location Date Sampled	GW-371		GW-372		GW-526						GW-537			
	BG		BG		S3						OLF			
	10/13/93		10/12/93		02/03/93		06/03/93		09/14/93		02/11/93		05/12/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Aluminum	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cobalt	.	.	.	.	<0.05	<0.05	<0.05	<0.05	.	.	<0.05	<0.05	<0.05	<0.05
Iron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Manganese	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Molybdenum	.	.	.	.	<0.1	<0.1	<0.1	<0.1	.	.	<0.1	<0.1	<0.1	<0.1
Nickel	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	1.4	1.4	.	.	13	12	13	13	14	14	2.9	2.5	3	3
Thorium	.	.	.	.	<2	<2	<2	<2	<0.4	<0.4	<2	<2	<2	<2
Uranium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vanadium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Zinc	.	.	1.6	0.0064	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	<1	.	4	.	14	.	9	.	8	.	4	.	5	.
Turbidity (NTU)	4.7	.	16	.	6.3	.	7.4	.	12	.	1.9	.	1.1	.

(CONTINUED)

APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

6

Sampling Point . Location . Date Sampled	GW-537				GW-601								GW-638	
	OLF				OLF								OLF	
	09/14/93		10/22/93		03/28/93		06/27/93		09/19/93		12/21/94		06/26/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Aluminum	.	.	.	.	.	.	.	.	.	.	.	.	28	0.038
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cobalt	<0.025	<0.025	<0.025	<0.025	.	.	.	.	.	.	.	.	0.018	<0.005
Iron	.	.	.	.	.	.	.	.	.	.	.	.	49	0.015
Manganese	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Molybdenum	<0.05	<0.05	<0.05	<0.05	.	.	.	.	.	.	.	.	.	.
Nickel	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	2.6	2.6	2.7	2.7	1.5	1.5	1.6	1.6	1.8	1.9	1.7	1.7	.	.
Thorium	<1	<1	<1	<1	.	.	.	.	.	.	.	.	.	.
Uranium	.	.	.	.	.	.	.	.	.	.	.	.	0.016	0.015
Vanadium	.	.	.	.	.	.	.	.	.	.	.	.	0.071	<0.005
Zinc	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	4	.	5	.	1	.	13	.	<1	.	<1	.	5405	.
Turbidity (NTU)	1.6	.	1.9	.	0.8	.	0.5	.	0.5	.	0.7	.	3100	.

(CONTINUED)

APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

Sampling Point Location Date Sampled	GW-638				GW-642		GW-644		GW-647					
	OLF				BG		OLF		OLF					
	09/17/93		12/18/93		10/10/93		09/17/93		02/08/93		05/17/93		09/25/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Aluminum	.	.	.	.	13	0.13	17	<0.02	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cobalt	.	.	.	.	0.023	<0.005	.	.	.	.	.	.	.	.
Iron	.	.	.	.	93	2.1	23	0.0077	.	.	.	.	.	.
Manganese	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Molybdenum	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Nickel	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	.	.	.	.	.	.	.	.	1.2	1.1	1.1	1.2	1.2	1.2
Thorium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Uranium	0.018	0.018	0.015	0.01	.	.	.	.	.	.	.	.	.	.
Vanadium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Zinc	0.16	0.11	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	91	.	31	.	540	.	53	.	16	.	<1	.	1	.
Turbidity (NTU)	370	.	37	.	60	.	19	.	9.3	.	1	.	5	.

(CONTINUED)

APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

Sampling Point Location Date Sampled	GW-647		GW-651		GW-653		GW-655		GW-683					
	OLF		BG		BG		BG		EXP					
	12/10/93		10/10/93		10/10/93		05/10/93		03/04/93		04/23/93		07/12/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Aluminum	.	.	8.5	0.044	.	.	16	<0.02	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cobalt	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Iron	.	.	.	.	.	.	30	0.32	.	.	.	.	.	.
Manganese	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Molybdenum	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Nickel	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	1.2	1.1	.	.	.	.	.	.	.	.	.	.	.	.
Thorium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Uranium	.	.	.	.	0.011	0.005	.	.	0.022	0.022	0.013	0.014	0.061	0.048
Vanadium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Zinc	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	1	.	4	.	158	.	624	.	2	.	1	.	<1	.
Turbidity (NTU)	1.6	.	5.6	.	42	.	180	.	2	.	1.3	.	0.9	.

(CONTINUED)

APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

Sampling Point . Location . Date Sampled	GW-683		GW-684								GW-694			
	EXP		EXP								EXP			
	10/12/93		03/03/93		04/22/93		07/11/93		10/12/93		03/23/93		06/06/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Aluminum	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cobalt	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Iron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Manganese	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Molybdenum	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Nickel	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Thorium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Uranium	0.11	0.109	0.026	0.025	0.019	0.019	0.062	0.066	0.114	0.075	0.115	0.111	0.121	0.015
Vanadium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Zinc	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	2	.	<1	.	<1	.	<1	.	3	.	3	.	3	.
Turbidity (NTU)	2.5	.	3.9	.	1.5	.	1	.	4.5	.	2.7	.	5.4	.

(CONTINUED)

APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

Sampling Point . Location . Date Sampled	GW-694				GW-704				GW-706				GW-710	
	EXP				EXP				EXP				EXP	
	09/22/93		12/28/93		06/04/93		09/22/93		06/11/93		12/28/93		03/21/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Aluminum	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cobalt	.	.	.	.	.	.	.	.	.	.	.	.	<0.05	<0.05
Iron	.	.	.	.	23	0.045	14	0.26	.	.	.	.	.	.
Manganese	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Molybdenum	.	.	.	.	.	.	.	.	.	.	.	.	<0.1	<0.1
Nickel	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	.	.	.	.	.	.	.	.	.	.	.	.	9.7	9.7
Thorium	.	.	.	.	.	.	.	.	.	.	.	.	<2	<2
Uranium	0.198	0.194	0.3	0.31	.	.	.	.	0.137	0.158	0.23	0.27	.	.
Vanadium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Zinc	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	1	.	2	.	52	.	24	.	1	.	<1	.	12	.
Turbidity (NTU)	2	.	2.7	.	125	.	38	.	2	.	3.9	.	20	.

(CONTINUED)

APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

Sampling Point . Location . Date Sampled	GW-710						GW-711							
	EXP						EXP							
	04/30/93		08/01/93		11/09/93		03/20/93		04/29/93		07/30/93		11/07/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Aluminum	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	1.3	1.2	.	.	1.2	1.2	1.2	1.2
Cobalt	<0.025	<0.025	.	.	.	.	<0.05	<0.05	<0.025	<0.05	<0.05	<0.05	.	.
Iron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Manganese	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Molybdenum	<0.05	<0.05	.	.	.	.	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	.	.
Nickel	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	8.4	8.2	8.6	8.4	8.3	8.2	15	15	13	13	14	14	13	13
Thorium	<1	<1	<0.4	<0.4	<0.4	<0.4	<2	<2	<1	<2	<2	<2	<0.4	<0.4
Uranium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vanadium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Zinc	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	2	.	7	.	9	.	23	.	23	.	15	.	14	.
Turbidity (NTU)	27	.	11	.	5	.	21	.	38	.	15	.	32	.

(CONTINUED)

APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

Sampling Point . Location . Date Sampled	GW-712								GW-713					
	EXP								EXP					
	03/18/93		04/28/93		07/29/93		11/06/93		03/19/93		04/30/93		07/31/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Aluminum	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cobalt	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Iron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Manganese	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Molybdenum	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Nickel	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	2.3	2.5	2.3	2.2	2.3	2.3	2.1	2.1	1.8	1.8	1.3	1.2	1.8	1.8
Thorium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Uranium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vanadium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Zinc	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	4	.	2	.	<1	.	1	.	4	.	4	.	5	.
Turbidity (NTU)	11	.	7	.	4.3	.	12	.	7.7	.	18	.	24	.

(CONTINUED)

APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

Sampling Point Location Date Sampled	GW-713		GW-723								GW-724			
	EXP		EXP								EXP			
	11/09/93		02/12/93		05/18/93		09/27/93		12/14/93		02/10/93		05/18/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Aluminum	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cobalt	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Iron	.	.	42	<0.005	.	.	16	<0.005	.	.	.	.	.	.
Manganese	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Molybdenum	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Nickel	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	1.9	1.8	.	.	1.2	1.2	1.6	1.6	1.5	1.5	1.2	1.2	1.2	1.2
Thorium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Uranium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vanadium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Zinc	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	4	.	89	.	9	.	<1	.	6	.	3	.	2	.
Turbidity (NTU)	15	.	80	.	14	.	36	.	9.2	.	7.8	.	9.1	.

(CONTINUED)

APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

Sampling Point . Location . Date Sampled	GW-724				GW-794	
	EXP				AGLLSF	
	09/29/93		12/14/93		03/01/93	
	TOT	DIS	TOT	DIS	TOT	DIS
Aluminum	.	.	.	.	9.6	0.022
Beryllium	.	.	.	.	.	.
Boron	.	.	.	.	.	.
Cobalt	.	.	.	.	<0.05	<0.005
Iron	.	.	.	.	17	0.0093
Manganese	.	.	.	.	.	.
Molybdenum	.	.	.	.	<0.1	<0.01
Nickel	.	.	.	.	.	.
Strontium	1.3	1.3	1.2	1.2	.	.
Thorium	.	.	.	.	<2	<0.2
Uranium	.	.	.	.	.	.
Vanadium	.	.	.	.	.	.
Zinc	.	.	.	.	.	.
.	.	.	.	.	.	.
TSS (mg/L)	<1	.	3	.	224	.
Turbidity (NTU)	7	.	16	.	110	.

APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

Sampling Point . Location . Date Sampled	BCK-00.63								BCK-04.55					
	EXP								EXP					
	03/09/93		05/03/93		08/16/93		11/08/93		03/09/93		05/03/93		08/16/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Uranium	0.015	0.019	0.018	0.017	0.032	0.033	0.03	0.03	0.019	0.02	0.021	0.02	0.03	0.026
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	2	.	2	.	4	.	<1	.	2	.	1	.	1	.
Turbidity (NTU)	4	.	3.2	.	2.5	.	3	.	3.4	.	3	.	2.3	.

(CONTINUED)

Sampling Point . Location . Date Sampled	BCK-04.55		BCK-09.40						NT-01					
	EXP		EXP						EXP					
	11/08/93		03/09/93		05/03/93		08/16/93		03/09/93		05/03/93		08/16/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Beryllium	0.0072	0.00069	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	.	.	.	.	.	.	.	.	.	.	.	.	1	1
Uranium	0.045	0.046	0.074	0.073	0.087	0.08	0.129	.	0.012	0.013	0.031	0.035	0.18	0.113
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	<1	.	2	.	1	.	2	.	5	.	7	.	4	.
Turbidity (NTU)	2.9	.	2.8	.	3	.	2.6	.	7.1	.	1.3	.	2.2	.

(CONTINUED)

APPENDIX H.2
Trace Metal Concentrations That Exceed
Screening Levels, 1993

16

Sampling Point . Location . Date Sampled	NT-01		SS-1								SS-4			
	EXP		EXP								EXP			
	11/08/93		03/09/93		05/03/93		08/16/93		11/08/93		03/09/93		05/03/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	0.92	0.89	.	.	.	.	.	.	.	.	.	.	.	.
Uranium	0.185	0.207	0.031	0.034	0.016	0.019	0.045	0.056	0.04	0.04	0.084	0.087	0.112	0.107
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	8	.	<1	.	9	.	5	.	10	.	10	.	6	.
Turbidity (NTU)	3.3	.	0.8	.	3	.	1.3	.	1.6	.	2.5	.	2.4	.

(CONTINUED)

Sampling Point . Location . Date Sampled	SS-4				SS-5								SS-6	
	EXP				EXP								EXP	
	08/16/93		11/08/93		03/09/93		05/03/93		08/16/93		11/08/93		11/08/93	
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
Beryllium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Strontium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Uranium	0.181	0.177	0.24	0.12	0.018	0.019	0.025	0.026	0.098	0.078	0.1	0.11	0.15	0.17
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TSS (mg/L)	10	.	41	.	3	.	<1	.	<1	.	5	.	3	.
Turbidity (NTU)	2.7	.	2	.	3	.	2.1	.	2.2	.	4	.	2.4	.

APPENDIX I
QA/QC DATA SUMMARIES

EXPLANATION

SAMPLING POINT:

BCK - Bear Creek Kilometer
GW - Monitoring Well
NT - North Tributary to Bear Creek
SS - Spring

LOCATION:

AGLLSF - Above Grade Low Level Storage Facility
BG - Bear Creek Burial Grounds WMA
EXP - Exit-Pathway Monitoring
OLF - Oil Landfarm WMA
RS - Rust Spoil Area
S3 - S-3 Site
SPI - Spoil Area I

NOTES:

- Not analyzed
U - Compound not detected at the reported minimum attainable detection limit.
B - Well was bailed
W - Well Wizard (Dedicated sampling equipment)
NA - Not Applicable

UNITS:

µg/L - micrograms per liter
mg/L - milligrams per liter
pCi/L - picoCuries per liter
Bq/L - Becquerels per liter
CE +/- - Counting Error (two standard deviations)

APPENDIX L1

**CORRELATION OF GROUNDWATER AND SURFACE-WATER SAMPLES TO
ASSOCIATED BLANKS**

APPENDIX I.1
Correlation of Samples to Associated Blanks

Sampling Pt.	Location	Pump No.	Date	Sample No.	Trip Blank No.	Lab Blank No.
First Quarter 1993						
GW-013	OLF	W	03/29/93	930329-084	930329-086	930330-003
GW-040	BG	B	03/25/93	930326-017	930326-021	930331-039
GW-043	OLF	W	02/04/93	930204-293	930204-297	930205-035
GW-044	OLF	W	02/04/93	930204-291	930204-297	930205-035
GW-052	BG	B	03/25/93	930326-019	930326-021	930331-039
GW-056	BG	W	03/04/93	930305-005	930305-011	930308-001
GW-057	EXP	W	03/04/93	930305-006	930305-011	930308-001
GW-063	OLF	B	02/23/93	930223-085	930223-087	930225-001
GW-064	OLF	W	02/09/93	930209-064	930209-066	930210-022
GW-069	BG	W	03/03/93	930303-124	930303-127	930304-076
GW-082	BG	W	03/10/93	930311-076	930311-082	930311-022
GW-084	OLF	W	02/04/93	930204-295	930204-297	930209-001
GW-085	OLF	8	02/11/93	930211-337	930211-343	930216-001
GW-086	OLF	8	02/05/93	930205-072	930205-074	930208-001
GW-115	S3	W	01/28/93	930128-114	930128-047	930129-016
GW-118	BG	B	03/04/93	930304-236	930304-238	930305-002
GW-286	BG	10	02/25/93	930226-306	930226-308	930301-001
GW-287	BG	10	02/24/93	930225-007	930225-015	930225-030
GW-311	RS	8	02/08/93	930208-159	930208-161	930210-021
GW-312	RS	B	02/08/93	930208-157	930208-161	930210-021
GW-315	SPI	10	02/03/93	930204-003	930204-007	930204-034
GW-316	SPI	10	02/02/93	930203-002	930203-008	930203-057
GW-317	SPI	10	02/02/93	930203-004	930203-008	930203-057
GW-323	SPI	10	02/02/93	930203-006	930203-008	930203-057
GW-324	S3	10	01/29/93	930129-099	930129-101	930201-001
GW-325	S3	10	02/01/93	930201-132	930201-134	930202-004
GW-345	S3	10	02/03/93	930204-005	930204-007	930204-034
GW-347	S3	10	02/01/93	930201-128	930201-134	930202-004
GW-348	S3	10	02/01/93	930201-130	930201-134	930202-004
GW-364	OLF	8	03/27/93	930329-011	930329-013	930331-039
GW-365	OLF	8	03/28/93	930329-021	930329-023	930330-003
GW-370	BG	6	02/17/93	930217-070	930217-072	930218-002
GW-371	BG	6	02/16/93	930216-140	930216-142	930217-004
GW-372	BG	6	02/09/93	930209-088	930209-090	930210-022
GW-373	BG	6	02/11/93	930211-332	930211-336	930212-068
GW-526	S3	10	02/03/93	930204-001	930204-007	930204-034
GW-537	OLF	8	02/11/93	930211-338	930211-343	930216-001
GW-601	OLF	6	03/28/93	930329-029	930329-031	930330-003
GW-621	BG	10	03/20/93	930322-010	930322-014	930323-042
GW-626	BG	6	03/10/93	930311-078	930311-082	930311-022
GW-627	BG	6	03/09/93	930309-123	930309-125	930310-001
GW-636	OLF	8	03/26/93	930329-006	930329-010	930401-019
GW-637	OLF	8	03/25/93	930325-117	930325-117	930326-001
GW-638	OLF	8	03/25/93	930325-119	930325-121	930326-001
GW-639	BG	6	02/24/93	930225-003	930225-011	930225-030

APPENDIX I.1
Correlation of Samples to Associated Blanks

Sampling Pt.	Location	Pump No.	Date	Sample No.	Trip Blank No.	Lab Blank No.
GW-640	BG	6	02/22/93	930222-104	930222-108	930223-001
GW-641	BG	6	02/22/93	930222-105	930222-108	930223-001
GW-642	BG	6	02/08/93	930208-162	930208-164	930210-021
GW-643	BG	6	02/16/93	930216-138	930216-142	930217-004
GW-644	OLF	8	03/25/93	930325-115	930325-121	930326-001
GW-647	OLF	7	02/08/93	930209-002	930209-004	930210-021
GW-651	BG	10	03/01/93	930302-009	930302-015	930302-060
GW-652	BG	10	03/01/93	930302-010	930302-015	930302-060
GW-653	BG	10	03/01/93	930302-011	930302-015	930302-060
GW-654	BG	10	02/24/93	930225-008	930225-015	930225-030
GW-655	BG	6	02/05/93	930205-069	930205-071	930208-001
GW-683	EXP	10	03/04/93	930305-007	930305-011	930308-001
GW-684	EXP	10	03/03/93	930303-105	930303-107	930304-069
GW-685	EXP	10	03/02/93	930302-081	930302-085	930303-001
GW-694	EXP	8	03/23/93	930323-069	930323-071	930325-011
GW-695	EXP	8	03/24/93	930324-097	930324-099	930325-001
GW-703	EXP	10	03/20/93	930322-012	930322-014	930322-005
GW-704	EXP	10	03/22/93	930322-111	930322-115	930323-042
GW-706	EXP	10	03/23/93	930323-056	930323-058	930325-011
GW-710	EXP	2	03/21/93	930322-006	930322-009	930323-002
GW-711	EXP	8	03/20/93	930322-037	930322-043	930323-002
GW-712	EXP	4	03/18/93	930319-002	930319-006	930322-002
GW-713	EXP	4	03/19/93	930319-114	930319-116	930322-005
GW-714	EXP	8	03/21/93	930322-041	930322-044	930323-002
GW-715	EXP	8	03/21/93	930322-039	930322-044	930323-002
GW-723	EXP	2	02/12/93	930212-105	930212-111	930216-089
GW-724	EXP	10	02/10/93	930210-183	930210-187	930211-001
GW-725	EXP	10	02/12/93	930212-106	930212-111	930216-089
GW-736	EXP	7	02/11/93	930211-327	930211-331	930212-068
GW-737	EXP	7	02/11/93	930211-328	930211-331	930212-068
GW-738	EXP	10	02/10/93	930210-185	930210-187	930211-001
GW-739	EXP	7	02/10/93	930210-026	930210-029	930211-011
GW-740	EXP	7	02/09/93	930210-024	930210-028	930211-011
GW-793	AGLLSF	6	02/26/93	930226-313	930226-315	930226-343
GW-794	AGLLSF	6	03/01/93	930302-005	930302-008	930302-060
GW-795	AGLLSF	6	03/02/93	930302-069	930302-071	930303-002
SS-1	EXP	NA	03/09/93	930309-107	930309-109	930310-002
SS-4	EXP	NA	03/09/93	930309-103	930309-109	930310-002
SS-5	EXP	NA	03/09/93	930309-101	930309-109	930310-002
SS-6	EXP	NA	03/09/93	930309-097	930309-109	930310-001
SS-8	EXP	NA	03/09/93	930309-093	930309-109	930310-001
BCK-00.63	EXP	NA	03/09/93	930309-089	930309-109	930310-001
BCK-04.55	EXP	NA	03/09/93	930309-091	930309-109	930310-001
BCK-09.40	EXP	NA	03/09/93	930309-099	930309-109	930310-002
NT-01	EXP	NA	03/09/93	930309-105	930309-109	930310-002
NT-13	EXP	NA	03/09/93	930309-095	930309-109	930310-001

APPENDIX I.1
Correlation of Samples to Associated Blanks

Sampling Pt.	Location	Pump No.	Date	Sample No.	Trip Blank No.	Lab Blank No.
Second Quarter 1993						
GW-013	OLF	W	06/17/93	930617-164	930617-166	930619-007
GW-040	BG	B	05/11/93	930511-097	930511-101	930513-045
GW-043	OLF	W	05/10/93	930510-150	930510-156	930512-001
GW-044	OLF	W	05/10/93	930510-151	930510-156	930512-001
GW-052	BG	B	04/26/93	930427-004	930427-008	930428-001
GW-056	BG	W	04/22/93	930423-013	930423-019	930423-001
GW-057	EXP	W	04/22/93	930423-015	930423-019	930423-001
GW-064	OLF	W	05/12/93	930513-009	930513-017	930514-001
GW-069	BG	W	04/21/93	930422-029	930422-033	930422-001
GW-082	BG	W	04/21/93	930422-031	930422-033	930422-001
GW-084	OLF	W	05/10/93	930510-152	930510-156	930512-001
GW-085	OLF	5	05/12/93	930513-011	930513-017	930514-001
GW-086	OLF	5	05/11/93	930512-019	930512-027	930513-045
GW-115	S3	W	05/25/93	930526-002	930526-010	930528-043
GW-118	BG	B	04/21/93	930422-027	930422-027	930422-001
GW-286	BG	7	04/19/93	930419-083	930419-089	930421-001
GW-287	BG	7	04/16/93	930416-078	930416-080	930419-001
GW-311	RS	5	05/11/93	930512-021	930512-027	930513-045
GW-312	RS	5	05/11/93	930512-023	930512-027	930513-045
GW-315	SPI	8	06/03/93	930603-171	930603-175	930606-001
GW-316	SPI	8	06/01/93	930602-004	930602-006	930605-001
GW-317	SPI	8	05/28/93	930528-145	930528-149	930604-019
GW-323	SPI	8	05/28/93	930528-146	930528-149	930604-019
GW-324	S3	8	05/25/93	930526-006	930526-010	930528-043
GW-325	S3	8	05/25/93	930526-008	930526-010	930529-016
GW-345	S3	8	06/01/93	930602-002	930602-006	930605-001
GW-347	S3	8	05/27/93	930527-332	930527-334	930530-001
GW-348	S3	8	05/27/93	930527-330	930527-334	930530-001
GW-364	OLF	5	06/27/93	930628-014	930628-020	930630-009
GW-365	OLF	4	06/27/93	930628-082	930628-084	930630-009
GW-370	BG	4	05/21/93	930521-106	930521-110	930522-012
GW-371	BG	4	05/21/93	930521-108	930521-110	930522-012
GW-372	BG	4	05/19/93	930520-002	930520-006	930522-012
GW-373	BG	7	05/14/93	930514-075	930514-077	930518-127
GW-526	S3	8	06/03/93	930603-172	930603-175	930606-001
GW-537	OLF	5	05/12/93	930513-013	930513-017	930514-001
GW-601	OLF	10	06/27/93	930628-010	930628-012	930630-009
GW-621	BG	7	06/02/93	930603-009	930603-011	930605-001
GW-626	BG	6	04/26/93	930427-006	930427-008	930429-001
GW-627	BG	6	04/23/93	930423-106	930423-110	930426-001
GW-636	OLF	5	06/27/93	930628-016	930628-020	930630-001
GW-637	OLF	5	06/26/93	930628-005	930628-009	930630-001
GW-638	OLF	5	06/26/93	930628-007	930628-009	930630-001
GW-639	BG	4	05/24/93	930525-002	930525-010	930526-019

APPENDIX I.1
Correlation of Samples to Associated Blanks

Sampling Pt.	Location	Pump No.	Date	Sample No.	Trip Blank No.	Lab Blank No.
GW-640	BG	4	05/24/93	930525-006	930525-010	930526-019
GW-641	BG	4	05/24/93	930525-008	930525-010	930526-019
GW-642	BG	7	05/11/93	930511-099	930511-101	930514-001
GW-643	BG	4	05/19/93	930520-004	930520-006	930522-012
GW-644	OLF	10	06/25/93	930625-292	930625-294	930628-002
GW-647	OLF	10	05/17/93	930518-020	930518-022	930520-057
GW-651	BG	7	04/19/93	930419-087	930419-089	930420-001
GW-652	BG	7	04/19/93	930419-085	930419-089	930421-001
GW-653	BG	7	04/20/93	930421-014	930421-016	930421-113
GW-654	BG	7	04/16/93	930416-076	930416-080	930419-001
GW-655	BG	7	05/10/93	930510-160	930510-162	930512-001
GW-683	EXP	7	04/23/93	930423-079	930423-081	930426-001
GW-684	EXP	7	04/22/93	930423-017	930423-019	930423-001
GW-685	EXP	7	04/21/93	930421-120	930421-122	930422-001
GW-694	EXP	7	06/06/93	930607-017	930607-019	930610-001
GW-695	EXP	7	06/09/93	930609-056	930609-058	930611-083
GW-703	EXP	7	06/03/93	930604-006	930604-008	930607-002
GW-704	EXP	7	06/04/93	930604-102	930604-106	930607-002
GW-706	EXP	7	06/11/93	930611-136	930611-138	930614-047
GW-710	EXP	2	04/30/93	930430-075	930430-077	930504-053
GW-711	EXP	8	04/29/93	930430-012	930430-014	930430-007
GW-712	EXP	10	04/28/93	930428-110	930428-114	930429-001
GW-713	EXP	10	04/30/93	930430-047	930430-049	930427-131
GW-714	EXP	8	04/29/93	930430-015	930430-014	930430-007
GW-715	EXP	8	04/29/93	930430-017	930430-014	930430-007
GW-723	EXP	2	05/18/93	930518-162	930518-164	930520-057
GW-724	EXP	10	05/18/93	930519-004	930519-010	930520-057
GW-725	EXP	6	05/19/93	930519-210	930519-214	930521-067
GW-736	EXP	10	05/18/93	930519-006	930519-010	930520-057
GW-737	EXP	10	05/19/93	930519-194	930519-196	930520-057
GW-738	EXP	10	05/18/93	930519-008	930519-010	930520-057
GW-739	EXP	6	05/18/93	930518-160	930518-164	930520-057
GW-740	EXP	10	05/17/93	930518-023	930518-025	930520-057
GW-793	AGLLSF	4	05/25/93	930525-084	930525-090	930527-064
GW-794	AGLLSF	4	05/25/93	930525-085	930525-090	930529-016
GW-795	AGLLSF	4	05/25/93	930525-086	930525-090	930528-043
GW-800	OLF	5	05/11/93	930512-025	930512-027	930514-001
SS-1	EXP	NA	05/03/93	930503-093	930503-095	930505-041
SS-4	EXP	NA	05/03/93	930503-089	930503-095	930505-041
SS-5	EXP	NA	05/03/93	930503-085	930503-095	930505-041
SS-6	EXP	NA	05/03/93	930503-087	930503-095	930505-041
SS-8	EXP	NA	05/03/93	930503-079	930503-095	930504-053
BCK-00.63	EXP	NA	05/03/93	930503-075	930503-095	930505-041
BCK-04.55	EXP	NA	05/03/93	930503-077	930503-095	930504-053
BCK-09.40	EXP	NA	05/03/93	930503-083	930503-095	930505-041
NT-01	EXP	NA	05/03/93	930503-091	930503-095	930505-041
NT-13	EXP	NA	05/03/93	930503-081	930503-095	930504-053

APPENDIX I.1
Correlation of Samples to Associated Blanks

Sampling Pt.	Location	Pump No.	Date	Sample No.	Trip Blank No.	Lab Blank No.
Third Quarter 1993						
GW-013	OLF	W	09/17/93	930918-017	930918-012	930920-116
GW-040	BG	B	07/02/93	930702-104	930702-110	930707-090
GW-043	OLF	W	09/11/93	930913-025	930913-037	930913-064
GW-044	OLF	W	09/11/93	930913-027	930913-037	930913-064
GW-056	BG	W	07/09/93	930709-065	930709-069	930712-037
GW-057	EXP	W	07/09/93	930709-067	930709-069	930712-037
GW-064	OLF	W	09/11/93	930913-031	930913-037	930914-009
GW-069	BG	W	07/25/93	930726-003	930726-009	930728-001
GW-082	BG	W	07/25/93	930726-005	930726-009	930728-001
GW-084	OLF	W	09/11/93	930913-033	930913-037	930914-009
GW-085	OLF	7	09/14/93	930915-020	930915-017	930916-020
GW-086	OLF	7	09/12/93	930913-066	930913-068	930914-009
GW-115	S3	W	09/11/93	930913-137	930913-139	930915-110
GW-118	BG	B	07/25/93	930726-007	930726-009	930728-001
GW-286	BG	4	07/10/93	930712-029	930712-031	930713-001
GW-287	BG	4	07/10/93	930712-023	930712-031	930712-080
GW-311	RS	7	09/12/93	930913-071	930913-068	930914-009
GW-312	RS	7	09/12/93	930913-069	930913-068	930914-009
GW-315	SPI	6	09/14/93	930915-013	930915-026	930916-031
GW-316	SPI	6	09/13/93	930913-244	930913-248	930916-020
GW-317	SPI	6	09/13/93	930913-246	930913-248	930915-107
GW-323	SPI	6	09/12/93	930913-151	930913-148	930915-107
GW-324	S3	6	09/11/93	930913-142	930913-139	930915-110
GW-325	S3	6	09/11/93	930913-144	930913-139	930915-110
GW-345	S3	6	09/14/93	930915-009	930915-026	930916-031
GW-347	S3	6	09/12/93	930913-146	930913-148	930915-107
GW-348	S3	6	09/12/93	930913-149	930913-148	930915-107
GW-364	OLF	3	09/19/93	930920-021	930920-025	930920-030
GW-365	OLF	3	09/19/93	930920-023	930920-025	930920-030
GW-370	BG	5	07/10/93	930712-002	930712-008	930712-080
GW-371	BG	5	07/09/93	930709-057	930709-059	930712-037
GW-372	BG	5	07/02/93	930702-106	930702-110	930707-090
GW-373	BG	5	07/02/93	930702-108	930702-110	930707-090
GW-526	S3	6	09/14/93	930915-011	930915-026	930916-031
GW-537	OLF	7	09/14/93	930915-018	930915-017	930916-020
GW-601	OLF	7	09/19/93	930920-027	930920-048	930920-030
GW-621	BG	7	09/20/93	930921-001	930921-005	930921-025
GW-626	BG	8	08/02/93	930802-115	930802-119	930803-040
GW-627	BG	8	07/28/93	930728-103	930728-105	930729-001
GW-636	OLF	3	09/18/93	930920-016	930920-020	930920-030
GW-637	OLF	3	09/17/93	930918-019	930918-012	930921-039
GW-638	OLF	3	09/17/93	930918-015	930918-012	930920-116
GW-639	BG	5	07/11/93	930712-009	930712-017	930713-014
GW-640	BG	5	07/10/93	930712-004	930712-008	930712-080

APPENDIX I.1
Correlation of Samples to Associated Blanks

Sampling Pt.	Location	Pump No.	Date	Sample No.	Trip Blank No.	Lab Blank No.
GW-641	BG	5	07/10/93	930712-006	930712-008	930712-080
GW-642	BG	5	07/01/93	930702-014	930702-018	930707-032
GW-643	BG	5	07/08/93	930708-048	930708-050	930709-031
GW-644	OLF	3	09/17/93	930918-013	930918-012	930920-116
GW-647	OLF	10	09/25/93	930927-011	930927-013	930928-089
GW-651	BG	4	07/10/93	930712-018	930712-022	930712-080
GW-652	BG	4	07/10/93	930712-027	930712-031	930713-001
GW-653	BG	4	07/10/93	930712-020	930712-022	930713-014
GW-654	BG	4	07/01/93	930702-024	930702-026	930707-090
GW-655	BG	5	07/01/93	930702-016	930702-018	930707-032
GW-683	EXP	4	07/12/93	930712-110	930712-112	930714-024
GW-684	EXP	4	07/11/93	930712-032	930712-036	930713-001
GW-685	EXP	4	07/11/93	930712-025	930712-036	930713-001
GW-694	EXP	5	09/22/93	930922-062	930922-064	930923-093
GW-695	EXP	7	09/22/93	930923-004	930923-010	930923-093
GW-703	EXP	7	09/20/93	930921-003	930921-005	930921-025
GW-704	EXP	7	09/22/93	930923-006	930923-010	930923-093
GW-706	EXP	7	09/23/93	930924-007	930924-009	930927-018
GW-710	EXP	2	08/01/93	930802-039	930802-043	930802-075
GW-711	EXP	7	07/30/93	930730-105	930730-107	930802-008
GW-712	EXP	10	07/29/93	930729-374	930729-376	930802-008
GW-713	EXP	10	07/31/93	930802-032	930802-036	930802-075
GW-714	EXP	10	08/01/93	930802-037	930802-043	930803-040
GW-715	EXP	10	08/01/93	930802-041	930802-043	930803-040
GW-723	EXP	2	09/27/93	930928-059	930928-056	930929-174
GW-724	EXP	6	09/29/93	930929-187	930929-189	930930-079
GW-725	EXP	10	09/28/93	930928-117	930928-119	930930-001
GW-736	EXP	5	09/28/93	930928-129	930928-131	930930-001
GW-737	EXP	5	09/28/93	930928-132	930928-131	930930-001
GW-738	EXP	5	09/27/93	930928-061	930928-056	930929-174
GW-739	EXP	10	09/27/93	930927-237	930927-239	930929-174
GW-740	EXP	5	09/27/93	930928-054	930928-056	930929-174
GW-793	AGLLSF	5	07/11/93	930712-013	930712-017	930713-014
GW-794	AGLLSF	5	07/11/93	930712-015	930712-017	930712-080
GW-795	AGLLSF	5	07/12/93	930712-076	930712-078	930713-001
GW-800	OLF	7	09/14/93	930915-015	930915-017	930916-020
SS-1	EXP	NA	08/16/93	930816-143	930816-147	930818-001
SS-4	EXP	NA	08/16/93	930816-141	930816-147	930818-001
SS-5	EXP	NA	08/16/93	930816-137	930816-147	930817-086
SS-6	EXP	NA	08/16/93	930816-139	930816-147	930817-086
SS-8	EXP	NA	08/16/93	930816-131	930816-147	930817-086
BCK-00.63	EXP	NA	08/16/93	930816-127	930816-147	930817-086
BCK-04.55	EXP	NA	08/16/93	930816-129	930816-147	930817-086
BCK-09.40	EXP	NA	08/16/93	930816-136	930816-147	930818-001
NT-01	EXP	NA	08/16/93	930816-145	930816-147	930818-001
NT-13	EXP	NA	08/16/93	930816-133	930816-147	930817-086

APPENDIX I.1
Correlation of Samples to Associated Blanks

Sampling Pt.	Location	Pump No.	Date	Sample No.	Trip Blank No.	Lab Blank No.
Fourth Quarter 1993						
GW-013	OLF	W	12/19/93	931219-041	931219-043	931220-103
GW-040	BG	10	10/09/93	931011-005	931011-007	931011-055
GW-042	BG	W	12/29/93	931229-046	931229-048	940103-032
GW-043	OLF	W	10/19/93	931019-052	931019-054	931021-024
GW-044	OLF	W	10/19/93	931019-050	931019-054	931021-024
GW-056	BG	W	10/09/93	931011-010	931011-012	931011-055
GW-057	EXP	W	10/09/93	931011-008	931011-012	931011-055
GW-064	OLF	W	10/20/93	931020-072	931020-076	931025-022
GW-069	BG	W	10/10/93	931011-034	931011-032	931012-055
GW-079	BG	8	10/18/93	931018-207	931018-209	931020-001
GW-080	BG	W	10/10/93	931011-038	931011-032	931012-055
GW-082	BG	W	10/18/93	931018-205	931018-204	931020-001
GW-084	OLF	W	10/20/93	931020-074	931020-076	931025-022
GW-085	OLF	6	10/22/93	931022-088	931022-094	931026-013
GW-086	OLF	6	10/21/93	931021-103	931021-105	931023-006
GW-115	S3	W	10/19/93	931019-057	931019-059	931021-024
GW-118	BG	B	10/10/93	931011-040	931011-032	931014-001
GW-162	BG	10	10/10/93	931011-013	931011-017	931011-055
GW-286	BG	6	10/07/93	931008-066	931008-072	931011-042
GW-287	BG	6	10/07/93	931008-070	931008-072	931012-038
GW-311	RS	6	10/21/93	931021-099	931021-105	931023-006
GW-312	RS	6	10/21/93	931021-101	931021-105	931025-031
GW-315	SPI	10	10/27/93	931027-029	931027-033	931028-007
GW-316	SPI	10	10/24/93	931025-014	931025-016	931027-002
GW-317	SPI	10	10/24/93	931025-012	931025-016	931027-002
GW-323	SPI	10	10/23/93	931025-009	931025-011	931027-001
GW-324	S3	10	10/19/93	931019-055	931019-059	931021-024
GW-325	S3	10	10/21/93	931022-037	931022-039	931023-006
GW-342	BG	10	10/07/93	931008-077	931008-079	931008-118
GW-345	S3	10	10/26/93	931026-042	931026-044	931028-007
GW-347	S3	10	10/22/93	931022-137	931022-139	931023-006
GW-348	S3	10	10/22/93	931022-135	931022-139	931025-031
GW-364	OLF	11	12/18/93	931218-053	931218-059	931221-083
GW-365	OLF	11	12/19/93	931219-050	931219-052	931222-020
GW-370	BG	10	10/14/93	931014-063	931014-065	931018-003
GW-371	BG	10	10/13/93	931014-004	931014-008	931014-010
GW-372	BG	10	10/12/93	931012-151	931012-153	931015-141
GW-373	BG	10	10/11/93	931011-127	931011-129	931014-001
GW-526	S3	10	10/26/93	931026-040	931026-044	931028-007
GW-537	OLF	6	10/22/93	931022-086	931022-094	931026-013
GW-601	OLF	11	12/21/94	931222-001	931222-003	931223-001
GW-613	S3	10	10/20/93	931020-079	931020-083	931021-024
GW-614	S3	10	10/20/93	931020-081	931020-083	931021-024
GW-621	BG	6	12/20/93	931220-117	931220-119	931222-020

APPENDIX I.1
Correlation of Samples to Associated Blanks

Sampling Pt.	Location	Pump No.	Date	Sample No.	Trip Blank No.	Lab Blank No.
GW-626	BG	8	10/20/93	931021-001	931021-005	931025-022
GW-627	BG	8	10/20/93	931021-003	931021-005	931025-022
GW-636	OLF	6	12/18/93	931218-048	931218-052	931221-083
GW-637	OLF	6	12/18/93	931218-046	931218-052	931221-083
GW-638	OLF	11	12/18/93	931218-057	931218-059	931222-020
GW-639	BG	10	10/15/93	931015-229	931015-231	931019-038
GW-640	BG	10	10/14/93	931014-066	931014-065	931018-003
GW-641	BG	10	10/14/93	931014-068	931014-065	931018-003
GW-642	BG	10	10/10/93	931011-015	931011-017	931012-038
GW-643	BG	10	10/12/93	931012-149	931012-153	931015-141
GW-644	OLF	11	12/18/93	931218-055	931218-059	931222-020
GW-647	OLF	8	12/10/93	931210-052	931210-054	931213-006
GW-651	BG	6	10/10/93	931011-018	931011-022	931012-055
GW-652	BG	6	10/18/93	931018-198	931018-200	931019-038
GW-653	BG	6	10/10/93	931011-020	931011-022	931012-055
GW-654	BG	6	10/07/93	931008-068	931008-072	931012-038
GW-655	BG	10	10/06/93	931007-002	931007-004	931008-005
GW-683	EXP	6	10/12/93	931013-001	931013-007	931014-001
GW-684	EXP	6	10/12/93	931013-003	931013-007	931014-001
GW-685	EXP	6	10/11/93	931011-124	931011-126	931014-001
GW-694	EXP	6	12/28/93	931228-136	931228-143	931229-014
GW-695	EXP	8	12/21/93	931221-132	931221-136	931223-001
GW-703	EXP	8	12/21/93	931221-134	931221-136	931223-001
GW-704	EXP	6	12/22/93	931222-059	931222-063	931227-026
GW-706	EXP	8	12/28/93	931229-007	931229-010	931229-014
GW-710	EXP	2	11/09/93	931109-175	931109-177	931111-002
GW-711	EXP	10	11/07/93	931108-004	931108-006	931110-008
GW-712	EXP	8	11/06/93	931108-001	931108-003	931110-008
GW-713	EXP	8	11/09/93	931109-166	931109-168	931111-002
GW-714	EXP	10	11/09/93	931109-170	931109-174	931111-002
GW-715	EXP	10	11/11/93	931111-112	931111-114	931116-002
GW-723	EXP	2	12/14/93	931214-033	931214-035	931215-020
GW-724	EXP	8	12/14/93	931215-003	931215-021	931215-020
GW-725	EXP	11	12/15/93	931216-009	931216-012	931216-050
GW-736	EXP	11	12/15/93	931216-003	931216-012	931216-050
GW-737	EXP	11	12/15/93	931216-007	931216-012	931216-050
GW-738	EXP	11	12/14/93	931215-001	931215-005	931215-020
GW-739	EXP	10	12/13/93	931213-122	931213-124	931214-002
GW-740	EXP	8	12/11/93	931213-007	931213-009	931213-006
GW-793	AGLLSF	10	10/18/93	931019-001	931019-007	931020-001
GW-794	AGLLSF	10	10/18/93	931019-003	931019-007	931020-001
GW-795	AGLLSF	10	10/18/93	931019-005	931019-007	931020-001
GW-800	OLF	6	10/22/93	931022-090	931022-094	931026-013
SS-1	EXP	NA	11/08/93	931108-114	931108-118	931110-011
SS-4	EXP	NA	11/08/93	931108-112	931108-118	931110-011
SS-5	EXP	NA	11/08/93	931108-108	931108-118	931110-011
SS-6	EXP	NA	11/08/93	931108-106	931108-118	931110-011

APPENDIX I.1
Correlation of Samples to Associated Blanks

Sampling Pt.	Location	Pump No.	Date	Sample No.	Trip Blank No.	Lab Blank No.
SS-8	EXP	NA	11/08/93	931108-102	931108-118	931110-008
BCK-00.63	EXP	NA	11/08/93	931108-098	931108-118	931110-008
BCK-04.55	EXP	NA	11/08/93	931108-100	931108-118	931110-008
BCK-09.40	EXP	NA	11/08/93	931108-110	931108-118	931110-011
NT-01	EXP	NA	11/08/93	931108-116	931108-118	931110-011
NT-13	EXP	NA	11/08/93	931108-104	931108-118	931110-008

APPENDIX L2

TRIP BLANK DATA SUMMARY

APPENDIX L2
1993 Trip Blank Data Summary

Compound	First		Second		Third		Fourth		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total Samples	54		47		41		55		197	
Not Detected	22	43	23	50	25	62	17	31	87	44
VOCs Detected	32	57	24	50	16	38	38	69	110	56
Methylene chloride	26	48	22	47	15	37	36	65	99	50
Acetone	17	31	2	4	3	7	28	51	50	25
2-Butanone	3	6	2	4			26	47	31	16
4-Methyl-2-pentanone	16	30	6	13			1	2	23	12
Tetrachloroethane							1	2	1	1
1,1,1-Trichloroethane			1	2					1	1
Xylenes							1	2	1	1

APPENDIX I.2

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Trip Blank Data Summary, First Quarter 1993

Sample No.	930128- 047	930129- 101	930201- 134	930203- 008	930204- 007	930204- 297	930205- 071	930205- 074
Acetone	10U	10U	6	3	1	10U	10U	10U
2-Butanone	10U	10U	6	5	10U	10U	10U	10U
4-Methyl-2-pentanone	1	10U	2	2	2	10U	10U	10U
Methylene chloride	5U	5U	5U	5U	2	5U	5U	5U

(CONTINUED)

Sample No.	930208- 161	930208- 164	930209- 004	930209- 066	930209- 090	930210- 028	930210- 029	930210- 187
Acetone	10U	10U	10U	10U	2	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	2	10U	10U	10U
Methylene chloride	0.9	1	5U	0.7	2	2	2	1

(CONTINUED)

Sample No.	930211- 331	930211- 336	930211- 343	930212- 111	930216- 142	930217- 072	930222- 108	930223- 087
Acetone	1	10U	10U	2	10U	3	10U	10U
2-Butanone	10U	10U	10U	1	10U	10U	10U	10U
4-Methyl-2-pentanone	1	10U	10U	10U	10U	2	10U	10U
Methylene chloride	2	2	5U	3	1	2	5U	1

(CONTINUED)

Sample No.	930225- 011	930225- 015	930226- 308	930226- 315	930302- 008	930302- 015	930302- 071	930302- 085
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	5U	1	5U	5U	5U	2	5U

(CONTINUED)

APPENDIX I.2

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Trip Blank Data Summary, First Quarter 1993

Sample No.	930303- 107	930303- 127	930304- 238	930305- 011	930311- 082	930319- 006	930319- 116	930322- 009
Acetone	10U	10U	13	10U	10U	87	4	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	2	10U
Methylene chloride	5U	5U	5U	5U	5U	5U	2	5U

(CONTINUED)

Sample No.	930322- 014	930322- 043	930322- 044	930322- 115	930323- 058	930323- 071	930324- 099	930325- 121
Acetone	3	81	7	9	7	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	1	10U	3	5	5	4	10U	10U
Methylene chloride	2	5U	2	2	3	3	3	5U

(CONTINUED)

Sample No.	930326- 021	930329- 010	930329- 013	930329- 023	930329- 031	930329- 086
Acetone	10U	10U	10U	10U	2	4
2-Butanone	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	1	1	2
Methylene chloride	5U	5U	5U	3	3	2

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Trip Blank Data Summary, Second Quarter 1993

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Sample No.	930416- 080	930419- 089	930421- 016	930421- 122	930422- 033	930423- 019	930423- 081	930423- 110
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	1	10U	10U	10U	10U	10U
Methylene chloride	5U	5U	1	5U	5U	5U	2	2
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

Sample No.	930427- 008	930428- 114	930430- 014	930430- 049	930430- 077	930503- 095	930510- 156	930510- 162
Acetone	10U	10U	10U	3	10U	10U	10U	10U
2-Butanone	10U	10U	10U	2	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	1	10U	1	10U	10U
Methylene chloride	1	5U	1	1	2	2	1	2
1,1,1-Trichloroethane	5U	5U	5U	1	5U	5U	5U	5U

(CONTINUED)

Sample No.	930511- 101	930512- 027	930513- 017	930514- 077	930518- 022	930518- 025	930518- 164	930519- 010
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	1	10U	10U	10U	10U
Methylene chloride	2	2	5U	2	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

Sample No.	930519- 196	930519- 214	930520- 006	930521- 110	930525- 010	930525- 090	930526- 010	930527- 334
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	2	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	1	10U	10U	10U
Methylene chloride	5U	5U	5U	5U	5U	1	5U	1
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

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Trip Blank Data Summary, Second Quarter 1993

Sample No.	930528- 149	930602- 006	930603- 011	930603- 175	930604- 008	930604- 106	930607- 019	930609- 058
Acetone	17	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	1	1	5U	2	1	1	1	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

Sample No.	930611- 138	930617- 166	930625- 294	930628- 009	930628- 012	930628- 020	930628- 084
Acetone	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	1	10U	10U
Methylene chloride	5U	5U	5U	5U	5U	5U	1
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U

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Trip Blank Data Summary, Third Quarter 1993

Sample No.	930702-018	930702-026	930702-110	930708-050	930709-059	930709-069	930712-008	930712-017
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	5U	5U	5U	1	1	5U	1

(CONTINUED)

Sample No.	930712-022	930712-031	930712-036	930712-078	930712-112	930726-009	930728-105	930729-376
Acetone	10U	7	10U	10U	10U	10U	10U	12
Methylene chloride	5U	5U	1	1	5U	1	1	1

(CONTINUED)

Sample No.	930730-107	930802-036	930802-043	930802-119	930913-037	930913-068	930913-139	930913-148
Acetone	11	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	1	5U	1	5U	1	5U	5U	5U

(CONTINUED)

Sample No.	930913-248	930915-017	930915-026	930918-012	930920-020	930920-025	930920-048	930921-005
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	1	5U	5U	1	0.9	0.9	5U

(CONTINUED)

Sample No.	930922-064	930923-010	930924-009	930927-013	930927-239	930928-056	930928-119	930928-131
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

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Trip Blank Data Summary, Third Quarter 1993

Sample No.	930929- 189
Acetone	10U
Methylene chloride	5U

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Trip Blank Data Summary, Fourth Quarter 1993

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Sample No.	931007-004	931008-072	931008-079	931011-007	931011-012	931011-017	931011-022	931011-126
Acetone	10U	4	10U	10U	10U	10U	10U	3
2-Butanone	10U	9	10U	10U	10U	10U	10U	8
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	3	5U	5U	5U	5U	5U	3
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

Sample No.	931011-129	931012-153	931013-007	931014-008	931014-065	931015-231	931018-200	931018-204
Acetone	3	10U	10U	10U	3	10U	10U	3
2-Butanone	10	10U	10U	10U	7	10U	10U	11
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	3	0.7	5U	5U	3	5U	5U	2
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

Sample No.	931019-007	931019-054	931019-059	931020-076	931020-083	931021-005	931021-105	931022-039
Acetone	2	3	3	3	2	3	10U	10U
2-Butanone	7	9	9	9	9	9	9	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	3	3	2	3	3	3	5U	5U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

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Trip Blank Data Summary, Fourth Quarter 1993

Sample No.	931022-094	931022-139	931025-011	931025-016	931026-044	931027-033	931108-003	931108-006
Acetone	10U	2	9	8	3	2	9	28
2-Butanone	10U	8	10U	10U	7	7	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	3	1	1	2	3	1	1
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

Sample No.	931108-118	931109-168	931109-174	931109-177	931111-114	931210-054	931213-009	931213-124
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	1	1	5U	2	1	1	1
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

Sample No.	931214-035	931215-005	931215-021	931216-012	931218-052	931218-059	931219-043	931219-052
Acetone	10U	10U	10U	4	7	8	5	6
2-Butanone	10U	10U	10U	7	10	9	8	11
4-Methyl-2-pentanone	10U	10U	10U	1	10U	10U	10U	10U
Methylene chloride	5U	5U	1	2	5U	0.8	2	0.8
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U	5U
Xylenes	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

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Trip Blank Data Summary, Fourth Quarter 1993

Sample No.	931220- 119	931221- 136	931222- 003	931222- 063	931228- 143	931229- 010	931229- 048
Acetone	11	8	10U	4	4	3	10U
2-Butanone	9	8	9	4	6	4	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	2	0.7	0.8	1	1	1	5U
Tetrachloroethene	5U	5U	5U	1	5U	5U	5U
Xylenes	5U	5U	5U	1	5U	5U	5U

APPENDIX L3

LABORATORY BLANK DATA SUMMARY

APPENDIX L3
1993 Laboratory Blank Data Summary

Compound	First		Second		Third		Fourth		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total Samples	42		35		31		35		144	
Not Detected	14	33	16	47	20	65	11	31	62	43
VOCs Detected	28	67	19	53	11	35	24	69	82	57
Methylene chloride	25	60	11	31	10	32	22	63	68	47
4-Methyl-2-pentanone	16	38	9	26	2	7	6	17	33	23
Acetone	8	19					16	46	24	17
2-Butanone	2	5	4	11			16	46	22	15
2-Hexanone	1	2	8	23	1	3	3	9	13	9
Vinyl acetate			3	9					3	2
Styrene							1	3	1	1
1,1,1-Trichloroethane			1	3					1	1
1,1,2-Trichloroethane			1	3					1	1

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VOCs Detected in Laboratory Blank Samples, First Quarter 1993

Sample No.	930129- 016	930201- 001	930202- 004	930203- 057	930204- 034	930205- 035	930208- 001	930209- 001
Acetone	1	10U	1	2	10U	10U	10U	10U
2-Butanone	10U	10U	10U	5	10U	10U	10U	10U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	2	10U	2	2	2	2	10U	10U
Methylene chloride	5U	5U	5U	5U	1	1	5U	5U

(CONTINUED)

Sample No.	930210- 021	930210- 022	930211- 001	930211- 011	930212- 068	930216- 001	930216- 089	930217- 004
Acetone	10U	2	10U	10U	1	10U	1	10U
2-Butanone	10U	10U	10U	10U	10U	10U	2	10U
2-Hexanone	10U	10U	10U	1	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	1	10U	2	1	10U	1	10U
Methylene chloride	5U	2	2	3	2	1	3	5U

(CONTINUED)

Sample No.	930218- 002	930223- 001	930225- 001	930225- 030	930226- 343	930301- 001	930302- 060	930303- 001
Acetone	2	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	2	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	2	1	5U	1	5U	1	5U	5U

(CONTINUED)

Sample No.	930303- 002	930304- 069	930304- 076	930305- 002	930308- 001	930310- 001	930310- 002	930311- 022
Acetone	10U	10U	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	2	10U	10U	10U	10U	3	10U	10U
Methylene chloride	2	1	5U	1	1	2	1	5U

(CONTINUED)

APPENDIX I.3

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VOCs Detected in Laboratory Blank Samples, First Quarter 1993

Sample No.	930322- 002	930322- 005	930323- 002	930323- 042	930325- 001	930325- 011	930326- 001	930330- 003
Acetone	10U	4	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	2	10U	3	10U	4	10U	2
Methylene chloride	5U	2	2	2	5U	2	2	2

(CONTINUED)

Sample No.	930331- 039	930401- 019
Acetone	10U	10U
2-Butanone	10U	10U
2-Hexanone	10U	10U
4-Methyl-2-pentanone	10U	10U
Methylene chloride	5U	2

APPENDIX I.3

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VOCs Detected in Laboratory Blank Samples, Second Quarter 1993

Sample No.	930419- 001	930420- 001	930421- 001	930421- 113	930422- 001	930423- 001	930426- 001	930427- 131
2-Butanone	10U	10U	10U	10U	10U	10U	10U	3
2-Hexanone	10U	10U	10U	5	10U	10U	10U	2
4-Methyl-2-pentanone	10U	10U	10U	3	10U	10U	10U	2
Methylene chloride	5U	1	1	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	1
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	1	10U	10U	10U	10U

(CONTINUED)

Sample No.	930428- 001	930429- 001	930430- 007	930504- 053	930505- 041	930512- 001	930513- 045	930514- 001
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
2-Hexanone	10U	10U	10U	2	2	10U	5	10U
4-Methyl-2-pentanone	10U	10U	10U	2	2	10U	5	10U
Methylene chloride	1	5U	5U	3	2	1	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U

(CONTINUED)

Sample No.	930518- 127	930520- 057	930521- 067	930522- 012	930526- 019	930527- 064	930528- 043	930529- 016
2-Butanone	10U	10U	10U	10U	5	4	10U	5
2-Hexanone	10U	10U	10U	10U	1	2	10U	2
4-Methyl-2-pentanone	10U	10U	10U	10U	2	2	10U	3
Methylene chloride	5U	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	1	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	5	10U	10U	10U	10U	10U	10U	10U

(CONTINUED)

APPENDIX I.3

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VOCs Detected in Laboratory Blank Samples, Second Quarter 1993

Sample No.	930530- 001	930605- 001	930606- 001	930607- 002	930610- 001	930611- 083	930614- 047	930619- 007
2-Butanone	10U	10U	10U	10U	10U	10U	10U	10U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	1	1	2	1	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U	5U
Vinyl acetate	10U	10U	10U	10U	10U	10U	10U	10U

(CONTINUED)

Sample No.	930628- 002	930630- 001	930630- 009
2-Butanone	10U	10U	10U
2-Hexanone	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	2
Methylene chloride	1	5U	5U
1,1,1-Trichloroethane	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U
Vinyl acetate	10U	10U	1

APPENDIX I.3

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VOCs Detected in Laboratory Blank Samples, Third Quarter 1993

Sample No.	930707- 032	930707- 090	930709- 031	930712- 037	930712- 080	930713- 001	930713- 014	930714- 024
2-Hexanone	10U	3	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	3	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	3	5U	2	5U	0.9	5U	5U

(CONTINUED)

Sample No.	930728- 001	930729- 001	930802- 008	930802- 075	930803- 040	930817- 086	930818- 001	930913- 064
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	2	10U	10U	10U	10U
Methylene chloride	1	1	1	5U	5U	5U	1	5U

(CONTINUED)

Sample No.	930914- 009	930915- 107	930915- 110	930916- 020	930916- 031	930920- 030	930920- 116	930921- 025
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	1	5U	5U	2	5U	5U	5U	5U

(CONTINUED)

Sample No.	930921- 039	930923- 093	930927- 018	930928- 089	930929- 174	930930- 001	930930- 079
2-Hexanone	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	5U	5U	5U	5U	1	5U

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VOCs Detected in Laboratory Blank Samples, Fourth Quarter 1993

Sample No.	931008- 005	931008- 118	931011- 042	931011- 055	931012- 038	931012- 055	931014- 001	931014- 010
Acetone	10U	10U	4	10U	3	10U	3	10U
2-Butanone	7	10U	11	10U	10	10U	11	10U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	5U	3	5U	3	5U	3	5U
Styrene	0.5	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

Sample No.	931015- 141	931018- 003	931019- 038	931020- 001	931021- 024	931023- 006	931025- 022	931025- 031
Acetone	10U	4	10U	3	3	10U	3	3
2-Butanone	10U	10	10U	10	11	10U	9	9
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	1	10U	1	1	10U	10U	10U
Methylene chloride	5U	3	5U	3	2	0.6	2	2
Styrene	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

Sample No.	931026- 013	931027- 001	931027- 002	931028- 007	931110- 008	931110- 011	931111- 002	931116- 002
Acetone	10U	8	10U	3	10U	10U	10U	10U
2-Butanone	10U	10U	10U	15	10U	10U	10U	10U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	1	5U	3	2	5U	2	1
Styrene	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

APPENDIX I.3

8

VOCs Detected in Laboratory Blank Samples, Fourth Quarter 1993

Sample No.	931213- 006	931214- 002	931215- 020	931216- 050	931220- 103	931221- 083	931222- 020	931223- 001
Acetone	10U	10U	10U	4	3	5	4	10U
2-Butanone	10U	10U	10U	9	8	8	7	10U
2-Hexanone	10U	10U	10U	10U	10U	1	1	10U
4-Methyl-2-pentanone	10U	10U	10U	1	1	10U	10U	10U
Methylene chloride	1	1	5U	2	1	0.6	0.5	0.6
Styrene	5U	5U	5U	5U	5U	5U	5U	5U

(CONTINUED)

Sample No.	931227- 026	931229- 014
Acetone	2	5
2-Butanone	4	9
2-Hexanone	10U	1
4-Methyl-2-pentanone	10U	2
Methylene chloride	5U	2
Styrene	5U	5U

EQUIPMENT RINSEATE DATA SUMMARY

APPENDIX 14

APPENDIX I.4

1

Equipment Rinseate Data Summary, First Quarter 1993

Sample No.	930204- 008	930211- 345	930211- 346	930212- 112	930212- 113	930302- 072	930305- 012	930319- 117
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	1	10U	10U	1	10U	10U	10U	3
4-Methyl-2-pentanone	2	10U	10U	1	1	10U	10U	2
Methylene chloride	2	2	1	3	2	2	2	2
	.	.	.	.	.	.	.	.
OTHER PARAMETERS (mg/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Nitrate (as N)	<0.2	.	.	.	.	.	.	.
Aluminum	0.022	.	.	.	.	.	.	.
Antimony	<0.05	.	.	.	.	.	.	.
Arsenic	<0.05	.	.	.	.	.	.	.
Barium	0.014	.	.	.	.	.	.	.
Beryllium	<0.0003	.	.	.	.	.	.	.
Boron	0.024	.	.	.	.	.	.	.
Cadmium	<0.003	.	.	.	.	.	.	.
Calcium	34	.	.	.	.	.	.	.
Chromium	<0.01	.	.	.	.	.	.	.
Cobalt	<0.005	.	.	.	.	.	.	.
Copper	0.0047	.	.	.	.	.	.	.
Iron	0.017	.	.	.	.	.	.	.
Magnesium	9.9	.	.	.	.	.	.	.
Manganese	0.0014	.	.	.	.	.	.	.
Molybdenum	<0.01	.	.	.	.	.	.	.
Nickel	<0.01	.	.	.	.	.	.	.
Potassium	2.1	.	.	.	.	.	.	.
Selenium	<0.05	.	.	.	.	.	.	.
Silver	<0.006	.	.	.	.	.	.	.
Sodium	6	.	.	.	.	.	.	.
Strontium	0.077	.	.	.	.	.	.	.
Thorium	<0.2	.	.	.	.	.	.	.
Vanadium	<0.005	.	.	.	.	.	.	.
Zinc	1.2	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	1.73	.	.	.	.	.	.	.
Gross Alpha (CE+/-)	1.3	.	.	.	.	.	.	.
Gross Beta (pCi/L)	9.96	.	.	.	.	.	.	.
Gross Beta (CE+/-)	3	.	.	.	.	.	.	.

(CONTINUED)

APPENDIX I.4

2

Equipment Rinseate Data Summary, First Quarter 1993

Sample No.	930322- 008	930322- 045	930323- 059	930324- 100	930329- 024	930329- 032
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.
	.	.	.	.	.	.
Acetone	10U	10U	7	10U	10U	2
4-Methyl-2-pentanone	10U	10U	4	10U	1	2
Methylene chloride	5U	2	2	2	4	4
	.	.	.	.	.	.
OTHER PARAMETERS (mg/L)	.	.	.	.	.	.
	.	.	.	.	.	.
Nitrate (as N)	.	.	.	.	.	.
Aluminum	.	.	.	.	.	.
Antimony	.	.	.	.	.	.
Arsenic	.	.	.	.	.	.
Barium	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.
Boron	.	.	.	.	.	.
Cadmium	.	.	.	.	.	.
Calcium	.	.	.	.	.	.
Chromium	.	.	.	.	.	.
Cobalt	.	.	.	.	.	.
Copper	.	.	.	.	.	.
Iron	.	.	.	.	.	.
Magnesium	.	.	.	.	.	.
Manganese	.	.	.	.	.	.
Molybdenum	.	.	.	.	.	.
Nickel	.	.	.	.	.	.
Potassium	.	.	.	.	.	.
Selenium	.	.	.	.	.	.
Silver	.	.	.	.	.	.
Sodium	.	.	.	.	.	.
Strontium	.	.	.	.	.	.
Thorium	.	.	.	.	.	.
Vanadium	.	.	.	.	.	.
Zinc	.	.	.	.	.	.
Gross Alpha (pCi/L)	.	.	.	.	.	.
Gross Alpha (CE+/-)	.	.	.	.	.	.
Gross Beta (pCi/L)	.	.	.	.	.	.
Gross Beta (CE+/-)	.	.	.	.	.	.

APPENDIX I.4

3

Equipment Rinseate Data Summary, Second Quarter 1993

Sample No.	930423- 082	930427- 009	930430- 019	930430- 050	930430- 078	930513- 018	930518- 165	930519- 197
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	10U	10U	10U	4	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	1	10U	10U	10U
Methylene chloride	5U	5U	5U	2	2	3	5U	5U
	.	.	.	.	.	.	.	.
OTHER PARAMETERS (mg/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Nitrate (as N)	.	.	.	.	.	.	.	.
Aluminum	.	.	.	.	.	.	.	.
Antimony	.	.	.	.	.	.	.	.
Arsenic	.	.	.	.	.	.	.	.
Barium	.	.	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.	.
Cadmium	.	.	.	.	.	.	.	.
Calcium	.	.	.	.	.	.	.	.
Chromium	.	.	.	.	.	.	.	.
Cobalt	.	.	.	.	.	.	.	.
Copper	.	.	.	.	.	.	.	.
Iron	.	.	.	.	.	.	.	.
Magnesium	.	.	.	.	.	.	.	.
Manganese	.	.	.	.	.	.	.	.
Molybdenum	.	.	.	.	.	.	.	.
Nickel	.	.	.	.	.	.	.	.
Potassium	.	.	.	.	.	.	.	.
Selenium	.	.	.	.	.	.	.	.
Silver	.	.	.	.	.	.	.	.
Sodium	.	.	.	.	.	.	.	.
Strontium	.	.	.	.	.	.	.	.
Thorium	.	.	.	.	.	.	.	.
Vanadium	.	.	.	.	.	.	.	.
Zinc	.	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	.	.	.	.	.	.	.	.
Gross Alpha (CE+/-)	.	.	.	.	.	.	.	.
Gross Beta (pCi/L)	.	.	.	.	.	.	.	.
Gross Beta (CE+/-)	.	.	.	.	.	.	.	.

(CONTINUED)

APPENDIX I.4

4

Equipment Rinseate Data Summary, Second Quarter 1993

Sample No.	930519- 215	930525- 091	930603- 176	930603- 177	930611- 139	930628- 013	930628- 021	930628- 085
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	10U	.	10U	10U	10U	10U	10U
4-Methyl-2-pentanone	10U	10U	.	10U	10U	1	10U	10U
Methylene chloride	5U	1	.	5U	5U	5U	5U	2
OTHER PARAMETERS (mg/L)	.	.	.	.	.	.	.	.
Nitrate (as N)	.	.	<0.2	.	.	.	.	.
Aluminum	.	.	<0.02	.	.	.	.	.
Antimony	.	.	<0.05	.	.	.	.	.
Arsenic	.	.	<0.05	.	.	.	.	.
Barium	.	.	0.024	.	.	.	.	.
Beryllium	.	.	<0.0003	.	.	.	.	.
Boron	.	.	0.014	.	.	.	.	.
Cadmium	.	.	<0.003	.	.	.	.	.
Calcium	.	.	32	.	.	.	.	.
Chromium	.	.	<0.01	.	.	.	.	.
Cobalt	.	.	<0.005	.	.	.	.	.
Copper	.	.	0.0051	.	.	.	.	.
Iron	.	.	0.0073	.	.	.	.	.
Magnesium	.	.	9.2	.	.	.	.	.
Manganese	.	.	0.0014	.	.	.	.	.
Molybdenum	.	.	<0.01	.	.	.	.	.
Nickel	.	.	<0.01	.	.	.	.	.
Potassium	.	.	1.9	.	.	.	.	.
Selenium	.	.	<0.05	.	.	.	.	.
Silver	.	.	<0.006	.	.	.	.	.
Sodium	.	.	4.9	.	.	.	.	.
Strontium	.	.	0.084	.	.	.	.	.
Thorium	.	.	<0.2	.	.	.	.	.
Vanadium	.	.	<0.005	.	.	.	.	.
Zinc	.	.	0.86	.	.	.	.	.
Gross Alpha (pCi/L)	.	.	-2.87	.	.	.	.	.
Gross Alpha (CE+/-)	.	.	4.2	.	.	.	.	.
Gross Beta (pCi/L)	.	.	-5.57	.	.	.	.	.
Gross Beta (CE+/-)	.	.	5.9	.	.	.	.	.

APPENDIX I.4

5

Equipment Rinse Data Summary, Third Quarter 1993

Sample No.	930712- 079	930712- 113	930730- 108	930802- 044	930802- 045	930802- 120	930915- 022	930915- 027
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Chloroform	5U	5U	5U	5U	5U	5U	5U	5U
Methylene chloride	1	5U	1	5U	1	5U	1	5U
OTHER PARAMETERS (mg/L)	.	.	.	.	.	.	.	.
Nitrate (as N)	.	.	.	.	.	.	.	0.46
Aluminum	.	.	.	.	.	.	.	<0.02
Antimony	.	.	.	.	.	.	.	<0.05
Arsenic	.	.	.	.	.	.	.	<0.05
Barium	.	.	.	.	.	.	.	0.033
Beryllium	.	.	.	.	.	.	.	<0.0003
Boron	.	.	.	.	.	.	.	0.013
Cadmium	.	.	.	.	.	.	.	<0.003
Calcium	.	.	.	.	.	.	.	35
Chromium	.	.	.	.	.	.	.	<0.01
Cobalt	.	.	.	.	.	.	.	<0.005
Copper	.	.	.	.	.	.	.	0.01
Iron	.	.	.	.	.	.	.	0.062
Magnesium	.	.	.	.	.	.	.	9.5
Manganese	.	.	.	.	.	.	.	0.003
Molybdenum	.	.	.	.	.	.	.	<0.01
Nickel	.	.	.	.	.	.	.	<0.01
Potassium	.	.	.	.	.	.	.	1.3
Selenium	.	.	.	.	.	.	.	<0.05
Silver	.	.	.	.	.	.	.	<0.006
Sodium	.	.	.	.	.	.	.	4.5
Strontium	.	.	.	.	.	.	.	0.086
Thorium	.	.	.	.	.	.	.	<0.2
Vanadium	.	.	.	.	.	.	.	<0.005
Zinc	.	.	.	.	.	.	.	0.59
Gross Alpha (pCi/L)	.	.	.	.	.	.	.	-0.659
Gross Alpha (CE+/-)	.	.	.	.	.	.	.	1.1
Gross Beta (pCi/L)	.	.	.	.	.	.	.	1.82
Gross Beta (CE+/-)	.	.	.	.	.	.	.	2.5

(CONTINUED)

APPENDIX I.4

6

Equipment Rinseate Data Summary, Third Quarter 1993

Sample No.	930920- 026	930920- 049	930924- 010	930928- 063	930928- 120	930928- 134	930929- 190
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.
	.	.	.	.	.	.	.
Chloroform	5U	5U	7	5U	5U	5U	5U
Methylene chloride	5U	1	5U	5U	1	1	5U
	.	.	.	.	.	.	.
OTHER PARAMETERS (mg/L)	.	.	.	.	.	.	.
	.	.	.	.	.	.	.
Nitrate (as N)	.	.	.	.	.	.	.
Aluminum	.	.	.	.	.	.	.
Antimony	.	.	.	.	.	.	.
Arsenic	.	.	.	.	.	.	.
Barium	.	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.
Cadmium	.	.	.	.	.	.	.
Calcium	.	.	.	.	.	.	.
Chromium	.	.	.	.	.	.	.
Cobalt	.	.	.	.	.	.	.
Copper	.	.	.	.	.	.	.
Iron	.	.	.	.	.	.	.
Magnesium	.	.	.	.	.	.	.
Manganese	.	.	.	.	.	.	.
Molybdenum	.	.	.	.	.	.	.
Nickel	.	.	.	.	.	.	.
Potassium	.	.	.	.	.	.	.
Selenium	.	.	.	.	.	.	.
Silver	.	.	.	.	.	.	.
Sodium	.	.	.	.	.	.	.
Strontium	.	.	.	.	.	.	.
Thorium	.	.	.	.	.	.	.
Vanadium	.	.	.	.	.	.	.
Zinc	.	.	.	.	.	.	.
Gross Alpha (pCi/L)	.	.	.	.	.	.	.
Gross Alpha (CE+/-)	.	.	.	.	.	.	.
Gross Beta (pCi/L)	.	.	.	.	.	.	.
Gross Beta (CE+/-)	.	.	.	.	.	.	.

APPENDIX I.4

7

Equipment Rinse Data Summary, Fourth Quarter 1993

Sample No.	931013- 008	931018- 201	931019- 008	931021- 006	931022- 095	931027- 034	931109- 169	931110- 021
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
Acetone	10U	3	10U	3	10U	1	10U	10U
2-Butanone	8	10	9	8	10U	6	10U	10U
4-Methyl-2-pentanone	10U	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5U	2	3	2	5U	2	1	5U
OTHER PARAMETERS (mg/L)	.	.	.	.	.	.	.	.
Nitrate (as N)	.	.	.	.	.	<0.2	.	.
Aluminum	.	.	.	.	.	<0.02	.	.
Antimony	.	.	.	.	.	<0.05	.	.
Arsenic	.	.	.	.	.	<0.05	.	.
Barium	.	.	.	.	.	0.0015	.	.
Beryllium	.	.	.	.	.	<0.0003	.	.
Boron	.	.	.	.	.	0.0059	.	.
Cadmium	.	.	.	.	.	<0.003	.	.
Calcium	.	.	.	.	.	0.14	.	.
Chromium	.	.	.	.	.	<0.01	.	.
Cobalt	.	.	.	.	.	<0.005	.	.
Copper	.	.	.	.	.	<0.004	.	.
Iron	.	.	.	.	.	0.024	.	.
Magnesium	.	.	.	.	.	0.027	.	.
Manganese	.	.	.	.	.	<0.001	.	.
Molybdenum	.	.	.	.	.	<0.01	.	.
Nickel	.	.	.	.	.	<0.01	.	.
Potassium	.	.	.	.	.	<0.6	.	.
Selenium	.	.	.	.	.	<0.05	.	.
Silver	.	.	.	.	.	<0.006	.	.
Sodium	.	.	.	.	.	0.066	.	.
Strontium	.	.	.	.	.	0.00081	.	.
Thorium	.	.	.	.	.	<0.2	.	.
Vanadium	.	.	.	.	.	<0.005	.	.
Zinc	.	.	.	.	.	0.015	.	.

(CONTINUED)

APPENDIX I.4

8

Equipment Rinsate Data Summary, Fourth Quarter 1993

Sample No.	931111- 115	931214- 036	931215- 006	931216- 011	931219- 044	931222- 004	931228- 138	931229- 009
VOLATILE ORGANICS (ug/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Acetone	10U	10U	8	4	5	4	4	2
2-Butanone	10U	10U	10U	7	8	9	8	5
4-Methyl-2-pentanone	10U	10U	10U	1	10U	10U	10U	10U
Methylene chloride	2	5U	1	2	2	0.7	1	1
	.	.	.	.	.	.	.	.
OTHER PARAMETERS (mg/L)	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.
Nitrate (as N)	.	.	.	.	.	.	.	.
Aluminum	.	.	.	.	.	.	.	.
Antimony	.	.	.	.	.	.	.	.
Arsenic	.	.	.	.	.	.	.	.
Barium	.	.	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.	.
Cadmium	.	.	.	.	.	.	.	.
Calcium	.	.	.	.	.	.	.	.
Chromium	.	.	.	.	.	.	.	.
Cobalt	.	.	.	.	.	.	.	.
Copper	.	.	.	.	.	.	.	.
Iron	.	.	.	.	.	.	.	.
Magnesium	.	.	.	.	.	.	.	.
Manganese	.	.	.	.	.	.	.	.
Molybdenum	.	.	.	.	.	.	.	.
Nickel	.	.	.	.	.	.	.	.
Potassium	.	.	.	.	.	.	.	.
Selenium	.	.	.	.	.	.	.	.
Silver	.	.	.	.	.	.	.	.
Sodium	.	.	.	.	.	.	.	.
Strontium	.	.	.	.	.	.	.	.
Thorium	.	.	.	.	.	.	.	.
Vanadium	.	.	.	.	.	.	.	.
Zinc	.	.	.	.	.	.	.	.

Equipment Rinseate Radiochemical Data Summary, Fourth Quarter 1993

Sample No.	931013- 008	931018- 201	931019- 008	931021- 006	931022- 095	931027- 034	931109- 169	931110- 021
Gross Alpha (pCi/L)	.	.	.	.	.	1.53	.	.
Gross Alpha (CE+/-)	.	.	.	.	.	1.6	.	.
Gross Beta (pCi/L)	.	.	.	.	.	0.508	.	.
Gross Beta (CE+/-)	.	.	.	.	.	2.6	.	.
Americium 241 (pCi/L)	.	.	0	5.14	6	-0.662	8.03	4.21
Americium 241 (CE+/-)	.	.	6.2	7.3	6.9	2.3	16	4.9
Neptunium 237 (pCi/L)	.	.	0	0.551	2.74	0	7.08	3.35
Neptunium 237 (CE+/-)	.	.	2.1	1.1	2.4	1.8	7.1	4.7
Radium, total (Bq/L)	.	.	.	.	.	0.029	0.077	0.047
Radium (CE+/-)	.	.	.	.	.	0.048	0.048	0.039
Strontium, total (pCi/L)	.	.	23.2	54.9	19.6	20	96.2	115
Strontium (CE+/-)	.	.	21	24	20	21	28	29
Technetium 99 (pCi/L)	.	.	187	121	189	-79.3	201	158
Technetium 99 (CE+/-)	.	.	65	63	65	56	65	64
Thorium 234 (pCi/L)	.	.	914	.	213	.	.	.
Thorium 234 (CE +/-)	.	.	410	.	520	.	.	.
Tritium (Bq/L)	.	.	.	.	33	-4	12	-13
Tritium (CE+/-)	.	.	.	.	29	23	25	22
Uranium 234 (pCi/L)	.	.	7.11	0	-7.06	5.46	4.47	-0.345
Uranium 234 (CE+/-)	.	.	38	28	32	4.9	2.3	0.77
Uranium 235 (pCi/L)	.	.	3.8	61.3	49.6	-6.59	-26.4	29.7
Uranium 235 (CE+/-)	.	.	68	90	27	59	68	90
Uranium 238 (pCi/L)	.	.	7.11	5.64	14.1	5.46	3.98	-0.517
Uranium 238 (CE+/-)	.	.	14	11	20	5.8	2.5	0.91

(CONTINUED)

Equipment Rinse Radiochemical Data Summary, Fourth Quarter 1993

Sample No.	931111- 115	931214- 036	931215- 006	931216- 011	931219- 044	931222- 004	931228- 138	931229- 009
Gross Alpha (pCi/L)	.	.	.	.	.	.	.	.
Gross Alpha (CE+/-)	.	.	.	.	.	.	.	.
Gross Beta (pCi/L)	.	.	.	.	.	.	.	.
Gross Beta (CE+/-)	.	.	.	.	.	.	.	.
Americium 241 (pCi/L)	3.7	.	.	.	.	.	.	.
Americium 241 (CE+/-)	5.2	.	.	.	.	.	.	.
Neptunium 237 (pCi/L)	0	.	.	.	.	.	.	.
Neptunium 237 (CE+/-)	5.5	.	.	.	.	.	.	.
Radium, total (Bq/L)	0.037	.	.	.	.	.	.	.
Radium (CE+/-)	0.037	.	.	.	.	.	.	.
Strontium, total (pCi/L)	96.2	.	.	.	.	.	.	.
Strontium (CE+/-)	28	.	.	.	.	.	.	.
Technetium 99 (pCi/L)	207	.	.	.	.	.	.	.
Technetium 99 (CE+/-)	65	.	.	.	.	.	.	.
Thorium 234 (pCi/L)	.	.	.	.	.	.	.	.
Thorium 234 (CE +/-)	.	.	.	.	.	.	.	.
Tritium (Bq/L)	13	.	.	.	.	.	.	.
Tritium (CE+/-)	25	.	.	.	.	.	.	.
Uranium 234 (pCi/L)	0.393	.	.	.	.	.	.	.
Uranium 234 (CE+/-)	0.96	.	.	.	.	.	.	.
Uranium 235 (pCi/L)	40.6	.	.	.	.	.	.	.
Uranium 235 (CE+/-)	16	.	.	.	.	.	.	.
Uranium 238 (pCi/L)	-0.786	.	.	.	.	.	.	.
Uranium 238 (CE+/-)	0.96	.	.	.	.	.	.	.

APPENDIX J

VALIDATED RESULTS OF VOLATILE ORGANIC COMPOUND ANALYSES

EXPLANATION

SAMPLING POINT:

- BCK - Bear Creek Kilometer
- GW - Monitoring Well
- NT - North Tributary to Bear Creek
- SS - Spring

LOCATION/SITE:

- AGLLSF - Above Grade Low Level Storage Facility
- BG - Bear Creek Burial Grounds WMA
- EXP - Exit-Pathway Monitoring
- OLF - Oil Landfarm WMA
- RS - Rust Spoil Area
- S3 - S-3 Site
- SPI - Spoil Area I

NOTES:

All results in micrograms per Liter (ug/L).

- FP1 - False Positive result, screened by laboratory blank
- FP2 - False Positive result, screened by trip blank
- FP3 - Anomalous Result
- U - Compound not detected at the reported minimum attainable detection limit.

Results of VOC analyses reported for each groundwater sample were evaluated using results for each associated laboratory and trip blank sample to identify false positives (i.e., results that are probable artifacts of the groundwater sampling or analysis procedures). To identify the false positives, the maximum concentration of each VOC detected in either blank sample (Appendix I) is multiplied by a qualification factor to determine the blank qualification result (BQR) for the compound. A factor of 5 is used for most compounds and a factor of 10 is used for the common laboratory reagents methylene chloride, acetone, 2-butanone, and toluene (U.S. Environmental Protection Agency 1988b). If a compound detected in the blank samples is also detected in an associated groundwater sample, the concentration reported for the groundwater sample (Appendix E) is compared to the corresponding BQR. If the concentration of the compound in the groundwater sample is at or below the BQR, the result is considered a false positive and is excluded from the summed VOC concentration determined for the sample.

If a compound was detected in only one of at least four consecutive quarterly samples collected at a sampling point, the result was assumed to be anomalous. Anomalous VOC results were not identified in samples for which elevated analytical detection limits were reported for the compound during any other consecutive sampling event.

APPENDIX J
Validated VOC Results, 1993

1

Sampling Point . Location . Date Sampled	GW-013								GW-040			
	OLF								BG			
	03/29/93		06/17/93		09/17/93		12/19/93		03/25/93		05/11/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	FP1	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Methylene chloride	FP1	.	5U	.	5U	.	FP1	.	5U	.	FP2	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

2

Sampling Point . Location . Date Sampled	GW-040				GW-043							
	BG				OLF							
	07/02/93		10/09/93		02/04/93		05/10/93		09/11/93		10/19/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	FP1	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	FP1	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	FP1	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	5U	.	FP1	.	5U	.	FP3	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

3

Sampling Point . Location . Date Sampled	GW-044								GW-056			
	OLF								BG			
	02/04/93		05/10/93		09/11/93		10/19/93		03/04/93		04/22/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	FP1	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	FP1	.	5U	.	5U	.	FP1	.	FP3	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

4

Sampling Point . Location . Date Sampled	GW-056				GW-057							
	BG				EXP							
	07/09/93		10/09/93		03/04/93		04/22/93		07/09/93		10/09/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	100	.	100	.	100	.	100	.	100	.	100	.
Benzene	50	.	50	.	50	.	50	.	50	.	50	.
Bromodichloromethane	50	.	50	.	50	.	50	.	50	.	50	.
2-Butanone	100	.	100	.	100	.	100	.	100	.	100	.
Carbon disulfide	50	.	50	.	50	.	50	.	50	.	50	.
Carbon tetrachloride	50	.	50	.	50	.	50	.	50	.	50	.
Chlorobenzene	50	.	50	.	50	.	50	.	50	.	50	.
Chloroform	50	.	50	.	50	.	50	.	50	.	50	.
1,1-Dichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,2-Dichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,1-Dichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
1,2-Dichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Ethylbenzene	50	.	50	.	50	.	50	.	50	.	50	.
2-Hexanone	100	.	100	.	100	.	100	.	100	.	100	.
4-Methyl-2-pentanone	100	.	100	.	100	.	100	.	100	.	100	.
Methylene chloride	50	.	50	.	50	.	50	.	FP1	.	50	.
Styrene	50	.	50	.	50	.	50	.	50	.	50	.
Tetrachloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Toluene	50	.	50	.	50	.	50	.	50	.	50	.
1,1,1-Trichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,1,2-Trichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
Trichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Vinyl acetate	100	.	100	.	100	.	100	.	100	.	100	.
Vinyl chloride	100	.	100	.	100	.	100	.	100	.	100	.
Xylenes	50	.	50	.	50	.	50	.	50	.	50	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

5

Sampling Point Location Date Sampled	GW-063		GW-064								GW-069	
	OLF		OLF								BG	
	02/23/93		02/09/93		05/12/93		09/11/93		10/20/93		03/03/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	FP3	.	100	.	100	.	100	.	100	.	100	.
Benzene	5U	.	50	.	50	.	50	.	50	.	50	.
Bromodichloromethane	5U	.	50	.	50	.	50	.	50	.	50	.
2-Butanone	10U	.	100	.	100	.	100	.	FP1	.	100	.
Carbon disulfide	5U	.	50	.	50	.	50	.	50	.	50	.
Carbon tetrachloride	5U	.	4	3.4	2	2.2	2	1.9	2	2.1	50	.
Chlorobenzene	5U	.	50	.	50	.	50	.	50	.	50	.
Chloroform	5U	.	3	2.5	2	2.2	2	1.9	2	2.1	50	.
1,1-Dichloroethane	5U	.	50	.	50	.	50	.	50	.	50	.
1,2-Dichloroethane	5U	.	50	.	50	.	50	.	50	.	50	.
1,1-Dichloroethene	5U	.	50	.	50	.	50	.	50	.	50	.
1,2-Dichloroethene	FP3	.	9	7.6	6	6.5	7	6.5	6	6.3	50	.
Ethylbenzene	5U	.	50	.	50	.	50	.	50	.	50	.
2-Hexanone	10U	.	100	.	100	.	100	.	100	.	100	.
4-Methyl-2-pentanone	10U	.	FP1	.	100	.	100	.	100	.	100	.
Methylene chloride	FP2	.	FP1	.	1	1.1	1	0.9	FP1	.	50	.
Styrene	5U	.	50	.	50	.	50	.	50	.	50	.
Tetrachloroethene	5U	.	1	0.8	1	1.1	1	0.9	50	.	50	.
Toluene	5U	.	50	.	50	.	50	.	50	.	50	.
1,1,1-Trichloroethane	5U	.	1	0.8	0.8	0.9	0.9	0.8	50	.	50	.
1,1,2-Trichloroethane	5U	.	50	.	50	.	50	.	50	.	50	.
Trichloroethene	16	100	100	84.7	79	86.1	94	87.1	85	89.5	50	.
Vinyl acetate	10U	.	FP3	.	100	.	100	.	100	.	100	.
Vinyl chloride	10U	.	100	.	100	.	100	.	100	.	100	.
Xylenes	5U	.	50	.	50	.	50	.	50	.	50	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	16	100	118	99.8	91.8	100.1	107.9	100	95	100	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

6

Sampling Point . Location . Date Sampled	GW-069						GW-079		GW-082			
	BG						BG		BG			
	04/21/93		07/25/93		10/10/93		10/18/93		03/10/93		04/21/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	100	.	100	.	100	.	FP1	.	100	.	100	.
Benzene	50	.	50	.	50	.	50	.	50	.	50	.
Bromodichloromethane	50	.	50	.	50	.	50	.	50	.	50	.
2-Butanone	100	.	100	.	100	.	FP1	.	100	.	100	.
Carbon disulfide	50	.	50	.	50	.	50	.	50	.	50	.
Carbon tetrachloride	50	.	50	.	50	.	50	.	50	.	50	.
Chlorobenzene	50	.	50	.	50	.	50	.	50	.	50	.
Chloroform	50	.	50	.	50	.	50	.	50	.	50	.
1,1-Dichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,2-Dichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,1-Dichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
1,2-Dichloroethene	50	.	50	.	50	.	50	.	41	57.7	50	61.7
Ethylbenzene	50	.	50	.	50	.	50	.	50	.	50	.
2-Hexanone	100	.	100	.	100	.	100	.	100	.	100	.
4-Methyl-2-pentanone	100	.	100	.	100	.	100	.	100	.	100	.
Methylene chloride	0.8	100	1	100	50	.	FP1	.	50	.	50	.
Styrene	50	.	50	.	50	.	50	.	50	.	50	.
Tetrachloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Toluene	50	.	50	.	50	.	50	.	50	.	50	.
1,1,1-Trichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,1,2-Trichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
Trichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Vinyl acetate	100	.	100	.	100	.	100	.	100	.	100	.
Vinyl chloride	FP3	.	100	.	100	.	100	.	30	42.3	31	38.3
Xylenes	50	.	50	.	50	.	50	.	50	.	50	.
.	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0.8	100	1	100	0	.	0	.	71	100	81	100

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

7

Sampling Point . Location . Date Sampled	GW-082				GW-084							
	BG				OLF							
	07/25/93		10/18/93		02/04/93		05/10/93		09/11/93		10/20/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	100	.	FP3	.	100	.	100	.	100	.	FP1	.
Benzene	50	.	50	.	50	.	50	.	50	.	50	.
Bromodichloromethane	50	.	50	.	50	.	50	.	50	.	50	.
2-Butanone	100	.	FP3	.	100	.	100	.	100	.	FP1	.
Carbon disulfide	50	.	50	.	50	.	50	.	50	.	50	.
Carbon tetrachloride	50	.	50	.	50	.	50	.	50	.	50	.
Chlorobenzene	50	.	50	.	50	.	50	.	50	.	50	.
Chloroform	50	.	50	.	50	.	50	.	50	.	50	.
1,1-Dichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,2-Dichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,1-Dichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
1,2-Dichloroethene	29	78.4	23	63.9	50	.	50	.	50	.	50	.
Ethylbenzene	50	.	50	.	50	.	50	.	50	.	50	.
2-Hexanone	100	.	100	.	100	.	100	.	100	.	100	.
4-Methyl-2-pentanone	100	.	100	.	100	.	100	.	100	.	100	.
Methylene chloride	FP1	.	FP3	.	50	.	50	.	50	.	FP1	.
Styrene	50	.	50	.	50	.	50	.	50	.	50	.
Tetrachloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Toluene	50	.	50	.	50	.	50	.	50	.	50	.
1,1,1-Trichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,1,2-Trichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
Trichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Vinyl acetate	100	.	100	.	100	.	100	.	100	.	100	.
Vinyl chloride	8	21.6	13	36.1	100	.	100	.	100	.	100	.
Xylenes	50	.	50	.	50	.	50	.	50	.	50	.
.	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	37	100	36	100	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

8

Sampling Point . Location . Date Sampled	GW-085								GW-086			
	OLF								OLF			
	02/11/93		05/12/93		09/14/93		10/22/93		02/05/93		05/11/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	100	.	100	.	100	.	100	.	100	.	100	.
Benzene	50	.	50	.	50	.	50	.	50	.	50	.
Bromodichloromethane	50	.	50	.	50	.	50	.	50	.	50	.
2-Butanone	100	.	100	.	100	.	100	.	100	.	100	.
Carbon disulfide	50	.	50	.	50	.	50	.	50	.	50	.
Carbon tetrachloride	50	.	50	.	50	.	50	.	50	.	50	.
Chlorobenzene	50	.	50	.	50	.	50	.	50	.	50	.
Chloroform	50	.	50	.	50	.	50	.	50	.	50	.
1,1-Dichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,2-Dichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,1-Dichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
1,2-Dichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Ethylbenzene	50	.	50	.	50	.	50	.	50	.	50	.
2-Hexanone	100	.	100	.	100	.	100	.	100	.	100	.
4-Methyl-2-pentanone	100	.	100	.	100	.	100	.	100	.	FP3	.
Methylene chloride	FP1	.	50	.	FP1	.	50	.	50	.	50	.
Styrene	50	.	50	.	50	.	50	.	50	.	50	.
Tetrachloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Toluene	50	.	50	.	50	.	50	.	50	.	50	.
1,1,1-Trichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,1,2-Trichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
Trichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Vinyl acetate	100	.	100	.	100	.	100	.	100	.	100	.
Vinyl chloride	100	.	100	.	100	.	100	.	100	.	100	.
Xylenes	50	.	50	.	50	.	50	.	50	.	50	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

9

Sampling Point . Location . Date Sampled	GW-086				GW-115							
	OLF				S3							
	09/12/93		10/21/93		01/28/93		05/25/93		09/11/93		10/19/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	FP1	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	FP1	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	5U	.	5U	.	5U	.	FP3	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

10

Sampling Point . Location . Date Sampled	GW-118								GW-286			
	BG								BG			
	03/04/93		04/21/93		07/25/93		10/10/93		02/25/93		04/19/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	FP3	.	10U	.	10U	.
Benzene	5U	.	5U	.	2	50	1	33.3	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	FP3	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	FP3	.	10U	.	10U	.
Methylene chloride	5U	.	5U	.	5U	.	FP3	.	1	100	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	2	50	2	66.7	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	FP3	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Summed VOCs	0	.	0	.	4	100	3	100	1	100	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

11

Sampling Point . Location . Date Sampled	GW-286				GW-287							
	BG				BG							
	07/10/93		10/07/93		02/24/93		04/16/93		07/10/93		10/07/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	FP2	.	FP3	.	10U	.	10U	.	10U	.	FP1	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	FP3	.	10U	.	10U	.	10U	.	FP1	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	FP1	.	3	100	FP3	.	5U	.	5U	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	FP3	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	3	100	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

12

Sampling Point . Location . Date Sampled	GW-311								GW-312			
	RS								RS			
	02/08/93		05/11/93		09/12/93		10/21/93		02/08/93		05/11/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	0.9	6	2	8.7	1	6	3	13	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	1	6.7	5U	.	0.8	4.8	1	4.3	1	1.6	1	1.2
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	FP1	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	5U	.	FP1	.	5U	.	5U	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	13	87.2	21	91.3	15	89.3	19	82.6	62	98.4	83	98.8
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
.	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	14.9	99.9	23	100	16.8	100.1	23	99.9	63	100	84	100

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

13

Sampling Point . Location . Date Sampled	GW-312				GW-315							
	RS				SPI							
	09/12/93		10/21/93		02/03/93		06/03/93		09/14/93		10/27/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	FP3	.	FP2	.	10U	.	10U	.	FP1	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	2	7.7	2	10	2	6.3	1	4.3
2-Butanone	10U	.	FP3	.	10U	.	10U	.	10U	.	FP1	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	7	26.9	9	45	8	25	6	26.1
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5	19.2	2	10	7	21.9	5	21.7
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	FP1	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	FP3	.	FP1	.	FP1	.	5U	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	8	30.8	5	25	10	31.3	7	30.4
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	10	100	49	100	4	15.4	2	10	5	15.6	4	17.4
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
.	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	10	100	49	100	26	100	20	100	32	100.1	23	99.9

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APPENDIX J
Validated VOC Results, 1993

14

Sampling Point . Location . Date Sampled	GW-316								GW-317			
	SPI								SPI			
	02/02/93		06/01/93		09/13/93		10/24/93		02/02/93		05/28/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	FP3	.	10U	.	10U	.	10U	.	FP1	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	FP3	.	10U	.	10U	.	10U	.	FP1	.	FP3	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	FP3	.	10U	.	10U	.	10U	.	FP1	.	10U	.
Methylene chloride	5U	.	5U	.	5U	.	5U	.	5U	.	FP2	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

15

Sampling Point . Location . Date Sampled	GW-317				GW-323							
	SPI				SPI							
	09/13/93		10/24/93		02/02/93		05/28/93		09/12/93		10/23/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	FP1	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	FP1	.	FP3	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	FP1	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

16

Sampling Point . Location . Date Sampled	GW-324								GW-325			
	S3								S3			
	01/29/93		05/25/93		09/11/93		10/19/93		02/01/93		05/25/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	FP1	.	10U	.
Methylene chloride	5U	.	5U	.	FP3	.	FP1	.	5U	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

17

Sampling Point . Location . Date Sampled	GW-325				GW-345							
	S3				S3							
	09/11/93		10/21/93		02/03/93		06/01/93		09/14/93		10/26/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	FP1	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	FP1	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	FP3	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	FP3	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	FP1	.	10U	.	10U	.	10U	.
Methylene chloride	FP3	.	5U	.	FP1	.	5U	.	FP3	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

18

Sampling Point . Location . Date Sampled	GW-347								GW-348			
	S3								S3			
	02/01/93		05/27/93		09/12/93		10/22/93		02/01/93		05/27/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	100	.	100	.	100	.	100	.	100	.	100	.
Benzene	50	.	50	.	50	.	50	.	50	.	50	.
Bromodichloromethane	50	.	50	.	50	.	50	.	50	.	50	.
2-Butanone	100	.	100	.	100	.	100	.	100	.	100	.
Carbon disulfide	50	.	50	.	50	.	50	.	50	.	50	.
Carbon tetrachloride	50	.	50	.	50	.	50	.	50	.	50	.
Chlorobenzene	50	.	50	.	50	.	50	.	50	.	50	.
Chloroform	50	.	50	.	50	.	50	.	50	.	50	.
1,1-Dichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,2-Dichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,1-Dichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
1,2-Dichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Ethylbenzene	50	.	50	.	50	.	50	.	50	.	50	.
2-Hexanone	100	.	100	.	100	.	100	.	100	.	100	.
4-Methyl-2-pentanone	FP1	.	100	.	100	.	100	.	FP1	.	100	.
Methylene chloride	50	.	50	.	50	.	50	.	50	.	50	.
Styrene	50	.	50	.	50	.	50	.	50	.	50	.
Tetrachloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Toluene	50	.	50	.	50	.	50	.	50	.	50	.
1,1,1-Trichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,1,2-Trichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
Trichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Vinyl acetate	100	.	100	.	100	.	100	.	100	.	100	.
Vinyl chloride	100	.	100	.	100	.	100	.	100	.	100	.
Xylenes	50	.	50	.	50	.	50	.	50	.	50	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

19

Sampling Point . Location . Date Sampled	GW-348				GW-364							
	S3				OLF							
	09/12/93		10/22/93		03/27/93		06/27/93		09/19/93		12/18/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	100	.	FP1	.	100	.	100	.	100	.	FP1	.
Benzene	50	.	50	.	50	.	50	.	50	.	50	.
Bromodichloromethane	50	.	50	.	50	.	50	.	50	.	50	.
2-Butanone	100	.	FP1	.	100	.	100	.	100	.	FP1	.
Carbon disulfide	50	.	50	.	50	.	50	.	50	.	50	.
Carbon tetrachloride	50	.	50	.	50	.	50	.	50	.	50	.
Chlorobenzene	50	.	50	.	50	.	50	.	50	.	50	.
Chloroform	50	.	50	.	50	.	50	.	50	.	50	.
1,1-Dichloroethane	50	.	50	.	2	25	50	.	3	9.4	2	12.3
1,2-Dichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,1-Dichloroethene	50	.	50	.	50	.	50	.	5	15.6	2	12.3
1,2-Dichloroethene	50	.	50	.	50	.	6	27.3	7	21.9	4	24.5
Ethylbenzene	50	.	50	.	50	.	50	.	50	.	50	.
2-Hexanone	100	.	100	.	100	.	100	.	100	.	100	.
4-Methyl-2-pentanone	100	.	100	.	100	.	FP1	.	100	.	100	.
Methylene chloride	50	.	FP1	.	50	.	50	.	FP3	.	FP1	.
Styrene	50	.	50	.	50	.	50	.	50	.	50	.
Tetrachloroethene	50	.	50	.	50	.	50	.	50	.	0.3	1.8
Toluene	50	.	50	.	50	.	50	.	50	.	50	.
1,1,1-Trichloroethane	50	.	50	.	50	.	50	.	2	6.3	FP3	.
1,1,2-Trichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
Trichloroethene	50	.	50	.	6	75	16	72.7	15	46.9	8	49.1
Vinyl acetate	100	.	100	.	100	.	100	.	100	.	100	.
Vinyl chloride	100	.	100	.	100	.	100	.	100	.	100	.
Xylenes	50	.	50	.	50	.	50	.	50	.	50	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	8	100	22	100	32	100.1	16.3	100

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

20

Sampling Point . Location . Date Sampled	GW-365								GW-370			
	OLF								BG			
	03/28/93		06/27/93		09/19/93		12/19/93		02/17/93		05/21/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	FP1	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	FP3	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5	3.3	5U	.	4	4.9	4	5.6	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	21	13.9	20	16.5	14	17.3	13	18.3	5U	.	5U	.
1,2-Dichloroethene	23	15.2	19	15.7	14	17.3	12	16.9	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	FP1	.	10U	.	10U	.	10U	.	FP1	.	10U	.
Methylene chloride	FP1	.	5U	.	5U	.	FP1	.	FP1	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	2	1.3	5U	.	1	1.2	1	1.4	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	11	7.3	5	4.1	2	2.5	2	2.8	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	89	58.9	77	63.6	46	56.8	39	54.9	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
.	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	151	99.9	121	99.9	81	100	71	99.9	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

21

Sampling Point . Location . Date Sampled	GW-370				GW-371							
	BG				BG							
	07/10/93		10/14/93		02/16/93		05/21/93		07/09/93		10/13/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	FP1	.	10U	.	10U	.	FP3	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	FP1	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	FP3	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	FP1	.	5U	.	5U	.	FP1	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

22

Sampling Point . Location . Date Sampled	GW-372								GW-373			
	BG								BG			
	02/09/93		05/19/93		07/02/93		10/12/93		02/11/93		05/14/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	FP1	.	100	.	100	.	100	.	FP1	.	100	.
Benzene	50	.	50	.	50	.	50	.	50	.	50	.
Bromodichloromethane	50	.	50	.	50	.	50	.	50	.	50	.
2-Butanone	100	.	100	.	100	.	100	.	100	.	100	.
Carbon disulfide	50	.	50	.	50	.	50	.	50	.	50	.
Carbon tetrachloride	50	.	50	.	50	.	50	.	50	.	50	.
Chlorobenzene	50	.	50	.	50	.	50	.	50	.	50	.
Chloroform	50	.	50	.	50	.	50	.	50	.	50	.
1,1-Dichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,2-Dichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,1-Dichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
1,2-Dichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Ethylbenzene	50	.	50	.	50	.	50	.	50	.	50	.
2-Hexanone	100	.	100	.	100	.	100	.	100	.	100	.
4-Methyl-2-pentanone	FP1	.	100	.	100	.	100	.	FP1	.	FP2	.
Methylene chloride	FP1	.	50	.	50	.	FP2	.	FP1	.	FP2	.
Styrene	50	.	50	.	50	.	50	.	50	.	50	.
Tetrachloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Toluene	50	.	50	.	50	.	50	.	50	.	50	.
1,1,1-Trichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
1,1,2-Trichloroethane	50	.	50	.	50	.	50	.	50	.	50	.
Trichloroethene	50	.	50	.	50	.	50	.	50	.	50	.
Vinyl acetate	100	.	100	.	100	.	100	.	100	.	100	.
Vinyl chloride	100	.	100	.	100	.	100	.	100	.	100	.
Xylenes	50	.	50	.	50	.	50	.	50	.	50	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

23

Sampling Point . Location . Date Sampled	GW-373				GW-526							
	BG				S3							
	07/02/93		10/11/93		02/03/93		06/03/93		09/14/93		10/26/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	FP1	.	FP3	.	10U	.	10U	.	FP1	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	FP1	.	10U	.	10U	.	10U	.	FP1	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	FP3	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	FP3	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	FP1	.	FP3	.	5U	.	5U	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC results, 1993

24

Sampling Point . Location . Date Sampled	GW-537								GW-601			
	OLF								OLF			
	02/11/93		05/12/93		09/14/93		10/22/93		03/28/93		06/27/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	4	2.6	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	0.8	100	0.8	100	0.9	100	5U	.	1	0.7	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	2	1.3	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	2	1.3	3	2.1
Methylene chloride	5U	.	5U	.	FP1	.	5U	.	3	2	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	1	0.7	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	140	91.5	140	97.9
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0.8	100	0.8	100	0.9	100	0	.	153	100.1	143	100

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

25

Sampling Point Location Date Sampled	GW-601				GW-613		GW-614		GW-621			
	OLF				S3		S3		BG			
	09/19/93		12/21/94		10/20/93		10/20/93		03/20/93		06/02/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	FP1	.	FP1	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	FP3	.	FP1	.	FP1	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	2	1.6	3	2.4	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	0.6	0.5	0.7	0.5	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	0.7	0.6	0.8	0.6	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	1	0.8	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	FP3	.	10U	.
Methylene chloride	5U	.	0.6	0.5	FP1	.	FP1	.	2	100	0.9	100
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	1	0.8	1	0.8	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	0.5	0.4	0.5	0.4	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	120	96.2	120	94	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	124.8	100.1	127.6	100	0	.	0	.	2	100	0.9	100

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

26

Sampling Point . Location . Date Sampled	GW-621				GW-626							
	BG				BG							
	09/20/93		12/20/93		03/10/93		04/26/93		08/02/93		10/20/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	100U	.	20U	.	20U	.	5	1.1
Benzene	5U	.	FP3	.	50U	.	10U	.	10U	.	10U	.
Bromodichloromethane	5U	.	5U	.	50U	.	10U	.	10U	.	10U	.
2-Butanone	10U	.	FP1	.	100U	.	20U	.	20U	.	23	4.9
Carbon disulfide	5U	.	5U	.	50U	.	10U	.	10U	.	10U	.
Carbon tetrachloride	5U	.	FP3	.	50U	.	10U	.	10U	.	10U	.
Chlorobenzene	5U	.	5U	.	50U	.	10U	.	10U	.	10U	.
Chloroform	5U	.	5U	.	50U	.	10U	.	10U	.	10U	.
1,1-Dichloroethane	5U	.	5U	.	51	3.2	18	3.6	19	5.5	19	4
1,2-Dichloroethane	5U	.	5U	.	50U	.	4	0.8	10U	.	3	0.6
1,1-Dichloroethene	5U	.	5U	.	28	1.7	6	1.2	9	2.6	12	2.5
1,2-Dichloroethene	5U	.	5U	.	1200	74.2	400	80.3	250	71.8	330	69.8
Ethylbenzene	5U	.	5U	.	50U	.	10U	.	10U	.	10U	.
2-Hexanone	10U	.	10U	.	100U	.	20U	.	20U	.	20U	.
4-Methyl-2-pentanone	10U	.	10U	.	100U	.	20U	.	20U	.	20U	.
Methylene chloride	5U	.	5U	.	50U	.	3	0.6	10U	.	7	1.5
Styrene	5U	.	5U	.	50U	.	10U	.	10U	.	10U	.
Tetrachloroethene	5U	.	5U	.	140	8.7	29	5.8	29	8.3	32	6.8
Toluene	5U	.	5U	.	50U	.	10U	.	10U	.	10U	.
1,1,1-Trichloroethane	5U	.	5U	.	17	1.1	4	0.8	6	1.7	6	1.3
1,1,2-Trichloroethane	5U	.	5U	.	50U	.	10U	.	10U	.	10U	.
Trichloroethene	FP3	.	5U	.	110	6.8	34	6.8	35	10.1	36	7.6
Vinyl acetate	10U	.	10U	.	100U	.	20U	.	20U	.	20U	.
Vinyl chloride	10U	.	10U	.	72	4.4	20U	.	20U	.	20U	.
Xylenes	5U	.	5U	.	50U	.	10U	.	10U	.	10U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	1618	100.1	498	99.9	348	100	473	100.1

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APPENDIX J
Validated VOC Results, 1993

27

Sampling Point . Location . Date Sampled	GW-627								GW-636			
	BG								OLF			
	03/09/93		04/23/93		07/28/93		10/20/93		03/26/93		06/27/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	3	6.3	5	7.9	6	6.7	3	6.7	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	FP3	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	FP1	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	5U	.	FP1	.	FP1	.	5U	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	39	81.3	51	81	74	82.2	37	82.2	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	6	12.5	7	11.1	10	11.1	5	11.1	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	FP3	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
.	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	48	100.1	63	100	90	100	45	100	0	.	0	.

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APPENDIX J
Validated VOC Results, 1993

28

Sampling Point . Location . Date Sampled	GW-636				GW-637							
	OLF				OLF							
	09/18/93		12/18/93		03/25/93		06/26/93		09/17/93		12/18/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	FP1	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	FP1	.	10U	.	10U	.	10U	.	FP1	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	FP3	.	FP1	.	5U	.	5U	.	5U	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

29

Sampling Point . Location . Date Sampled	GW-638								GW-639			
	OLF								BG			
	03/25/93		06/26/93		09/17/93		12/18/93		02/24/93		05/24/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	FP1	.	10U	.	FP3	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	10U	.	FP3	.
Methylene chloride	5U	.	5U	.	5U	.	5U	.	FP3	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

30

Sampling Point . Location . Date Sampled	GW-639				GW-640							
	BG				BG							
	07/11/93		10/15/93		02/22/93		05/24/93		07/10/93		10/14/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	FP1	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	FP1	.	10U	.	FP1	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	5U	.	FP1	.	5U	.	5U	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

31

Sampling Point . Location . Date Sampled	GW-641								GW-642			
	BG								BG			
	02/22/93		05/24/93		07/10/93		10/14/93		02/08/93		05/11/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	FP1	.	10U	.	FP1	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	FP1	.	5U	.	5U	.	FP1	.	5U	.	FP3	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

32

Sampling Point . Location . Date Sampled	GW-642				GW-643							
	BG				BG							
	07/01/93		10/10/93		02/16/93		05/19/93		07/08/93		10/12/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	FP1	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	FP1	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	FP1	.	FP2	.	5U	.	5U	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	FP3	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

33

Sampling Point . Location . Date Sampled	GW-647								GW-652			
	OLF								BG			
	02/08/93		05/17/93		09/25/93		12/10/93		03/01/93		04/19/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	5U	.	5U	.	FP1	.	5U	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	FP3	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

34

Sampling Point . Location . Date Sampled	GW-652				GW-653							
	BG				BG							
	07/10/93		10/18/93		03/01/93		04/20/93		07/10/93		10/10/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	7	77.8	5U	.	3	100	7	77.8
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	FP3	.	10U	.	10U	.
Methylene chloride	FP1	.	5U	.	5U	.	5U	.	5U	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	2	22.2	2	100	5U	.	2	22.2
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	9	100	2	100	3	100	9	100

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APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	GW-654								GW-655			
	BG								BG			
	02/24/93		04/16/93		07/01/93		10/07/93		02/05/93		05/10/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	FP3	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	FP3	.	FP3	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	FP1	.	5U	.	5U	.	FP3	.	5U	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

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APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	GW-655				GW-683							
	BG				EXP							
	07/01/93		10/06/93		03/04/93		04/23/93		07/12/93		10/12/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	FP3	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	FP3	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	5U	.	5U	.	5U	.	5U	.	FP3	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

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APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	GW-684								GW-685			
	EXP								EXP			
	03/03/93		04/22/93		07/11/93		10/12/93		03/02/93		04/21/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	2	100	2	100
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	FP3	.	FP1	.	FP1	.	5U	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Summed VOCs	0	.	0	.	0	.	0	.	2	100	2	100

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	GW-685				GW-694							
	EXP				EXP							
	07/11/93		10/11/93		03/23/93		06/06/93		09/22/93		12/28/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	FP1	.	10U	.	10U	.	10U	.	FP1	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	FP1	.	10U	.	10U	.	10U	.	FP1	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	2	100	5U	.	9	39.1	11	44	11	50	13	46.4
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	FP1	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	FP1	.	FP1	.	FP3	.	5U	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	FP3	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	14	60.9	14	56	11	50	15	53.6
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	2	100	0	.	23	100	25	100	22	100	28	100

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	GW-695								GW-703			
	EXP								EXP			
	03/24/93		06/09/93		09/22/93		12/21/93		03/20/93		06/03/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	FP3	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	FP2	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	FP3	.	2	5.3	1	3.2
1,2-Dichloroethene	2	33.3	5U	.	5U	.	2	33.3	8	21.1	7	22.6
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	FP3	.	10U	.
Methylene chloride	5U	.	5U	.	5U	.	FP1	.	FP3	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	4	66.7	5U	.	4	100	4	66.7	28	73.7	23	74.2
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	6	100	0	.	4	100	6	100	38	100.1	31	100

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	GW-703				GW-704							
	EXP				EXP							
	09/20/93		12/21/93		03/22/93		06/04/93		09/22/93		12/22/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	FP1	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	FP2	.	10U	.	10U	.	10U	.	FP1	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	FP3	.	2	1.5	1	1	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	0.5	1.8	0.5	1.3	5U	.	FP3	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	FP3	.	FP3	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	2	5.2	6	4.5	6	5.8	6	6.1	4	6.6
1,2-Dichloroethene	6	21.4	13	33.9	3	2.3	3	2.9	4	4.1	2	3.3
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	FP1	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	FP1	.	FP1	.	FP1	.	5U	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	FP3	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	0.5	1.8	0.9	2.3	2	1.5	2	1.9	2	2	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	21	75	22	57.3	120	90.2	92	88.5	86	87.8	55	90.2
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	28	100	38.4	100	133	100	104	100.1	98	100	61	100.1

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	GW-706								GW-710			
	EXP								EXP			
	03/23/93		06/11/93		09/23/93		12/28/93		03/21/93		04/30/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	FP3	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	FP3	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	7	43.8	5	45.5	5	50	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	FP1	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	FP1	.	5U	.	5U	.	FP3	.	5U	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	9	56.3	6	54.5	5	50	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
.	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	16	100.1	11	100	10	100	0	.	0	.	0	.

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APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	GW-710				GW-711							
	EXP				EXP							
	08/01/93		11/09/93		03/20/93		04/29/93		07/30/93		11/07/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	5U	.	5U	.	5U	.	FP1	.	FP3	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

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APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	GW-712								GW-713			
	EXP								EXP			
	03/18/93		04/28/93		07/29/93		11/06/93		03/19/93		04/30/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	FP1	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	FP1	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	FP1	.	10U	.
Methylene chloride	5U	.	5U	.	FP1	.	5U	.	FP1	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	FP1	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	GW-713				GW-714							
	EXP				EXP							
	07/31/93		11/09/93		03/21/93		04/29/93		08/01/93		11/09/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	FP1	.	FP1	.	FP2	.	5U	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	GW-715								GW-723			
	EXP								EXP			
	03/21/93		04/29/93		08/01/93		11/11/93		02/12/93		05/18/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	FP1	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	FP3	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	FP3	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	FP1	.	10U	.
Methylene chloride	FP3	.	5U	.	5U	.	FP1	.	FP1	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	21	100	3	100
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	21	100	3	100

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	GW-723				GW-724							
	EXP				EXP							
	09/27/93		12/14/93		02/10/93		05/18/93		09/29/93		12/14/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	FP3	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	FP3	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	2	2	5U	.	5U	.	3	2.1
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	5U	.	FP1	.	5U	.	5U	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	2	2	5U	.	5U	.	3	2.1
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	4	100	5	100	95	96	46	100	3	100	140	95.9
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	4	100	5	100	99	100	46	100	3	100	146	100.1

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	GW-725								GW-736			
	EXP								EXP			
	02/12/93		05/19/93		09/28/93		12/15/93		02/11/93		05/18/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	FP1	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	FP3	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	FP1	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	FP3	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	FP3	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	FP3	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	FP3	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	FP3	.	5U	.
1,2-Dichloroethene	2	9.5	3	5.4	2	4	3	5.1	7	26.9	5	25
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	FP3	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	FP1	.	10U	.	10U	.	FP1	.	FP1	.	10U	.
Methylene chloride	FP1	.	5U	.	5U	.	FP1	.	FP1	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	FP3	.	5U	.
Tetrachloroethene	5U	.	5U	.	0.8	1.6	1	1.7	7	26.9	3	15
Toluene	5U	.	5U	.	5U	.	2	3.4	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	FP3	.	5U	.
Trichloroethene	19	90.5	53	94.6	47	94.4	53	89.8	12	46.2	12	60
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	FP3	.	5U	.
.	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	21	100	56	100	49.8	100	59	100	26	100	20	100

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

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Sampling Point Location Date Sampled	GW-736				GW-737							
	EXP				EXP							
	09/28/93		12/15/93		02/11/93		05/19/93		09/28/93		12/15/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	FP3	.	FP1	.	10U	.	10U	.	FP1	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	FP3	.	10U	.	10U	.	10U	.	FP1	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	FP3	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	2	10.5	2	11.1	1	6.3	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	3	23.1	5	23.8	4	21.1	4	22.2	3	18.8	4	22.2
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	FP3	.	FP1	.	10U	.	10U	.	FP1	.
Methylene chloride	5U	.	FP3	.	FP1	.	5U	.	5U	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	1	7.7	3	14.3	4	21.1	3	16.7	3	18.8	3	16.7
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	9	69.2	13	61.9	9	47.4	9	50	9	56.3	11	61.1
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	13	100	21	100	19	100.1	18	100	16	100.2	18	100

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	GW-738								GW-739			
	EXP								EXP			
	02/10/93		05/18/93		09/27/93		12/14/93		02/10/93		05/18/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	1	1.6	5U	.	5U	.	1	1.8	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	2	3.2	2	3.6	1	2.1	2	3.6	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	4	6.5	3	5.4	3	6.3	3	5.4	2	5.9	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	FP1	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	10U	.	FP1	.	10U	.
Methylene chloride	FP1	.	5U	.	5U	.	5U	.	FP1	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	55	88.7	51	91.1	44	91.7	50	89.3	32	94.1	33	100
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	FP3	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	62	100	56	100.1	48	100.1	56	100.1	34	100	33	100

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	GW-739				GW-740							
	EXP				EXP							
	09/27/93		12/13/93		02/09/93		05/17/93		09/27/93		12/11/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	FP3	.	FP3	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	FP3	.	2	3.4	2	4.8	1	2.8	1	2.6
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	2	4.9	2	4.5	4	6.9	2	4.8	2	5.6	2	5.1
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	FP3	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	5U	.	2	3.4	5U	.	5U	.	1	2.6
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	FP3	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	39	95.1	42	95.5	50	86.2	38	90.5	33	91.7	35	89.7
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
.	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	41	100	44	100	58	99.9	42	100.1	36	100.1	39	100

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

51

Sampling Point . Location . Date Sampled	GW-793								GW-794			
	AGLLSF								AGLLSF			
	02/26/93		05/25/93		07/11/93		10/18/93		03/01/93		05/25/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	FP3	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	FP1	.	10U	.	FP3	.	10U	.	FP3	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	FP1	.	10U	.	10U	.	10U	.	FP3	.
Methylene chloride	5U	.	5U	.	5U	.	FP3	.	5U	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

52

Sampling Point . Location . Date Sampled	GW-794				GW-795							
	AGLLSF				AGLLSF							
	07/11/93		10/18/93		03/02/93		05/25/93		07/12/93		10/18/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	FP1	.	FP3	.	10U	.	10U	.	FP1	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	FP1	.	10U	.	10U	.	10U	.	FP1	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	FP1	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	FP1	.	FP1	.	5U	.	5U	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
.	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

APPENDIX J
Validated VOC Results, 1993

53

Sampling Point . Location . Date Sampled	BCK-00.63								BCK-04.55			
	EXP								EXP			
	03/09/93		05/03/93		08/16/93		11/08/93		03/09/93		05/03/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	FP3	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	FP1	.	FP3	.	10U	.	10U	.	FP1	.	FP1	.
Methylene chloride	FP1	.	FP3	.	5U	.	FP1	.	FP1	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

54

Sampling Point . Location . Date Sampled	BCK-04.55				BCK-09.40							
	EXP				EXP							
	08/16/93		11/08/93		03/09/93		05/03/93		08/16/93		11/08/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	8	88.9	9	90	1	37	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Methylene chloride	5U	.	FP1	.	5U	.	FP1	.	1	37	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	1	11.1	1	10	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	0.7	25.9	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	9	100	10	100	2.7	99.9	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

55

Sampling Point . Location . Date Sampled	NT-01								NT-13			
	EXP								EXP			
	03/09/93		05/03/93		08/16/93		11/08/93		03/09/93		05/03/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	FP3	.	10U	.	10U	.	FP3	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	FP1	.	10U	.	10U	.	FP1	.	FP1	.
Methylene chloride	FP1	.	FP1	.	FP1	.	5U	.	FP1	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	4	100	1	100	2	100	3	100	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	4	100	1	100	2	100	3	100	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	NT-13				SS-1							
	EXP				EXP							
	08/16/93		11/08/93		03/09/93		05/03/93		08/16/93		11/08/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	FP3	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	10U	.	FP1	.	10U	.	10U	.
Methylene chloride	5U	.	FP1	.	FP1	.	FP1	.	5U	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	2	100	3	100	5U	.	1	100
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Summed VOCs	0	.	0	.	2	100	3	100	0	.	1	100

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

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Sampling Point . Location . Date Sampled	SS-4								SS-5			
	EXP								EXP			
	03/09/93		05/03/93		08/16/93		11/08/93		03/09/93		05/03/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	FP3	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	2	33.3	4	50	7	63.6	3	42.9	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	FP1	.	10U	.	10U	.	10U	.	FP1	.
Methylene chloride	5U	.	FP1	.	FP1	.	5U	.	5U	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	4	66.7	4	50	4	36.4	4	57.1	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	6	100	8	100	11	100	7	100	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

58

Sampling Point . Location . Date Sampled	SS-5				SS-6							
	EXP				EXP							
	08/16/93		11/08/93		03/09/93		05/03/93		08/16/93		11/08/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	FP3	.	5U	.	5U	.	5U	.	5U	.	FP3	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	10U	.	10U	.	FP1	.	10U	.	10U	.	10U	.
Methylene chloride	5U	.	5U	.	FP1	.	FP1	.	5U	.	5U	.
Styrene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.	5U	.	FP3	.
Toluene	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
Trichloroethene	2	100	1	100	5U	.	5U	.	5U	.	FP3	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.	.	.	.	.
Summed VOCs	2	100	1	100	0	.	0	.	0	.	0	.

(CONTINUED)

APPENDIX J
Validated VOC Results, 1993

59

Sampling Point . Location . Date Sampled	SS-8							
	EXP							
	03/09/93		05/03/93		08/16/93		11/08/93	
	ug/L	% sum	ug/L	% sum	ug/L	% sum	ug/L	% sum
Acetone	10U	.	10U	.	10U	.	10U	.
Benzene	5U	.	5U	.	5U	.	5U	.
Bromodichloromethane	5U	.	5U	.	5U	.	5U	.
2-Butanone	10U	.	10U	.	10U	.	10U	.
Carbon disulfide	5U	.	5U	.	5U	.	5U	.
Carbon tetrachloride	5U	.	5U	.	5U	.	5U	.
Chlorobenzene	5U	.	5U	.	5U	.	5U	.
Chloroform	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethane	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethane	5U	.	5U	.	5U	.	5U	.
1,1-Dichloroethene	5U	.	5U	.	5U	.	5U	.
1,2-Dichloroethene	5U	.	5U	.	5U	.	5U	.
Ethylbenzene	5U	.	5U	.	5U	.	5U	.
2-Hexanone	10U	.	10U	.	10U	.	10U	.
4-Methyl-2-pentanone	FP1	.	FP1	.	10U	.	10U	.
Methylene chloride	FP1	.	FP1	.	5U	.	FP1	.
Styrene	5U	.	5U	.	5U	.	5U	.
Tetrachloroethene	5U	.	5U	.	5U	.	5U	.
Toluene	5U	.	5U	.	5U	.	5U	.
1,1,1-Trichloroethane	5U	.	5U	.	5U	.	5U	.
1,1,2-Trichloroethane	5U	.	5U	.	5U	.	5U	.
Trichloroethene	5U	.	5U	.	5U	.	5U	.
Vinyl acetate	10U	.	10U	.	10U	.	10U	.
Vinyl chloride	10U	.	10U	.	10U	.	10U	.
Xylenes	5U	.	5U	.	5U	.	5U	.
	.	.	.	.	.	.	.	.
Summed VOCs	0	.	0	.	0	.	0	.

APPENDIX K
RADIOCHEMICAL DATA SUMMARY

EXPLANATION

SAMPLING POINT:

BCK - Bear Creek Kilometer
GW - Monitoring Well
NT - North Tributary to Bear Creek
SS - Spring

LOCATION:

AGLLSF - Above Grade Low Level Storage Facility
BG - Bear Creek Burial Grounds WMA
EXP - Exit-Pathway Monitoring
OLF - Oil Landfarm WMA
RS - Rust Spoil Area
S3 - S-3 Site
SPI - Spoil Area I

NOTES:

pCi/L - picoCuries per Liter
CE (±) - Counting Error (two standard deviations)
- Not sampled

Mean counting error (e) calculated using the following formula from Evans (1955):

$$e = \sqrt{\frac{E_1^2}{n^2} + \frac{E_2^2}{n^2} + \frac{E_3^2}{n^2} + \dots}$$

where $E_1, E_2, \dots, E_x$ are the individual errors, and n is the number of observations.

APPENDIX K

1

Gross Alpha and Gross Beta Activity Data Summary, 1993

Sampling Point Location	GW-013		GW-040		GW-042		GW-043		GW-044	
	OLF		BG		BG		OLF		OLF	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	2.17	1.70	9.99	4.80	.	.	2.01	1.30	1.29	1.30
Second Quarter	-3.47	1200.00	-1.19	1.80	.	.	1.69	0.80	2.13	0.78
Third Quarter	-0.01	3.00	5.67	5.50	.	.	-2.48	2.30	-1.95	2.60
Fourth Quarter	-0.37	1.00	-1.96	1.80	-2.48	1.90	-0.62	2.10	0.61	2.50
Mean	-0.42	300.00	3.13	1.90	-2.48	1.90	0.15	0.90	0.52	1.00
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	1.76	2.60	22.70	6.30	.	.	2.81	2.60	1.82	2.60
Second Quarter	-12.50	2400.00	-3.19	6.00	.	.	0.22	1.40	4.49	1.60
Third Quarter	2.65	4.80	-8.38	12.00	.	.	-13.90	5.80	-9.66	5.70
Fourth Quarter	-2.53	2.90	2.97	2.80	-4.77	3.20	-7.90	5.80	-8.81	5.60
Mean	-2.66	600.00	3.53	3.80	-4.77	3.20	-4.69	2.20	-3.04	2.10

(CONTINUED)

Sampling Point Location	GW-052		GW-056		GW-057		GW-063		GW-064	
	BG		BG		EXP		OLF		OLF	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	20.00	4.10	3.82	2.00	6.76	2.80	1.53	2.10	0.67	2.90
Second Quarter	32.70	7.00	2.70	2.50	1.60	3.80	.	.	-2.70	4.20
Third Quarter	.	.	4.54	2.90	1.98	2.70	.	.	-1.87	3.10
Fourth Quarter	.	.	1.19	2.50	1.93	2.80	.	.	-0.20	1.30
Mean	26.35	4.10	3.06	1.20	3.07	1.50	1.53	2.10	-1.02	1.50
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	30.30	4.10	7.04	3.50	8.14	3.60	5.84	3.00	11.90	3.60
Second Quarter	44.40	7.50	4.33	2.90	6.43	3.20	.	.	15.40	6.50
Third Quarter	.	.	6.70	3.10	4.92	3.10	.	.	4.71	6.20
Fourth Quarter	.	.	4.71	3.20	3.23	3.10	.	.	13.80	3.40
Mean	37.35	4.30	5.69	1.60	5.68	1.60	5.84	3.00	11.45	2.60

(CONTINUED)

APPENDIX K

2

Gross Alpha and Gross Beta Activity Data Summary, 1993

Sampling Point Location	GW-069		GW-079		GW-080		GW-082		GW-084	
	BG		BG		BG		BG		OLF	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	3.45	1.70	.	.	.	.	1.57	3.90	3.57	1.80
Second Quarter	0.17	1.60	.	.	.	.	0.00	1.70	0.20	0.74
Third Quarter	-4.90	2.50	.	.	.	.	-3.42	2.50	-0.66	2.90
Fourth Quarter	-0.32	1.80	-0.93	2.00	2.06	2.30	-1.30	2.40	0.77	1.40
Mean	-0.40	1.00	-0.93	2.00	2.06	2.30	-0.79	1.40	0.97	0.90
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	7.78	3.40	.	.	.	.	3.32	5.40	7.67	3.00
Second Quarter	1.75	2.90	.	.	.	.	-2.40	2.70	-1.12	1.30
Third Quarter	0.00	3.00	.	.	.	.	-1.66	2.90	-7.51	5.80
Fourth Quarter	3.72	3.00	-3.07	6.00	0.90	2.60	-7.74	5.60	5.16	2.70
Mean	3.31	1.50	-3.07	6.00	0.90	2.60	-2.12	2.20	1.05	1.80

(CONTINUED)

Sampling Point Location	GW-085		GW-086		GW-115		GW-118		GW-162	
	OLF		OLF		S3		BG		BG	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	17.30	4.10	5.10	2.30	2.35	1.80	6.60	3.90	.	.
Second Quarter	-2.24	7.20	9.27	2.30	-1.99	3.30	-2.52	11.00	.	.
Third Quarter	-3.08	3.30	8.75	5.20	0.18	1.10	-52.30	29.00	.	.
Fourth Quarter	0.44	2.10	7.92	6.40	1.43	1.60	9.63	22.00	-0.31	2.10
Mean	3.10	2.30	7.76	2.20	0.49	1.10	-9.65	9.60	-0.31	2.10
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	120.00	7.00	8.10	4.30	5.65	3.00	5.51	6.60	.	.
Second Quarter	144.00	12.00	24.70	3.40	-3.68	5.40	-1.49	12.00	.	.
Third Quarter	116.00	16.00	16.10	7.00	-0.64	2.60	-21.30	29.00	.	.
Fourth Quarter	77.60	9.60	7.98	10.00	4.06	2.60	14.90	54.00	-0.33	2.60
Mean	114.40	5.80	14.22	3.30	1.35	1.80	-0.60	15.70	-0.33	2.60

(CONTINUED)

APPENDIX K

3

Gross Alpha and Gross Beta Activity Data Summary, 1993

Sampling Point Location	GW-286		GW-287		GW-311		GW-312		GW-315	
	BG		BG		RS		RS		SPI	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	-0.33	1.50	-0.48	1.40	-0.74	2.20	-0.55	3.30	5.35	3.40
Second Quarter	0.87	1.70	5.38	1.20	-0.00	0.56	-0.35	0.55	-2.46	4.60
Third Quarter	1.64	1.70	1.48	1.70	-2.75	2.60	-1.88	3.10	0.33	1.50
Fourth Quarter	4.59	2.50	0.00	1.70	1.00	1.50	-0.20	1.40	2.54	2.60
Mean	1.69	0.90	1.59	0.80	-0.62	0.90	-0.75	1.20	1.44	1.60
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	-0.70	2.60	0.17	2.60	10.10	3.40	7.36	3.40	12.90	3.40
Second Quarter	-1.66	2.70	7.54	1.40	-1.65	1.40	1.43	1.40	15.70	7.10
Third Quarter	-0.08	2.60	0.33	2.60	-7.51	5.70	-5.53	5.70	31.30	5.00
Fourth Quarter	7.39	3.20	2.22	2.90	-0.41	2.40	7.27	2.90	53.80	4.90
Mean	1.24	1.40	2.57	1.20	0.13	1.80	2.63	1.80	28.42	2.60

(CONTINUED)

Sampling Point Location	GW-316		GW-317		GW-323		GW-324		GW-325	
	SPI		SPI		SPI		S3		S3	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	2.21	1.50	1.55	1.40	2.20	1.50	1.59	1.30	1.12	1.60
Second Quarter	1.75	3.60	2.94	3.80	2.08	3.70	0.00	3.10	0.56	3.20
Third Quarter	-0.01	0.95	0.16	1.40	0.68	1.20	0.33	1.10	0.29	0.94
Fourth Quarter	-0.45	2.10	-1.64	1.90	0.75	2.30	-0.32	2.20	10.80	3.20
Mean	0.88	1.10	0.75	1.20	1.43	1.20	0.40	1.00	3.19	1.20
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	2.16	2.60	3.58	2.70	2.16	2.60	0.75	2.60	4.41	2.70
Second Quarter	5.42	5.00	7.40	5.10	6.92	5.10	-3.77	5.20	-1.63	5.30
Third Quarter	-0.97	2.60	-1.43	2.30	-1.21	2.60	-2.66	2.50	-0.10	2.90
Fourth Quarter	2.64	2.70	1.98	2.70	1.81	2.60	-7.50	5.70	15.50	3.50
Mean	2.31	1.70	2.88	1.70	2.42	1.70	-3.30	2.10	4.55	1.90

(CONTINUED)

APPENDIX K

4

Gross Alpha and Gross Beta Activity Data Summary, 1993

Sampling Point Location	GW-342		GW-345		GW-347		GW-348		GW-364	
	BG		S3		S3		S3		OLF	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	.	.	3.33	2.00	1.81	1.90	2.42	2.50	1.65	2.10
Second Quarter	.	.	-1.70	2.90	0.85	3.40	0.00	3.40	-1.34	3.00
Third Quarter	.	.	0.47	1.40	2.50	1.60	1.42	1.40	2.77	3.60
Fourth Quarter	0.00	2.00	-14.00	27.00	3.64	2.70	0.31	2.30	3.73	2.00
Mean	0.00	2.00	-2.98	6.80	2.20	1.30	1.04	1.30	1.70	1.40
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	.	.	25.70	3.90	4.71	2.70	37.30	4.40	5.26	2.90
Second Quarter	.	.	8.99	5.20	5.24	4.90	31.60	6.50	1.25	5.00
Third Quarter	.	.	15.10	3.60	5.53	3.10	18.40	4.00	22.30	6.30
Fourth Quarter	1.97	2.70	13.70	27.00	11.10	3.20	29.80	4.00	4.16	3.20
Mean	1.97	2.70	15.87	7.00	6.64	1.80	29.27	2.40	8.24	2.30

(CONTINUED)

Sampling Point Location	GW-365		GW-370		GW-371		GW-372		GW-373	
	OLF		BG		BG		BG		BG	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	4.29	3.90	0.20	2.80	-1.32	2.10	-1.05	2.00	0.76	1.70
Second Quarter	-2.17	3.10	4.67	2.70	-3.06	2.10	1.42	3.60	-1.57	4.00
Third Quarter	-2.10	2.40	4.88	3.30	0.38	1.30	0.70	1.30	0.18	1.20
Fourth Quarter	-0.47	1.30	4.93	2.10	2.80	1.90	-0.01	2.40	-1.92	2.10
Mean	-0.11	1.40	3.67	1.40	-0.30	0.90	0.27	1.20	-0.64	1.20
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	4.41	3.10	2.99	3.30	0.92	3.20	-0.25	2.90	0.79	2.40
Second Quarter	1.40	4.90	5.12	3.10	-1.35	2.80	-5.73	5.60	-2.33	5.50
Third Quarter	4.40	4.90	-8.69	5.60	-3.87	2.70	-4.29	2.70	-4.66	2.70
Fourth Quarter	0.89	3.10	3.08	2.90	4.86	3.10	-4.94	5.60	0.08	2.70
Mean	2.77	2.10	0.62	1.90	0.14	1.50	-3.80	2.20	-1.53	1.80

(CONTINUED)

APPENDIX K

5

Gross Alpha and Gross Beta Activity Data Summary, 1993

Sampling Point Location	GW-526		GW-537		GW-601		GW-613		GW-614	
	S3		OLF		OLF		S3		S3	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	2.04	1.40	39.80	14.00	1.48	2.70	.	.	.	.
Second Quarter	121.00	80.00	0.00	20.00	-2.15	3.00	.	.	.	.
Third Quarter	-14.20	24.00	16.60	33.00	0.33	3.10	.	.	.	.
Fourth Quarter	0.79	2.40	19.70	12.00	2.08	1.80	1.79	1.60	1.23	1.50
Mean	27.41	20.90	19.02	10.70	0.43	1.30	1.79	1.60	1.23	1.50
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	3.53	2.70	287.00	23.00	15.50	3.50	.	.	.	.
Second Quarter	287.00	120.00	373.00	42.00	18.70	6.20	.	.	.	.
Third Quarter	-22.10	46.00	426.00	80.00	23.40	6.40	.	.	.	.
Fourth Quarter	44.70	4.60	432.00	27.00	21.80	4.20	2.82	2.50	2.92	2.60
Mean	78.28	32.20	379.50	24.30	19.85	2.60	2.82	2.50	2.92	2.60

(CONTINUED)

Sampling Point Location	GW-621		GW-626		GW-627		GW-636		GW-637	
	BG		BG		BG		OLF		OLF	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	0.00	1.80	2.38	3.90	1.25	1.30	0.00	1.60	-0.19	1.80
Second Quarter	1.47	4.90	0.16	1.40	-0.38	3.10	-2.87	2.50	-2.42	2.60
Third Quarter	3.51	4.50	-22.30	33.00	-6.24	3.60	-0.72	2.80	-0.72	2.80
Fourth Quarter	2.41	1.70	-1.59	2.30	-0.82	3.20	-0.60	1.00	1.39	1.50
Mean	1.85	1.80	-5.34	8.30	-1.55	1.50	-1.05	1.10	-0.48	1.10
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	5.13	2.80	2.97	5.30	5.84	3.40	6.37	2.90	2.89	2.70
Second Quarter	7.89	6.60	0.26	2.60	1.70	2.90	-1.61	4.80	-2.73	4.80
Third Quarter	24.10	6.30	17.90	52.00	-0.96	3.00	3.44	4.80	0.46	4.60
Fourth Quarter	5.79	3.30	-8.32	5.70	-6.67	5.50	-1.66	2.90	-2.56	2.90
Mean	10.73	2.50	3.20	13.20	-0.02	1.90	1.63	2.00	-0.49	1.90

(CONTINUED)

APPENDIX K

6

Gross Alpha and Gross Beta Activity Data Summary, 1993

Sampling Point Location	GW-638		GW-639		GW-640		GW-641		GW-642	
	OLF		BG		BG		BG		BG	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	5.01	4.20	0.46	2.20	0.59	1.50	1.00	1.50	-1.00	1.60
Second Quarter	5.67	4.30	0.00	3.80	-0.56	3.00	-0.84	2.90	-0.62	0.43
Third Quarter	8.70	4.40	0.43	1.50	-0.16	0.93	0.15	0.99	-2.38	2.40
Fourth Quarter	9.13	3.00	-0.77	3.00	0.44	1.30	1.27	2.10	2.10	2.40
Mean	7.13	2.00	0.03	1.40	0.08	0.90	0.40	1.00	-0.47	0.90
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	15.60	5.90	0.72	2.80	7.60	3.00	1.11	2.70	0.08	2.80
Second Quarter	8.17	5.50	0.17	5.60	-1.47	5.40	-2.28	5.30	-2.64	1.40
Third Quarter	13.50	5.70	-4.58	2.80	-4.22	2.90	-4.96	3.00	0.64	5.10
Fourth Quarter	2.14	3.10	-7.74	5.40	0.26	2.80	-1.31	2.70	3.30	2.80
Mean	9.85	2.60	-2.86	2.20	0.54	1.80	-1.86	1.80	0.35	1.70

(CONTINUED)

Sampling Point Location	GW-643		GW-644		GW-647		GW-651		GW-652	
	BG		OLF		OLF		BG		BG	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	2.73	3.60	-0.29	1.40	-1.70	1.80	-0.37	2.30	0.22	2.80
Second Quarter	-0.14	2.00	0.95	2.60	3.74	3.90	1.71	2.00	1.67	2.20
Third Quarter	0.82	1.30	0.69	3.10	2.11	4.00	1.21	1.70	0.47	1.60
Fourth Quarter	1.61	1.50	-0.01	1.10	0.34	2.50	0.30	1.80	0.31	2.80
Mean	1.25	1.10	0.33	1.10	1.12	1.60	0.71	1.00	0.67	1.20
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	1.57	3.30	0.66	2.50	1.01	2.90	2.98	3.60	9.19	3.90
Second Quarter	1.72	2.90	-6.95	5.60	-4.59	5.60	2.03	3.00	0.89	2.90
Third Quarter	-3.49	2.80	5.01	5.00	9.41	5.50	4.87	2.90	0.66	2.60
Fourth Quarter	1.28	2.80	-2.98	2.90	3.31	3.10	0.94	2.80	0.30	6.00
Mean	0.27	1.50	-1.07	2.10	2.28	2.20	2.71	1.50	2.76	2.00

(CONTINUED)

APPENDIX K

7

Gross Alpha and Gross Beta Activity Data Summary, 1993

Sampling Point Location	GW-653		GW-654		GW-655		GW-683		GW-684	
	BG		BG		BG		EXP		EXP	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	12.90	5.60	0.31	1.50	2.18	1.60	7.31	2.30	9.05	2.50
Second Quarter	3.93	3.50	3.52	1.00	14.10	3.90	5.33	2.30	5.89	2.50
Third Quarter	6.36	3.80	-2.58	2.60	-2.03	2.40	12.50	5.50	21.20	4.00
Fourth Quarter	8.56	8.00	3.44	2.30	0.43	1.70	35.80	5.10	38.20	5.20
Mean	7.94	2.80	1.17	1.00	3.67	1.30	15.24	2.00	18.58	1.90
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	11.60	7.20	1.89	2.70	-4.35	3.70	15.80	3.80	20.90	4.00
Second Quarter	-3.09	5.30	1.31	1.30	13.70	5.90	10.60	3.20	27.50	4.00
Third Quarter	6.73	5.60	-3.20	4.70	-1.65	5.00	26.20	7.70	46.60	4.70
Fourth Quarter	16.00	12.00	4.14	3.00	2.21	2.70	64.40	5.50	63.60	5.50
Mean	7.81	4.00	1.03	1.60	2.48	2.20	29.25	2.70	39.65	2.30

(CONTINUED)

Sampling Point Location	GW-685		GW-694		GW-695		GW-703		GW-704	
	EXP		EXP		EXP		EXP		EXP	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	0.75	3.30	31.80	5.10	3.49	2.30	0.19	2.30	-1.48	3.30
Second Quarter	1.93	3.30	56.90	9.20	4.46	4.20	-2.64	4.30	0.92	3.80
Third Quarter	3.21	2.30	50.90	13.00	5.77	5.00	-0.66	5.00	1.30	4.20
Fourth Quarter	4.48	2.20	108.00	8.90	10.90	3.40	2.91	1.80	0.82	1.20
Mean	2.59	1.40	61.90	4.70	6.15	1.90	-0.05	1.80	0.39	1.70
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	3.16	3.70	34.60	4.20	15.70	3.40	6.39	2.90	4.94	5.20
Second Quarter	5.21	3.30	88.40	9.40	14.50	6.10	-3.95	6.00	9.93	5.90
Third Quarter	7.10	3.10	112.00	17.00	30.90	6.70	28.60	7.10	13.90	5.80
Fourth Quarter	10.90	3.40	161.00	8.00	16.90	4.10	42.70	6.10	3.64	2.70
Mean	6.59	1.70	99.00	5.40	19.50	2.60	18.43	2.90	8.10	2.50

(CONTINUED)

APPENDIX K
Gross Alpha and Gross Beta Activity Data Summary, 1993

Sampling Point Location	GW-706		GW-710		GW-711		GW-712		GW-713	
	EXP		EXP		EXP		EXP		EXP	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	0.00	1.50	1.00	4.20	1.45	4.60	1.71	1.80	-0.53	2.00
Second Quarter	54.40	9.00	-4.53	3.10	3.24	3.80	5.37	2.50	-1.16	2.00
Third Quarter	11.70	7.40	-6.39	41.00	3.52	47.00	-2.80	37.00	-22.30	33.00
Fourth Quarter	99.20	8.50	-6.99	22.00	-6.49	28.00	-0.19	2.50	-0.17	2.20
Mean	41.32	3.60	-4.23	11.70	0.43	13.80	1.02	9.30	-6.04	8.30
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	7.42	2.90	7.84	3.20	16.80	3.70	3.37	2.90	3.30	2.70
Second Quarter	97.90	9.80	-11.80	2.90	8.84	3.40	-8.64	2.70	-8.13	2.80
Third Quarter	0.00	11.00	15.00	53.00	18.60	54.00	31.00	53.00	-17.90	50.00
Fourth Quarter	150.00	7.70	-20.10	28.00	3.59	31.00	1.15	3.10	1.13	3.00
Mean	63.83	4.20	-2.27	15.00	11.96	15.60	6.72	13.30	-5.40	12.60

(CONTINUED)

Sampling Point Location	GW-714		GW-715		GW-723		GW-724		GW-725	
	EXP		EXP		EXP		EXP		EXP	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	2.23	2.40	-0.35	2.10	0.54	7.80	4.97	2.80	0.26	3.70
Second Quarter	-3.05	1.60	-3.15	1.80	3.24	4.00	2.08	3.80	2.06	3.80
Third Quarter	-2.80	37.00	-33.80	32.00	-1.51	3.50	0.92	3.40	0.63	3.80
Fourth Quarter	0.93	2.20	0.17	1.30	0.64	2.40	-0.36	2.60	4.61	3.50
Mean	-0.67	9.30	-9.28	8.00	0.73	2.40	1.90	1.60	1.89	1.90
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	2.94	2.70	5.66	2.90	4.96	6.90	11.10	3.50	24.20	4.40
Second Quarter	-3.17	3.00	-4.22	2.90	10.70	6.50	40.40	7.90	41.60	7.90
Third Quarter	-22.80	49.00	-11.40	50.00	9.41	5.50	41.80	4.90	46.50	5.20
Fourth Quarter	6.28	3.30	2.65	2.50	9.78	3.40	32.00	4.40	53.70	5.30
Mean	-4.19	12.30	-1.83	12.60	8.71	2.90	31.32	2.70	41.50	2.90

(CONTINUED)

APPENDIX K

9

Gross Alpha and Gross Beta Activity Data Summary, 1993

Sampling Point Location	GW-736		GW-737		GW-738		GW-739		GW-740	
	EXP		EXP		EXP		EXP		EXP	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	7.80	4.50	9.66	4.80	7.81	3.30	1.57	1.50	0.17	1.30
Second Quarter	2.04	3.70	0.95	3.50	0.59	3.50	2.33	3.80	0.28	3.40
Third Quarter	3.51	4.00	0.00	3.70	0.33	4.10	-1.22	3.60	1.85	4.10
Fourth Quarter	4.12	3.40	5.85	3.60	0.18	2.60	-0.96	2.20	0.65	2.40
Mean	4.37	2.00	4.12	2.00	2.23	1.70	0.43	1.50	0.74	1.50
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	22.90	3.90	23.60	3.90	41.40	4.80	1.08	2.80	0.17	2.80
Second Quarter	45.20	8.00	42.00	4.90	30.20	7.40	7.72	6.30	0.33	5.90
Third Quarter	57.90	5.50	52.80	5.40	47.50	7.50	14.20	5.80	16.90	5.90
Fourth Quarter	52.00	5.20	60.80	5.50	60.10	5.40	9.51	3.40	8.40	3.30
Mean	44.50	2.90	44.80	2.50	44.80	3.20	8.13	2.40	6.45	2.30

(CONTINUED)

Sampling Point Location	GW-793		GW-794		GW-795		GW-800		SS-1	
	AGLLSF		AGLLSF		AGLLSF		OLF		EXP	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	0.49	1.40	2.55	2.00	0.35	1.50	.	.	12.90	3.50
Second Quarter	-5.55	4.40	-5.92	4.70	-6.19	4.30	-0.18	0.57	15.10	3.60
Third Quarter	-4.03	7.90	-4.51	7.60	0.00	8.30	-2.26	3.00	18.90	4.10
Fourth Quarter	-0.15	2.20	2.20	2.60	3.24	2.70	1.88	1.70	18.20	4.50
Mean	-2.31	2.40	-1.42	2.40	-0.65	2.50	-0.19	1.20	16.27	2.00
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	0.95	2.70	4.57	2.90	2.28	2.80	.	.	27.10	4.50
Second Quarter	3.98	5.50	1.00	5.40	2.32	5.40	0.31	1.40	178.00	8.30
Third Quarter	-0.98	11.00	-3.27	11.00	-8.51	11.00	-6.00	5.70	52.60	5.00
Fourth Quarter	3.21	3.10	7.15	3.40	10.00	3.50	4.08	2.70	63.60	5.40
Mean	1.79	3.20	2.36	3.30	1.52	3.30	-0.54	2.20	80.32	3.00

(CONTINUED)

APPENDIX K

10

Gross Alpha and Gross Beta Activity Data Summary, 1993

Sampling Point Location	SS-4		SS-5		SS-6		SS-8		BCK-00.63	
	EXP		EXP		EXP		EXP		EXP	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.	.	.
First Quarter	25.80	5.00	8.69	3.00	-0.15	1.60	0.00	1.70	6.99	2.70
Second Quarter	29.60	6.20	6.11	2.70	-0.90	1.30	0.48	1.70	5.06	2.40
Third Quarter	57.00	14.00	30.60	11.00	2.29	6.10	6.91	6.90	18.30	8.70
Fourth Quarter	55.10	9.10	32.80	6.10	54.30	8.70	-0.66	0.81	13.80	3.60
Mean	41.88	4.60	19.55	3.30	13.89	2.70	1.68	1.80	11.04	2.50
GROSS BETA	.	.	.	.	.	.	.	.	.	.
First Quarter	37.10	4.50	12.50	3.40	0.82	2.70	1.65	2.80	10.50	3.30
Second Quarter	44.30	4.80	15.70	3.50	0.34	2.50	-1.38	2.40	10.20	3.10
Third Quarter	118.00	17.00	65.20	15.00	-1.70	11.00	6.47	11.00	21.50	12.00
Fourth Quarter	143.00	16.00	73.30	9.20	126.00	14.00	-1.70	2.70	32.40	5.30
Mean	85.60	6.10	41.67	4.60	31.37	4.50	1.26	3.00	18.65	3.50

(CONTINUED)

Sampling Point Location	BCK-04.55		BCK-09.40		NT-01		NT-13	
	EXP		EXP		EXP		EXP	
	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-	pCi/L	CE +/-
GROSS ALPHA	.	.	.	.	.	.	.	.
First Quarter	7.94	2.90	26.80	4.80	8.78	5.10	0.28	1.60
Second Quarter	5.81	2.60	19.10	4.40	16.30	7.10	0.00	1.40
Third Quarter	11.70	7.80	41.00	12.00	45.50	7.20	1.73	6.00
Fourth Quarter	12.10	3.40	-0.01	1.00	72.80	8.70	0.81	1.30
Mean	9.39	2.30	21.72	3.40	35.85	3.60	0.71	1.60
GROSS BETA	.	.	.	.	.	.	.	.
First Quarter	13.90	3.40	41.30	4.60	63.60	6.00	1.55	2.70
Second Quarter	8.17	3.00	43.80	4.70	64.40	8.60	2.46	2.60
Third Quarter	21.80	12.00	95.50	16.00	384.00	12.00	-2.04	11.00
Fourth Quarter	30.50	5.10	-1.47	2.70	318.00	11.00	0.23	2.80
Mean	18.59	3.50	44.78	4.40	207.50	4.80	0.55	3.00

APPENDIX L

ANNUAL AVERAGE NITRATE (as N) CONCENTRATIONS

EXPLANATION

SAMPLING POINT:

BCK	-	Bear Creek Kilometer
GW	-	Monitoring Well
NT	-	North Tributary to Bear Creek
SS	-	Spring

LOCATION:

AGLLSF	-	Above Grade Low Level Storage Facility
BG	-	Bear Creek Burial Grounds WMA
EXP	-	Exit-Pathway Monitoring
OLF	-	Oil Landfarm WMA
RS	-	Rust Spoil Area
S3	-	S-3 Site
SPI	-	Spoil Area I

NOTES:

All concentrations reported as nitrate (as N) in milligrams per Liter (mg/L).

Results reported as less than the detection limit were not used to calculate mean concentrations.

ND	-	Not detected, annual average
.	-	Not sampled
<	-	Not detected at the reported minimum attainable detection limit.

APPENDIX L
Annual Average Nitrate Concentrations, 1993

Sampling Point	Location	1993 Average	Quarterly Concentration (mg/L)			
			First	Second	Third	Fourth
GW-013	OLF	ND	<0.2	<0.2	<0.2	<0.2
GW-040	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-042	BG	ND	.	.	.	<0.2
GW-043	OLF	ND	<0.2	<0.2	<0.2	<0.2
GW-044	OLF	ND	<0.2	<0.2	<0.2	<0.2
GW-052	BG	9.18	6.3	12.06	.	.
GW-056	BG	0.3	<0.2	0.3	<0.2	<0.2
GW-057	EXP	0.28	0.28	0.27	<0.2	0.3
GW-063	OLF	1.8	1.8	.	.	.
GW-064	OLF	7.42	8.3	4.7	7.67	9
GW-069	BG	0.26	<0.2	<0.2	<0.2	0.26
GW-079	BG	ND	.	.	.	<0.2
GW-080	BG	ND	.	.	.	<0.2
GW-082	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-084	OLF	ND	<0.2	<0.2	<0.2	<0.2
GW-085	OLF	748.9	2139	240	304	312.6
GW-086	OLF	4.54	4.5	3.1	4.97	5.6
GW-115	S3	ND	<0.2	<0.2	<0.2	<0.2
GW-118	BG	ND	<23	<0.2	<0.2	<22.6
GW-162	BG	ND	.	.	.	<0.2
GW-286	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-287	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-311	RS	0.49	0.42	0.5	0.54	0.5
GW-312	RS	0.24	<0.2	0.26	0.26	0.2
GW-315	SPI	12.88	7.8	8.9	15	19.8
GW-316	SPI	0.36	0.46	0.33	0.3	0.35
GW-317	SPI	0.23	0.26	<0.2	<0.2	0.2
GW-323	SPI	ND	<0.2	<0.2	<0.2	<0.2
GW-324	S3	ND	<0.2	<0.2	<0.2	<0.2
GW-325	S3	ND	<0.2	<0.2	<0.2	<0.2
GW-342	BG	ND	.	.	.	<0.2
GW-345	S3	24.28	7.7	3.4	20	66
GW-347	S3	ND	<0.2	<0.2	<0.2	<0.2
GW-348	S3	9.75	9.73	8.5	9.35	11.4
GW-364	OLF	3.83	1.21	1.12	10.2	2.8
GW-365	OLF	4	2.9	4.04	5.17	3.9
GW-370	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-371	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-372	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-373	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-526	S3	962.25	826	1006	846	1171
GW-537	OLF	697.65	782	692	525	791.6
GW-601	OLF	34.03	32.1	41.6	30.5	31.9
GW-613	S3	ND	.	.	.	<0.2
GW-614	S3	ND	.	.	.	<0.2

APPENDIX L
Annual Average Nitrate Concentrations, 1993

Sampling Point	Location	1993 Average	Quarterly Concentration (mg/L)			
			First	Second	Third	Fourth
GW-621	BG	6.14	4.45	6	10.12	4
GW-626	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-627	BG	0.2	<0.2	<0.2	0.2	<0.2
GW-636	OLF	ND	<0.2	<0.2	<0.2	<0.2
GW-637	OLF	ND	<0.2	<0.2	<0.2	<0.2
GW-638	OLF	0.34	0.23	0.38	0.4	<0.2
GW-639	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-640	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-641	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-642	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-643	BG	0.29	0.29	<0.2	<0.2	<0.2
GW-644	OLF	ND	<0.2	<0.2	<0.2	<0.2
GW-647	OLF	ND	<0.2	<0.2	<0.2	<0.2
GW-651	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-652	BG	0.45	<0.2	<0.2	<0.2	0.45
GW-653	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-654	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-655	BG	ND	<0.2	<0.2	<0.2	<0.2
GW-683	EXP	11.75	2.7	2.3	10.01	32
GW-684	EXP	9.4	4.3	4.1	10.3	18.9
GW-685	EXP	2.36	1.7	1.63	2.1	4
GW-694	EXP	24.86	10	29.25	31	29.2
GW-695	EXP	8.9	5.7	16	6.2	7.7
GW-703	EXP	19.09	22.36	9.6	21.8	22.6
GW-704	EXP	11.63	14.28	15	17	0.23
GW-706	EXP	30.45	<0.2	32	<0.2	28.9
GW-710	EXP	74.9	<11.3	74.9	<0.2	<0.2
GW-711	EXP	ND	<11.3	<23	<2	-22.59
GW-712	EXP	0.21	<0.2	0.24	0.2	0.2
GW-713	EXP	1.4	<0.2	1.4	<0.2	<0.2
GW-714	EXP	4.05	4.16	4.8	4.03	3.2
GW-715	EXP	0.8	0.6	0.82	1.1	0.66
GW-723	EXP	11.65	20	6.39	9.6	10.6
GW-724	EXP	48.88	62	37	50.1	46.4
GW-725	EXP	53.03	61	55	49.9	46.2
GW-736	EXP	47.3	61	42	43.8	42.4
GW-737	EXP	47.05	57	37	49.9	44.3
GW-738	EXP	25.55	22	15	40.4	24.8
GW-739	EXP	7.23	7.4	4.17	8.6	8.76
GW-740	EXP	4.1	3.5	3.32	4.8	4.78
GW-793	AGLLSF	ND	<0.2	<0.2	<0.2	<0.2
GW-794	AGLLSF	0.34	<0.2	<0.2	0.3	0.37
GW-795	AGLLSF	5.2	<0.2	<0.2	<0.2	5.2
GW-800	OLF	ND	.	<0.2	<0.2	<0.2
SS-1	EXP	68.03	31	142	44.2	54.9

APPENDIX L
Annual Average Nitrate Concentrations, 1993

Sampling Point	Location	1993 Average	Quarterly Concentration (mg/L)			
			First	Second	Third	Fourth
SS-4	EXP	33.3	9.3	15	41.3	67.6
SS-5	EXP	11.75	2.5	4.5	15.2	24.8
SS-6	EXP	37.8	<0.2	<0.2	<0.2	37.8
SS-8	EXP	0.55	0.36	0.32	1.2	0.3
BCK-00.63	EXP	4.8	2	2.2	5.1	9.9
BCK-04.55	EXP	5.38	2.3	2.6	6.3	10.3
BCK-09.40	EXP	14.27	11	13	18.8	<0.2
NT-01	EXP	172.03	112	31	286.1	259
NT-13	EXP	ND	<0.2	<0.2	<0.2	<0.2

APPENDIX M
GROUNDWATER ELEVATIONS

EXPLANATION

LOCATION:

AGLLSF	-	Above Grade Low Level Storage Facility
BG	-	Bear Creek Burial Grounds WMA
EXP	-	Exit-Pathway Monitoring
OLF	-	Oil Landfarm WMA
RS	-	Rust Spoil Area
S3	-	S-3 Site
SPI	-	Spoil Area I

SAMPLED IN 93:

Y	-	Wells included in the 1993 groundwater monitoring program.
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NOTES:

CTP Elev.	-	The elevation of the centerpoint of the monitored interval.
January	-	Measuring event from January 10 to 14, 1993.
August	-	Measuring event from August 31 to September 3, 1993.
Depth	-	The distance in ft from the top-of-casing measuring point to the static water level.
Elev.	-	The groundwater elevation in ft above mean sea level.
+/- Ft	-	The calculated drop in water level from the January to the August measuring events. Negative results show a rise in water level.
.	-	No information available.

APPENDIX M
Groundwater Elevations, 1993

Sampling Pt.	Location	Sampled in 93	CTP Elev.	January Depth	January Elev.	August Depth	August Elev.	+/- Ft
Water Table Interval								
1003	S3		1000.86	12.7	991.24	.	.	.
1010	S3		1004.65	8.7	1012.17	.	.	.
1011	S3		990.02	13.6	996.97	.	.	.
1013	S3		1032.05	14.5	.	.	.	.
1014	S3		1061.02	16.7	.	.	.	.
1016	S3		1012.68	21.1	.	.	.	.
1020	S3		1017.39	14.7	.	.	.	.
1022	S3		1017.14	23.2	.	.	.	.
1026	S3		1012.97	36.6	.	45.0	.	8.4
1034	BG		933.93	8.7	928.65	13.1	924.25	4.4
1037	BG		914.40	4.3	913.40	.	.	.
1097	S3		1051.00	32.8	.	.	.	.
GW-001	OLF		958.44	10.7	970.16	17.8	963.06	7.1
GW-005	OLF		954.62	3.6	961.53	5.8	959.33	2.2
GW-007	OLF		949.92	4.8	958.73	7.5	956.03	2.7
GW-008	OLF		942.86	12.3	952.49	15.3	949.49	3.0
GW-010	OLF		940.63	1.9	950.86	5.3	947.46	3.4
GW-011	OLF		911.90	2.3	950.78	5.2	947.88	2.9
GW-012	OLF		937.40	3.3	950.27	6.8	946.77	3.5
GW-014	BG		922.29	5.0	928.76	7.7	926.06	2.7
GW-015	BG		917.46	3.7	921.73	6.2	919.23	2.5
GW-016	BG		914.67	6.9	921.16	12.5	915.56	5.6
GW-018	BG		906.14	5.9	918.59	10.7	913.79	4.8
GW-036	BG		967.97	21.4	973.95	.	.	.
GW-038	BG		959.02	50.3	956.82	.	.	.
GW-041	BG		981.52	12.4	995.15	25.3	982.25	12.9
GW-043	OLF	Y	984.78	24.7	986.81	28.2	983.31	3.5
GW-045	BG		898.65	5.8	903.99	15.9	893.89	10.1
GW-051	BG		900.55	8.9	901.81	.	.	.
GW-052	BG	Y	891.96	5.5	900.54	18.0	888.04	12.5
GW-053	BG		878.23	4.0	898.67	10.4	892.27	6.4
GW-065	OLF		948.07	22.2	960.05	29.4	952.85	7.2
GW-067	OLF		945.13	8.9	952.60	11.3	950.20	2.4
GW-080	BG	Y	951.78	19.5	960.81	25.0	955.31	5.5
GW-084	OLF	Y	971.22	11.6	985.00	16.4	980.20	4.8
GW-086	OLF	Y	954.20	12.4	970.36	15.6	967.16	3.2
GW-087	OLF		943.72	6.6	953.90	10.8	949.70	4.2
GW-089	BG		939.98	1.4	962.96	6.8	957.56	5.4
GW-090	BG		946.52	3.9	957.98	9.6	952.28	5.7
GW-091	BG		928.17	.	.	8.9	944.58	.
GW-096	BG		860.92	8.8	912.61	15.2	906.21	6.4
GW-097	OLF		925.79	6.3	938.49	16.7	928.09	10.4
GW-101	S3		992.20	8.3	999.03	9.9	997.43	1.6
GW-115	S3	Y	1006.62	6.8	1047.61	14.2	1040.21	7.4
GW-127	S3		984.67	12.8	993.10	16.4	989.50	3.6

APPENDIX M
Groundwater Elevations, 1993

Sampling Pt.	Location	Sampled in 93	CTP Elev.	January Depth	January Elev.	August Depth	August Elev.	+/- Ft
GW-133	S3		695.57	80.8	945.06	80.4	945.46	-0.4
GW-136	GBR		436.47	3.0	856.41	7.6	851.81	4.6
GW-237	BG		.	9.0	.	16.1	.	7.1
GW-243	S3		948.48	14.4	997.15	14.9	996.65	0.5
GW-244	S3		946.93	12.3	996.95	14.8	994.45	2.5
GW-245	S3		955.41	12.8	996.28	15.0	994.08	2.2
GW-246	S3		950.97	12.9	996.29	15.0	994.19	2.1
GW-249	BG		956.82	21.7	969.45	.	.	.
GW-257	BG		932.86	25.7	935.98	.	.	.
GW-276	S3		983.90	5.4	995.87	8.4	992.87	3.0
GW-277	S3		929.25	4.9	996.86	7.6	994.16	2.7
GW-287	BG	Y	915.55	8.2	918.67	9.6	917.27	1.4
GW-289	BG		911.47	7.7	940.77	.	.	.
GW-291	BG		931.89	6.4	941.96	11.9	936.46	5.5
GW-307	RS		955.86	26.5	966.64	35.1	958.04	8.6
GW-308	RS		961.27	27.1	966.70	37.1	956.70	10.0
GW-309	RS		954.27	19.9	968.27	24.0	964.17	4.1
GW-310	RS		969.10	19.7	975.65	22.4	972.95	2.7
GW-311	RS	Y	963.48	31.0	968.35	41.6	957.75	10.6
GW-312	RS	Y	958.83	30.0	966.49	39.4	957.09	9.4
GW-316	SPI	Y	970.98	49.5	997.67	62.7	984.47	13.2
GW-323	SPI	Y	1026.41	85.7	1044.41	86.1	1044.01	0.4
GW-325	S3	Y	989.03	7.2	995.80	18.3	984.70	11.1
GW-345	S3	Y	974.18	17.7	981.76	20.5	978.96	2.8
GW-347	S3	Y	979.11	16.7	984.86	19.6	981.96	2.9
GW-370	BG	Y	930.84	12.0	948.62	15.8	944.82	3.8
GW-372	BG	Y	934.17	15.9	967.63	26.5	957.03	10.6
GW-443	GBR		784.00	5.5	823.87	10.3	819.07	4.8
GW-445	GBR		802.15	5.4	841.13	8.6	837.93	3.2
GW-531	LD		971.94	13.6	991.01	19.7	984.91	6.1
GW-532	LD		974.30	13.6	983.30	16.2	980.70	2.6
GW-533	LD		977.36	12.3	991.52	18.6	985.22	6.3
GW-537	OLF	Y	960.14	5.7	970.54	8.2	968.04	2.5
GW-538	LD		960.12	17.0	979.89	19.0	977.89	2.0
GW-613	S3	Y	974.17	9.8	1003.57	16.5	996.87	6.7
GW-621	BG	Y	891.17	8.7	916.54	21.2	904.04	12.5
GW-622	BG		907.89	6.3	917.86	14.4	909.76	8.1
GW-624	BG		898.72	4.8	917.16	12.2	909.76	7.4
GW-626	BG	Y	869.45	25.4	917.21	27.7	914.91	2.3
GW-637	OLF	Y	917.26	5.7	936.13	15.2	926.63	9.5
GW-638	OLF	Y	931.14	5.7	936.07	13.8	927.97	8.1
GW-641	BG	Y	926.36	16.5	930.16	22.3	924.36	5.8
GW-642	BG	Y	984.23	.	.	23.2	991.47	.
GW-644	OLF	Y	939.93	7.6	952.15	12.4	947.35	4.8
GW-645	OLF		931.80	69.4	937.00	79.8	926.60	10.4
GW-648	RS		953.93	62.7	966.47	71.2	957.97	8.5
GW-649	OLF		966.46	6.8	976.86	10.8	972.86	4.0

APPENDIX M
Groundwater Elevations, 1993

Sampling Pt.	Location	sampled in 93	CTP Elev.	January Depth	January Elev.	August Depth	August Elev.	+/- Ft
GW-651	BG	Y	854.15	4.4	898.72	10.9	892.22	6.5
GW-652	BG	Y	875.68	8.4	892.43	12.2	888.63	3.8
GW-653	BG	Y	896.20	20.4	911.20	24.5	907.10	4.1
GW-654	BG	Y	928.51	6.2	934.59	9.3	931.49	3.1
GW-715	EXP	Y	834.17	26.0	848.72	30.0	844.72	4.0
GW-795	AGLLSF	Y	909.12	.	.	11.5	914.48	.

Bedrock Interval

1033	BG		813.28	7.4	942.79	.	.	.
42-DC	GBR		870.65	27.4	.	33.6	.	6.2
GW-002	OLF		928.91	9.2	973.22	16.8	965.62	7.6
GW-037	BG		946.97	41.1	964.50	.	.	.
GW-044	OLF	Y	954.05	26.6	986.89	30.4	983.09	3.8
GW-054	BG		855.66	8.9	884.43	11.7	881.63	2.8
GW-055	BG		871.71	14.8	877.73	12.3	880.23	-2.5
GW-056	BG	Y	834.50	3.1	887.61	8.3	882.41	5.2
GW-057	EXP	Y	866.68	3.7	885.66	6.8	882.56	3.1
GW-058	BG		867.77	18.5	894.46	25.9	887.06	7.4
GW-059	BG		887.72	17.9	894.58	25.0	887.48	7.1
GW-060	BG		856.61	11.1	893.31	18.0	886.41	6.9
GW-061	BG		879.73	11.2	893.24	16.0	888.44	4.8
GW-062	OLF		911.23	25.9	936.26	32.3	929.86	6.4
GW-063	OLF	Y	928.69	25.8	936.13	.	.	.
GW-064	OLF	Y	929.42	21.9	959.66	28.1	953.46	6.2
GW-066	OLF		904.87	7.3	954.42	11.4	950.32	4.1
GW-069	BG	Y	835.15	7.5	919.51	11.0	916.01	3.5
GW-070	BG		793.36	7.0	919.39	9.1	917.29	2.1
GW-071	BG		718.42	6.6	921.82	8.9	919.52	2.3
GW-072	BG		834.97	9.3	920.61	12.3	917.61	3.0
GW-075	OLF		774.05	2.0	962.31	4.4	959.91	2.4
GW-076	OLF		888.53	3.3	962.71	5.4	960.61	2.1
GW-077	BG		820.57	4.8	913.59	11.5	906.89	6.7
GW-078	BG		897.98	3.7	913.63	10.3	907.03	6.6
GW-079	BG	Y	919.74	18.1	962.40	24.6	955.90	6.5
GW-082	BG	Y	927.59	19.4	943.09	20.3	942.19	0.9
GW-083	BG		909.49	9.5	928.33	14.0	923.83	4.5
GW-085	OLF	Y	926.22	12.4	970.47	15.5	967.37	3.1
GW-094	BG		808.51	6.1	907.02	11.2	901.92	5.1
GW-095	BG		764.88	2.6	908.27	8.5	902.37	5.9
GW-098	OLF		851.54	10.4	934.70	21.9	923.20	11.5
GW-112	GC		640.88	23.2	854.28	29.8	847.68	6.6
GW-113	GC		726.57	20.7	854.09	43.9	830.89	23.2
GW-114	BCR		720.06	23.2	805.07	26.8	801.47	3.6
GW-118	BG	Y	359.37	14.0	898.39	4.7	907.69	-9.3
GW-119	BG		433.12	2.0	919.91	.	.	.
GW-120	OLF		789.19	3.4	943.87	9.5	937.77	6.1

APPENDIX M
Groundwater Elevations, 1993

Sampling Pt.	Location	Sampled in 93	CTP Elev.	January Depth	January Elev.	August Depth	August Elev.	+/- Ft
GW-122	S3		887.15	12.6	994.60	20.6	986.60	8.0
GW-123	S3		457.43	9.1	998.35	4.9	1002.55	-4.2
GW-124	S3		878.51	8.9	997.88	22.2	984.58	13.3
GW-125	S3		476.98	4.9	1001.95	2.8	1004.05	-2.1
GW-162	BG	Y	929.56	18.8	1021.64	21.8	1018.64	3.0
GW-211	EXP		386.14	10.2	786.06	.	.	.
GW-225	OLF		765.21	8.0	935.11	22.0	921.11	14.0
GW-226	OLF		890.56	7.5	935.90	22.1	921.30	14.6
GW-227	OLF		908.91	7.8	938.66	19.4	927.06	11.6
GW-228	OLF		853.85	9.1	937.37	22.0	924.47	12.9
GW-229	OLF		898.21	5.5	943.50	32.8	916.20	27.3
GW-248	BG		903.27	25.2	936.05	.	.	.
GW-250	BG		932.80	24.9	966.35	.	.	.
GW-286	BG	Y	898.62	8.9	917.93	10.4	916.43	1.5
GW-288	BG		893.07	7.2	941.16	.	.	.
GW-290	BG		916.46	5.2	943.26	9.2	939.26	4.0
GW-306	RS		937.09	29.7	962.08	37.7	954.08	8.0
GW-313	SPI		944.77	63.4	989.12	75.9	976.62	12.5
GW-314	SPI		939.20	53.2	996.61	65.9	983.91	12.7
GW-315	SPI	Y	947.84	50.0	997.28	63.2	984.08	13.2
GW-317	SPI	Y	936.30	66.8	996.18	79.3	983.68	12.5
GW-324	S3	Y	928.19	5.9	997.93	18.3	985.53	12.4
GW-346	S3		936.88	17.0	978.65	18.6	977.05	1.6
GW-348	S3	Y	923.50	19.9	980.22	26.1	974.02	6.2
GW-363	OLF		892.91	4.6	953.31	6.8	951.11	2.2
GW-364	OLF	Y	879.74	7.4	928.55	24.4	911.55	17.0
GW-365	OLF	Y	794.68	4.1	931.48	17.4	918.18	13.3
GW-366	OLF		891.16	56.3	932.49	74.0	914.79	17.7
GW-367	OLF		848.71	58.8	929.36	75.5	912.66	16.7
GW-368	OLF		763.63	62.5	938.03	73.9	926.63	11.4
GW-369	OLF		864.86	66.8	932.92	82.6	917.12	15.8
GW-371	BG	Y	840.63	15.8	944.42	18.7	941.52	2.9
GW-373	BG	Y	840.25	18.6	964.20	20.3	962.50	1.7
GW-375	BG		776.23	5.7	915.13	10.7	910.13	5.0
GW-520	OLF		911.03	56.1	931.28	67.5	919.88	11.4
GW-526	S3	Y	883.34	11.6	985.85	13.7	983.75	2.1
GW-534	LD		959.61	17.8	983.05	20.7	980.15	2.9
GW-601	OLF	Y	661.84	61.7	940.50	73.2	929.00	11.5
GW-602	OLF		870.76	76.6	1001.17	79.7	998.07	3.1
GW-614	S3	Y	928.49	4.2	1008.02	9.7	1002.52	5.5
GW-615	S3		780.42	11.6	1005.15	13.6	1003.15	2.0
GW-616	S3		765.81	9.2	1002.61	10.9	1000.91	1.7
GW-623	BG		665.86	3.9	921.31	5.9	919.31	2.0
GW-627	BG	Y	678.39	23.5	919.35	25.3	917.55	1.8
GW-629	BG		637.27	4.4	922.76	6.2	920.96	1.8
GW-636	OLF	Y	830.33	1.9	940.02	10.6	931.32	8.7
GW-639	BG	Y	827.48	10.3	930.40	13.7	927.00	3.4

APPENDIX M
Groundwater Elevations, 1993

Sampling Pt.	Location	Sampled in 93	CTP Elev.	January Depth	January Elev.	August Depth	August Elev.	+/- Ft
GW-640	BG	Y	901.39	15.1	930.28	21.3	924.08	6.2
GW-646	OLF		932.41	39.7	964.76	40.6	963.86	0.9
GW-647	OLF	Y	945.64	68.8	964.47	69.2	964.07	0.4
GW-683	EXP	Y	804.10	88.4	883.66	88.9	883.16	0.5
GW-684	EXP	Y	778.13	15.1	883.56	15.7	882.96	0.6
GW-685	EXP	Y	775.88	6.9	884.61	8.8	882.71	1.9
GW-694	EXP	Y	759.33	23.0	918.38	31.4	909.98	8.4
GW-695	EXP	Y	880.62	23.1	916.27	31.6	907.77	8.5
GW-703	EXP	Y	793.30	38.1	916.59	26.6	928.09	-11.5
GW-704	EXP	Y	690.99	27.2	917.53	37.3	907.43	10.1
GW-705	EXP		652.96	160.7	767.77	32.8	895.67	-128
GW-706	EXP	Y	756.03	10.6	918.07	19.0	909.67	8.4
GW-710	EXP	Y	265.93	63.5	847.76	69.1	842.16	5.6
GW-711	EXP	Y	260.86	61.1	844.10	67.3	837.90	6.2
GW-712	EXP	Y	424.11	31.5	845.59	35.2	841.89	3.7
GW-713	EXP	Y	567.73	35.0	845.63	38.6	842.03	3.6
GW-714	EXP	Y	742.25	27.5	847.58	31.6	843.48	4.1
GW-723	EXP	Y	626.76	70.0	952.23	76.7	945.53	6.7
GW-724	EXP	Y	681.02	26.5	952.77	35.4	943.87	8.9
GW-725	EXP	Y	820.76	7.6	953.45	15.9	945.15	8.3
GW-736	EXP	Y	859.05	6.5	953.62	14.8	945.32	8.3
GW-737	EXP	Y	873.25	6.4	953.51	14.7	945.21	8.3
GW-738	EXP	Y	904.61	25.8	957.28	31.6	951.48	5.8
GW-739	EXP	Y	716.06	70.3	953.44	78.8	944.94	8.5
GW-740	EXP	Y	839.15	66.3	953.33	74.4	945.23	8.1
GW-800	OLF	Y	936.00	.	.	21.2	943.16	.

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