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CALENDAR YEAR 2000 GROUNDWATER MONITORING REPORT FOR THE GROUNDWATER PROTECTION PROGRAM, U.S. DEPARTMENT OF ENERGY, Y-12 NATIONAL SECURITY COMPLEX OAK RIDGE, TENNESSEE

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Acronyms and Abbreviations

ACO	Analytical Chemistry Organization
BCK	Bear Creek Kilometer
Bear Creek Regime	Bear Creek Hydrogeologic Regime
CERCLA	Comprehensive Environmental Response, Compensations, and Liability Act
Chestnut Ridge Regime	Chestnut Ridge Hydrogeologic Regime
CRSDB	Chestnut Ridge Sediment Disposal Basin
CRSP	Chestnut Ridge Security Pits
CY	calendar year
DOE	U.S. Department of Energy
DQO	data quality objective
East Fork Regime	Upper East Fork Poplar Creek Hydrogeologic Regime
ft	feet
GWPP	Y-12 Groundwater Protection Program
LMES	Lockheed Martin Energy Systems, Inc.
μg/L	micrograms per liter
ORR	Oak Ridge Reservation
PCP	post closure permit (RCRA)
QA/QC	quality assurance/quality control
RCRA	Resource Conservation and Recovery Act
REDOX	oxidation-reduction potential
ROD	record of decision (CERCLA)
SS	south side (of Bear Creek)
SWDF	Solid Waste Disposal Facility
TDEC	Tennessee Department of Environment and Conservation
UEFPC	Upper East Fork Poplar Creek
VOC	volatile organic compound
WRRP	Water Resources Restoration Program
Y-12	Y-12 National Security Complex

1.0 INTRODUCTION

This report contains the groundwater and surface water monitoring data that were obtained at the U.S. Department of Energy (DOE) Y-12 National Security Complex (hereafter referenced as Y-12) in Oak Ridge, Tennessee, during calendar year (CY) 2000. These monitoring data were collected for the specific purposes of DOE Order 5400.1 site surveillance monitoring and exit pathway/perimeter monitoring, as described in the *Environmental Monitoring Plan for the Oak Ridge Reservation* (DOE 1996). Site surveillance monitoring provides data regarding the quality of groundwater and surface water in areas that are, or could be, affected by operations at Y-12. Exit pathway/perimeter monitoring provides data regarding the quality of groundwater and surface water where contaminants from Y-12 are most likely to migrate beyond the boundaries of the DOE Oak Ridge Reservation (ORR).

The CY 2000 groundwater and surface water monitoring data presented in this report were obtained under the auspices of the Y-12 Groundwater Protection Program (GWPP), managed by Lockheed Martin Energy Systems, Inc. (LMES) (January - October, 2000) and by BWXT Y-12, L.L.C. (November - December, 2000), and the Water Resources Restoration Program (WRRP), which is managed by Bechtel Jacobs Company LLC. Combining the monitoring results obtained under both the Y-12 GWPP and the WRRP enables this report to serve as a consolidated reference for the groundwater and surface water monitoring data obtained at Y-12 during CY 2000.

Section 2 of this report provides detailed descriptions of the CY 2000 groundwater and surface water monitoring activities at Y-12, including: sampling locations, dates, and methods; field measurements and laboratory analyses; quality assurance/quality control (QA/QC) sampling and data management protocols associated with monitoring performed by the GWPP; and a discussion of analytical results that do not meet applicable data quality objectives (DQOs). Section 3 describes the groundwater elevation monitoring performed at Y-12 during CY 2000, along with a short discussion of seasonal water table fluctuations and general flow directions. Section 4 lists the documents cited for more detailed operational, regulatory, or technical information regarding the CY 2000 groundwater and surface water monitoring activities at Y-12.

The narrative sections of the report reference several appendices. Figures (maps and diagrams) and large data tables (at least one page in length) are presented in Appendix A and Appendix B, respectively. Monitoring well construction details are provided in Appendix C. Results of field measurements and laboratory analyses of the groundwater and surface water samples collected during CY 2000 are presented in Appendix D (Bear Creek Hydrogeologic Regime), Appendix E (Chestnut Ridge Hydrogeologic Regime), and Appendix F (Upper East Fork Poplar Creek Hydrogeologic Regime and surrounding areas). Appendix G contains data for the quality assurance/quality control (QA/QC) samples.

2.0 CY 2000 GROUNDWATER AND SURFACE WATER MONITORING

Monitoring the quality of groundwater and surface water at Y-12 during CY 2000 involved sampling locations in the three hydrogeologic regimes (Figure A.1). The Bear Creek Hydrogeologic Regime (Bear Creek Regime) encompasses a section of Bear Creek Valley between the west end of Y-12 and the west end of the valley (directions are in reference to Y-12 grid system). The Upper East Fork Poplar Creek Hydrogeologic Regime (East Fork Regime) encompasses industrial facilities and support structures located between Scarboro Road at the east end of Y-12 and Old Bear Creek Road at the west end of Y-12. The Chestnut Ridge Hydrogeologic Regime (Chestnut Ridge Regime) encompasses a section of Chestnut Ridge west of Scarboro Road and east of an unnamed drainage feature southwest of Y-12.

Groundwater and surface water sampling activities that were performed during CY 2000 specifically for DOE Order 5400.1 site surveillance and DOE Order 5400.1 exit pathway/perimeter monitoring (collectively referenced as DOE Order 5400.1 monitoring) were implemented under the Y-12 GWPP in accordance with the *Y-12 Plant Groundwater Protection Program Groundwater and Surface Water Sampling and Analysis Plan for Calendar Year 2000* (LMES 1999a), as modified by applicable addenda (Table B.1). Groundwater and surface water sampling activities associated with the following programs were implemented under the auspices of the WRRP during CY 2000: (1) Resource Conservation and Recovery Act (RCRA) post-closure detection monitoring and RCRA post-closure corrective action monitoring (collectively referenced as RCRA monitoring), as specified in applicable RCRA post-closure permits (PCP) issued by the Tennessee Department of Environment and Conservation (TDEC); (2) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remedial effectiveness monitoring, as specified in the applicable record of decision (ROD) or decision documents pending final approval (hereafter referenced as CERCLA ROD monitoring), and CERCLA pre-remediation baseline water quality monitoring (hereafter referenced as CERCLA baseline monitoring), and (3) nonhazardous solid waste disposal facility (SWDF) detection monitoring (collectively referenced as SWDF monitoring) in accordance with site-specific operating permits issued by the TDEC Division of Solid Waste Management. The groundwater and surface water sampling activities associated with these monitoring programs were performed in accordance with the respective sampling and analysis plan for fiscal years 2000 (Bechtel Jacobs Company 1999a) and 2001 (Bechtel Jacobs Company 2000).

Several of the CY 2000 monitoring locations in each hydrogeologic regime served the purposes of more than one monitoring program. For example, seven monitoring wells, three springs, and one surface water station in the Bear Creek Regime serve both DOE Order 5400.1 monitoring and CERCLA or RCRA monitoring purposes (Table B.2).

2.1 SAMPLING LOCATIONS AND FREQUENCY

A total of 151 monitoring wells, 19 springs, 25 surface water locations, and two building sumps were sampled during CY 2000 (Tables B.2, B.3, and B.4). Five of the monitoring wells are equipped with Westbay™ multi-port sampling equipment (hereafter referenced as Westbay wells), which allow collection of groundwater samples from several discrete depth intervals. All of the remaining wells are equipped with a dedicated sampling apparatus (Well Wizard™). Information regarding the total depth, geologic formation, aquifer zone, and complete construction details for each monitoring well are provided in Appendix C.

2.1.1 Bear Creek Regime

As shown in the following summary, 50 monitoring wells (including four Westbay wells), 7 springs, and 10 surface water stations in the Bear Creek Regime (Figure A.2) were sampled during CY 2000 for the purposes of DOE Order 5400.1 monitoring, RCRA monitoring, and CERCLA monitoring (Table B.2).

Table 1. CY 2000 sampling locations in the Bear Creek Regime

Monitoring Driver	Monitoring Wells	Springs	Surface Water Stations
DOE Order 5400.1	28	4	7
RCRA PCP	8	0	0
CERCLA	20	6	4
Totals:	**50**	**7**	**10**
Note: Several sampling locations serve multiple monitoring purposes (see Table B.2).			

Samples were collected semiannually from each of the springs and surface water stations, and from each of the monitoring wells except the four Westbay wells (GW-727, GW-729, GW-730, and GW-790), which were sampled only once, and nine other wells (GW-006, GW-043, GW-044, GW-615, GW-835, GW-838, GW-840, GW-904, and GW-905) that were sampled at least three times (Table B.2). Semiannual sampling was performed during seasonally wet (January/February 2000) and seasonally dry (July/August/September 2000) flow conditions.

Twenty-eight monitoring wells in the Bear Creek Regime were sampled for the specific purposes of DOE Order 5400.1 site surveillance monitoring during CY 2000 (Table B.2). As shown on Figure A.2, about half of these wells are located near the S-3 Site (GW-115), Spoil Area I (GW-315), the Rust Spoil Area (GW-311), the Oil Landfarm Waste Management Area (GW-085, GW-226, GW-537, and GW-829), the Bear Creek Burial Grounds Waste Management Area (GW-053, GW-079, GW-080, GW-287, GW-627, and GW-653). The remaining wells comprise Exit Pathway Pickets which are located about 3,000 feet (ft) (Picket C), 7,000 ft (Picket B), 10,000 ft (Picket A), and 15,000 ft (Picket W) southwest of the S-3 Site (Figure A.2). The wells in each Exit Pathway Picket are completed at various depths along strike-normal transects across the Maynardville Limestone, which is the primary groundwater migration pathway in the Bear Creek Regime. Note that groundwater samples were collected for microbiological analyses from five wells used for DOE Order 5400.1 site surveillance monitoring in the Bear Creek Regime during CY 2000: background well GW-115, wells GW-079 and GW-080 at the Bear Creek Burial Grounds, and Exit Pathway Picket W wells GW-714 and GW-715 (see Section 2.3).

Four springs and seven surface water sampling stations in the Bear Creek Regime were sampled for the purposes of DOE Order 5400.1 exit pathway/perimeter monitoring during CY 2000 (Table B.2). The springs, which discharge into Bear Creek from the south side (SS) of the creek channel, are located west of the S-3 Site (SS-1), south of the Oil Landfarm (SS-4), and west of the Bear Creek Burial Grounds (SS-5 and SS-6). The surface water stations, as designated by the Bear Creek kilometer (BCK) value measured upstream from the confluence of Bear Creek and East Fork Poplar Creek, are located north of Pine Ridge (BCK-00.63); near the west end of Bear Creek Valley (BCK-04.55); about 6,200 ft (BCK-07.87) and 1,600 ft (BCK-09.40) downstream of the Bear Creek Burial Grounds; about midway between the Oil Landfarm and the Bear Creek Burial Grounds (BCK-10.60); about 3,600 ft downstream of the S-3 Site (BCK-11.97); and in a northern tributary of Bear Creek (NT-01) about 1,500 ft west of the S-3 Site (Figure A.2). Note that BCK-10.60 is located in a losing reach of Bear Creek and was dry during both sampling attempts during CY 2000 (Table B.2).

Eight monitoring wells in the Bear Creek Regime were sampled for the purposes of RCRA post-closure corrective action monitoring during CY 2000 (Table B.2). These wells include a background well (GW-115) located hydraulically upgradient of contaminated groundwater in the regime; point-of-compliance wells located downgradient of the S-3 Site (GW-276), the Oil Landfarm (GW-008), and the Bear Creek Burial Grounds (GW-046); and four plume boundary wells (GW-712, GW-713, GW-714, and GW-715) located at Exit Pathway Picket W (Figure A.2).

Twenty monitoring wells in the Bear Creek Regime, six springs that discharge into Bear Creek (SS-4, SS-5, SS-6, SS-6.6, SS-7, and SS-8), and four surface water stations located in Bear Creek and two of its northern tributaries (BCK-07.87, BCK-09.47, NT-07 and NT-08) were sampled for the purposes of CERCLA baseline monitoring during CY 2000 (Table B.2). As shown on Figure A.2, the monitoring wells are located near the S-3 Site (GW-526, GW-615, and GW-835); the Environmental Management Waste Management Facility (GW-006, GW-043, GW-044, GW-838, GW-840, GW-904, and GW-905), which is currently under construction; the Bear Creek Burial Grounds (GW-077, GW-078, GW-079, GW-080, and Westbay wells GW-727 [10 sampling ports], GW-729 [10 sampling ports], GW-730, [eight sampling ports], and GW-790 [10 sampling ports]); and Exit Pathway Picket C (GW-704) and Picket B (GW-706). Schematic diagrams showing the number and depth of the sampling ports in each Westbay well are presented in Figure A.3 (GW-727), Figure A.4 (GW-729), Figure A.5 (GW-730), and Figure 6 (GW-790).

2.1.2 Chestnut Ridge Regime

As shown in the following summary, 42 monitoring wells, eight springs, and three surface water stations in the Chestnut Ridge Regime were sampled during CY 2000 for the purposes of DOE Order 5400.1 monitoring, SWDF monitoring, RCRA monitoring, and CERCLA monitoring.

Table 2. CY 2000 sampling locations in the Chestnut Ridge Regime

Monitoring Driver	Monitoring Wells	Springs	Surface Water Stations
DOE Order 5400.1	5	5	0
SWDF permit	22	1	0
RCRA PCP	13	0	0
CERCLA	6	2	3
Totals:	**42**	**8**	**3**

Note: Several wells serve multiple monitoring purposes (see Table B.3).

Samples were collected at least semiannually from all of monitoring wells and springs; semiannual sampling was performed during seasonally wet (winter/spring) and seasonally dry (summer/fall) flow conditions (Table B.3). Also, well GW-305 was sampled quarterly and three samples were collected from wells GW-560, GW-562, GW-564, and GW-798 during the fourth quarter of the year.

Five monitoring wells in the Chestnut Ridge Regime were sampled for the purposes of DOE Order 5400.1 site surveillance monitoring during CY 2000 (Table B.3). Three of these wells (GW-203, GW-302, and GW-339) are located on the south side of the United Nuclear Corporation Site and two of the wells (GW-305 and GW-521) are located at Industrial Landfill IV (Figure A.7). Groundwater samples for microbiological analyses were obtained from each of these wells as part of the DOE Order 5400.1 site surveillance monitoring in the Chestnut Ridge Regime (see Section 2.3).

Five springs were sampled during CY 2000 for the purposes of DOE Order 5400.1 exit pathway/perimeter monitoring in the Chestnut Ridge Regime (Table B.3). These springs are located in an unnamed drainage

feature about 1,000 ft southeast of Industrial Landfill II (SCR2.1SP); in Bethel Valley about 2,500 ft west of Rogers Quarry (SCR2.2SP); in McCoy Branch about 1,600 ft downstream (south) of the Filled Coal Ash Pond (SCR3.4SP); and in an unnamed drainage feature about 1,600 ft north (SCR5.1SP) and 1,200 ft south (SCR5.4SP) of Kerr Hollow Quarry (Figure A.7).

Twenty-two monitoring wells and one spring in the Chestnut Ridge Regime were sampled during CY 2000 for the purposes of SWDF detection monitoring (Table B.3): wells GW-539, GW-540, GW-709 and GW-757 at Industrial Landfill II; wells GW-141, GW-217, GW-305, GW-521, GW-522 at Industrial Landfill IV; wells GW-557, GW-796, GW-797, GW-799, and GW-801 at Industrial Landfill V; wells GW-542, GW-543, GW-544, and GW-827 at Construction/Demolition Landfill VI; and wells GW-560, GW-562, GW-564, and GW-798 at Construction/Demolition Landfill VII (Figure A.7). The spring (SCR4.3SP), which was sampled for the purposes of SWDF detection monitoring at Industrial Landfill V, is located about 2,400 ft southeast of the site (Figure A.7). At the request of the TDEC (TDEC 1999), samples were collected quarterly from well GW-305 at Industrial Landfill IV during CY 2000 because the nickel concentration reported for the sample collected in July 1999 exceeded the Groundwater Protection Standard. Samples were collected in July, October, November, and December from the four wells at Construction/Demolition Landfill VII to determine baseline groundwater quality before the site begins accepting waste in 2001. Note that the SWDF detection monitoring results for wells GW-521, GW-557, GW-796, GW-798, GW-799, and GW-801 also serve the purposes of RCRA post-closure corrective action monitoring at the Chestnut Ridge Security Pits (CRSP).

Four monitoring wells in the Chestnut Ridge Regime were sampled during CY 2000 for the specific purposes of RCRA post-closure corrective action monitoring at the CRSP (Table B.3). These wells include a point-of-compliance well (GW-609) located about 800 ft east (downgradient) of the site and three plume delineation wells, one at the Chestnut Ridge Borrow Area Waste Pile (GW-301) about 3,000 ft east of the site, one at the Construction/Demolition Landfill VII (GW-798) about 1,500 ft southeast of the site, and one at the Filled Coal Ash Pond (GW-831) about 2,000 ft southwest of the site (Figure A.7).

Nine monitoring wells in the Chestnut Ridge Regime were sampled during CY 2000 for the purposes of RCRA post-closure detection monitoring at the Chestnut Ridge Sediment Disposal Basin (CRSDB) and Kerr Hollow Quarry (Table B.3). The RCRA monitoring well network at the CRSDB includes one well (GW-159) located hydraulically upgradient (northwest) of the site and three point-of-compliance wells (GW-156, GW-731, and GW-732) to the east-southeast (hydraulically downgradient) of the site (Figure A.5). Two upgradient/background wells (GW-142 and GW-231) and three downgradient point-of-compliance wells (GW-143, GW-144, and GW-145) comprise the RCRA monitoring well network at Kerr Hollow Quarry (Figure A.7). Four replicate groundwater samples were collected from each of the RCRA monitoring wells at the each site during each semiannual sampling event (Table B.3).

Six monitoring wells at the United Nuclear Corporation Site (1090, GW-203, GW-205, GW-221, GW-302, and GW-339) and Outfall 301 at Kerr Hollow Quarry (Figure A.7) were sampled during CY 2000 for the purposes of the respective CERCLA ROD for each site (Table B.3). Additionally, two surface water stations (MCK 2.0 and MCK 2.05) and two springs (SCR1.25SP and SCR2.1SP) were sampled for CERCLA baseline monitoring purposes (Table B.3). As noted previously, both surface water stations are located in McCoy Branch, which drains the west-central part of the regime, and the springs discharge into unnamed surface drainage features in the southwestern portion of the regime (Figure A.7).

2.1.3 East Fork Regime

As shown in the following summary, 59 monitoring wells, four springs, two building sumps, and 12 surface water stations in the East Fork Regime (and surrounding areas) were sampled for the purposes of DOE Order 5400.1 monitoring, RCRA monitoring, and CERCLA monitoring during CY 2000.

Table 3. CY 2000 sampling locations in the East Fork Regime, north of Pine Ridge, and in Union Valley

Monitoring Driver	Monitoring Wells	Springs	Building Sumps	Surface Water Stations
DOE Order 5400.1	40	0	2	6
RCRA	5	0	0	0
CERCLA	18	4	0	6
Totals:	**59**	**4**	**2**	**12**
Note: Several wells serve multiple monitoring purposes (see Table B.4).				

Samples were collected at least semiannually from all of the monitoring wells and springs, with sampling performed during seasonally wet and dry flow conditions (Table B.4). The building sumps were sampled only once during the year. Samples also were obtained semiannually (wet and dry seasonal flow conditions) from each of the surface water stations except NPR10.0SW, which was dry during the seasonally dry sampling event (November 2000).

Sixty-three of these sampling locations lie within the boundaries of the East Fork Regime, which is divided into the three major areas for the purposes of this report: the western Y-12 area between Old Bear Creek Road and grid coordinate easting 55,000; the central Y-12 area between grid coordinate eastings 55,000 and 62,000; and the eastern Y-12 area between grid coordinate easting 62,000 and Scarboro Road (Figure A.8). The other fourteen CY 2000 sampling locations lie outside the boundaries of the regime, including six wells (GW-169, GW-170, GW-171, GW-172, GW-230, and GW-232) and three springs (SCR7.1SP, SCR7.18SP, and SCR7.8SP) located in Union Valley east the ORR boundary (Figure A.8), and five surface water stations (NPR07.0SW, NPR10.0SW, NPR12.0SW, GHK2.51ESW, and GHK2.51NSW) located in drainage features along the ORR boundary on the north side of Pine Ridge (Figure A.9).

Thirty-one monitoring wells in the East Fork Regime were sampled during CY 2000 for the purposes of DOE Order 5400.1 site surveillance monitoring (Table B.4). As shown on Figure A.8, these wells are located within the western Y-12 area (eight wells), the central Y-12 area (15 wells), and the eastern Y-12 area (eight wells). Groundwater in each of the monitoring wells was sampled semiannually (i.e., during seasonally high and low groundwater flow) during CY 2000. Samples for microbiological analyses were collected from seven wells in the eastern Y-12 area (GW-220, GW-380, GW-381, GW-656, GW-782, GW-783, and GW-791) during CY 2000 (see Section 2.3). Additionally, groundwater samples were obtained from selected sumps in the basements of Building 9212 (in March 2000) and Building 9215 (in November 2000), both of which are in the central Y-12 area (Figure A.8).

Nine monitoring wells, including Westbay well GW-722 (Figure A.10), and six surface water locations were sampled during CY 2000 for the purposes of DOE Order 5400.1 exit pathway/perimeter monitoring in the East Fork Regime (Table B.4). The monitoring wells are located east of New Hope Pond (GW-220), near the ORR Boundary along Scarboro Road (Westbay well GW-722, GW-735, GW-744, GW-747, and GW-750), and next to Upper East Fork Poplar Creek (UEFPC) in the gap through Pine Ridge (GW-207, GW-208, and GW-816) northeast of Y-12 (Figure A.8). The surface water sampling locations include the outfall of the New Hope Pond distribution channel (LRSPW) and five sampling stations (GHK2.51ESW,

GHK2.51WSW, NPR07.0SW, NPR10.0SW, and NPR12.0SW) located in surface drainage features north of Pine Ridge (Figure A.9).

The well network used for RCRA post-closure corrective action monitoring in the East Fork Regime during CY 2000 included RCRA background well GW-115, which is located about 500 ft north (upgradient) of the S-3 Site in the Bear Creek Regime (Figure A.2); RCRA point-of-compliance well GW-108, which is located in the western Y-12 area about 800 ft southeast of the S-3 Site; and RCRA plume delineation wells located near Tank 2331-U (GW-193) and New Hope Pond (GW-605, GW-606, and GW-733) several thousand feet east-southeast of the S-3 Site (Figure A.8).

A total of 18 monitoring wells, four springs and six surface water stations were sampled during CY 2000 for CERCLA monitoring purposes. Six monitoring wells and three springs located in Union Valley east of the ORR boundary (Figure A.8) were sampled for CERCLA ROD monitoring purposes (Table B.4). Twelve monitoring wells (including Westbay well GW-722), one spring, and six surface water stations were sampled for CERCLA baseline monitoring purposes. As shown on Figure A.8, these monitoring wells are located near the S-2 Site (GW-253 and GW-618) and New Hope Pond (GW-151, GW-154, GW-220, GW-382, GW-383, GW-722, GW-735, GW-762, GW-832, and GW-845). The surface water and spring sampling locations used for CERCLA baseline monitoring during CY 2000 included two storm drain outfalls in the western Y-12 area near the Y-12 Salvage Yard (OF 221 and OF 225), Outfall 51 and Spring 17 (SP-17) in the central Y-12 area, and Outfall 200, Station 8, and Station 17 located in UEFPC (Figure A.8).

2.2 SAMPLE COLLECTION AND HANDLING

The following discussion pertains to the groundwater and surface water sampling activities managed by the Y-12 GWPP during CY 2000. Personnel from the Sampling and Environmental Support Department of the Y-12 Analytical Chemistry Organization (ACO) were responsible for collection, transportation, and chain-of-custody control of the groundwater and surface water samples. Groundwater and surface water sampling was performed in accordance with the most recent version of the technical procedures approved by the Y-12 GWPP Manager (LMES 1999b and 1999c). Samples were obtained for the WRRP using functionally equivalent procedures, as specified in the applicable sampling and analysis plan (Bechtel Jacobs Company 1999a and 2000). All samples were collected in appropriate containers, labeled, logged, placed in ice-filled coolers, and transported to the designated ACO laboratory in accordance with chain-of-custody control requirements.

The low-flow minimal drawdown sampling method (hereafter referenced as low-flow sampling) was used to collect groundwater samples from all monitoring wells except Westbay well GW-722. This method is intended to obtain representative groundwater samples from a specified depth that do not include stagnant water from the well casing above or below the monitored interval. Field personnel first pump the well at a flow rate that is low enough (<300 milliliters per minute) to minimize drawdown of the water level in the well (<0.1 ft per quarter-hour) and then measure the pH, conductivity, temperature, oxidation-reduction potential (REDOX), and dissolved oxygen of the groundwater pumped from the well at five-minute intervals. Samples of the groundwater are collected once the field measurements for each parameter show minimal variation over four consecutive readings.

Groundwater samples were collected from Westbay well GW-722 in accordance with the most recent and approved version of the standard operating procedures (LMES 2000a and 2000b). One or more 250-milliliter non-vented stainless steel sample collection bottles were used to obtain groundwater samples from the sampling ports in each well. The sample collection bottles were lowered to the designated sampling port; the sampling port valve was opened and the bottle was allowed to fill with groundwater; the filled bottle was retrieved to the surface; and the contents were poured into the appropriate laboratory sample bottle(s). The

sample collection bottles were lowered, filled, and retrieved as many times as needed to completely fill the laboratory sample bottles. Groundwater in the first sample collection bottle retrieved from each sampling port was used as a "formation rinse" to obtain field measurements and to condition the sample collection bottles.

Unfiltered samples were collected from most of the monitoring wells, springs, and surface water stations that were sampled during CY 2000. However, filtered samples also were obtained from selected monitoring wells (including each of the Westbay wells), springs, and surface water stations. Samples were filtered in the field using a 0.45-micron filter.

2.3 FIELD MEASUREMENTS AND LABORATORY ANALYTES

The following discussion pertains to the field measurements and laboratory analytes associated with the groundwater and surface water samples collected as part of the Y-12 GWPP during CY 2000. Functionally equivalent field measurements and laboratory analyses were performed under the WRRP during CY 2000 in accordance with the applicable sampling and analysis plan (Bechtel Jacobs Company 1999a and 2000). Field measurements and laboratory analytical results obtained under both programs are presented in Appendix D (Bear Creek Regime), Appendix E (Chestnut Ridge Regime), and Appendix F (East Fork Regime). Note that the data appendix for each hydrogeologic regime contains the analytical results for each laboratory analyte that was detected (i.e., exceeds the applicable reporting limit) in at least one sample from the sampling locations in the particular regime.

Field personnel measured the depth to water before sampling groundwater in each monitoring well. Sampling personnel also recorded field measurements of pH, temperature, conductivity, dissolved oxygen, and REDOX for each sampling location (Table B.5). Field measurements were obtained in accordance with the most recent and approved technical procedures (LMES 1999d and LMES 1999e). The field measurements recorded for the sampling locations in each regime are presented in Appendices D.1, E.1, and F.1.

Laboratory analyses of most groundwater samples and surface water samples include the following standard suite of analytes: (1) miscellaneous laboratory analytes—pH, conductivity, turbidity, total suspended solids, and total dissolved solids; (2) major ions and trace metals, which is the term used hereafter to differentiate metals that are typically minor constituents in groundwater (e.g., cobalt) from metals that are usually major ionic species (e.g., magnesium); (3) volatile organic compounds (VOCs); and (4) gross alpha and gross beta activity (Table B.5). Unfiltered groundwater and surface water samples were analyzed for all of the standard laboratory analytes; filtered samples were analyzed only for the major cations and trace metals. Laboratory analyses of the samples were performed by the Y-12 ACO laboratories in accordance with the analytical methods and procedures listed in Table B.5.

As shown in the following summary, several monitoring wells in each hydrogeologic regime were selected for microbiological sampling as part of DOE Order 5400.1 site surveillance monitoring during CY 2000.

Table 4. CY 2000 microbiologic sampling locations and dates in the Bear Creek, Chestnut Ridge, and East Fork Hydrogeologic Regimes

Bear Creek Regime			Chestnut Ridge Regime			East Fork Regime	
Well	Dates		Well	Dates		Well	Dates
GW-079	02/22	08/15	GW-203	02/23	08/15	GW-220	05/15
GW-080	02/21	08/14	GW-302	02/23	08/14	GW-380	05/16
GW-115	02/15	.	GW-305	02/07	.	GW-381	05/17
GW-714	02/16	08/14	GW-339	02/23	08/14	GW-656	06/12
GW-715	02/16	08/14	GW-521	01/31	.	GW-782	05/01
						GW-783	05/01
						GW-791	05/02

These samples were obtained to assess microbial activity (iron related, slime forming, and sulfate reducing bacteria) in groundwater and are estimates based on visual appearance after a growth period of several days. The results of the tests (methods shown on Table B.5) are provided in the explanation pages that precede the data tables in Appendices D, E, and F.

2.4 QUALITY ASSURANCE/QUALITY CONTROL SAMPLING

Quality assurance/quality control samples associated with the Y-12 GWPP sampling activities during CY 2000 include a total of 64 method (laboratory) blanks, 106 trip blanks, four field blanks, and two equipment rinsate samples (Table 4). The QA/QC samples were prepared and analyzed as specified in the *Quality Assurance Plan for the Analytical Chemistry Organization* (LMES 2000c). Method blanks were samples of deionized water analyzed along with several associated groundwater and/or surface water samples to assess the environmental conditions in the laboratory while the associated samples were analyzed. Trip blanks were samples of deionized water prepared in the laboratory and transported in each cooler containing groundwater and surface water samples scheduled for VOC analyses to evaluate the environmental conditions under which the associated samples were transported and stored. Field blanks were samples of deionized water collected at selected monitoring wells to assess field conditions under which the groundwater samples were collected. The deionized water was transported to the field in a sealed glass container and transferred to sample bottles at a monitoring well immediately before groundwater samples were collected and then transported in the cooler with other samples from the location to the laboratory. Equipment rinsates were collected to evaluate the procedure used to decontaminate nondedicated sampling equipment. During CY 2000, these are samples of the deionized water from the final rinse used to decontaminate the equipment used for the last sampling port of Westbay well GW-722.

Table 5. QA/QC samples analyzed in CY 2000 by the GWPP

Sample Type	Number of Samples, Quarter of CY 2000				Annual Total
	First	Second	Third	Fourth	
Trip Blank Samples	28	29	26	23	**106**
Method Blank Samples	16	19	14	15	**64**
Equipment Rinsate Samples	1	0	1	0	**2**
Field Blank Samples	2	0	1	1	**4**

Method blanks, trip blanks, field blanks, and equipment rinsate samples were analyzed for VOCs; equipment rinsates were also analyzed for miscellaneous analytes (e.g., suspended solids), major ions, trace metals, and

radioanalytes. Analytical results for the QA/QC blanks and equipment rinsate samples prepared for the GWPP are presented in respective subsections of Appendix G.

Volatile organic compounds were not detected in any of the QA/QC blank samples prepared for the GWPP during CY 2000, which differs significantly from previous years. In CY 1999, VOCs were detected in only 3% of the trip blanks, 1% of the method blanks, 17% of the equipment rinsates, and 14% of the field blanks. In CY 1998, however, at least one VOC was detected in 72% of the trip blanks, 54% of the method blanks, 100% of the rinsates, and 80% of the field blanks. This virtual elimination of VOCs from the QA/QC samples resulted from corrective actions initiated by the ACO in 1999. Personnel with the ACO had determined that the occurrence of VOCs in the QA/QC blanks (and associated groundwater/surface water samples) often resulted from uncertainty associated with reporting results below the method detection limit. In previous years, the ACO reported detection of all VOCs below the contract required reporting limit (typically 5 micrograms per liter [μg/L] or 10 μg/L) down to 1 μg/L with a J (estimated) qualifier, even though the method detection limits were often higher (e.g., 3.8 μg/L for acetone). This reporting procedure was modified so that results between the reporting limit and the method detection limit were reported with a J qualifier and results below the method detection limit were reported as not detected at the reporting limit (e.g., 5U or 10U). The ACO also determined that the General grade methanol used to clean the laboratory equipment and to prepare standards was contaminated with low concentrations of acetone and 2-butanone (both compounds were frequently detected in QA/QC blanks), and subsequently switched to Purge and Trap grade methanol that (presumably) is not contaminated with these compounds.

In addition to the blank samples and equipment rinsate samples, 19 field duplicate samples were collected for QA/QC purposes from selected sampling locations monitored by the Y-12 GWPP in each hydrogeologic regime (see Tables B.2, B.3, and B.4). The duplicate samples were analyzed for the same constituents and parameters specified for the well from which they were collected; analytical results are presented with the regular sample results in Appendices D, E, and F.

2.5 DATA MANAGEMENT

Analytical results for the GWPP groundwater and surface water samples were downloaded directly into SAS® groundwater data files from data files provided by the ACO laboratories. Sampling personnel of the ACO manually input information from field data sheets before electronic transfer to the groundwater database management subcontractor. Downloaded and manually input data were verified in accordance with the *Y-12 Plant Groundwater Protection Program Data Management Plan* (LMES 2000d). The groundwater database management subcontractor and the appropriate ACO staff worked to resolve any incomplete data transfers, irregular parameter names or reporting units, and discrepancies between electronic and hardcopy versions of the data.

Analytical results and field measurements for the WRRP groundwater and surface water samples were extracted from the project database by the GWPP groundwater database management subcontractor and formatted as SAS® files for presentation in this report. The WRRP data management process is similar to the process described above for the GWPP (Bechtel Jacobs Company 1999b).

2.6 DATA QUALITY OBJECTIVE SCREENING

The CY 2000 groundwater and surface water monitoring data presented in this report have been screened in accordance with the DQO criteria defined in: *Y-12 Plant Groundwater Protection Program Data Management Plan* (LMES 2000d) and the functionally equivalent DQO criteria used by the WRRP. Specific DQO criteria apply to analytical results for major ions, trace metals, VOCs, radiological analytes (gross

alpha, gross beta, and radionuclides), and miscellaneous laboratory analytes (e.g., total suspended solids). Results that do not meet the specified DQO criteria are replaced with a designated surrogate value (i.e., screened). Only a few of the monitoring results (four charge balance errors, two duplicate sets of metal results, and three radiological results) obtained under the Y-12 GWPP do not meet applicable DQOs; these results are identified in the explanation pages preceding the data appendix for each hydrogeologic regime.

3.0 CY 2000 GROUNDWATER ELEVATION MONITORING

The following sections contain a brief overview of the groundwater elevation monitoring in the Bear Creek, Chestnut Ridge, and East Fork regimes performed at Y-12 during CY 2000 (pre-sampling depth-to-water measurements were not used for this purpose). Groundwater elevations were determined from measurements of the depth to water in selected monitoring wells located in each regime. These depth-to-water measurements were obtained during seasonal flow conditions; field personnel with the Y-12 GWPP obtained the measurements during seasonally high flow (April/May 2000) and field personnel subcontracted by the WRRP obtained the measurements during seasonally low flow (September 2000). The depth-to-water measurements were obtained in accordance with respective operating procedure (LMES 1999d and MDM Services Corporation 2000).

3.1 BEAR CREEK HYDROGEOLOGIC REGIME

Groundwater surface elevations in the Bear Creek Regime were determined from depth-to-water measurements obtained from 68 monitoring wells during April 10 - 12, 2000 and 66 wells in September 18 - 21, 2000 (Table B.7). As shown on Figure A.11, isopleths of the seasonal groundwater elevations generally mirror surface topography and indicate southwesterly (strike-normal) flow in the Aquitard (geologic formations of the Conasauga group excluding the Maynardville Limestone) toward the Aquifer (Maynardville Limestone), with more westerly (strike-parallel) flow in the Maynardville Limestone (the hydrologic drain for the groundwater flow system). Seasonal water level fluctuations, which are less than 10 ft in most wells (Table B.7), influence the magnitude of horizontal hydraulic gradients but did not significantly alter the overall directions of groundwater flow in the Bear Creek Regime (Figure A.11).

3.2 CHESTNUT RIDGE HYDROGEOLOGIC REGIME

Groundwater surface elevations in the Chestnut Ridge Regime were determined from depth-to-water measurements obtained from 83 monitoring wells during April 10 - May 1, 2000 and 85 monitoring wells during September 7 - 21, 2000 (Table B.8). Groundwater elevation isopleths indicate eastward (strike parallel) flow along the ridge crest in the northern part of the regime, which is a recharge area and a flow divide, with flow components to the north (across strike) toward the Maynardville Limestone at the base of the ridge, and south (parallel to dip) toward the tributaries on the southern flank of the ridge (Figure A.12). Radial groundwater flow directions from hilltops toward crosscutting tributaries dominate the central part of the regime, and flow in the southernmost part of the regime is south toward Melton Hill Reservoir (Clinch River). Seasonal water table fluctuations, which are greatest (>15 ft) in wells located along the crest of Chestnut Ridge (Table B.8), do not significantly alter the overall directions of groundwater flow.

Groundwater elevations in several wells located on the ridge crest, notably well GW-293 at the East Chestnut Ridge Waste Pile and well GW-322 at the CRSP (Figure A.12), are more than 10 ft lower than in nearby wells located east and along strike (downgradient direction). Substantial differences between water table elevations over such short distances potentially reflect localized depressions in the water table associated with highly permeable conduits that function as local drains for the shallow karst network. The location of such conduits may correspond with the bedding plane or fracture set potentially associated with a strike-parallel series of sinkholes along the crest of the ridge (Figure A.12).

3.3 UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME

Groundwater surface elevations in the East Fork Regime were determined from depth-to-water measurements obtained from 65 monitoring wells during April 10 - 14, 2000 and 64 wells during September 7 - 21, 2000 (Table B.9). As shown on Figure A.13, isopleths of seasonal groundwater surface elevations in the water table interval generally show southeasterly (strike-normal) flow in the Aquitard toward the

Aquifer (Maynardville Limestone), the hydrologic drain for the groundwater flow system in the East Fork Regime, and easterly (strike-parallel) flow in the Maynardville Limestone toward the east end of Y-12. Seasonal water level fluctuations during CY 2000, typically less than 5 ft throughout the regime (Table B.9), influenced the magnitude of horizontal hydraulic gradients but did not significantly alter the overall directions of groundwater flow in the regime (Figure A.13).

The extensive network of basement dewatering sumps, storm drains, process lines, pipes, and sanitary sewers in the shallow subsurface throughout much of the western and central Y-12 areas strongly influences local groundwater flow patterns. In the eastern Y-12 area , directions of groundwater flow at shallow depths in the Maynardville Limestone are strongly influenced by an underdrain beneath the UEFPC distribution channel that functions as a highly permeable groundwater flow path and a constant head (recharge) boundary (Science Applications International Corporation 1998). Additionally, operation of the Lake Reality Sump, which is a 6-ft diameter, 20-ft deep sump installed to reduce hydraulic pressure on the synthetic liner in Lake Reality, creates an elongated cone of depression in the Aquitard (Nolichucky Shale) oriented parallel with strike and decreases water levels in the Aquifer (Maynardville Limestone) along the main channel of UEFPC. The sump is activated manually as required (very infrequently) to reduce pressure head and stop flotation of the liner. Another cone of depression is most likely created by the effort to capture the VOC plume in the Maynardville Limestone in the eastern Y-12 area. Beginning in October 2000, groundwater has been continuously pumped at 25 gallons per minute from well GW-845 (Figure A.2).

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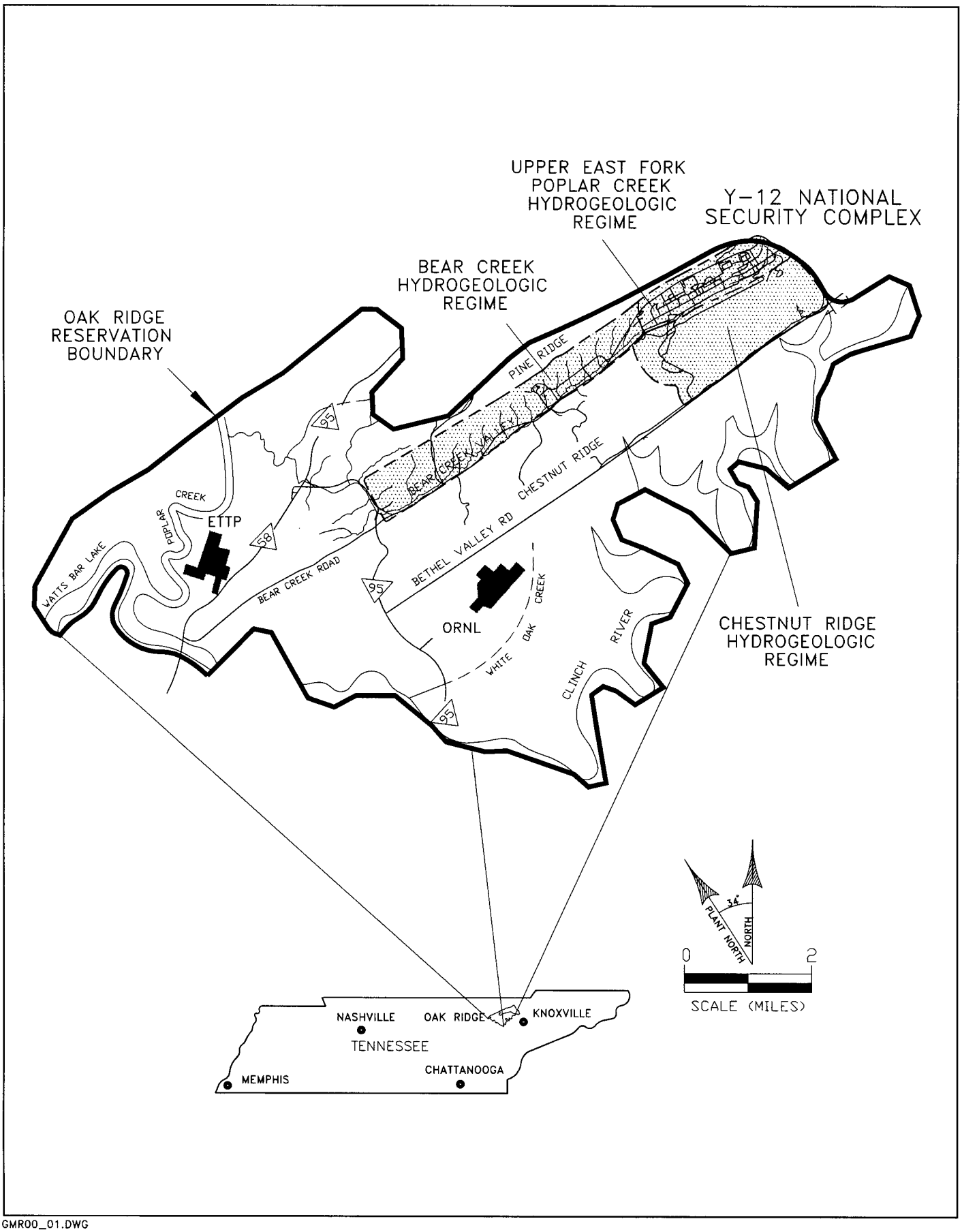
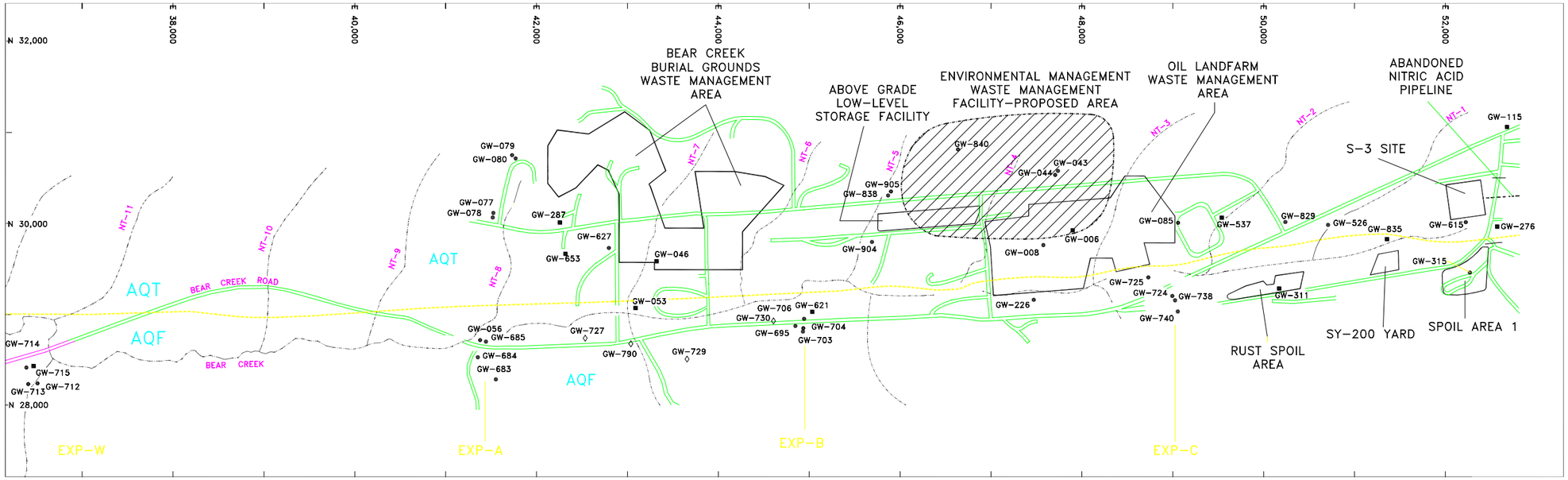
APPENDIX A

FIGURES

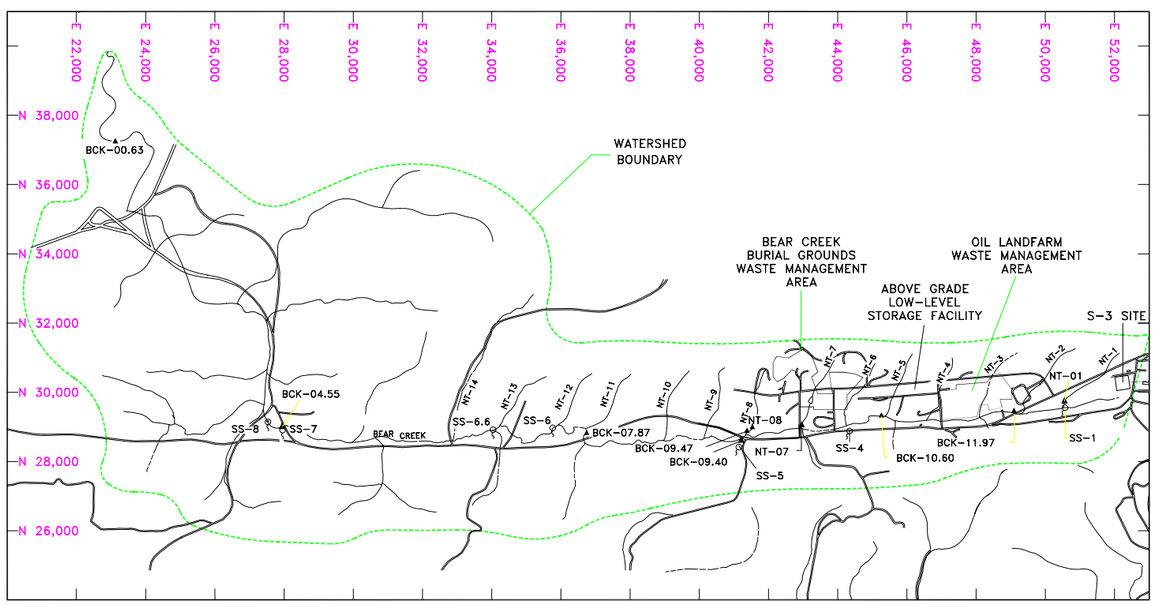


GMR00_01.DWG

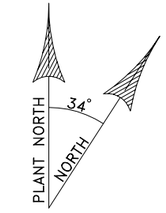
Fig. A.1. Hydrogeologic regimes at the Y-12 National Security Complex.



MONITORING WELL LOCATIONS



SPRINGS AND SURFACE WATER SAMPLING LOCATIONS

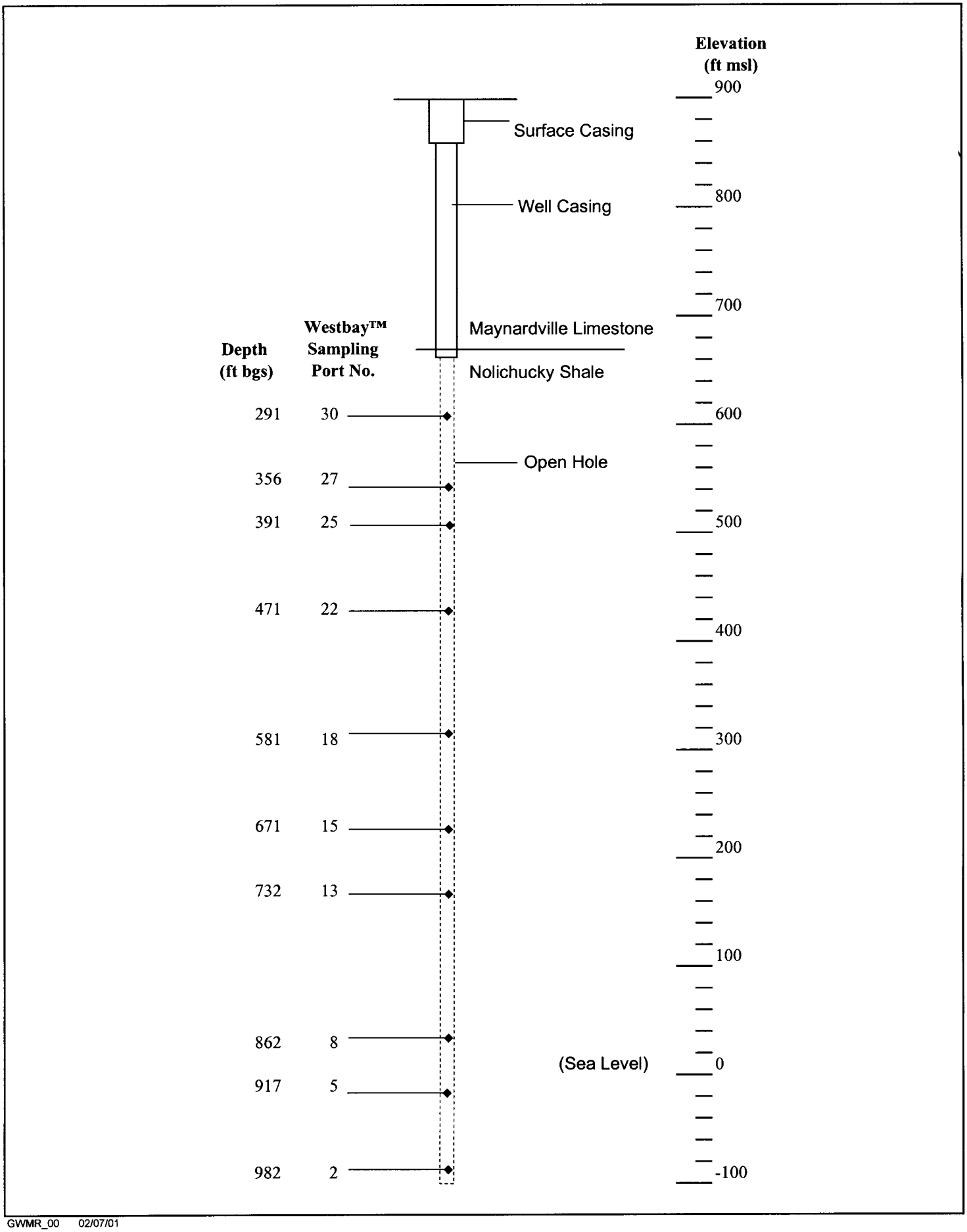


EXPLANATION

- ■ — Water Table Monitoring Well
- • — Bedrock Monitoring Well
- ◊ — Well With Westbay Multiport Monitoring System
- ▲ — Surface Water Sampling Station
- ♀ — Spring Sampling Station
- EXP-C — Exit Pathway, Maynardville Limestone Picket
- — Surface Drainage Feature
- NT-5 — North Tributary
- AQT — Aquitard
- — Approximate Nolichucky Shale\Maynardville Limestone Contact
- AQF — Aquifer

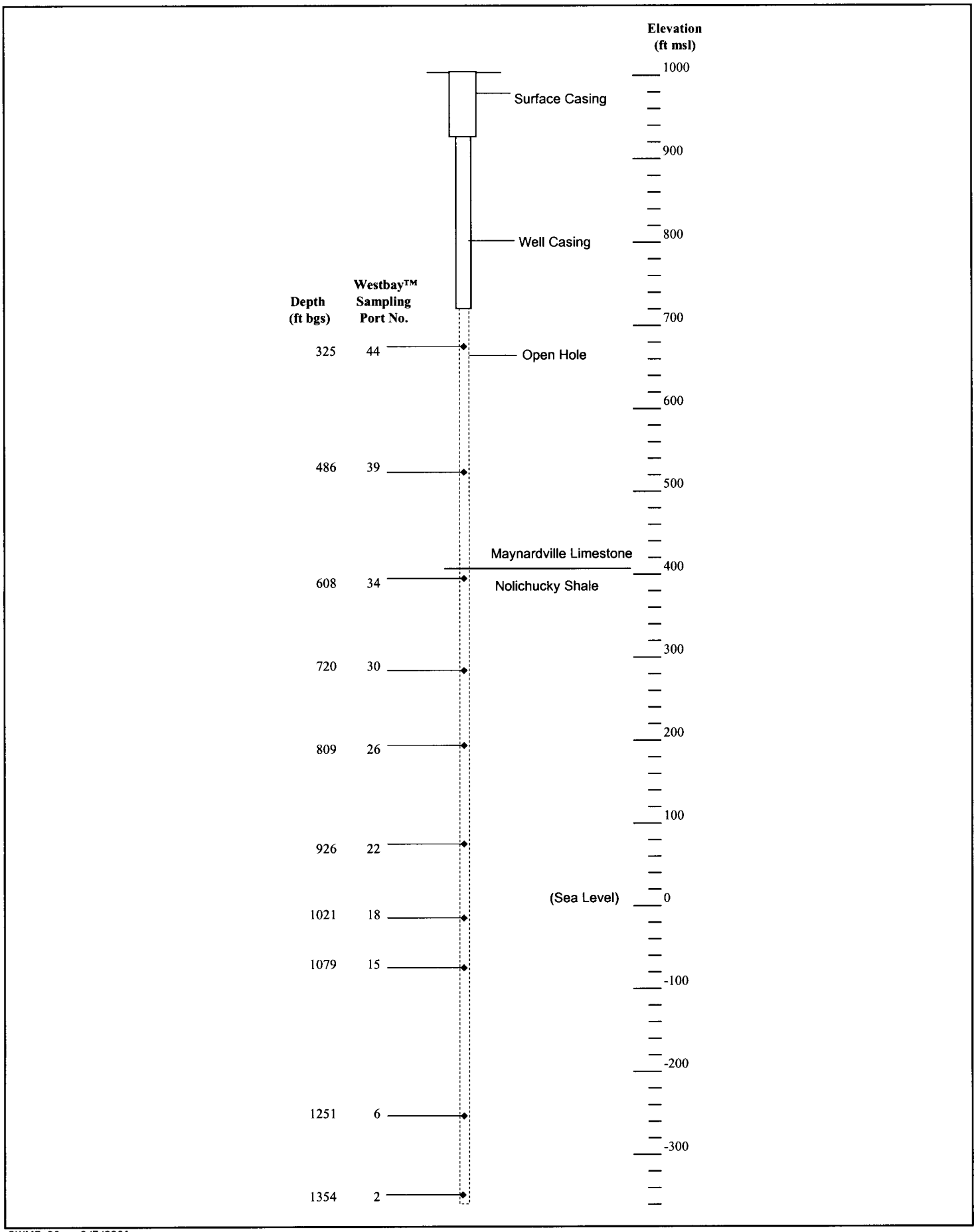
GMR00_02.DWG

Fig.A.2. CY 2000 Sampling Locations in the Bear Creek Hydrogeologic Regime.



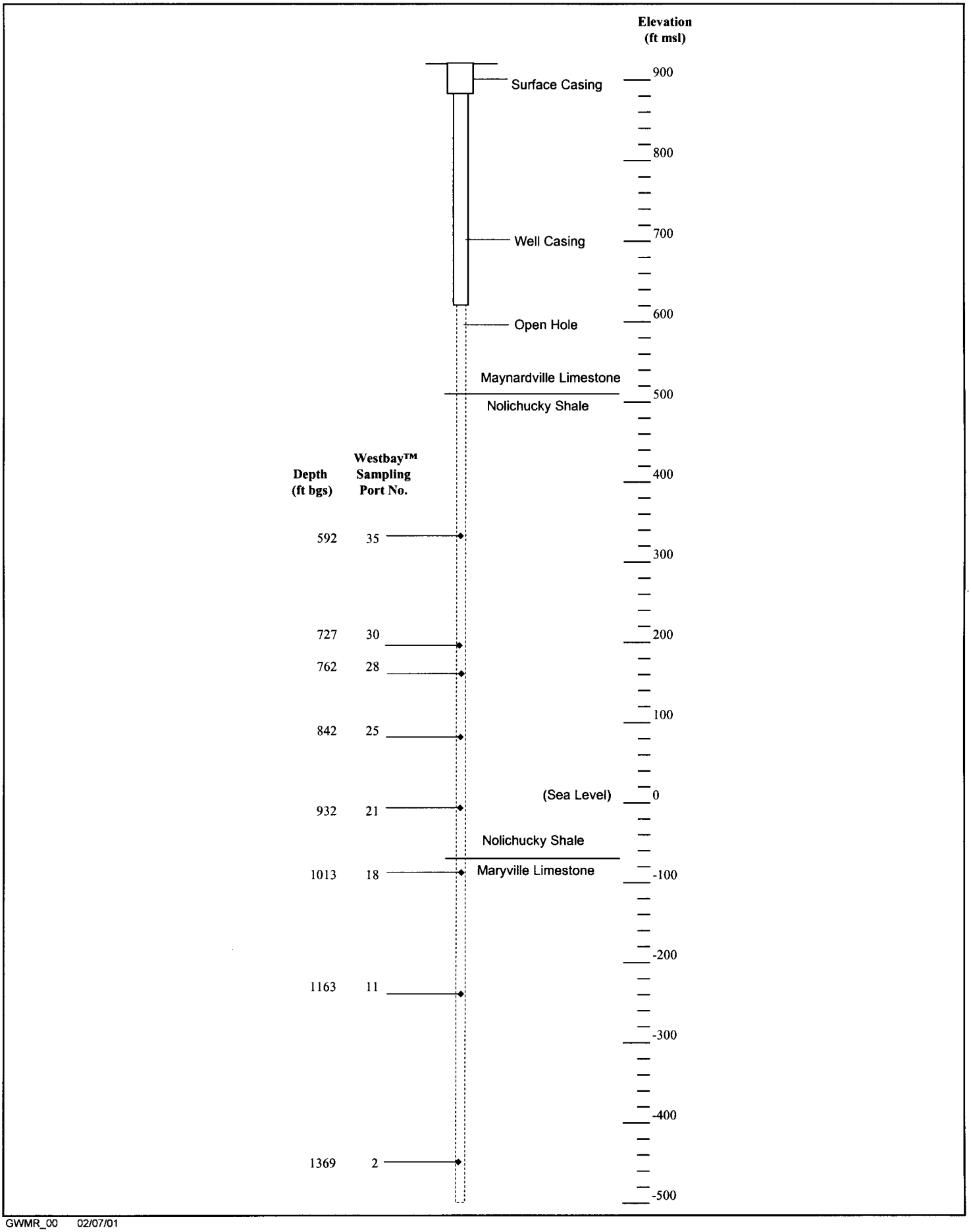
GWMR_00 02/07/01

Fig. A.3. Westbay™ monitoring system sampling port depths in well GW-727.



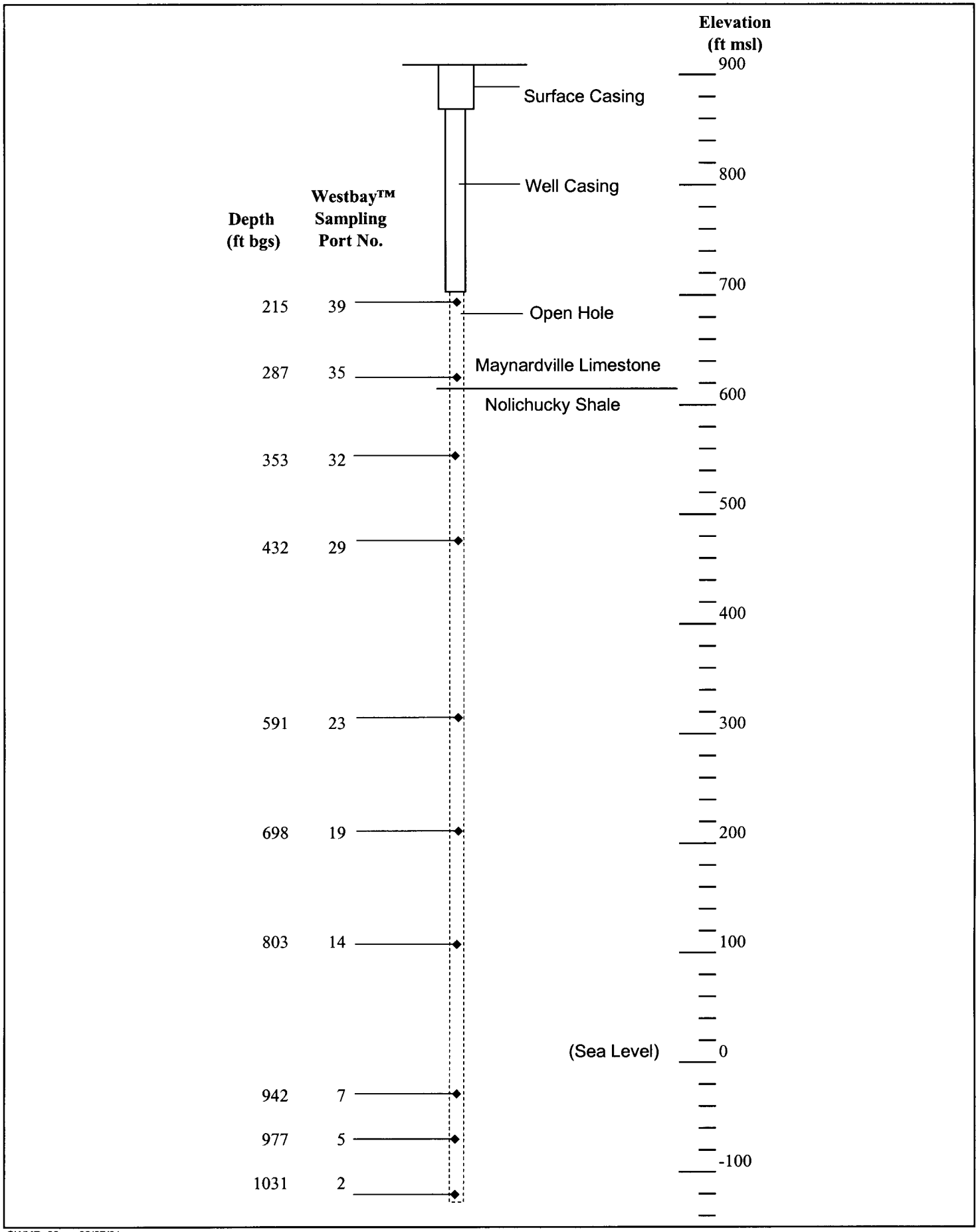
GWMR_00 2/7/2001

Fig. A.4. Westbay™ monitoring system sampling port depths in well GW-729.



GWMR_00 02/07/01

Fig. A.5. Westbay™ monitoring system sampling port depths in well GW-730.



GWMR_00 02/07/01

Fig. A.6. Westbay™ monitoring system sampling port depths in well GW-790.

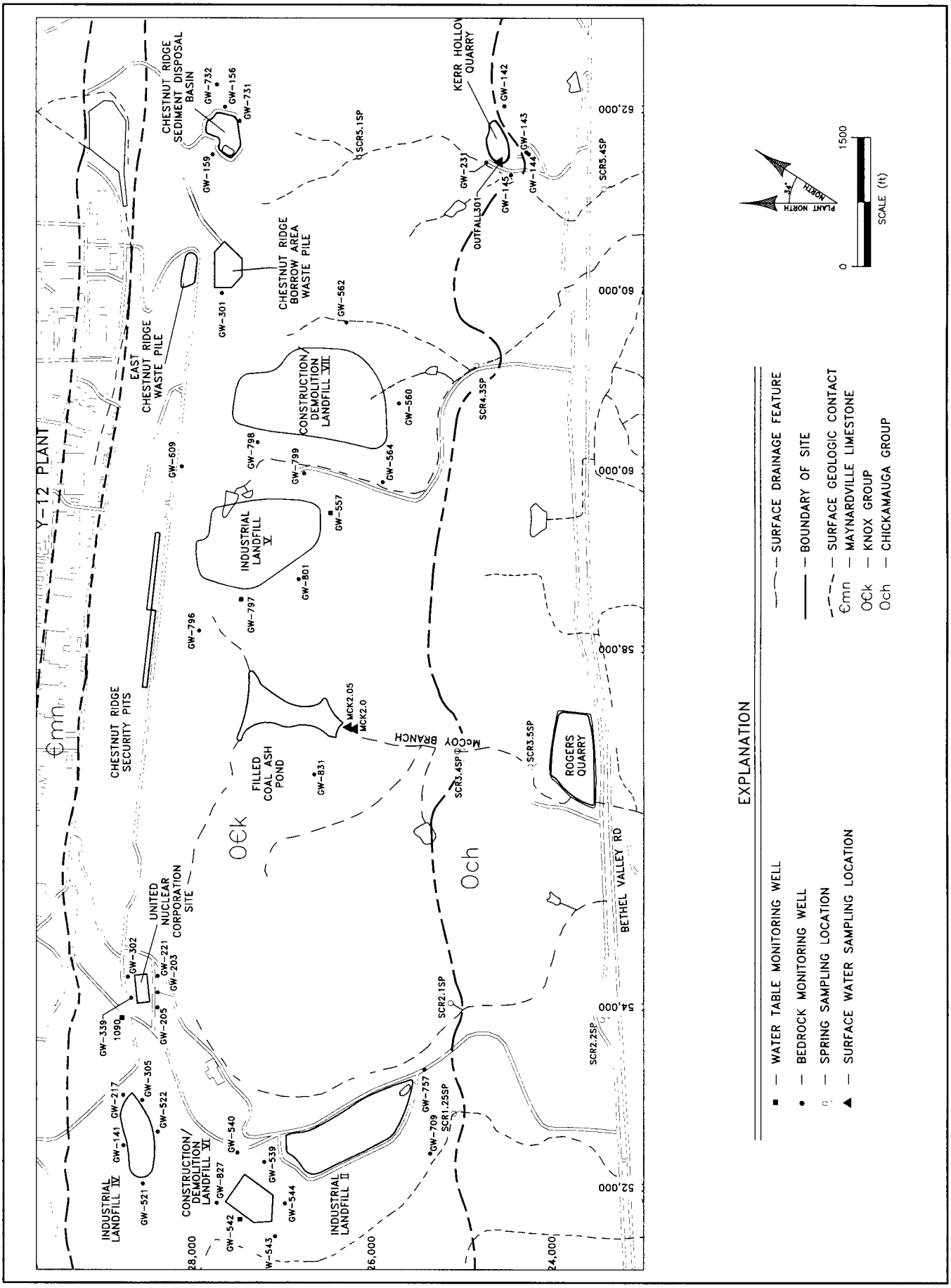


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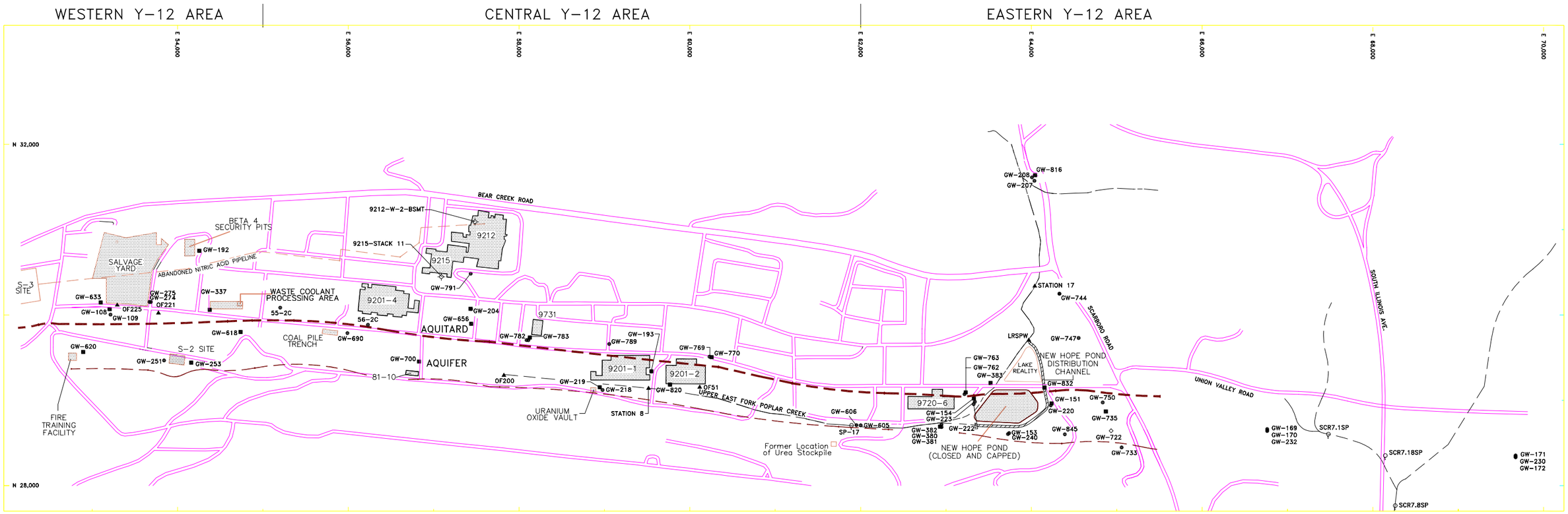
Fig. A.7. CY 2000 sampling locations in the Chestnut Ridge Hydrogeologic Regime.



EXPLANATION

- ■ — Water Table Monitoring Well
- ● — Bedrock Monitoring Well
- ◇ — Well With Westbay Multiport Sampling System (Discrete Vertical Sampling zones, see Figures 8 and 9)
- ♀ — Spring Sampling Location
- ▲ — Surface Water Sampling Location
- ✧ — Sump Sampling Location
- LRSPW — Lake Reality Emergency Spillway

AQUITARD
- NOLICHUCKY SHALE
- MARYVILLE LIMESTONE
- ROGERSVILLE SHALE
- RUTLEDGE LIMESTONE
- PUMPKIN VALLEY SHALE
- ROME FORMATION

AQUIFER
- COPPER RIDGE DOLOMITE
- MAYNARDVILLE LIMESTONE

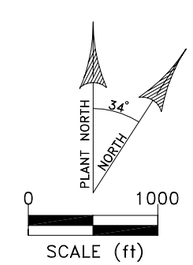


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Fig. A.8. CY 2000 sampling locations in the Upper East Fork Poplar Creek Hydrogeologic Regime and in Union Valley.

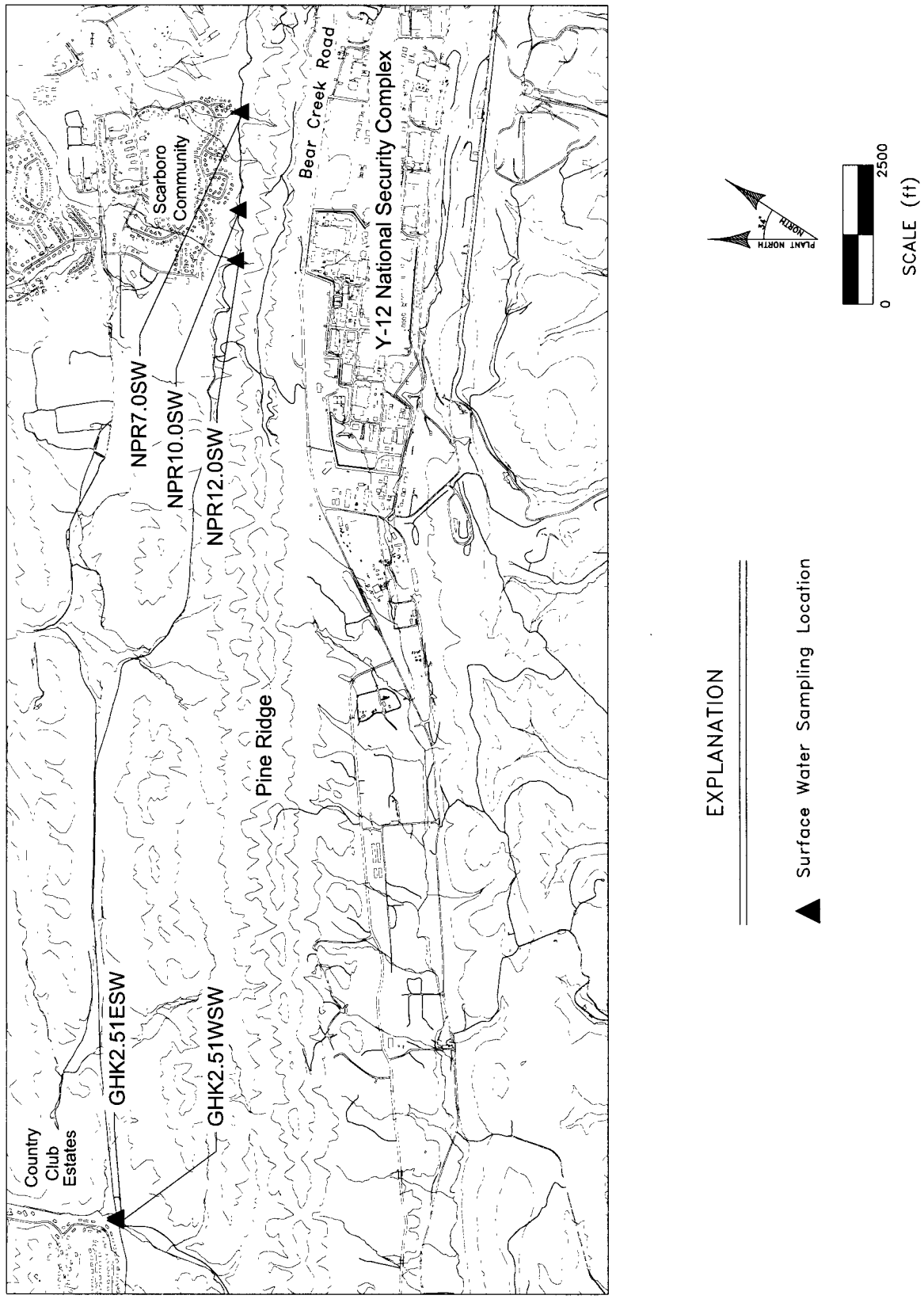

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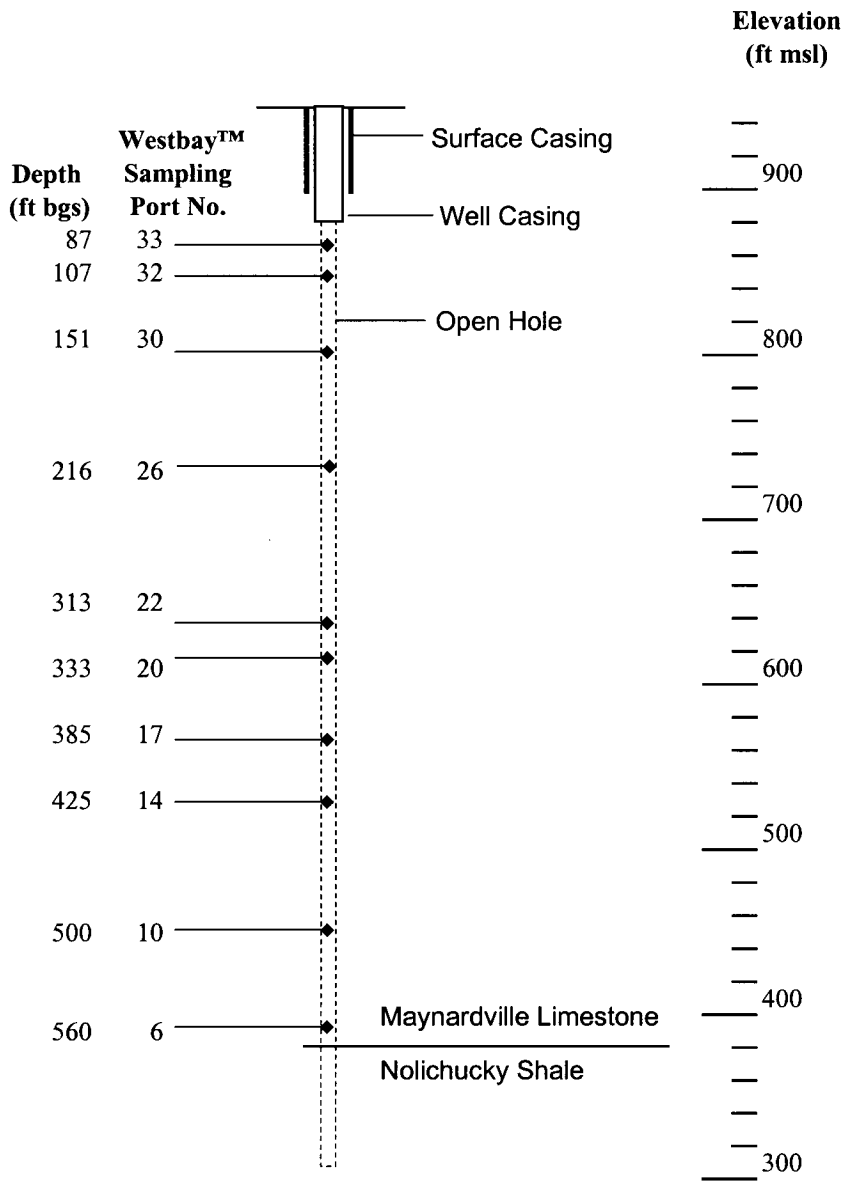
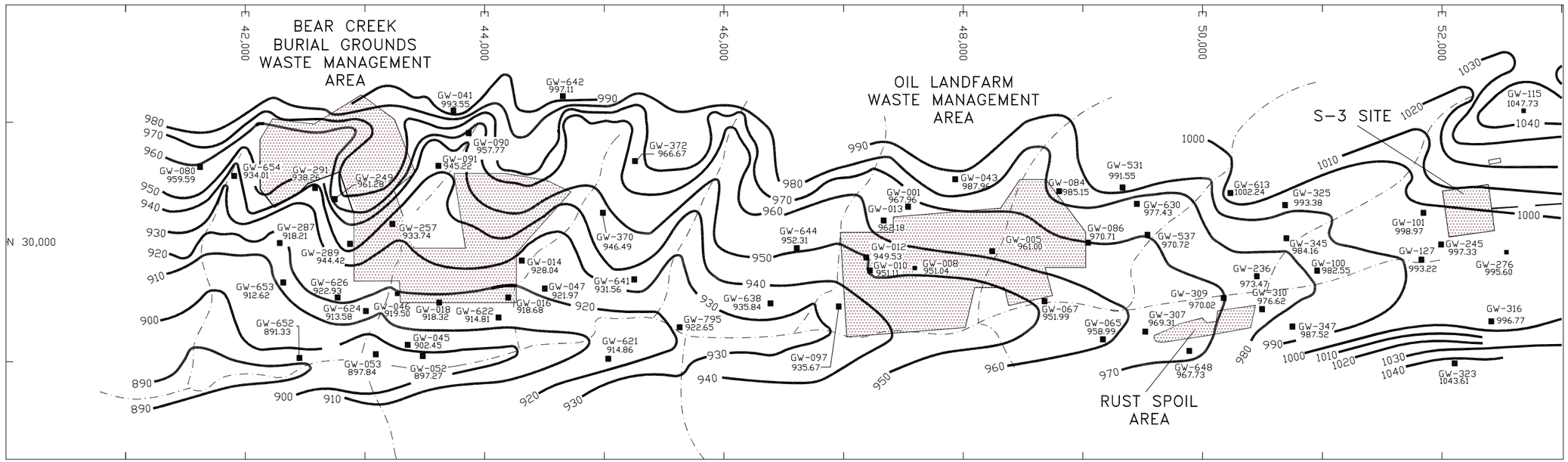
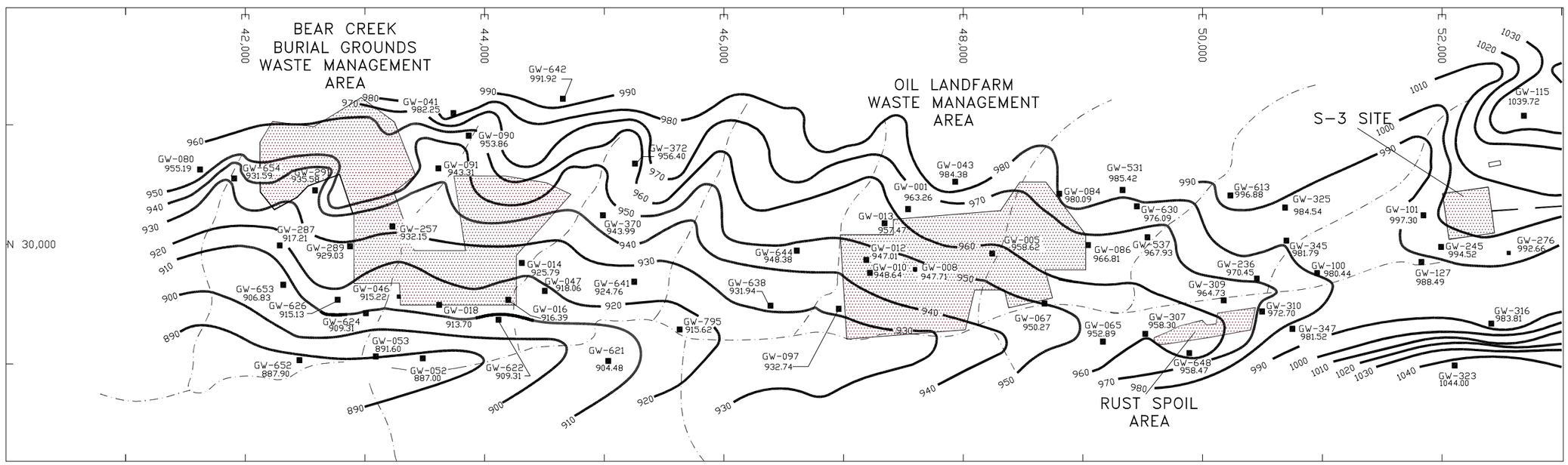
Fig. A.9. CY 2000 surface water sampling locations north of Pine Ridge.



GWMR_00 02/07/01

Fig. A.10. Westbay™ monitoring system sampling port depths in well GW-722.





PLANT NORTH
34°
NORTH

0 950
SCALE (ft)

EXPLANATION

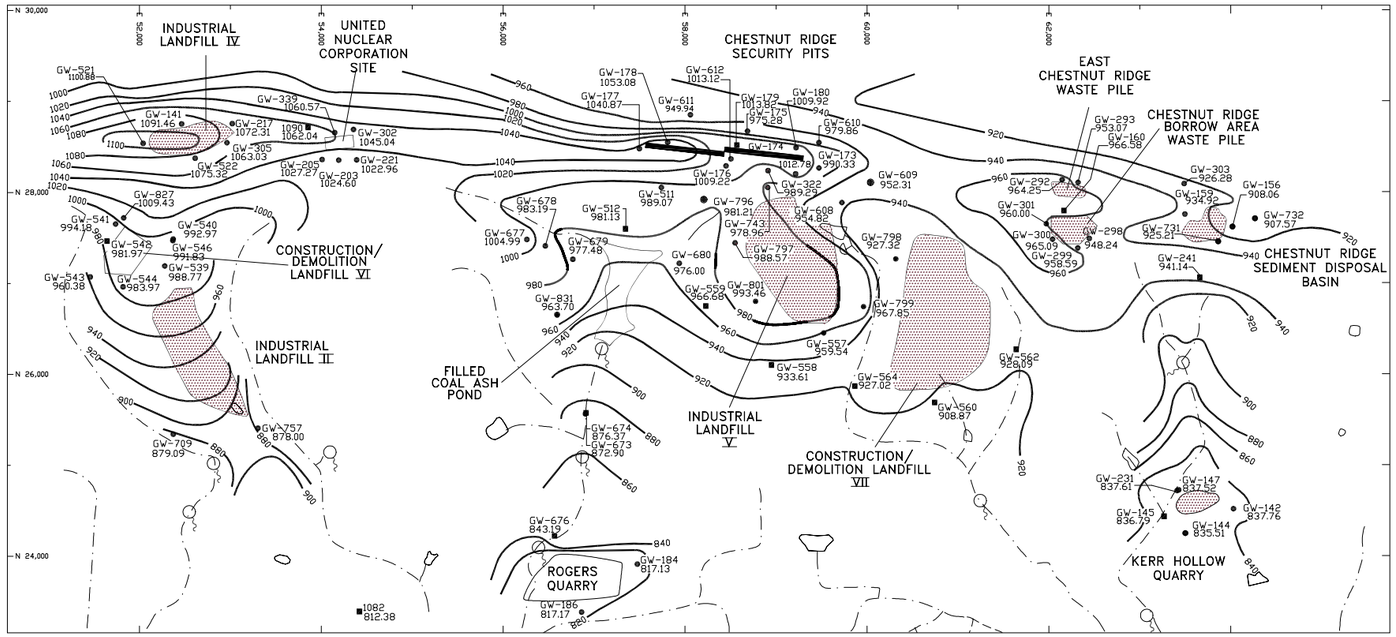
WATER TABLE INTERVAL MONITORING WELL

920 WATER-LEVEL ISOPLETH (ft msl)

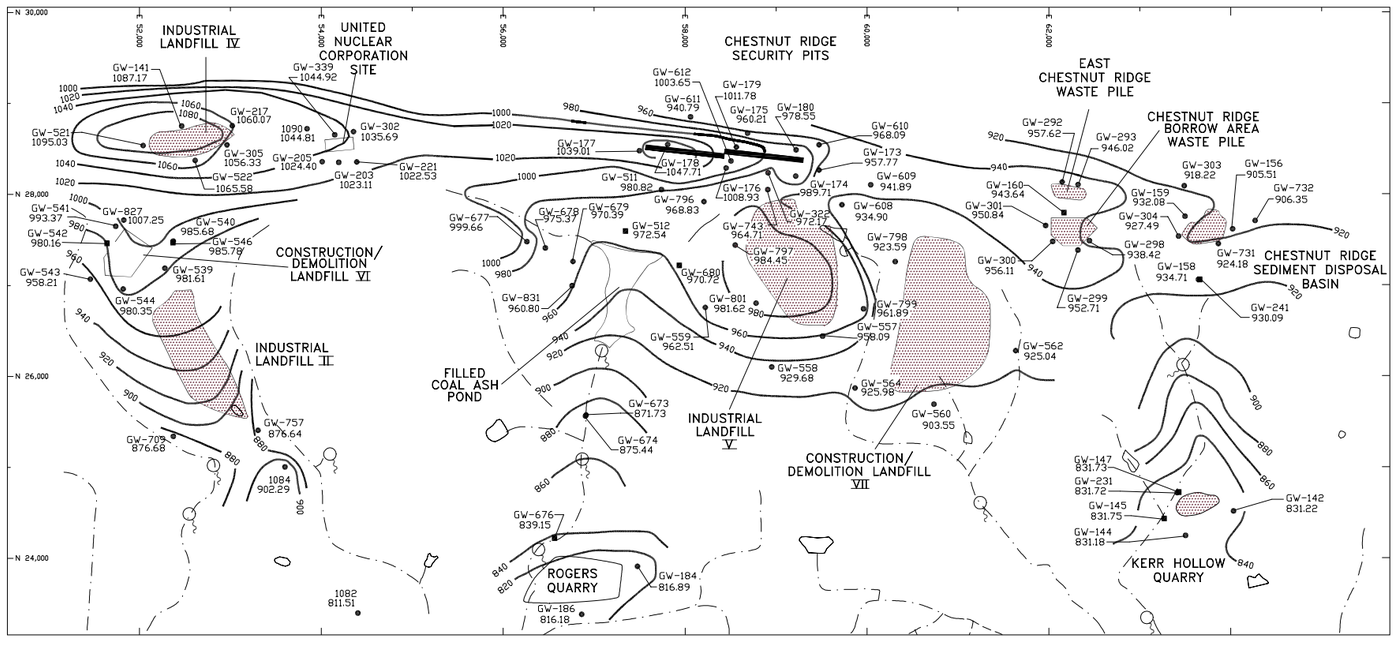
SURFACE DRAINAGE FEATURE

GMR00_11.DWG

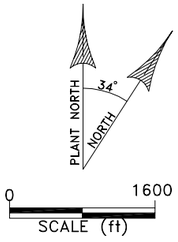
Fig. A.11. Seasonal groundwater elevations in the Bear Creek Hydrogeologic Regime, 2000.



GROUNDWATER ELEVATIONS
APRIL 10 - MAY 1, 2000



GROUNDWATER ELEVATIONS
SEPTEMBER 7-21, 2000

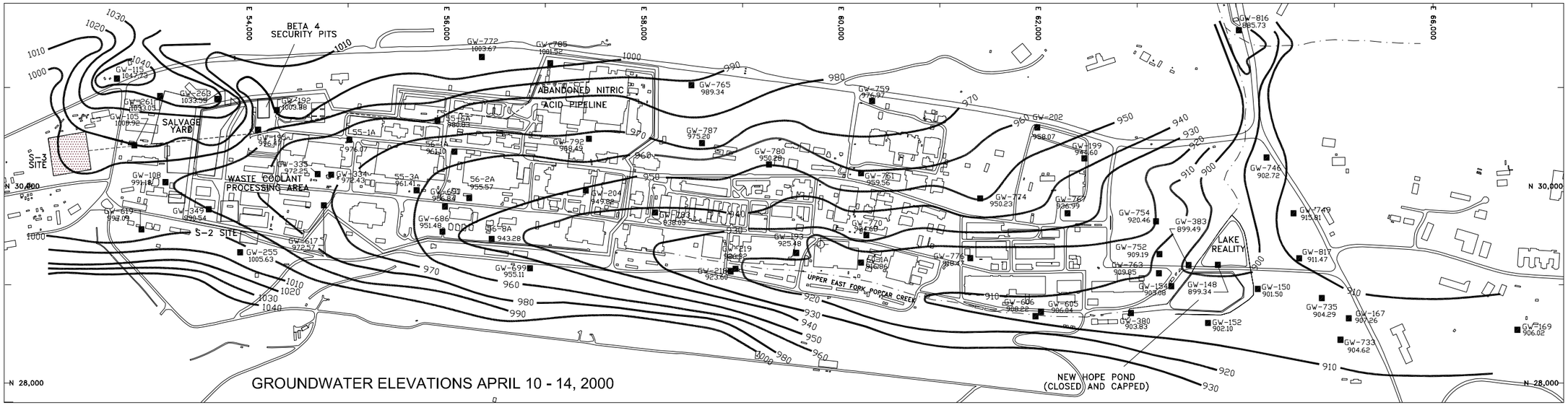


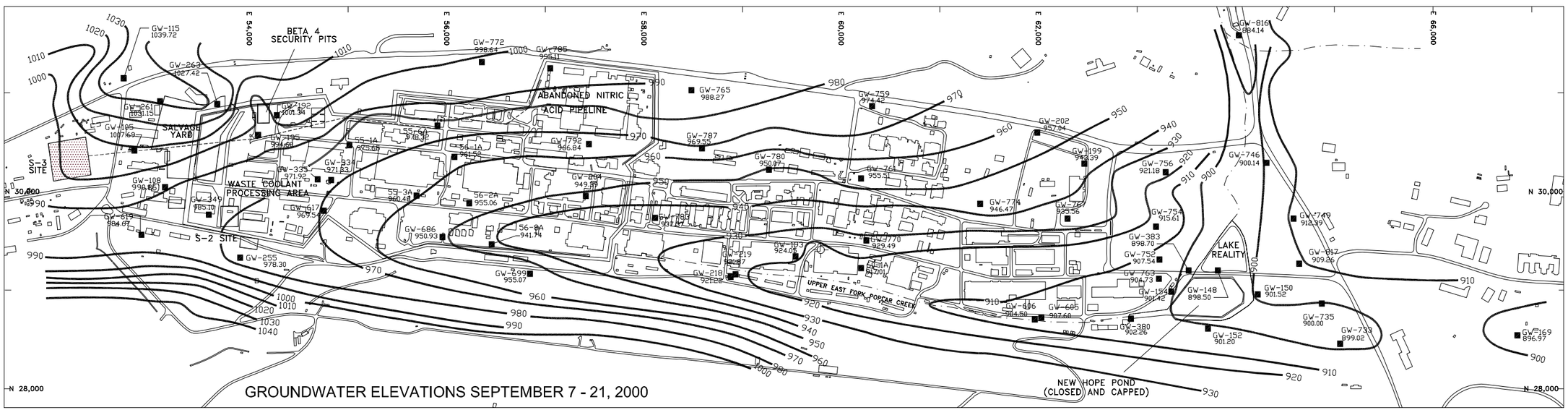
EXPLANATION

- ■ WATER TABLE INTERVAL MONITORING WELL
- • BEDROCK INTERVAL MONITORING WELL
- 920 WATER-LEVEL ISOPLETH (ft msl)
- SURFACE DRAINAGE FEATURE
- SPRING

GMR00_12.DWG

Fig. A.12. Seasonal groundwater elevations in the Chestnut Ridge Hydrogeologic Regime, 2000.





EXPLANATION

■ — WATER TABLE INTERVAL MONITORING WELL

⊕ — BUILDING 9201-2 SUMP

980 — APPROXIMATE WATER-LEVEL ISOPLETH (ft msl)

— SURFACE DRAINAGE FEATURE

PLANT NORTH

34°

NORTH

0 1200

SCALE (ft)

GMR00_13.DWG

Fig. A.13. Seasonal groundwater elevations in the Upper East Fork Poplar Creek Hydrogeologic Regime, 2000.

APPENDIX B

TABLES

Table B.1. Summary of CY 2000 sampling and analysis plan addenda

Addendum No.	Effective Date	Modification to the CY 2000 Sampling and Analysis Plan [1]
2000-01	01/01/00	Removed landfill monitoring locations from the sampling schedule (CR-1, CR-2, CR-4, and CR-5).
2000-02	01/01/00	Added containment requirements for well GW-722 (EF-WB)
2000-03	01/25/00	Added biological test parameters (iron related, sulfate reducing, and slime forming bacteria) to evaluate microbial influence on groundwater quality (EF-1, EF-2, and EF-3).
2000-04	01/25/00	Added biological test parameters to evaluate microbial influence on groundwater quality (EF-1, EF-2, BC-4, and CR-6).
2000-05	03/08/00	Added sump 9212-W-BSTM to the first quarter sampling schedule.
2000-06	04/01/00	Removed well GW-150 from the sampling schedule because the well has insufficient water for sample collection (EF-2).
2000-07	07/01/00	Removed five wells planned for biological sampling due to funding limitations (EF-1, EF-2, CR-6, and BC-4).
2000-08	07/01/00	Removed biological test parameters from six wells due to funding limitations (EF-1, EF-2, and EF-4).
2000-09	10/01/00	The inductively coupled plasma (ICP) spectroscopy method for metals analyses was revised.
2000-10	10/01/00	Added technetium-99 analysis for six locations (EF-2 and EF-3).
2000-11	10/01/00	Changed the method used for chromium and nickel analysis from ICP to ICP-MS to attain lower detection limits.
2000-12	10/01/00	Added sump 9215-STACK11 to the fourth quarter sampling schedule.

Note:

1 Modification to the *Y-12 Plant Groundwater Protection Program Groundwater and Surface Water Monitoring Sampling and Analysis Plan for Calendar Year 2000* (Lockheed Martin Energy Systems, Inc. 1999a).

Table B.2. CY 2000 groundwater and surface water sampling dates in the Bear Creek Hydrogeologic Regime

WRRP [1]		CERCLA Monitoring							
		RCRA Corrective Action Monitoring							
GWPP [2]		DOE Order 5400.1 Exit Pathway/Perimeter Monitoring							
		DOE Order 5400.1 Surveillance Monitoring							
Sampling Point [3]	Sampling Location [4]	CY 2000 Sampling Date [5]							
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter				
BCK-00.63	EXP-SW	02/09/00	.	08/01/00	.		!		
BCK-04.55	EXP-SW	02/09/00	.	08/01/00	.		!		
BCK-07.87	EXP-SW	02/09/00	.	08/03/00	.				!
BCK-07.87	EXP-SW	02/09/00	.	08/01/00	.		!		
BCK-09.40	EXP-SW	02/10/00	.	08/02/00	.		!		
BCK-09.47	EXP-SW	01/25/00	.	08/16/00	.				!
BCK-10.60	EXP-SW	DRY	.	DRY	.		!		
BCK-11.97	EXP-SW	02/10/00	.	08/02/00	.		!		
GW-006	EMWMF	**02/08/00 D**	**04/12/00 D**	**08/02/00 D**					!
GW-008	OLF	01/10/00	.	07/12/00	.			!	
GW-043	EMWMF	02/09/00	04/13/00	08/03/00					!
GW-044	EMWMF	02/09/00	04/13/00	08/03/00					!
GW-046	BG	01/11/00	.	07/13/00*	.			!	
GW-053	BG	02/21/00	.	08/22/00	.	!			
GW-056	EXP-A	**01/12/00 D**	.	07/11/00	.	!			
GW-077	BG	02/17/00	.	08/15/00	.				!
GW-078	BG	02/17/00	.	08/15/00	.				!
GW-079	BG	02/22/00	.	08/15/00	.	B			
GW-079	BG	02/22/00	.	08/16/00	.				!
GW-080	BG	02/21/00	.	08/14/00	.	B			
GW-080	BG	**02/21/00 D**	.	**08/16/00 D**	.				!
GW-085	OLF	02/29/00	.	09/08/00	.	!			
GW-115	S3	02/15/00	.	.	.	B			
GW-115	S3	01/04/00	.	07/12/00	.			!	
GW-226	OLF	03/01/00	.	09/11/00	.	!			
GW-276	S3	01/04/00	.	07/12/00	.			!	
GW-287	BG	**02/17/00 D**	.	08/21/00	.	!			
GW-311	RS	02/28/00	.	09/06/00	.	!			
GW-315	SPI	02/28/00	.	09/05/00	.	!			
GW-526	S3	02/22/00	.	08/16/00	.				!
GW-537	OLF	03/01/00	.	**09/11/00 D**	.	!			
GW-615	S3	02/15/00	06/08/00	08/30/00	.				!
GW-621	EXP-B	01/19/00	.	07/13/00	.	!			

Table B.2 (continued)

WRRP [1]		CERCLA Monitoring							
		RCRA Corrective Action Monitoring							
GWPP [2]		DOE Order 5400.1 Exit Pathway/Perimeter Monitoring							
		DOE Order 5400.1 Surveillance Monitoring							
Sampling Point [3]	Sampling Location [4]	CY 2000 Sampling Date [5]							
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter				
GW-627	BG	02/21/00	.	08/22/00	.	!			
GW-627	BG	02/23/00 **C**	.	08/23/00 **C**	.	!			
GW-653	BG	02/17/00	.	08/21/00	.	!			
GW-683	EXP-A	01/18/00	.	07/12/00	.	!			
GW-684	EXP-A	01/13/00	.	07/12/00	.	!			
GW-685	EXP-A	01/13/00	.	07/11/00	.	!			
GW-695	EXP-B	01/24/00	.	07/13/00	.	!			
GW-703	EXP-B	01/24/00	.	07/24/00	.	!			
GW-704	EXP-B	01/25/00	.	07/24/00	.	!			!
GW-706	EXP-B	01/31/00	.	07/25/00	.	!			!
GW-706	EXP-B	02/01/00 **C**	.	07/26/00 **C**	.	!			
GW-712	EXP-W	01/10/00	.	07/10/00	.		!	!	
GW-713	EXP-W	01/06/00	.	07/10/00	.		!	!	
GW-714	EXP-W	02/16/00	.	08/14/00	.	**B**			
GW-714	EXP-W	01/05/00	.	07/11/00	.		!	!	
GW-715	EXP-W	02/16/00	.	08/14/00	.	**B**			
GW-715	EXP-W	**01/5/00 D**	.	**07/11/00 D**	.		!	!	
GW-724	EXP-C	02/03/00	.	**07/31/00 D**	.	!			
GW-725	EXP-C	02/07/00	.	08/08/00	.	!			
GW-725	EXP-C	02/08/00 **C**	.	08/09/00 **C**	.	!			
GW-727-02	BG	.	05/02/00	.	.				!
GW-727-05	BG	.	05/03/00	.	.				!
GW-727-08	BG	.	05/30/00	.	.				!
GW-727-13	BG	.	06/01/00	.	.				!
GW-727-15	BG	.	06/01/00	.	.				!
GW-727-18	BG	.	**06/05/00 D**	.	.				!
GW-727-22	BG	.	06/02/00	.	.				!
GW-727-25	BG	.	06/06/00	.	.				!
GW-727-27	BG	.	06/07/00	.	.				!
GW-727-30	BG	.	06/07/00	.	.				!
GW-729-02	BG	.	.	07/10/00	.				!
GW-729-06	BG	.	.	07/11/00	.				!

Table B.2 (continued)

WRRP [1]		CERCLA Monitoring							
		RCRA Corrective Action Monitoring							
GWPP [2]		DOE Order 5400.1 Exit Pathway/Perimeter Monitoring							
		DOE Order 5400.1 Surveillance Monitoring							
Sampling Point [3]	Sampling Location [4]	CY 2000 Sampling Date [5]							
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter				
GW-729-15	BG	.	.	07/11/00	.				!
GW-729-18	BG	.	.	07/12/00	.				!
GW-729-22	BG	.	.	07/12/00	.				!
GW-729-26	BG	.	.	07/13/00**	.				!
GW-729-30	BG	.	.	07/17/00	.				!
GW-729-34	BG	.	.	07/17/00	.				!
GW-729-39	BG	.	.	07/18/00	.				!
GW-729-44	BG	.	.	**07/18/00 D**	.				!
GW-730-02	BG	.	.	08/15/00	.				!
GW-730-11	BG	.	.	08/16/00	.				!
GW-730-18	BG	.	.	08/17/00	.				!
GW-730-21	BG	.	.	08/17/00	.				!
GW-730-25	BG	.	.	08/21/00	.				!
GW-730-28	BG	.	.	08/21/00	.				!
GW-730-30	BG	.	.	**08/22/00 D**	.				!
GW-730-35	BG	.	.	08/22/00	.				!
GW-738	EXP-C	02/03/00	.	07/31/00	.	!			
GW-740	EXP-C	02/02/00	.	07/27/00	.	!			
GW-790-02	BG	.	06/08/00	.	.				!
GW-790-05	BG	.	06/12/00	.	.				!
GW-790-07	BG	.	06/13/00	.	.				!
GW-790-14	BG	.	**06/14/00 D**	.	.				!
GW-790-19	BG	.	06/15/00	.	.				!
GW-790-23	BG	.	06/15/00	.	.				!
GW-790-29	BG	.	06/19/00	.	.				!
GW-790-32	BG	.	06/19/00	.	.				!
GW-790-35	BG	.	06/19/00	.	.				!
GW-790-39	BG	.	06/19/00	.	.				!
GW-829	OLF	02/29/00	.	09/08/00	.	!			
GW-835	S3	02/15/00	06/16/00	08/29/00	11/14/00				!
GW-838	EMWMF	02/14/00	04/12/00	08/07/00	.				!
GW-840	EMWMF	02/10/00	04/11/00	08/07/00	.				!
GW-904	EMWMF	02/08/00	04/10/00	08/02/00	.				!
GW-905	EMWMF	02/14/00	04/12/00	08/07/00	.				!

Table B.2 (continued)

WRRP [1]		CERCLA Monitoring							
		RCRA Corrective Action Monitoring							
GWPP [2]		DOE Order 5400.1 Exit Pathway/Perimeter Monitoring							
		DOE Order 5400.1 Surveillance Monitoring							
Sampling Point [3]	Sampling Location [4]	CY 2000 Sampling Date [5]							
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter				
NT-01	EXP-SW	02/10/00	.	08/02/00	.		!		
NT-07	EXP-SW	01/25/00	.	08/17/00	.				!
NT-08	EXP-SW	01/25/00	.	08/17/00	.				!
SS-1	EXP-SW	02/10/00	.	08/02/00	.		!		
SS-4	EXP-SW	02/09/00	.	08/01/00	.		!		
SS-4	EXP-SW	**02/09/00 D**	.	**08/03/00 D**	.				!
SS-5	EXP-SW	02/09/00	.	08/01/00	.		!		
SS-5	EXP-SW	02/09/00	.	08/03/00	.				!
SS-6	EXP-SW	**02/09/00 D**	.	08/01/00	.		!		
SS-6	EXP-SW	02/09/00	.	08/03/00	.				!
SS-6.6	EXP-SW	**01/25/00 D**	.	**08/16/00 D**	.				!
SS-7	EXP-SW	01/25/00	.	08/16/00	.				!
SS-8	EXP-SW	01/25/00	.	08/16/00	.				!

Notes:

1 Groundwater and surface water monitoring performed for the Water Resources Restoration Program, managed by Bechtel Jacobs Company LLC.

2 Groundwater and surface water monitoring performed for the Y-12 Groundwater Protection Program managed by Lockheed Martin Energy Systems, Inc. through October 2000 and by BWXT Y-12, L.L.C. thereafter.

B - Sample collected for biological testing

3 BCK - Bear Creek Kilometer
GW - Groundwater Monitoring Well; Westbay wells are GW-727, GW-729, GW-730, and GW-790.
NT - Northern Tributary (to Bear Creek)
SS - Spring sampling location (south side of Bear Creek)

Table B.2 (continued)

Notes: (continued)

4	BG	-	Bear Creek Burial Grounds Waste Management Area
	EMWMF	-	Environmental Management Waste Management Facility
	EXP-A	-	Exit Pathway (Maynardville Limestone) Picket A
	EXP-B	-	Exit Pathway Picket B
	EXP-C	-	Exit Pathway Picket C
	EXP-W	-	Exit Pathway Picket W
	EXP-SW	-	Exit Pathway (Bear Creek) Surface Water
	OLF	-	Oil Landfarm Waste Management Area
	RS	-	Rust Spoil Area
	SPI	-	Spoil Area I
	S3	-	S-3 Site
5	**.**	-	Not sampled
	C	-	Sample collected using the conventional (three well volume purge) method
	D	-	Duplicate sample was collected (shown in bold typeface)
	*	-	re-sampled on July 19 for nitrate analysis (GW-046)
	**	-	re-sampled on August 14 for volatile organic analyses (GW-729-26)

Table B.3. CY 2000 groundwater and surface water sampling dates in the Chestnut Ridge Hydrogeologic Regime

WRRP [1]		SWDF Detection Monitoring							
		RCRA Detection (!) and Corrective Action (") Monitoring							
		CERCLA ROD (!) and Baseline (") Monitoring							
Y-12 GWPP [2]		Surveillance (!) and Exit Pathway/Perimeter (") Monitoring							
Sampling Point [3]	Sampling Location [4]	CY 2000 Sampling Date [5]							
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter				
1090	UNCS	02/22/00	.	08/09/00	.		!		
GW-141	LIV	02/07/00	.	07/26/00	.				!
GW-142	KHQ	.	04/03-06/00 REP	.	10/02-05/00 REP			!	
GW-143	KHQ	.	**04/03-06/00 REP**	.	**10/02-05/00 REP**			!	
GW-144	KHQ	.	**04/03-06/00 REP**	.	**10/02-05/00 REP**			!	
GW-145	KHQ	.	04/03-06/00 REP	.	10/02-05/00 REP			!	
GW-156	CRSDB	.	**04/24-27/00 REP**	.	**10/09-12/00 REP**			!	
GW-159	CRSDB	.	04/24-27/00 REP	.	10/09-12/00 REP			!	
GW-203	UNCS	02/23/00	.	08/15/00	.	B	!		
GW-205	UNCS	02/23/00	.	08/10/00	.		!		
GW-217	LIV	02/07/00	.	07/27/00	.				!
GW-221	UNCS	02/22/00	.	08/09/00	.		!		
GW-231	KHQ	.	04/03-06/00 REP	.	10/02-05/00 REP			!	
GW-301	CRBAWP	**01/31/00 D**	.	**07/19/00 D**	.			"	
GW-302	UNCS	02/23/00	.	08/14/00	.	B	!		
GW-305	LIV	02/07/00	05/23/00	07/27/00	11/06/00	B			!
GW-339	UNCS	**02/23/00 D**	.	**08/14/00 D**	.	B	!		
GW-521	LIV	1/31/00	.	7/25/00	.	B		"	!
GW-522	LIV	02/07/00	.	07/25/00	.				!
GW-539	LII	02/02/00	.	08/01/00	.				!
GW-540	LII/CDLVII	02/02/00	.	07/26/00	.				!
GW-542	CDLVI	02/01/00	.	07/27/00	.				!
GW-543	CDLVI	02/02/00	.	07/31/00	.				!
GW-544	CDLVI	02/02/00	.	07/31/00	.				!
GW-557	LV	**01/26/00 D**	.	**07/20/00 D**	.			"	!
GW-560	CDLVII	.	.	07/27/00	10/30, 11/28, 12/11				!
GW-562	CDLVII	.	.	07/25/00	10/31, 11/28, 12/12				!
GW-564	CDLVII	.	.	07/26/00	10/30, 11/27, 12/11				!
GW-609	CRSP	02/01/00	.	07/19/00	.			"	
GW-709	LII	02/02/00	.	08/01/00	.				!
GW-731	CRSDB	.	04/24-27/00 REP	.	10/09-12/00 REP			!	
GW-732	CRSDB	.	**04/24-27/00 REP**	.	**10/09-12/00 REP**			!	
GW-757	LII	02/02/00	.	08/01/00	.				!

Table B.3 (continued)

WRRP [1]		SWDF Detection Monitoring							
		RCRA Detection (!) and Corrective Action (") Monitoring							
		CERCLA ROD (!) and Baseline (") Monitoring							
Y-12 GWPP [2]		Surveillance (!) and Exit Pathway/Perimeter (") Monitoring							
Sampling Point [3]	Sampling Location [4]	CY 2000 Sampling Date [5]							
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter				
GW-796	LV	01/27/00	.	07/24/00	.			"	!
GW-797	LV	02/01/00	.	07/24/00	.				!
GW-798	CDLVII	01/31/00	.	07/20/00	.			"	
GW-798	CDLVII	.	.	07/20/00	10/30, 11/27, 12/11				!
GW-799	LV	01/27/00	.	07/25/00	.			"	!
GW-801	LV	01/31/00	.	07/24/00	.			"	!
GW-827	CDLVI	02/01/00	.	07/31/00	.				!
GW-831	FCAP	01/27/00	.	07/24/00	.			"	
MCK 2.0	FCAP	02/07/00	.	08/29/00	.		"		
MCK 2.05	FCAP	02/07/00	.	**08/29/00 D**	.		"		
OF 301	KHQ	.	05/30/00	.	11/02/00		!		
SCR1.25SP	EXP	02/07/00	.	08/29/00	.		"		
SCR2.1SP	EXP	03/06/00	.	08/17/00	.	"			
SCR2.2SP	EXP	03/06/00	.	08/17/00	.	"			
SCR3.4SP	EXP	03/06/00	.	08/17/00	.	"			
SCR3.5SP	EXP	02/07/00	.	08/29/00	.		"		
SCR4.3SP	LV	02/02/00	.	07/25/00	.				!
SCR5.1SP	EXP	**03/06/00 D**	.	08/17/00	.	"			
SCR5.4SP	EXP	03/06/00	.	**08/17/00 D**	.	"			

Notes:

1 Groundwater and surface water monitoring performed under the Oak Ridge Reservation Water Resources Restoration Program (WRRP), managed by Bechtel Jacobs Company LLC.

2 Groundwater and surface water monitoring performed under the Y-12 Groundwater Protection Program (GWPP) managed by Lockheed Martin Energy Systems, Inc. until October 2000 and by BWXT Y-12, L.L.C. thereafter.

B - An additional sample for biological testing (surveillance monitoring) was collected by WRRP.

3
GW - Groundwater monitoring well (also 1090)
MCK - McCoy Branch Kilometer
OF 301 - Outfall 301: surface water station located where water exits Kerr Hollow Quarry
SCR - South Chestnut Ridge (tributary prefix)
SP - Spring location (suffix)

Table B.3 (continued)

Notes: (continued)

4	CDLVI	-	Construction/Demolition Landfill VI
	CDLVII	-	Construction/Demolition Landfill VII
	CRBAWP	-	Chestnut Ridge Borrow Area Waste Pile
	CRSDB	-	Chestnut Ridge Sediment Disposal Basin
	CRSP	-	Chestnut Ridge Security Pits
	EXP	-	Exit Pathway (spring sampling location)
	FCAP	-	Filled Coal Ash Pond
	KHQ	-	Kerr Hollow Quarry
	LII	-	Industrial Landfill II
	LIV	-	Industrial Landfill IV
	LV	-	Industrial Landfill V
	UNCS	-	United Nuclear Corporation Site
5	**.**	-	Not Sampled.
	D	-	Duplicate sample was collected (shown in bold typeface).
	REP	-	Four replicate groundwater samples were collected from the well over the specified date range. **BOLD** indicates that duplicate groundwater samples were collected from the specified well on the following replicate sampling dates: GW-143 (April 3 and October 2); GW-144 (April 4 and October 4); GW-156 (April 27 and October 12); and GW-732 (April 25 and October 10)

Table B.4. CY 2000 groundwater and surface water sampling dates in the Upper East Fork Poplar Creek Hydrogeologic Regime

WRRP [1]		CERCLA ROD (!) and Baseline (") Monitoring							
		RCRA Corrective Action Monitoring							
GWPP [2]		DOE Order 5400.1 Exit Pathway/Perimeter Monitoring							
		DOE Order 5400.1 Surveillance Monitoring							
Sampling Point [3]	Sampling Location [4]	CY 2000 Sampling Date [5]							
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter				
55-2C	Y12	.	05/22/00	.	10/17/00	!			
56-2C	Y12	.	05/22/00	.	10/17/00	!			
9212-W-2-BSTM	B9212	03/08/00	.	.	.	!			
9215-STACK11	B9215	.	.	.	11/30/00	!			
GHK2.51ESW	EXP-NPR	.	04/19/00	.	11/09/00		!		
GHK2.51WSW	EXP-NPR	.	**04/19/00 D**	.	11/09/00		!		
GW-108	S3	01/11/00	.	07/18/00				!	
GW-109	S3	.	05/25/00*	.	10/19/00	!			
GW-151	NHP	.	05/16/00	08/17/00	.				"
GW-153	NHP	.	05/11/00	.	10/12/00	!			
GW-154	NHP	.	05/17/00	08/22/00	.				"
GW-169	EXP-UV	01/25/00	05/18/00	08/09/00					!
GW-170	EXP-UV	**01/24/00 D**	**05/18/00 D**	**08/08/00 D**	**11/01/00 D**				!
GW-171	EXP-UV	01/19/00	05/17/00	08/07/00	.				!
GW-172	EXP-UV	01/19/00	05/17/00	08/08/00	.				!
GW-192	B4	.	**05/09/00 D**	.	10/09/00	!			
GW-193	T2331	01/12/00	.	07/18/00	.			!	
GW-204	T0134	.	06/07/00	.	10/24/00	!			
GW-207	EXP-SR	.	04/05/00	.	11/07/00		!		
GW-208	EXP-SR	.	04/05/00	.	11/07/00		!		
GW-218	UOV	.	05/31/00	.	10/30/00**	!			
GW-219	UOV	.	**06/06/00 D**	.	10/30/00	!			
GW-220	NHP	.	5/15/00	.	**10/12/00 D**		!		
GW-220	NHP	.	5/15/00	.	.	**B**			
GW-220	NHP	.		08/22/00	.				"
GW-222	NHP	.	06/13/00	.	10/26/00	!			
GW-223	NHP	.	06/12/00	.	10/31/00	!			
GW-230	EXP-UV	01/20/00	05/17/00	08/08/00	11/01/00				!
GW-232	EXP-UV	01/25/00	05/18/00	08/09/00	.				!
GW-240	NHP	.	05/17/00	.	10/11/00	!			
GW-251	S2	.	05/09/00	.	10/09/00	!			
GW-253	S2	.	05/23/00	.	11/02/00				"
GW-274	SY	.	05/30/00	.	10/18/00	!			
GW-275	SY	.	05/30/00	.	10/18/00	!			

Table B.4 (continued)

WRRP [1]		CERCLA ROD (!) and Baseline (") Monitoring							
		RCRA Corrective Action Monitoring							
GWPP [2]		DOE Order 5400.1 Exit Pathway/Perimeter Monitoring							
		DOE Order 5400.1 Surveillance Monitoring							
Sampling Point [3]	Sampling Location [4]	CY 2000 Sampling Date [5]							
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter				
GW-337	WC	.	05/23/00	.	10/19/00	!			
GW-380	NHP	.	05/16/00	.	.	B			
GW-381	NHP	.	05/17/00	.	10/16/00	!			
GW-381	NHP	.	05/17/00	.	.	B			
GW-382	NHP	.	05/18/00	09/11/00	.				"
GW-383	NHP	.	05/15/00	.	10/16/00	!			
GW-383	NHP	.	.	08/17/00	.				"
GW-605	EXP-I	**01/12/00 D**	.	**07/17/00 D**	.			!	
GW-606	EXP-I	01/12/00	.	07/17/00	.			!	
GW-618	EXP-E	.	05/23/00	.	11/08/00				"
GW-620	FTF	.	05/10/00	.	10/10/00	!			
GW-633	RG	.	06/08/00	.	10/24/00	!			
GW-656	T0134	.	06/12/00	.	10/25/00	!			
GW-656	T0134	.	06/12/00	.	.	B			
GW-690	CPT	.	06/19/00	.	10/25/00	!			
GW-700	B8110	.	06/19/00	.	10/25/00	!			
GW-722-06	EXP-J	03/14/00	.	07/17/00	.	!			
GW-722-06	EXP-J	.	.	09/12/00	11/30/00				"
GW-722-10	EXP-J	03/20/00	.	07/20/00	.	!			
GW-722-10	EXP-J	.	.	09/12/00	11/30/00				"
GW-722-14	EXP-J	03/21/00	.	07/26/00	.	!			
GW-722-14	EXP-J	.	.	09/13/00	11/30/00				"
GW-722-17	EXP-J	03/21/00	.	07/26/00	.	!			
GW-722-17	EXP-J	.	.	09/13/00	11/30/00				"
GW-722-20	EXP-J	03/21/00	.	07/25/00	.	!			
GW-722-20	EXP-J	.	.	09/13/00	12/04/00				"
GW-722-22	EXP-J	03/21/00	.	**07/25/00 D**	.	!			
GW-722-22	EXP-J	.	.	09/13/00	12/04/00				"
GW-722-26	EXP-J	**03/15/00 D**	.	07/18/00	.	!			
GW-722-26	EXP-J	.	.	**09/14/00 D**	**12/04/00 D**				"
GW-722-30	EXP-J	03/15/00	.	07/18/00	.	!			
GW-722-30	EXP-J	.	.	09/14/00	12/06/00				"
GW-722-32	EXP-J	03/20/00	.	07/18/00	.	!			
GW-722-32	EXP-J	.	.	09/14/00	12/05/00				"
GW-722-33	EXP-J	03/20/00	.	07/18/00	.	!			
GW-722-33	EXP-J	.	.	09/18/00	12/05/00				"
GW-733	EXP-J	01/13/00	.	07/17/00	.			!	

Table B.4 (continued)

WRRP [1]		CERCLA ROD (!) and Baseline (") Monitoring							
		RCRA Corrective Action Monitoring							
GWPP [2]		DOE Order 5400.1 Exit Pathway/Perimeter Monitoring							
		DOE Order 5400.1 Surveillance Monitoring							
Sampling Point [3]	Sampling Location [4]	CY 2000 Sampling Date [5]							
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter				
GW-735	EXP-J	.	04/25/00	.	11/02/00		!		
GW-735	EXP-J	.	05/15/00	08/21/00	.				"
GW-744	GRIDK1	.	04/17/00	.	**11/01/00 D**		!		
GW-747	GRIDK2	.	04/24/00	.	11/01/00		!		
GW-750	EXP-J	.	04/25/00	.	11/02/00		!		
GW-762	GRIDJ3	.	**05/16/00 D**	**08/21/00 D**	.				"
GW-763	GRIDJ3	.	05/10/00	.	10/10/00	!			
GW-763	GRIDJ3	.	05/11/00 C	.	10/11/00 C	!			
GW-769	GRIDG3	.	04/27/00	.	10/03/00	!			
GW-770	GRIDG3	.	04/26/00	.	**10/02/00 D**	!			
GW-782	GRIDE3	.	05/01/00	.	10/03/00	!			
GW-782	GRIDE3	.	05/01/00	.	.	B			
GW-783	GRIDE3	.	05/01/00	.	.	B			
GW-789	GRIDF3	.	**04/26/00 D**	.	10/02/00	!			
GW-791	GRIDD2	.	05/02/00	.	10/03/00	!			
GW-791	GRIDD2	.	05/02/00	.	.	B			
GW-791	GRIDD2	.	05/03/00 C	.	10/04/00 C	!			
GW-816	EXP-SR	.	04/10/00	.	11/08/00		!		
GW-820	B9201-2	.	06/13/00	.	**10/26/00 D**	!			
GW-832	NHP	.	05/17/00	08/23/00	.				"
GW-845	NHP	03/15/00	.	.	.				"
LRSPW	EXP-SW	.	**04/18/00 D**	.	12/19/00		!		
NPR07.0SW	EXP-NPR	.	04/19/00	.	11/09/00		!		
NPR10.0SW	EXP-NPR	.	05/24/00	.	DRY		!		
NPR12.0SW	EXP-NPR	.	04/19/00	.	**11/09/00 D**		!		
OF 51	EXP-SW	.	04/10/00	09/19/00	.				"
OF 200	EXP-SW	**03/20/00 D**	**04/10/00 D**	**09/19/00 D**	.				"
OF 221	EXP-SW	03/20/00	.	09/19/00	.				"
OF 225	EXP-SW	03/20/00	.	09/19/00	.				"
SCR7.1	EXP-UV	01/19/00	05/30/00	09/06/00					!
SCR7.18SP	EXP-UV	01/19/00	05/30/00	.	.				!
SCR7.8SP	EXP-UV	01/19/00	05/30/00	09/06/00	.				!
SP-17	EXP-SW	.	04/10/00	09/19/00	.				"
STATION 17	EXP-SW	03/20/00	04/10/00	09/19/00	.				"
STATION 8	EXP-SW	03/20/00	04/10/00	09/19/00	.				"

Table B.4 (continued)

Notes:

1 Monitoring activities performed by the Water Resources Restoration Program, managed by Bechtel Jacobs Company LLC.

2 Monitoring performed by the Y-12 Groundwater Protection Program managed by Lockheed Martin Energy Systems, Inc. until October and by BWXT Y-12, L.L.C. thereafter.

B	-	Biological testing performed

3

GHK	-	Gum Hollow Branch Kilometer (surface water sampling location)
GW	-	Groundwater Monitoring Well; Westbay well GW-722
LRSPW	-	Lake Reality Emergency Spillway (surface water sampling location)
NPR	-	North of Pine Ridge near the Scarboro Community (surface water sampling location)
OF	-	Storm drain outfall (surface water sampling location)
SCR	-	Spring sampling location in Union Valley
SP	-	Spring sampling location
STATION	-	Surface water sampling location in Upper East Fork Poplar Creek

4

B4	-	Beta-4 Security Pits
B9201-2	-	Building 9201-2
B9212	-	Building 9212 (sump sampling location)
B9215	-	Building 9215 (sump sampling location)
EXP	-	Exit Pathway monitoring location:
	!	-E, -I, or -J: Maynardville Limestone Picket monitoring well.
	!	-NPR: Surface water station located north of Pine Ridge where drainage exits the Oak Ridge Reservation.
	!	-SW: Onsite spring or surface water station
	!	-SR: Along Scarboro Road in the gap through Pine Ridge
	!	-UV: East of the Oak Ridge Reservation boundary in Union Valley
FTF	-	Fire Training Facility
GRID	-	Comprehensive Groundwater Monitoring Plan Grid Location
NHP	-	New Hope Pond
RG	-	Rust Garage Area
S2	-	S-2 Site
S3	-	S-3 Ponds Site
SY	-	Y-12 Salvage Yard
T0134	-	Tank 0134-U
T2331	-	Tank 2331-U
UOV	-	Uranium Oxide Vault
WC	-	Waste Coolant Processing Area

5

.	-	Not sampled.
B	-	Biological sampling
C	-	Sample obtained using the conventional sampling method.
D	-	Duplicate sample was collected (shown in bold typeface).
*	-	Re-sampled on June 8, 2000 for volatile organics analyses (GW-109) .
**	-	Re-sampled on November 6, 2000 for nitrate analyses (GW-218).

Table B.5. Field measurements and laboratory analytes for CY 2000 groundwater and surface water samples

Field Measurements	Analytical Method [1]	Detection Limit [2]	Units [3]
Depth to Water	Y50-71-015	NA	ft
Water Temperature	Y50-71-001	NA	centigrade
pH	Y50-71-001	NA	pH units
Conductivity	Y50-71-001	NA	µmho/cm
Dissolved Oxygen	Y50-71-001	NA	ppm
Oxidation-Reduction Potential	SESD-TP-8204 (R.2)	NA	mV
Miscellaneous Laboratory Analytes			
pH	EPA-9040	NA	pH units
Conductivity	EPA-9050	NA	µmho/cm
Total Dissolved Solids	EPA-160.1	1	mg/L
Total Suspended Solids	EPA-160.2	1	mg/L
Turbidity	EPA-180.1	0.1	NTU
Additional Laboratory Analytes			
Iron Related Bacteria	ASO-SOP-0028	NA	cfu/mL
Slime Forming Bacteria	ASO-SOP-0028	NA	cfu/mL
Sulfate Reducing Bacteria	ASO-SOP-0028	NA	cfu/mL
Fecal Coliform	SM-9222D17	1	col/100ml
Surfactant	EPA-425.1	0.07	mg/L
Total Phosphate (as phosphorous)	EPA-365.4	0.1	mg/L
Anions			
Alkalinity - HCO3	EPA-310.1	1.0	mg/L
Alkalinity - CO3	EPA-310.1	1.0	mg/L
Chloride	EPA-300.0	0.2	mg/L
Fluoride	EPA-340.2	0.1	mg/L
Nitrate (as Nitrogen)	EPA-300.0	0.028	mg/L
Sulfate	EPA-300.0	0.25	mg/L
Metals/Cations: Unfiltered & Filtered [4]			
Aluminum	SW846-6010A/B	0.2	mg/L
Antimony	EPA-200.8	0.0025	mg/L
Arsenic	EPA-200.8	0.005	mg/L
Barium	SW846-6010A/B	0.004	mg/L
Beryllium	SW846-6010A/B	0.001	mg/L
Boron	SW846-6010A/B	0.1	mg/L
Cadmium	EPA-200.8	0.0005	mg/L
Calcium	SW846-6010A/B	0.2	mg/L
Chromium	SW846-6010A/B	0.02	mg/L
Chromium	EPA-200.8	0.0025	mg/L
Cobalt	SW846-6010A/B	0.02	mg/L
Copper	SW846-6010A/B	0.02	mg/L
Iron	SW846-6010A/B	0.05	mg/L

Table B.5 (continued)

Metals/Cations (continued)	Analytical Method [1]	Detection Limit [2]	Units [3]
Lead	EPA-200.8	0.0005	mg/L
Lithium	SW846-6010A/B	0.01	mg/L
Magnesium	SW846-6010A/B	0.2	mg/L
Manganese	SW846-6010A/B	0.005	mg/L
Mercury	SW846-7470	0.0002	mg/L
Molybdenum	SW846-6010A/B	0.05	mg/L
Nickel	SW846-6010A/B	0.05	mg/L
Nickel	EPA-200.8	0.005	mg/L
Potassium	SW846-6010A/B	2	mg/L
Selenium	EPA-200.8	0.01	mg/L
Silver	SW846-6010A/B	0.02	mg/L
Sodium	SW846-6010A/B	0.2	mg/L
Strontium	SW846-6010A/B	0.005	mg/L
Thallium	EPA-200.8	0.0005	mg/L
Thorium	SW846-6010A/B	0.2	mg/L
Uranium	EPA-200.8	0.0005	mg/L
Vanadium	SW846-6010A/B	0.02	mg/L
Zinc	SW846-6010A/B	0.05	mg/L
Volatile Organic Compounds		**CRQL [5]**	
Acetone	SW846-8260 UP	10	µg/L
Acrolein	SW846-8260 UP	10	µg/L
Acrylonitrile	SW846-8260 UP	5	µg/L
Benzene	SW846-8260 UP	5	µg/L
Bromochloromethane	SW846-8260 UP	10	µg/L
Bromodichloromethane	SW846-8260 UP	5	µg/L
Bromoform	SW846-8260 UP	5	µg/L
Bromomethane	SW846-8260 UP	5	µg/L
2-Butanone	SW846-8260 UP	5	µg/L
Carbon disulfide	SW846-8260 UP	5	µg/L
Carbon tetrachloride	SW846-8260 UP	5	µg/L
Chlorobenzene	SW846-8260 UP	5	µg/L
Chloroethane	SW846-8260 UP	5	µg/L
2-Chloroethyl vinyl ether	SW846-8260 UP	5 / 10	µg/L
Chloroform	SW846-8260 UP	5	µg/L
Chloromethane	SW846-8260 UP	5	µg/L
Dibromochloromethane	SW846-8260 UP	5	µg/L
1,2-Dibromo-3-chloropropane	SW846-8260 UP	10	µg/L
1,2-Dibromoethane	SW846-8260 UP	5	µg/L
Dibromomethane	SW846-8260 UP	5	µg/L
1,2-Dichlorobenzene	SW846-8260 UP	5	µg/L
1,4-Dichlorobenzene	SW846-8260 UP	5	µg/L
1,4-Dichloro-2-butene	SW846-8260 UP	5	µg/L

Table B.5 (continued)

Volatile Organic Compounds (cont'd)	Analytical Method [1]	CRQL [5]	Units [3]
trans-1,4-Dichloro-2-butene	SW846-8260 UP	5	µg/L
Dichlorodifluoromethane	SW846-8260 UP	5	µg/L
1,1-Dichloroethane	SW846-8260 UP	5	µg/L
1,2-Dichloroethane	SW846-8260 UP	5	µg/L
1,1-Dichloroethene	SW846-8260 UP	5	µg/L
cis-1,2-Dichloroethene	SW846-8260 UP	5	µg/L
trans-1,2-Dichloroethene	SW846-8260 UP	5	µg/L
1,2-Dichloropropane	SW846-8260 UP	5	µg/L
cis-1,3-Dichloropropene	SW846-8260 UP	5	µg/L
trans-1,3-Dichloropropene	SW846-8260 UP	5	µg/L
Dimethylbenzene	SW846-8260 UP	5	µg/L
Ethanol	SW846-8260 UP	200	µg/L
Ethylbenzene	SW846-8260 UP	5	µg/L
Ethyl methacrylate	SW846-8260 UP	5	µg/L
2-Hexanone	SW846-8260 UP	5	µg/L
Iodomethane	SW846-8260 UP	5	µg/L
4-Methyl-2-pentanone	SW846-8260 UP	5	µg/L
Methylene chloride	SW846-8260 UP	5	µg/L
Styrene	SW846-8260 UP	5	µg/L
1,1,1,2-Tetrachloroethane	SW846-8260 UP	5	µg/L
1,1,2,2-Tetrachloroethane	SW846-8260 UP	5	µg/L
Tetrachloroethene	SW846-8260 UP	5	µg/L
Toluene	SW846-8260 UP	5	µg/L
1,1,1-Trichloroethane	SW846-8260 UP	5	µg/L
1,1,2-Trichloroethane	SW846-8260 UP	5	µg/L
Trichloroethene	SW846-8260 UP	5	µg/L
Trichlorofluoromethane	SW846-8260 UP	5	µg/L
1,2,3-Trichloropropane	SW846-8260 UP	10	µg/L
Vinyl acetate	SW846-8260 UP	10	µg/L
Vinyl chloride	SW846-8260 UP	5 / 2	µg/L
Radiological Analytes		**Target MDA [6]**	
Gross Alpha Activity	EPA-900.0	3.5	pCi/L
Gross Beta Activity	EPA-900.0	7.0	pCi/L
Americium-241	ACO-TP-7226	0.4	pCi/L
Iodine-129	EPA-901.1	3.0	pCi/L
Neptunium-237	ACO-Y/P65-7206	0.4	pCi/L
Plutonium-238 & -239/240	ACO-TP-7226	0.4	pCi/L
Radium-223/224/226	EPA-903.0 / 904.0	0.5	pCi/L
Strontium-89/90	EPA-905.0	4.0	pCi/L
Technetium-99	ACD-TP-160074 or ACO-Y/P65-7154	10	pCi/L
Thorium-228, 230, 232, & 234	ACO-Y/P65-7206	0.4	pCi/L
Tritium	EPA-906.0	300	pCi/L
Uranium-234, 235, & 238	ACO-TP-7226	0.4	pCi/L

Table B.5 (continued)

Notes:

1 Analytical/field methods/procedures from:

- Y-12 Plant System Operation Procedures (LMES 1999a and 1999b)
- *Test Methods for Evaluating Solid Waste Physical/Chemical Methods* (U.S. Environmental Protection Agency 1996)
- *Methods for Chemical Analysis of Water and Wastes* (U.S. Environmental Protection Agency 1983)
- Lockheed Martin Energy Systems ACO Control Procedures: SESD-TP-8204 (R.2), ACD-TP-160074, ACO-TP-7154, ACO-TP-7206, ACO-Y/P65-7226, and ACO-Y/P65-8044

2 NA - not applicable

The method for metals analyses was updated from SW846-6010A to SW846-6010B in September 1, 2000. To achieve lower reporting limits, chromium and nickel analyses by EPA-200.8 began in October 2000; results for these metals were also obtained using SW846-6010B.

3
cfu/mL - colony forming units per milliliter
col/100ml - colonies per 100 milliliters
ft - feet
µg/L - micrograms per liter
µmho/cm - micromhos per centimeter
mg/L - milligrams per liter
mV - millivolts
NTU - nephelometric turbidity units
ppm - parts per million
pCi/L - picoCuries per liter

4 Samples for dissolved metals analysis were obtained at selected monitoring locations using a 0.45-micron filter.

5 CRQL - contract-required quantitation limit; estimated values are reported below this level and above the instrument detection limit. Results below the instrument detection limit are reported as not detected at the CRQL.

The CRQL for 2-chloroethyl vinyl ether increased from 5 µg/L to 10 µg/L for samples collected after November 1, 2000 and the CRQL for vinyl chloride decreased from 5 µg/L to 2 µg/L for samples collected after October 3, 2000.

6 MDA - minimum detectable activity. The target MDA may be obtained under optimal analytical conditions; actual MDAs are sample-specific and may vary significantly from the target value.

Table B.6. Depth-to-water measurements and groundwater elevations in the Bear Creek Hydrogeologic Regime, April and September 2000

Well Number	Location [1]	Hydrogeologic Unit: Aquifer	Hydrogeologic Unit: Aquitard	MP Elevation [2] April	MP Elevation [2] Sept.	Depth-to-Water (ft below measuring point): April 10 - 12, 2000	Depth-to-Water (ft below measuring point): September 18 - 21, 2000	Seasonal Fluctuation (+/- ft)	Groundwater Elevation (ft above mean sea level): April 10 - 12, 2000	Groundwater Elevation (ft above mean sea level): September 18 - 21, 2000
GW-001	OLF		–	981.00	981.00	13.04	17.74	-4.70	967.96	963.26
GW-005	OLF		–	967.81	967.21	6.81	8.59	-2.38	961.00	958.62
GW-008	OLF		–	965.39	964.79	14.35	17.08	-3.33	951.04	947.71
GW-010	OLF		–	952.70	952.70	1.59	4.06	-2.47	951.11	948.64
GW-011	OLF		–	953.60	953.00	3.24	4.73	-2.09	950.36	948.27
GW-012	OLF		–	955.57	954.97	6.04	7.96	-2.52	949.53	947.01
GW-013	OLF		–	965.12	964.52	2.94	7.05	-4.71	962.18	957.47
GW-014	BG		–	934.50	933.90	6.46	8.11	-2.25	928.04	925.79
GW-016	BG		–	928.20	928.20	9.52	11.81	-2.29	918.68	916.39
GW-018	BG		–	924.49	924.49	6.17	10.79	-4.62	918.32	913.70
GW-041	BG		–	1007.50	1007.50	13.95	25.25	-11.30	993.55	982.25
GW-043	OLF		–	1014.04	1013.44	26.08	29.06	-3.58	987.96	984.38
GW-045	BG	M		909.70	NM [3]	7.25	NM	NA [4]	902.45	NA
GW-046	BG		–	920.57	920.57	1.07	5.35	-4.28	919.50	915.22
GW-047	BG		–	928.40	928.40	6.43	10.34	-3.91	921.97	918.06
GW-052	BG	M		905.70	905.70	8.43	18.70	-10.27	897.27	887.00
GW-053	BG	–		902.80	902.80	4.96	11.20	-6.24	897.84	891.60
GW-065	OLF	–		982.50	982.50	23.51	29.61	-6.10	958.99	952.89
GW-067	OLF	–		961.60	961.60	9.61	11.33	-1.72	951.99	950.27
GW-080	BG		–	981.00	980.40	21.41	25.21	-4.40	959.59	955.19
GW-084	OLF		–	997.20	996.60	12.05	16.51	-5.06	985.15	980.09
GW-086	OLF		–	982.80	982.80	12.09	15.99	-3.90	970.71	966.81
GW-090	BG		–	961.88	961.88	4.11	8.02	-3.91	957.77	953.86
GW-091	BG		–	953.48	953.48	8.26	10.17	-1.91	945.22	943.31
GW-097	OLF		–	945.30	944.70	9.63	11.96	-2.93	935.67	932.74
GW-100	S3	–		987.40	986.80	4.85	6.36	-2.11	982.55	980.44
GW-101	S3		–	1008.00	1007.40	9.03	10.10	-1.67	998.97	997.30
GW-115	S3		–	1055.01	1054.41	7.28	14.69	-8.01	1047.73	1039.72
GW-127	S3		–	1005.90	1005.90	12.68	17.41	-4.73	993.22	988.49
GW-236	S3	–		983.21	983.21	9.74	12.76	-3.02	973.47	970.45
GW-245	S3		–	1009.08	1009.08	11.75	14.56	-2.81	997.33	994.52
GW-249	BG		–	991.15	NM	29.87	NM	NA	961.28	NA
GW-257	BG		–	961.68	961.68	27.94	29.53	-1.59	933.74	932.15
GW-276	S3		–	1001.57	1001.27	5.97	8.61	-2.94	995.60	992.66
GW-277	S3		–	1001.76	1001.76	5.11	7.52	-2.41	996.65	994.24

Table B.6 (continued)

Well Number	Location [1]	Hydrogeologic Unit: Aquifer	Hydrogeologic Unit: Aquitard	MP Elevation [2] April	MP Elevation [2] Sept.	Depth-to-Water (ft below measuring point) April 10 - 12, 2000	Depth-to-Water (ft below measuring point) September 18 - 21, 2000	Seasonal Fluctuation (+/- ft)	Groundwater Elevation (ft above mean sea level) April 10 - 12, 2000	Groundwater Elevation (ft above mean sea level) September 18 - 21, 2000
GW-287	BG		–	927.07	926.87	8.86	9.66	-1.00	918.21	917.21
GW-289	BG		–	948.73	948.47	4.31	19.44	-15.39	944.42	929.03
GW-291	BG		–	948.56	948.36	10.30	12.78	-2.68	938.26	935.58
GW-307	RS	–		993.14	993.14	23.83	34.84	-11.01	969.31	958.30
GW-309	RS	–		988.17	988.17	18.15	23.44	-5.29	970.02	964.73
GW-310	RS	–		995.35	995.35	18.73	22.65	-3.92	976.62	972.70
GW-316	SPI	–		1047.17	1047.17	50.40	63.36	-12.96	996.77	983.81
GW-323	SPI	–		1130.11	1130.11	86.50	86.11	0.39	1043.61	1044.00
GW-325	S3		–	1003.00	1003.00	9.62	18.46	-8.84	993.38	984.54
GW-345	S3		–	999.66	999.46	15.50	17.67	-2.37	984.16	981.79
GW-347	S3	M		1001.05	1001.05	13.53	19.53	-6.00	987.52	981.52
GW-370	BG		–	960.82	960.62	14.33	16.63	-2.50	946.49	943.99
GW-372	BG		–	983.20	983.00	16.53	26.60	-10.27	966.67	956.40
GW-531	LD		–	1004.61	1004.61	13.06	19.19	-6.13	991.55	985.42
GW-537	OLF		–	976.44	976.24	5.72	8.31	-2.79	970.72	967.93
GW-613	S3		–	1013.57	1013.37	11.33	16.49	-5.36	1002.24	996.88
GW-621	EXP-B	–		925.44	925.24	10.58	20.76	-10.38	914.86	904.48
GW-622	BG		–	924.16	924.16	9.35	14.85	-5.50	914.81	909.31
GW-624	BG		–	922.14	921.96	8.56	12.65	-4.27	913.58	909.31
GW-626	BG		–	942.87	942.61	19.94	27.48	-7.80	922.93	915.13
GW-630	LD		–	986.65	986.65	9.22	10.56	-1.34	977.43	976.09
GW-637	OLF		–	941.83	941.83	6.33	11.07	-4.74	935.50	930.76
GW-638	OLF		–	941.77	941.77	5.93	9.83	-3.90	935.84	931.94
GW-641	BG		–	946.66	946.66	15.10	21.90	-6.80	931.56	924.76
GW-642	BG		–	1014.90	1014.70	17.79	22.78	-5.19	997.11	991.92
GW-644	OLF		–	959.75	959.75	7.44	11.37	-3.93	952.31	948.38
GW-648	RS	M		1029.20	1029.20	61.47	70.73	-9.26	967.73	958.47
GW-651	BG	M		903.12	903.12	4.58	10.67	-6.09	898.54	892.45
GW-652	BG	M		900.83	900.83	9.50	12.93	-3.43	891.33	887.90
GW-653	BG		–	931.80	931.60	19.18	24.77	-5.79	912.62	906.83
GW-654	BG		–	940.79	940.79	6.78	9.20	-2.42	934.01	931.59
GW-715	EXP-W	–		874.92	874.72	26.73	28.93	-2.40	848.19	845.79
GW-795	AGLLSF		–	925.98	925.98	3.33	10.36	-7.03	922.65	915.62

Table B.6 (continued)

Notes:

1 AGLLSF - Above Grade Low-Level Storage Facility
BG - Bear Creek Burial Grounds Waste Management Area
EXP-B - Exit Pathway (Maynardville Limestone) Picket B
EXP-W - Exit Pathway (Maynardville Limestone) Picket W
LD - Lysimeter Demonstration Site
OLF - Oil Landfarm Waste Management Area
RS - Rust Spoil Area
SPI - Spoil Area I
S3 - S-3 Site

2 Measuring point (MP) elevation in feet above mean sea level. The measuring point is either the top of the innermost well casing or the top of dedicated sampling equipment mounted on the casing.

3 NM - Not Measured

4 NA - Not Applicable

Table B.7. Depth-to-water measurements and groundwater elevations in the Chestnut Ridge Regime, April and September 2000

Groundwater Elevation (ft above mean sea level)							September 7 - 21, 2000	
							April 10 - May 1, 2000	
						Seasonal Fluctuation (+/- ft)		
Depth-to-Water (ft below measuring point)				September 7 - 21, 2000				
				April 10 - May 1, 2000				
Well Number	Location[1]	Measuring Point Elevation [2]						
		April	September					
1082	ORSF	837.28	837.28	24.90	25.77	-0.87	812.38	811.51
1084	ORSF	NM [3]	965.40	NM	63.11	NA [4]	NA	902.29
1090	UNCS	1104.48	1103.90	42.44	59.09	-17.23	1062.04	1044.81
GW-141	LIV	1186.23	1186.06	94.77	98.89	-4.29	1091.46	1087.17
GW-142	KHQ	971.15	970.35	133.39	139.13	-6.54	837.76	831.22
GW-143	KHQ	913.98	913.18	78.08	82.04	-4.76	835.90	831.14
GW-144	KHQ	913.54	913.34	78.03	82.16	-4.33	835.51	831.18
GW-145	KHQ	840.24	840.04	3.45	8.29	-5.04	836.79	831.75
GW-146	KHQ	838.16	838.16	3.28	4.84	-1.56	834.88	833.32
GW-147	KHQ	851.62	851.62	14.10	19.89	-5.79	837.52	831.73
GW-156	CRSDB	1049.30	1049.10	141.24	143.59	-2.55	908.06	905.51
GW-158	CRSDB	983.05	983.05	44.20	48.34	-4.14	938.85	934.71
GW-159	CRSDB	1051.40	1051.20	116.48	119.12	-2.84	934.92	932.08
GW-160	CRBAWP	1093.09	1093.09	126.51	149.45	-22.94	966.58	943.64
GW-161	CRBAWP	1093.54	1093.54	153.61	161.96	-8.35	939.93	931.58
GW-173	CRSP	1115.00	1115.00	124.67	157.23	-32.56	990.33	957.77
GW-174	CRSP	1116.50	1116.50	103.72	126.79	-23.07	1012.78	989.71
GW-175	CRSP	1084.00	1084.00	108.72	123.79	-15.07	975.28	960.21
GW-176	CRSP	1125.30	1125.30	116.08	116.37	-0.29	1009.22	1008.93
GW-177	CRSP	1158.00	1158.00	117.13	118.99	-1.86	1040.87	1039.01
GW-178	CRSP	1143.49	1143.49	90.41	95.78	-5.37	1053.08	1047.71
GW-179	CRSP	1128.00	1128.00	114.18	116.22	-2.04	1013.82	1011.78
GW-180	CRSP	1103.97	1103.97	94.05	125.42	-31.37	1009.92	978.55
GW-184	RQ	927.63	927.63	110.50	110.74	-0.24	817.13	816.89
GW-186	RQ	831.32	831.32	14.15	15.14	-0.99	817.17	816.18
GW-203	UNCS	1105.45	1105.26	80.85	82.15	-1.49	1024.60	1023.11
GW-205	UNCS	1104.14	1103.97	76.87	79.57	-2.87	1027.27	1024.40
GW-217	LIV	1177.06	1176.86	104.75	116.79	-12.24	1072.31	1060.07
GW-221	UNCS	1106.16	1106.00	83.20	83.47	-0.43	1022.96	1022.53
GW-231	KHQ	849.67	849.47	12.06	17.75	-5.89	837.61	831.72
GW-241	CRSDB	982.64	982.64	41.50	52.55	-11.05	941.14	930.09
GW-292	ECRWP	1073.00	1073.00	108.75	115.38	-6.63	964.25	957.62
GW-293	ECRWP	1063.90	1063.90	110.83	117.88	-7.05	953.07	946.02

Table B.7 (continued)

Groundwater Elevation (ft above mean sea level)		September 7 - 21, 2000						
		April 10 - May 1, 2000						
		Seasonal Fluctuation (+/- ft)						
Depth-to-Water (ft below measuring point)		September 7 - 21, 2000						
		April 10 - May 1, 2000						
Well Number	Location[1]	Measuring Point Elevation [2]						
		April	September					
GW-298	CRBAWP	1049.01	1049.01	100.77	110.59	-9.82	948.24	938.42
GW-299	CRBAWP	1053.86	1053.86	95.27	101.15	-5.88	958.59	952.71
GW-300	CRBAWP	1073.12	1073.12	108.03	117.01	-8.98	965.09	956.11
GW-301	CRBAWP	1086.55	1086.38	126.55	135.54	-9.16	960.00	950.84
GW-302	UNCS	1141.84	1141.67	96.80	105.98	-9.35	1045.04	1035.69
GW-303	CRSDB	1007.16	1007.16	80.88	88.94	-8.06	926.28	918.22
GW-304	CRSDB	NM	928.67	NM	1.18	NA	NA	927.49
GW-305	LIV	1183.75	1183.55	120.72	127.22	-6.70	1063.03	1056.33
GW-322	CRSP	1135.05	1134.25	145.76	162.08	-17.12	989.29	972.17
GW-339	UNCS	1124.83	1124.59	64.26	79.67	-15.65	1060.57	1044.92
GW-511	CRSP	1093.21	1093.21	104.14	112.39	-8.25	989.07	980.82
GW-512	FCAP	1001.54	972.83	20.41	0.29	-8.59	981.13	972.54
GW-514	FCAP	1001.22	1001.22	20.70	29.58	-8.88	980.52	971.64
GW-521	LIV	1182.88	1182.68	82.00	87.65	-5.85	1100.88	1095.03
GW-522	LIV	1175.49	1175.31	100.17	109.73	-9.74	1075.32	1065.58
GW-539	LII	1093.22	1093.00	104.45	111.39	-7.16	988.77	981.61
GW-540	CDLVI	1072.32	1072.12	79.35	86.44	-7.29	992.97	985.68
GW-541	CDLVI	1058.40	1058.40	64.22	65.03	-0.81	994.18	993.37
GW-542	CDLVI	1051.77	1051.60	69.80	71.44	-1.81	981.97	980.16
GW-543	CDLVI	1023.98	1023.80	63.60	65.59	-2.17	960.38	958.21
GW-544	CDLVI	1045.20	1044.99	61.23	64.64	-3.62	983.97	980.35
GW-546	CDLVI	1072.21	1072.21	80.38	86.43	-6.05	991.83	985.78
GW-557	LV	1081.36	1081.16	121.82	123.07	-1.45	959.54	958.09
GW-558	SSCR	981.42	981.42	47.81	51.74	-3.93	933.61	929.68
GW-559	SSCR	1102.79	1102.79	136.11	140.28	-4.17	966.68	962.51
GW-560	CDLVII	949.05	948.85	40.18	45.30	-5.32	908.87	903.55
GW-562	CDLVII	934.69	934.49	6.60	9.45	-3.05	928.09	925.04
GW-564	CDLVII	937.97	937.77	10.95	11.79	-1.04	927.02	925.98
GW-608	CRSP	1074.75	1073.95	119.93	139.05	-19.92	954.82	934.90
GW-609	CRSP	1112.31	1112.11	160.00	170.22	-10.42	952.31	941.89
GW-610	CRSP	1059.44	1059.44	79.58	91.35	-11.77	979.86	968.09
GW-611	CRSP	1048.38	1048.38	98.44	107.59	-9.15	949.94	940.79
GW-612	CRSP	1131.03	1131.03	117.91	127.38	-9.47	1013.12	1003.65

Table B.7 (continued)

Groundwater Elevation (ft above mean sea level)							September 7 - 21, 2000	April 10 - May 1, 2000
						Seasonal Fluctuation (+/- ft)		
Depth-to-Water (ft below measuring point)				September 7 - 21, 2000	April 10 - May 1, 2000			
Well Number	Location[1]	Measuring Point Elevation [2]						
		April	September					
GW-673	FCAP	882.01	882.01	9.11	10.28	-1.17	872.90	871.73
GW-674	FCAP	883.79	883.79	7.42	8.35	-0.93	876.37	875.44
GW-676	FCAP	846.50	846.50	3.31	7.35	-4.04	843.19	839.15
GW-677	FCAP	1030.40	1030.40	25.41	30.74	-5.33	1004.99	999.66
GW-678	FCAP	1000.70	1000.70	17.51	25.33	-7.82	983.19	975.37
GW-679	FCAP	1026.90	1026.90	49.42	56.51	-7.09	977.48	970.39
GW-680	FCAP	1001.50	1001.50	25.50	30.78	-5.28	976.00	970.72
GW-709	LII	906.78	906.60	27.69	29.92	-2.41	879.09	876.68
GW-731	CRSDB	1049.38	925.43	124.17	1.25	-1.03	925.21	924.18
GW-732	CRSDB	1064.29	1064.09	156.72	157.74	-1.22	907.57	906.35
GW-743	CRSP	1100.36	1100.36	121.40	135.65	-14.25	978.96	964.71
GW-757	LII	961.61	961.43	83.61	84.79	-1.36	878.00	876.64
GW-796	LV	1052.62	1052.42	71.41	83.59	-12.38	981.21	968.83
GW-797	LV	1060.00	1059.80	71.43	75.35	-4.12	988.57	984.45
GW-798	CDLVII	1006.00	1005.80	78.68	82.21	-3.73	927.32	923.59
GW-799	LV	981.29	981.09	13.44	19.20	-5.96	967.85	961.89
GW-801	LV	1097.16	1096.96	103.70	115.34	-11.84	993.46	981.62
GW-827	CDLVI	1051.58	1051.39	42.15	44.14	-2.18	1009.43	1007.25
GW-831	FCAP	1091.29	1091.09	127.59	130.29	-2.90	963.70	960.80

Notes:

1
- CDLVI - Construction/Demolition Landfill VI
- CDLVII - Construction/Demolition Landfill VII
- CRBAWP - Chestnut Ridge Borrow Area Waste Pile
- CRSDB - Chestnut Ridge Sediment Disposal Basin
- CRSP - Chestnut Ridge Security Pits
- ECRWP - East Chestnut Ridge Waste Pile
- FCAP - Filled Coal Ash Pond
- KHQ - Kerr Hollow Quarry
- LII - Industrial Landfill II
- LIV - Industrial Landfill IV
- LV - Industrial Landfill V
- ORSF - Oak Ridge Sludge Farm
- RQ - Rogers Quarry
- SSCR - South Side Chestnut Ridge
- UNCS - United Nuclear Corporation Site

Table B.7 (continued)

<u>Notes</u> (continued):

2 Measuring point elevation is in feet above mean sea level. The measuring point is either the top of the innermost well casing or the top of dedicated sampling equipment mounted on the casing.

3 NM - Not Measured

4 NA - Not Applicable

Table B.8. Depth-to-water measurements and groundwater elevations in the Upper East Fork Poplar Creek Hydrogeologic Regime, April and September 2000

Well Number	Location[1]	Hydrogeologic Unit: Aquifer	Hydrogeologic Unit: Aquitard	MP Elevation[2]: April	MP Elevation[2]: Sept.	Depth-to-Water (ft below measuring point): April 10 - 14, 2000	Depth-to-Water (ft below measuring point): September 7 - 21, 2000	Seasonal Fluctuation (+/- ft)	Groundwater Elevation (ft above mean sea level): April 10 - 14, 2000	Groundwater Elevation (ft above mean sea level): September 7 - 21, 2000
55-1A	Y12		–	986.67	986.67	10.60	11.02	-0.42	976.07	975.65
55-3A	Y12		–	972.46	972.46	11.05	11.98	-0.93	961.41	960.48
55-6A	Y12		–	989.04	989.04	8.21	10.72	-2.51	980.83	978.32
56-1A	Y12		–	969.25	969.25	8.15	7.73	0.42	961.10	961.52
56-2A	Y12		–	963.30	963.30	7.73	8.24	-0.51	955.57	955.06
56-8A	Y12	–		962.46	962.46	19.18	20.72	-1.54	943.28	941.74
60-1A	Y12	–		929.66	929.66	12.80	12.65	0.15	916.86	917.01
GW-105	S3		–	1017.60	1017.60	7.68	9.91	-2.23	1009.92	1007.69
GW-106	S3		–	1017.30	1016.70	4.68	5.74	-1.66	1012.62	1010.96
GW-107	S3		–	999.00	998.40	8.45	7.75	0.10	990.55	990.65
GW-108	S3		–	999.00	998.80	7.82	7.94	-0.32	991.18	990.86
GW-115	S3		–	1055.01	1054.41	7.28	14.69	-8.01	1047.73	1039.72
GW-148	NHP	–		907.56	907.36	8.22	8.86	-0.84	899.34	898.50
GW-150	NHP	–		915.56	915.56	14.06	14.04	0.02	901.50	901.52
GW-152	NHP	–		921.18	921.18	19.08	19.98	-0.90	902.10	901.20
GW-154	NHP	–		911.50	911.50	8.42	10.08	-1.66	903.08	901.42
GW-167	EXP	–		931.97	NM[3]	24.71	NM	NA[4]	907.26	NA
GW-169	EXP-UV	–		932.12	931.51	26.10	34.54	-9.05	906.02	896.97
GW-171	EXP-UV	–		920.72	920.10	3.18	12.32	-9.76	917.54	907.78
GW-191	B4		–	1011.27	1011.10	3.20	6.28	-3.25	1008.07	1004.82
GW-192	B4		–	1008.83	1008.60	5.45	7.26	-2.04	1003.38	1001.34
GW-193	T2331		–	934.17	934.00	8.69	9.95	-1.43	925.48	924.05
GW-195	B4		–	1002.90	1002.90	6.43	8.30	-1.87	996.47	994.60
GW-199	GRIDI1		–	961.08	961.08	16.48	17.69	-1.21	944.60	943.39
GW-202	RDS			968.02	968.02	9.95	10.98	-1.03	958.07	957.04
GW-204	T0134			958.77	958.57	8.95	9.18	-0.43	949.82	949.39
GW-218	UOV	–		936.01	935.81	12.41	14.59	-2.38	923.60	921.22
GW-219	UOV	–		935.84	935.64	9.52	13.77	-4.45	926.32	921.87
GW-253	S2	–		1004.24	1003.99	3.54	24.73	-21.44	1000.70	979.26
GW-255	S2	–		1027.13	1027.13	21.50	48.83	-27.33	1005.63	978.30
GW-261	SY		–	1049.99	1049.99	16.94	18.84	-1.90	1033.05	1031.15
GW-263	SY		–	1057.73	1057.73	24.18	30.31	-6.13	1033.55	1027.42

Table B.8 (continued)

Groundwater Elevation (ft above mean sea level)						September 7 - 21, 2000				
						April 10 - 14, 2000				
						Seasonal Fluctuation (+/- ft)				
Depth-to-Water (ft below measuring point)						September 7 - 21, 2000				
						April 10 - 14, 2000				
Well Number	Location[1]	Hydrogeologic Unit		MP Elevation[2]						
		Aquifer	Aquitard	April	Sept.					
GW-334	WC		–	983.73	983.73	11.30	12.40	-1.10	972.43	971.33
GW-335	WC		–	981.88	981.88	9.63	9.96	-0.33	972.25	971.92
GW-349	S2	–		993.50	993.50	2.96	8.40	-5.44	990.54	985.10
GW-380	NHP	–		913.55	913.55	9.72	11.29	-1.57	903.83	902.26
GW-383	NHP		–	908.77	908.50	9.28	9.80	-0.79	899.49	898.70
GW-384	NHP		–	908.98	908.38	11.13	11.40	-0.87	897.85	896.98
GW-617	EXP-E	–		985.31	985.11	12.74	15.57	-3.03	972.57	969.54
GW-618	EXP-E	–		985.14	984.94	12.46	15.41	-3.15	972.68	969.53
GW-619	FTF	–		1015.50	1015.24	18.41	30.57	-12.42	997.09	984.67
GW-620	FTF	–		1015.54	1015.34	19.16	31.13	-12.17	996.38	984.21
GW-686	CPT	–		963.76	963.76	12.28	12.83	-0.55	951.48	950.93
GW-691	CPT	–		968.59	NM	11.75	NM	NA	956.84	NA
GW-699	B8110	–		971.14	971.14	16.03	16.07	-0.04	955.11	955.07
GW-735	EXP-J		–	924.46	924.28	20.17	24.28	-4.29	904.29	900.00
GW-746	GRIDK1		–	906.88	906.88	4.16	6.74	-2.58	902.72	900.14
GW-749	GRIDK2		–	921.19	921.19	5.38	8.80	-3.42	915.81	912.39
GW-752	GRIDJ3		–	912.78	912.78	3.59	5.24	-1.65	909.19	907.54
GW-754	GRIDJ2		–	928.78	928.59	8.32	12.98	-4.85	920.46	915.61
GW-756	GRIDJ1		–	NM	927.92	NM	6.74	NA	NA	921.18
GW-759	GRIDG1		–	994.01	994.01	17.04	19.59	-2.55	976.97	974.42
GW-761	GRIDG2		–	968.23	968.23	8.67	12.72	-4.05	959.56	955.51
GW-763	GRIDJ3		–	915.05	914.85	5.20	10.12	-5.12	909.85	904.73
GW-765	GRIDE1		–	1008.54	1008.54	19.20	20.27	-1.07	989.34	988.27
GW-767	GRIDI2		–	948.54	948.54	11.55	12.98	-1.43	936.99	935.56
GW-770	GRIDG3		–	944.71	944.55	10.03	15.06	-5.19	934.68	929.49
GW-772	GRIDC1		–	1012.66	1012.66	8.99	14.02	-5.03	1003.67	998.64
GW-774	GRIDH2		–	963.16	963.16	12.93	16.69	-3.76	950.23	946.47
GW-776	GRIDH3		–	931.25	NM	12.78	NM	NA	918.47	NA
GW-780	GRIDF2		–	963.40	963.40	13.12	13.33	-0.21	950.28	950.07
GW-783	GRIDE3		–	948.49	948.32	10.46	10.95	-0.66	938.03	937.37
GW-785	GRIDD1		–	1009.43	1009.43	7.91	14.32	-6.41	1001.52	995.11
GW-787	GRIDE2		–	987.85	987.85	12.65	18.30	-5.65	975.20	969.55
GW-792	GRIDD2		–	992.74	992.57	24.25	25.73	-1.65	968.49	966.84
GW-816	EXP-SR		–	898.41	898.21	12.68	14.07	-1.59	885.73	884.14
GW-817	GRIDK3		–	918.32	918.12	6.85	8.86	-2.21	911.47	909.26

Table B.8 (continued)

Notes:

1
- B4 - Beta-4 Security Pits
- B8110 - Building 8110
- CPT - Coal Pile Trench
- EXP - Exit Pathway (Maynardville Limestone) monitoring well
  - -E or -J: Maynardville Limestone Picket
  - -UV: Offsite in Union Valley
  - -SR: Along Scarboro Road in the gap through Pine Ridge
- FTF - Fire Training Facility
- GRID - Comprehensive Groundwater Monitoring Plan Grid Location
- NHP - New Hope Pond
- RDS - Ravine Disposal Site
- RG - Rust Garage Area
- S2 - S-2 Site
- S3 - S-3 Ponds Site
- SY - Y-12 Salvage Yard
- T0134 - Tank 0134-U
- T2331 - Tank 2331-U
- UOV - Uranium Oxide Vault
- WC - Waste Coolant Processing Area
- Y12 - Y-12 National Security Complex

2 Measuring point (MP) elevation is in feet above mean sea level. The measuring point is either the top of the innermost well casing or the top of dedicated sampling equipment.

3 NM - Not measured

4 NA - Not applicable

APPENDIX C

MONITORING WELL CONSTRUCTION DETAILS

EXPLANATION

LOCATION:

Bear Creek Regime

BG	-	Bear Creek Burial Grounds WMA
EMWMF	-	Environmental Management Waste Management Facility
EXP	-	Exit Pathway Monitoring Location: Maynardville Limestone Picket (-A, -B, -C, -W)
OLF	-	Oil Landfarm WMA
RS	-	Rust Spoil Area
S3	-	S-3 Site
SPI	-	Spoil Area I

Chestnut Ridge Regime

CDLVI	-	Construction/Demolition Landfill VI
CDLVII	-	Construction/Demolition Landfill VII
CRBAWP	-	Chestnut Ridge Borrow Area Waste Pile
CRSDB	-	Chestnut Ridge Sediment Disposal Basin
CRSP	-	Chestnut Ridge Security Pits
FCAP	-	Filled Coal Ash Pond
KHQ	-	Kerr Hollow Quarry
LII	-	Industrial Landfill II
LIV	-	Industrial Landfill IV
LV	-	Industrial Landfill V
UNCS	-	United Nuclear Corporation Site

East Fork Regime

B4	-	Beta-4 Security Pits
B9201-2	-	Building 9201-2
EXP	-	Exit Pathway Monitoring Location: Maynardville Limestone Picket (-E, -I, -J) Along Scarboro Road in the gap through Pine Ridge (-SR)
FTF	-	Fire Training Facility
GRID	-	Comprehensive Groundwater Monitoring Plan Grid Location
NHP	-	New Hope Pond
S2	-	S-2 Site
S3	-	S-3 Site
T0134	-	Tank 0134-U
T2331	-	Tank 2331-U, near Building 9201-1
UOV	-	Uranium Oxide Vault
WC	-	Waste Coolant Processing Area

EXPLANATION (continued)

GENERAL INFORMATION:

Coordinates	-	Y-12 grid system
Measuring Point (Pt.)	-	Top of well casing or Well Wizard™
Elevation	-	Feet above mean sea level
Depth	-	Feet below ground surface
Diameter	-	Outside dimensions, in inches (nominal)
.	-	Not Applicable or not available

CASING:

Diameter	-	Outside dimensions, in inches (nominal)
PVC/#40	-	Polyvinyl chloride, schedule 40
SS/#304	-	Stainless steel, schedule 304
Steel	-	Carbon steel
F25/J55	-	American Petroleum Institute Grade

MONITORED INTERVAL

Hydrostratigraphic Unit:		
AQF	-	Knox Aquifer (Maynardville Limestone and Knox Group)
AQT	-	ORR Aquitard (other formations of the Conasauga Group)
Aquifer Zone:		
BDR	-	Bedrock Interval (monitored interval top is in fresh rock)
WT	-	Water Table Interval (monitored interval top is above fresh rock)
Geologic Formation:		
OCk	-	Knox Group
CON	-	Conasauga Group, undifferentiated
Cm	-	Maryville Limestone
Cn	-	Nolichucky Shale
Cmn	-	Maynardville Limestone
Cpv	-	Pumpkin Valley Shale
Crg	-	Rogersville Shale
Cr	-	Rome Formation
Monitored Interval:		
Top	-	Depth to top of filter pack or open-hole
Bottom	-	Depth to bottom of filter pack or open-hole
Screen Material:		
PVC/sl	-	PVC/slotted
PVC/sw/.01	-	PVC, spiral wound, 0.01 inch slot size
SS/sw/.01	-	Stainless steel, spiral wound, 0.01 inch slot size
SS/pp/.01	-	Stainless steel prepack screen, spiral wound, 0.01 inch slot size

NOTE:

Data compiled from the *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* (LMES 1998).

APPENDIX C.1

BEAR CREEK HYDROGEOLOGIC REGIME

APPENDIX C.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Monitoring Well Construction Details

Well Number	GW-006	GW-008	GW-043	GW-044	GW-046	GW-053	GW-056
Location	EMWMF	OLF	EMWMF	EMWMF	BG	BG	EXP-A
GENERAL INFORMATION							
East Coordinate	47995.00	47597.00	47932.00	47928.00	43284.00	43091.00	41384.00
North Coordinate	29810.00	29781.00	30522.00	30526.00	29562.00	29061.00	28698.00
Measuring Pt. Elevation	962.75	965.39	1014.04	1014.20	921.17	903.40	891.50
Surface Elevation	959.90	962.11	1010.43	1010.40	918.13	900.50	886.80
Hydrostratigraphic Unit	AQT	AQT	AQT	AQT	AQT	AQF	AQF
Geologic Formation	Cn	Cn	Cm	Cm	Cn	Cmn	Cmn
Aquifer Zone	WT	WT	WT	BDR	WT	WT	BDR
Weathered Rock - Depth	7.0	0.6	1.0	1.0	7.7	4.0	.
Weathered Rock - Elevation	955.40	961.51	1008.80	1009.30	909.51	896.33	.
Fresh Rock - Depth	16.5	.	38.0	38.0	.	.	6.4
Fresh Rock - Elevation	945.90	.	971.80	972.30	.	.	880.25
Total Depth Drilled	46.8	25.5	40.0	70.0	20.5	39.7	55.2
SURFACE/CONDUCTOR CASING							
Casing Depth	.	.	.	.	.	4.0	32.0
Casing Diameter	.	.	.	.	.	6.50	4.50
Casing Material	unknown	unknown	none	unknown	none	PVC/#40	PVC/#40
WELL CASING							
Borehole Depth	46.8	25.5	40.0	70.0	20.5	39.7	55.2
Borehole Diameter	4.50	4.50	6.00	4.00	6.00	4.00	4.00
Well Casing Depth	37.3	15.7	22.8	48.0	8.1	26.6	53.2
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							
Top - Depth	15.3	13.0	10.0	42.5	5.0	11.4	49.1
Midpoint - Depth	31.1	19.3	25.0	56.3	12.7	22.1	52.2
Bottom - Depth	46.8	25.5	40.0	70.0	20.3	32.8	55.2
Top - Elevation	947.10	949.11	999.80	967.80	912.21	888.93	837.55
Midpoint - Elevation	931.35	942.86	984.80	954.05	904.56	878.23	834.50
Bottom - Elevation	915.60	936.61	969.80	940.30	896.91	867.53	831.45
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	5.0	10.0	10.0	10.0	5.0	2.0
Open-Hole Length	.	.	.	.	.	.	.
Open-Hole Diameter	.	.	.	.	.	.	.

(Continued)

Monitoring Well Construction Details

Well Number	GW-077	GW-078	GW-079	GW-080	GW-085	GW-115	GW-226
Location	BG	BG	BG	BG	OLF	S3	OLF
GENERAL INFORMATION							
East Coordinate	41234.00	41210.00	41619.00	41622.00	49058.00	52685.00	47473.00
North Coordinate	29731.00	29732.00	30632.00	30624.00	30002.00	31073.00	29156.00
Measuring Pt. Elevation	919.30	918.10	981.20	981.00	983.50	1055.01	943.60
Surface Elevation	914.70	914.50	977.20	977.10	979.80	1051.92	940.56
Hydrostratigraphic Unit	AQT	AQT	AQT	AQT	AQT	AQT	AQF
Geologic Formation	Cn	Cn	Crg	Crg	Cn	Cm	Cmn
Aquifer Zone	BDR	BDR	BDR	WT	BDR	WT	BDR
Weathered Rock - Depth	7.0	6.5	4.0	3.5	2.0	.	.
Weathered Rock - Elevation	907.42	907.88	973.14	973.53	977.82	.	.
Fresh Rock - Depth	13.0	8.5	26.5	23.5	40.0	.	28.0
Fresh Rock - Elevation	901.42	905.88	950.64	953.53	939.82	.	912.56
Total Depth Drilled	100.5	21.1	65.0	30.0	62.0	53.0	55.0
SURFACE/CONDUCTOR CASING							
Casing Depth	35.0	.	.	.	.	.	30.0
Casing Diameter	4.50	.	.	.	.	.	10.75
Casing Material	PVC/#40	none	none	none	unknown	none	Steel
WELL CASING							
Borehole Depth	100.5	21.1	65.0	30.0	62.0	53.0	45.0
Borehole Diameter	3.88	6.50	6.50	6.50	4.00	.	10.00
Well Casing Depth	90.3	16.1	59.9	24.7	53.8	42.0	45.0
Well Casing Diameter	2.37	2.37	2.37	2.37	2.37	2.37	4.50
Well Casing Material	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	Steel
MONITORED INTERVAL							
Top - Depth	87.4	11.7	49.9	20.8	48.4	37.6	45.0
Midpoint - Depth	93.9	16.4	57.4	25.3	53.6	45.3	50.0
Bottom - Depth	100.3	21.1	64.9	29.7	58.8	53.0	55.0
Top - Elevation	827.02	902.68	927.24	956.23	931.42	1014.30	895.56
Midpoint - Elevation	820.57	897.98	919.74	951.78	926.22	1006.60	890.56
Bottom - Elevation	814.12	893.28	912.24	947.33	921.02	998.90	885.56
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	5.0	5.0	5.0	10.0	.
Open-Hole Length	.	.	.	.	.	.	10.0
Open-Hole Diameter	.	.	.	.	.	.	4.00

(Continued)

Monitoring Well Construction Details

Well Number	GW-276	GW-287	GW-311	GW-315	GW-526	GW-537	GW-615
Location	S3	BG	RS	SPI	S3	OLF	S3
GENERAL INFORMATION							
East Coordinate	52557.00	42288.00	50126.00	52268.00	50708.00	49539.23	52223.78
North Coordinate	29926.00	29989.00	29267.00	29455.00	30033.00	30057.19	30009.32
Measuring Pt. Elevation	1001.57	927.07	999.65	1047.48	998.25	976.44	1017.55
Surface Elevation	998.70	924.60	996.43	1044.84	995.34	974.19	1014.17
Hydrostratigraphic Unit	AQT	AQT	AQF	AQF	AQT	AQT	AQT
Geologic Formation	Cn	Cm	Cmn	Cmn	Cn	Cn	Cn
Aquifer Zone	WT	WT	WT	BDR	BDR	WT	BDR
Weathered Rock - Depth	18.5	4.5	40.3	54.0	3.5	14.9	15.0
Weathered Rock - Elevation	980.30	920.10	956.13	990.80	991.84	959.29	999.20
Fresh Rock - Depth	.	11.0	.	71.0	23.6	.	40.0
Fresh Rock - Elevation	.	913.60	.	973.80	971.74	.	974.20
Total Depth Drilled	18.5	12.5	40.3	104.0	123.0	24.5	245.0
SURFACE/CONDUCTOR CASING							
Casing Depth	.	.	.	84.4	23.6	.	84.5
Casing Diameter	.	.	.	10.75	10.75	.	11.75
Casing Material	none	none	none	Steel/F25	unknown	none	Steel/J55
WELL CASING							
Borehole Depth	18.5	12.5	40.3	104.0	101.0	24.5	222.5
Borehole Diameter	8.00	9.00	10.00	10.00	9.50	8.75	10.63
Well Casing Depth	13.0	7.3	29.7	93.3	101.0	8.0	222.5
Well Casing Diameter	4.50	4.50	4.50	4.50	6.62	4.50	7.00
Well Casing Material	SS/#304	SS/#304	SS/#304	SS/#304	Steel/F25	SS/#304	Steel/F25
MONITORED INTERVAL							
Top - Depth	11.3	5.6	25.6	90.0	101.0	4.8	222.5
Midpoint - Depth	14.9	9.1	33.0	97.0	112.0	14.1	233.8
Bottom - Depth	18.5	12.5	40.3	104.0	123.0	23.3	245.0
Top - Elevation	987.50	919.00	970.83	954.80	894.34	969.39	791.70
Midpoint - Elevation	983.90	915.55	963.48	947.80	883.34	960.14	780.45
Bottom - Elevation	980.30	912.10	956.13	940.80	872.34	950.89	769.20
Screen Material	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	.	SS/sw/.01	.
Screen Length	5.3	5.0	10.6	10.0	.	15.0	.
Open-Hole Length	.	.	.	.	22.0	.	22.5
Open-Hole Diameter	.	.	.	.	6.10	.	6.25

(Continued)

Monitoring Well Construction Details

Well Number	GW-621	GW-627	GW-653	GW-683	GW-684	GW-685	GW-695
Location	EXP-B	BG	BG	EXP-A	EXP-A	EXP-A	EXP-B
GENERAL INFORMATION							
East Coordinate	45032.91	42774.10	42317.29	41552.33	41353.53	41447.78	44868.30
North Coordinate	29023.30	29505.05	29660.39	28281.78	28524.52	28667.40	28844.73
Measuring Pt. Elevation	925.44	943.65	931.80	972.26	898.86	892.31	939.57
Surface Elevation	923.07	940.39	928.85	969.45	895.53	889.28	937.22
Hydrostratigraphic Unit	AQF	AQT	AQT	AQF	AQF	AQF	AQF
Geologic Formation	Cmn	Cn	Cn	OCk	Cmn	Cmn	OCk
Aquifer Zone	WT	BDR	WT	BDR	BDR	BDR	BDR
Weathered Rock - Depth	22.0	3.0	3.5	22.0	.	5.0	6.0
Weathered Rock - Elevation	901.07	937.39	925.35	947.45	.	884.28	931.22
Fresh Rock - Depth	.	43.0	.	26.0	9.0	15.5	18.0
Fresh Rock - Elevation	.	897.39	.	943.45	886.53	873.78	919.22
Total Depth Drilled	43.0	270.0	39.0	197.5	129.6	138.3	62.6
SURFACE/CONDUCTOR CASING							
Casing Depth	24.0	47.5	.	82.0	87.0	.	22.5
Casing Diameter	10.75	11.75	.	11.75	11.75	.	11.75
Casing Material	Steel/J55	Steel/J55	none	Steel/J55	Steel/J55	none	Steel/J55
WELL CASING							
Borehole Depth	43.0	254.0	39.0	197.5	129.6	88.5	62.6
Borehole Diameter	7.88	10.63	9.50	10.63	10.50	10.63	9.88
Well Casing Depth	24.8	254.0	29.0	146.0	113.8	88.3	52.4
Well Casing Diameter	4.50	7.00	4.50	4.50	4.50	7.00	4.50
Well Casing Material	SS/#304	Steel/F25	SS/#304	SS/#304	SS/#304	Steel/F25	SS/#304
MONITORED INTERVAL							
Top - Depth	23.3	254.0	26.3	133.9	106.4	88.5	50.6
Midpoint - Depth	31.9	262.0	32.7	165.4	117.4	113.4	56.6
Bottom - Depth	40.5	270.0	39.0	196.8	128.4	138.3	62.6
Top - Elevation	899.77	686.39	902.55	835.55	789.13	800.78	886.62
Midpoint - Elevation	891.17	678.39	896.20	804.10	778.13	775.88	880.62
Bottom - Elevation	882.57	670.39	889.85	772.65	767.13	750.98	874.62
Screen Material	SS/sw/.01	.	SS/sw/.01	SS/pp/.01	SS/pp/.01	.	SS/sw/.01
Screen Length	15.7	.	10.0	50.8	14.6	.	10.0
Open-Hole Length	.	16.0	.	.	.	49.8	.
Open-Hole Diameter	.	6.25	.	.	.	6.63	.

(Continued)

Monitoring Well Construction Details

Well Number	GW-703	GW-704	GW-706	GW-712	GW-713	GW-714	GW-715
Location	EXP-B	EXP-B	EXP-B	EXP-W	EXP-W	EXP-W	EXP-W
GENERAL INFORMATION							
East Coordinate	44930.51	44934.98	44943.63	36506.87	36434.40	36435.09	36453.11
North Coordinate	28806.34	28844.67	28946.41	28232.52	28235.95	28421.56	28424.58
Measuring Pt. Elevation	955.49	945.53	929.47	877.89	881.43	875.88	874.92
Surface Elevation	951.80	941.99	925.78	873.61	877.83	872.30	872.17
Hydrostratigraphic Unit	AQF	AQF	AQF	AQF	AQF	AQF	AQF
Geologic Formation	Cmn	Cmn	Cmn	OCk	Cmn	Cmn	Cmn
Aquifer Zone	BDR	BDR	BDR	BDR	BDR	BDR	WT
Weathered Rock - Depth	7.0	16.0	17.0	12.0	26.8	27.0	34.0
Weathered Rock - Elevation	944.80	925.99	908.78	861.61	851.03	845.30	838.17
Fresh Rock - Depth	10.0	23.0	27.0	66.0	63.8	35.0	.
Fresh Rock - Elevation	941.80	918.99	898.78	807.61	814.03	837.30	.
Total Depth Drilled	182.0	256.0	182.5	457.5	315.2	145.0	44.6
SURFACE/CONDUCTOR CASING							
Casing Depth	.	21.0	40.3	44.8	50.0	40.5	.
Casing Diameter	.	11.75	11.75	11.75	11.75	11.75	.
Casing Material	none	Steel/J55	Steel/J55	Steel/J55	Steel/J55	Steel/J55	none
WELL CASING							
Borehole Depth	135.0	246.0	157.0	441.5	305.0	115.1	44.6
Borehole Diameter	10.63	10.63	10.60	10.60	10.60	10.60	10.60
Well Casing Depth	133.8	244.5	156.1	440.2	305.0	115.1	33.1
Well Casing Diameter	7.00	7.00	7.00	7.00	7.00	7.00	4.25
Well Casing Material	Steel/F25	Steel/F25	Steel/F25	Steel/F25	Steel/F25	Steel/F25	SS/#304
MONITORED INTERVAL							
Top - Depth	135.0	246.0	157.0	441.5	305.0	115.1	32.0
Midpoint - Depth	158.5	251.0	169.8	449.5	310.1	130.1	38.0
Bottom - Depth	182.0	256.0	182.5	457.5	315.2	145.0	44.0
Top - Elevation	816.80	695.99	768.78	432.11	572.83	757.20	840.17
Midpoint - Elevation	793.30	690.99	756.03	424.11	567.73	742.25	834.17
Bottom - Elevation	769.80	685.99	743.28	416.11	562.63	727.30	828.17
Screen Material	.	.	.	.	.	.	SS/sw/.01
Screen Length	.	.	.	.	.	.	10.0
Open-Hole Length	47.0	10.0	25.5	16.0	10.2	29.9	.
Open-Hole Diameter	6.25	6.50	6.25	6.25	6.25	6.25	.

(Continued)

Monitoring Well Construction Details

Well Number	GW-724	GW-725	GW-727	GW-729	GW-730	GW-738	GW-740
Location	EXP-C	EXP-C	BG	BG	BG	EXP-C	EXP-C
GENERAL INFORMATION							
East Coordinate	48995.17	48989.13	42540.07	43656.85	44607.57	49026.00	49055.00
North Coordinate	29198.24	29405.44	28734.12	28500.91	28920.84	29150.00	29027.00
Measuring Pt. Elevation	979.27	961.05	900.63	1004.48	926.09	983.08	1020.43
Surface Elevation	976.62	958.26	897.96	1002.24	922.64	980.36	1016.95
Hydrostratigraphic Unit	AQF	AQF	.	.	.	AQF	AQF
Geologic Formation	Cmn	Cmn	Cn	Cn	Cr	Cmn	Cmn
Aquifer Zone	BDR	BDR	BDR	BDR	BDR	BDR	BDR
Weathered Rock - Depth	33.5	14.0	.	.	.	12.0	38.1
Weathered Rock - Elevation	943.12	944.26	.	.	.	968.36	978.90
Fresh Rock - Depth	40.0	17.5	11.5	.	35.6	15.1	45.1
Fresh Rock - Elevation	936.62	940.76	886.46	.	887.04	965.26	971.90
Total Depth Drilled	301.6	142.5	1000.1	1361.0	1424.8	90.1	190.0
SURFACE/CONDUCTOR CASING							
Casing Depth	40.0	21.0	38.4	72.0	36.7	16.5	46.9
Casing Diameter	11.75	11.75	11.75	11.75	11.75	11.75	11.75
Casing Material	Steel/J55	Steel/J55	Steel/J55	Steel/J55	Steel/J55	Steel/J55	Steel/J55
WELL CASING							
Borehole Depth	289.6	132.5	1000.1	1361.0	1424.8	90.1	165.6
Borehole Diameter	10.60	10.60	3.50	3.50	3.64	10.60	10.60
Well Casing Depth	289.6	132.5	237.5	281.5	418.3	67.3	165.6
Well Casing Diameter	7.00	7.00	7.00	4.50	4.50	4.50	7.00
Well Casing Material	Steel/F25	Steel/F25	Steel/F25	0.00	Steel	SS/#304	Steel/F25
MONITORED INTERVAL							
Top - Depth	289.6	132.5	241.8	282.1	418.3	63.5	165.6
Midpoint - Depth	295.6	137.5	621.0	821.6	921.6	75.8	177.8
Bottom - Depth	301.6	142.5	1000.1	1361.0	1424.8	88.0	190.0
Top - Elevation	687.02	825.76	656.16	720.14	504.34	916.86	851.40
Midpoint - Elevation	681.02	820.76	277.01	180.69	1.09	904.61	839.20
Bottom - Elevation	675.02	815.76	-102.14	-358.76	-502.16	892.36	827.00
Screen Material	.	.	.	.	.	SS/sw/.01	.
Screen Length	.	.	.	.	.	20.2	.
Open-Hole Length	12.0	10.0	758.3	1078.9	1006.5	.	24.4
Open-Hole Diameter	6.25	6.25	3.50	3.50	3.64	.	6.25

(Continued)

APPENDIX C.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Monitoring Well Construction Details

Well Number	GW-790	GW-829	GW-835	GW-838	GW-840	GW-904	GW-905
Location	BG	OLF	S3	EMWMF	EMWMF	EMWMF	EMWMF
GENERAL INFORMATION							
East Coordinate	43038.45	50035.53	51358.36	46084.20	47090.25	45889.53	46121.23
North Coordinate	28670.02	29952.81	29822.02	30395.55	31173.36	29783.61	30426.78
Measuring Pt. Elevation	911.51	985.98	1000.91	967.73	1027.63	952.88	973.59
Surface Elevation	909.49	981.92	998.04	964.42	1024.24	949.86	970.11
Hydrostratigraphic Unit	AQT	AQT	.	AQT	AQT	AQT	AQT
Geologic Formation	Cn	Cn	.	.	.	.	.
Aquifer Zone	BDR	BDR	WT	WT	WT	BDR	BDR
Weathered Rock - Depth	17.0	1.3	.	.	.	.	.
Weathered Rock - Elevation	892.49	980.62	.	.	.	.	.
Fresh Rock - Depth	20.0	29.0	.	.	.	.	.
Fresh Rock - Elevation	889.49	952.92	.	.	.	.	.
Total Depth Drilled	1040.3	115.0	19.2	31.5	32.5	300.0	.
SURFACE/CONDUCTOR CASING							
Casing Depth	40.0	.	.	.	.	.	.
Casing Diameter	7.00	.	.	.	.	.	.
Casing Material	Steel/F25	none	.	.	.	.	.
WELL CASING							
Borehole Depth	1040.3	115.0	.	.	.	.	.
Borehole Diameter	3.64	9.87	.	.	.	.	.
Well Casing Depth	212.5	104.7	17.2	19.5	11.5	.	.
Well Casing Diameter	4.50	4.50	4.50	2.37	2.37	.	.
Well Casing Material	Steel	SS/#304	PVC/#40	PVC/#40	PVC/#40	.	.
MONITORED INTERVAL							
Top - Depth	212.5	102.9	.	.	.	.	.
Midpoint - Depth	626.4	108.8	.	24.5	22.0	50.0	50.0
Bottom - Depth	1040.3	114.6	.	.	.	.	.
Top - Elevation	696.99	879.02	.	946.92	1012.74	.	.
Midpoint - Elevation	283.09	873.17	.	939.92	1002.24	.	.
Bottom - Elevation	-130.81	867.32	.	932.92	991.74	.	.
Screen Material	.	SS/sw/.01	PVC/sl	PVC/sl	PVC/sl	.	.
Screen Length	.	9.9	.	.	.	.	.
Open-Hole Length	827.8	.	.	.	.	.	.
Open-Hole Diameter	3.64	.	.	.	.	.	.

APPENDIX C.2

CHESTNUT RIDGE HYDROGEOLOGIC REGIME

Monitoring Well Construction Details

Well Number	1090	GW-141	GW-142	GW-143	GW-144	GW-145	GW-156
Location	UNCS	LIV	KHQ	KHQ	KHQ	KHQ	CRSDB
GENERAL INFORMATION							
East Coordinate	53853.02	52463.00	64030.00	63522.00	63502.00	63266.00	64020.00
North Coordinate	28718.02	28755.00	24524.00	24257.00	24255.00	24441.00	27626.00
Measuring Pt. Elevation	1104.48	1186.23	971.15	913.98	913.54	840.24	1049.30
Surface Elevation	1101.58	1183.45	968.29	911.04	910.48	837.29	1046.94
Hydrostratigraphic Unit	AQF	AQF	AQF	AQF	AQF	AQF	AQF
Geologic Formation	OCk	OCk	OCk	OCk	OCk	OCk	OCk
Aquifer Zone	WT	BDR	BDR	BDR	BDR	WT	BDR
Weathered Rock - Depth	.	.	.	.	.	.	84.0
Weathered Rock - Elevation	.	.	.	.	.	.	962.90
Fresh Rock - Depth	.	57.0	.	18.0	.	.	93.0
Fresh Rock - Elevation	.	1126.50	.	893.04	.	.	953.90
Total Depth Drilled	96.7	156.0	295.0	253.0	195.0	110.0	157.0
SURFACE/CONDUCTOR CASING							
Casing Depth	.	65.0	20.0	20.0	40.0	12.0	94.0
Casing Diameter	.	10.75	12.50	10.63	12.50	12.50	10.75
Casing Material	none	Steel/F25	PVC/#40	PVC/#40	PVC/#40	PVC/#40	Steel/F25
WELL CASING							
Borehole Depth	96.7	156.0	250.0	205.0	195.0	110.0	157.0
Borehole Diameter	8.00	10.00	11.00	10.00	11.00	11.00	8.50
Well Casing Depth	0.5	144.5	248.5	205.0	150.0	88.5	147.0
Well Casing Diameter	6.50	4.50	6.62	6.62	4.50	4.50	4.50
Well Casing Material	PVC/#40	SS/#304	Steel/F25	Steel/F25	PVC/#40	PVC/#40	PVC/#40
MONITORED INTERVAL							
Top - Depth	0.0	141.0	248.5	205.0	148.0	86.0	146.0
Midpoint - Depth	0.0	148.5	271.8	229.0	171.5	98.0	151.5
Bottom - Depth	0.0	156.0	295.0	253.0	195.0	110.0	157.0
Top - Elevation	.	1042.50	719.79	706.04	762.48	751.29	900.90
Midpoint - Elevation	.	1035.00	696.54	682.04	738.98	739.29	895.40
Bottom - Elevation	.	1027.50	673.29	658.04	715.48	727.29	889.90
Screen Material	PVC/sl	SS/sw/.01	.	.	PVC/sw/.01	PVC/sw/.01	PVC/sw/.01
Screen Length	.	10.7	.	.	40.0	20.0	10.0
Open-Hole Length	.	.	46.5	48.0	.	.	.
Open-Hole Diameter	.	.	6.00	6.00	.	.	.

(Continued)

Monitoring Well Construction Details

Well Number	GW-159	GW-203	GW-205	GW-217	GW-221	GW-231	GW-301
Location	CRSDB	UNCS	UNCS	LIV	UNCS	KHQ	CRBAWP
GENERAL INFORMATION							
East Coordinate	63496.00	54190.48	54008.30	53020.00	54388.57	63410.00	61964.00
North Coordinate	27764.00	28355.82	28362.98	28758.00	28359.44	24725.00	27662.00
Measuring Pt. Elevation	1051.40	1105.45	1104.14	1177.06	1106.16	849.67	1086.55
Surface Elevation	1048.79	1102.34	1101.46	1174.29	1103.36	846.90	1083.94
Hydrostratigraphic Unit	AQF	AQF	AQF	AQF	AQF	AQF	AQF
Geologic Formation	OCk	OCk	OCk	OCk	OCk	OCk	OCk
Aquifer Zone	BDR	BDR	BDR	BDR	BDR	BDR	BDR
Weathered Rock - Depth	.	86.0	100.0	55.0	36.0	.	94.0
Weathered Rock - Elevation	.	1016.30	1001.50	1119.30	1067.40	.	989.90
Fresh Rock - Depth	100.0	93.0	146.0	75.0	90.0	10.5	136.0
Fresh Rock - Elevation	948.80	1009.30	955.50	1099.30	1013.40	836.40	947.90
Total Depth Drilled	157.0	156.0	164.0	180.0	158.0	35.0	163.5
SURFACE/CONDUCTOR CASING							
Casing Depth	123.0	94.0	154.0	81.7	92.0	11.0	105.0
Casing Diameter	10.75	10.75	10.75	10.75	6.63	10.63	10.75
Casing Material	Steel/F25	Steel/F25	Steel/F25	Steel/F25	Steel/F25	PVC/#40	Steel/F25
WELL CASING							
Borehole Depth	157.0	156.0	164.0	180.0	158.0	35.0	163.5
Borehole Diameter	8.50	8.50	10.00	10.00	6.00	11.00	10.00
Well Casing Depth	147.0	146.0	154.0	166.8	148.0	24.5	151.0
Well Casing Diameter	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Well Casing Material	PVC/#40	PVC/#40	PVC/#40	SS/#304	PVC/#40	PVC/#40	SS/#304
MONITORED INTERVAL							
Top - Depth	146.0	144.0	154.0	165.2	147.0	22.8	148.5
Midpoint - Depth	151.5	150.0	159.0	172.6	152.5	28.9	156.0
Bottom - Depth	157.0	156.0	164.0	180.0	158.0	35.0	163.5
Top - Elevation	902.80	958.30	947.50	1009.10	956.40	824.10	935.40
Midpoint - Elevation	897.30	952.30	942.50	1001.70	950.90	818.00	927.90
Bottom - Elevation	891.80	946.30	937.50	994.30	945.40	811.90	920.40
Screen Material	PVC/sw/.01	PVC/sw/.01	PVC/sw/.01	SS/sw/.01	PVC/sw/.01	PVC/sw/.01	SS/sw/.01
Screen Length	10.0	10.0	10.0	10.6	10.0	10.0	10.0
Open-Hole Length	.	.	.	.	.	.	.
Open-Hole Diameter	.	.	.	.	.	.	.

(Continued)

Monitoring Well Construction Details

Well Number	GW-302	GW-305	GW-339	GW-521	GW-522	GW-539	GW-540
Location	UNCS	LIV	UNCS	LIV	LIV	CDLVII	LII
GENERAL INFORMATION							
East Coordinate	54353.40	52962.00	54146.52	52040.00	52612.00	52278.26	52371.31
North Coordinate	28693.55	28548.00	28658.72	28541.00	28377.00	27192.53	27489.06
Measuring Pt. Elevation	1141.84	1183.75	1124.83	1182.88	1175.49	1093.22	1072.32
Surface Elevation	1139.59	1181.07	1122.18	1179.46	1172.04	1090.39	1069.38
Hydrostratigraphic Unit	AQF	AQF	AQF	AQF	AQF	AQF	AQF
Geologic Formation	OCk	OCk	OCk	OCk	OCk	OCk	OCk
Aquifer Zone	BDR	BDR	BDR	BDR	BDR	BDR	BDR
Weathered Rock - Depth	63.0	53.0	45.0	.	85.0	.	110.0
Weathered Rock - Elevation	1076.60	1128.10	1077.20	.	1087.00	.	959.40
Fresh Rock - Depth	102.0	84.0	91.0	54.0	130.0	74.0	150.0
Fresh Rock - Elevation	1037.60	1097.10	1031.20	1125.50	1042.00	1016.40	919.40
Total Depth Drilled	136.0	179.6	114.0	136.0	195.5	156.0	171.5
SURFACE/CONDUCTOR CASING							
Casing Depth	63.8	64.0	91.0	60.5	90.0	79.0	154.0
Casing Diameter	10.75	10.75	10.75	10.75	10.75	10.75	10.75
Casing Material	Steel	Steel/F25	Steel	unknown	unknown	Steel	Steel
WELL CASING							
Borehole Depth	136.0	179.6	114.0	136.0	195.5	156.0	171.5
Borehole Diameter	9.50	10.00	9.50	9.50	9.50	9.25	9.25
Well Casing Depth	124.5	168.9	103.7	124.9	184.6	139.8	161.2
Well Casing Diameter	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Well Casing Material	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304
MONITORED INTERVAL							
Top - Depth	121.5	165.3	101.0	123.2	183.0	136.4	158.5
Midpoint - Depth	128.2	172.5	107.5	129.6	189.2	146.2	165.0
Bottom - Depth	134.8	179.6	114.0	136.0	195.3	156.0	171.5
Top - Elevation	1018.10	1015.80	1021.20	1056.30	989.00	954.00	910.90
Midpoint - Elevation	1011.45	1008.65	1014.70	1049.90	982.85	944.20	904.40
Bottom - Elevation	1004.80	1001.50	1008.20	1043.50	976.70	934.40	897.90
Screen Material	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sl/.01	SS/sl/.01
Screen Length	10.3	10.7	10.3	10.3	10.4	15.9	10.3
Open-Hole Length	.	.	.	.	.	.	.
Open-Hole Diameter	.	.	.	.	.	.	.

(Continued)

Monitoring Well Construction Details

Well Number	GW-542	GW-543	GW-544	GW-557	GW-560	GW-562	GW-564
Location	CDLVI	CDLVI	CDLVI	LV	CDLVII	CDLVII	CDLVII
GENERAL INFORMATION							
East Coordinate	51641.74	51458.48	51819.56	59519.59	60743.42	61640.17	59865.28
North Coordinate	27466.22	27072.06	26963.22	26450.11	25692.28	26276.29	25872.94
Measuring Pt. Elevation	1051.77	1023.98	1045.20	1081.36	949.05	934.69	937.97
Surface Elevation	1049.03	1021.19	1042.53	1078.63	945.76	931.86	935.12
Hydrostratigraphic Unit	AQF	AQF	AQF	AQF	AQF	AQF	AQF
Geologic Formation	OCk	OCk	OCk	OCk	OCk	OCk	OCk
Aquifer Zone	WT	BDR	BDR	WT	WT	WT	WT
Weathered Rock - Depth	.	16.0	47.0	.	.	.	.
Weathered Rock - Elevation	.	1005.20	995.50	.	.	.	.
Fresh Rock - Depth	.	37.0	52.5	.	.	52.0	72.0
Fresh Rock - Elevation	.	984.20	990.00	.	.	879.86	863.12
Total Depth Drilled	77.5	94.0	110.0	139.0	117.0	133.0	88.0
SURFACE/CONDUCTOR CASING							
Casing Depth	.	29.3	54.5	85.0	.	.	.
Casing Diameter	.	10.75	10.75	10.75	.	.	.
Casing Material	none	Steel	Steel	Steel	none	none	none
WELL CASING							
Borehole Depth	76.5	93.6	109.3	138.0	117.0	60.0	81.0
Borehole Diameter	9.25	9.25	9.25	9.50	9.50	9.50	9.50
Well Casing Depth	60.8	78.0	93.4	115.8	49.0	38.0	55.3
Well Casing Diameter	4.50	4.50	4.50	4.00	4.00	4.00	4.00
Well Casing Material	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304
MONITORED INTERVAL							
Top - Depth	59.0	76.2	91.0	112.9	45.2	36.0	52.0
Midpoint - Depth	67.8	84.9	100.2	125.5	57.1	48.0	66.5
Bottom - Depth	76.5	93.6	109.3	138.0	69.0	60.0	81.0
Top - Elevation	990.00	945.00	951.50	965.70	890.97	895.86	883.12
Midpoint - Elevation	981.25	936.30	942.35	953.15	879.07	883.86	868.62
Bottom - Elevation	972.50	927.60	933.20	940.60	867.17	871.86	854.12
Screen Material	SS/sl/.01	SS/sl/.01	SS/sl/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01
Screen Length	15.7	15.6	15.9	20.0	20.0	20.0	20.0
Open-Hole Length	.	.	.	.	.	.	.
Open-Hole Diameter	.	.	.	.	.	.	.

(Continued)

Monitoring Well Construction Details

Well Number	GW-609	GW-709	GW-731	GW-732	GW-757	GW-796	GW-797
Location	CRSP	LII	CRSDB	CRSDB	LII	LV	LV
GENERAL INFORMATION							
East Coordinate	60039.73	52371.88	63863.14	64267.74	53302.52	58206.40	58550.40
North Coordinate	28109.43	25344.08	27463.65	27716.72	25409.50	27923.90	27446.60
Measuring Pt. Elevation	1112.31	906.78	1049.38	1064.29	961.61	1052.62	1060.00
Surface Elevation	1109.70	903.84	1045.75	1060.65	958.65	1048.80	1056.10
Hydrostratigraphic Unit	AQF	AQF	AQF	AQF	AQF	AQF	AQF
Geologic Formation	OCk	OCk	OCk	OCk	OCk	OCk	OCk
Aquifer Zone	BDR	BDR	BDR	BDR	BDR	BDR	BDR
Weathered Rock - Depth	.	39.0	95.4	85.0	29.5	102.0	67.1
Weathered Rock - Elevation	.	864.84	950.40	975.70	929.15	946.80	989.00
Fresh Rock - Depth	107.0	43.0	129.4	96.0	48.0	103.0	89.0
Fresh Rock - Elevation	1002.70	860.84	916.40	964.70	910.65	945.80	967.10
Total Depth Drilled	269.0	80.6	180.4	190.6	166.5	139.7	134.1
SURFACE/CONDUCTOR CASING							
Casing Depth	107.0	50.0	122.0	100.7	46.8	107.6	95.0
Casing Diameter	10.75	11.75	11.75	11.75	10.75	10.75	10.75
Casing Material	Steel/J55	Steel/J55	Steel/J55	Steel/J55	Steel/J55	Steel/J55	Steel/J55
WELL CASING							
Borehole Depth	269.0	80.6	175.4	189.5	166.5	139.7	134.1
Borehole Diameter	9.50	10.60	10.60	10.60	9.62	9.50	9.50
Well Casing Depth	258.7	70.4	165.2	179.3	135.5	126.5	123.5
Well Casing Diameter	4.50	4.25	4.50	4.50	4.50	4.50	4.50
Well Casing Material	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304
MONITORED INTERVAL							
Top - Depth	256.4	68.7	164.0	178.3	134.0	122.9	118.0
Midpoint - Depth	262.7	74.7	171.4	184.2	150.4	129.7	126.1
Bottom - Depth	269.0	80.6	178.7	190.0	166.7	136.5	134.1
Top - Elevation	853.30	835.14	881.80	882.40	824.65	925.90	938.10
Midpoint - Elevation	847.00	829.19	874.45	876.55	808.30	919.10	930.05
Bottom - Elevation	840.70	823.24	867.10	870.70	791.95	912.30	922.00
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	10.0	30.0	10.0	10.0
Open-Hole Length	.	.	.	.	.	.	.
Open-Hole Diameter	.	.	.	.	.	.	.

(Continued)

Monitoring Well Construction Details

Well Number	GW-798	GW-799	GW-801	GW-827	GW-831
Location	CDLVII	LV	LV	CDLVI	FCAP
GENERAL INFORMATION					
East Coordinate	60309.95	59961.20	58779.90	51826.32	56593.48
North Coordinate	27264.85	26745.50	26807.80	27721.42	26653.53
Measuring Pt. Elevation	1006.00	981.29	1097.16	1051.58	1091.29
Surface Elevation	1002.42	978.10	1093.82	1048.13	1088.04
Hydrostratigraphic Unit	AQF	AQF	AQF	AQF	AQF
Geologic Formation	OCk	OCk	OCk	OCk	OCk
Aquifer Zone	BDR	BDR	BDR	BDR	BDR
Weathered Rock - Depth	94.4	60.8	112.5	.	134.8
Weathered Rock - Elevation	908.02	917.30	981.32	.	953.24
Fresh Rock - Depth	95.8	62.8	113.4	40.5	140.8
Fresh Rock - Elevation	906.62	915.30	980.42	1007.63	947.24
Total Depth Drilled	135.5	92.0	188.9	135.0	200.0
SURFACE/CONDUCTOR CASING					
Casing Depth	99.7	65.0	115.4	43.4	138.3
Casing Diameter	10.75	10.75	10.75	10.75	10.75

APPENDIX C.3

UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME

APPENDIX C.3: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Monitoring Well Construction Details

Well Number	55-2C	56-2C	GW-108	GW-109	GW-151	GW-153	GW-154	GW-169
Location	Y12	Y12	S3	S3	NHP	NHP	NHP	EXP-UV
GENERAL INFORMATION								
East Coordinate	55203.00	56231.00	53207.00	53207.00	64232.00	63728.00	63346.00	66855.00
North Coordinate	30085.00	29885.00	30069.00	30055.00	28958.00	28613.00	28987.00	28545.00
Measuring Pt. Elevation	977.06	964.94	999.00	998.20	916.17	921.64	911.70	932.12
Surface Elevation	976.07	962.44	995.80	995.30	913.06	918.53	908.60	929.95
Hydrostratigraphic Unit	AQT	AQT	AQT	AQT	AQF	AQF	AQF	AQF
Geologic Formation	Cn	Cn	Cn	Cn	Cmn	Cmn	Cmn	Cmn
Aquifer Zone	BDR	BDR	WT	BDR	BDR	BDR	WT	WT
Weathered Rock - Depth	14.5	11.5	4.0	5.0	.	.	11.2	.
Weathered Rock - Elevation	961.60	950.90	991.61	989.54	.	.	897.40	.
Fresh Rock - Depth	47.2	17.0	.	16.0	12.0	14.0	.	.
Fresh Rock - Elevation	928.90	945.40	.	978.54	901.06	904.53	.	.
Total Depth Drilled	75.9	77.3	58.6	147.6	96.5	60.0	11.2	42.0
SURFACE/CONDUCTOR CASING								
Casing Depth	15.5	11.5	20.7	20.0	12.0	14.0	.	.
Casing Diameter	4.50	4.50	10.63	10.63	12.50	12.50	.	.
Casing Material	Steel	Steel	PVC/#40	PVC/#40	PVC/#40	PVC/#40	none	none
WELL CASING								
Borehole Depth	75.9	77.3	58.6	147.6	96.5	60.0	11.2	42.0
Borehole Diameter	6.00	6.00	9.00	9.00	11.00	11.00	8.00	8.00
Well Casing Depth	70.9	72.3	46.7	102.9	86.0	49.5	5.7	29.7
Well Casing Diameter	4.50	4.50	4.50	4.50	4.50	4.50	4.50	2.37
Well Casing Material	PVC/#40	PVC/#40	PVC/#40	PVC/#40	PVC/#40	PVC/#40	PVC/#40	PVC/#40
MONITORED INTERVAL								
Top - Depth	69.0	71.0	41.0	96.6	85.0	45.0	4.7	28.7
Midpoint - Depth	72.5	74.2	49.8	112.6	90.8	52.5	8.0	31.7
Bottom - Depth	75.9	77.3	58.6	128.5	96.5	60.0	11.2	34.7
Top - Elevation	907.10	891.40	954.61	897.94	828.06	873.53	903.90	901.25
Midpoint - Elevation	903.65	888.25	945.81	881.99	822.31	866.03	900.65	898.25
Bottom - Elevation	900.20	885.10	937.01	866.04	816.56	858.53	897.40	895.25
Screen Material	SS/sw/.01	SS/sw/.01	PVC/sl/.01	PVC/sl/.01	PVC/sw/.01	PVC/sw/.01	PVC/sw/.01	PVC/sl
Screen Length	5.0	5.0	10.1	19.0	10.0	10.0	5.0	5.0
Open-Hole Length	.	.	.	.	.	.	.	.
Open-Hole Diameter	.	.	.	.	.	.	.	.

(Continued)

Monitoring Well Construction Details

Well Number	GW-170	GW-171	GW-172	GW-192	GW-193	GW-204	GW-207	GW-208
Location	EXP-UV	EXP-UV	EXP-UV	B4	T2331	T0134	EXP-SR	EXP-SR
GENERAL INFORMATION								
East Coordinate	66843.00	69654.00	69578.94	54277.00	59536.17	57410.93	64023.00	64007.00
North Coordinate	28545.00	28403.00	28358.45	30772.00	29343.93	29955.91	31596.00	31612.00
Measuring Pt. Elevation	932.63	920.72	926.57	1008.83	934.17	958.77	898.80	897.72
Surface Elevation	930.70	918.55	922.85	1006.04	931.11	955.47	894.61	894.38
Hydrostratigraphic Unit	AQF	AQF	AQF	AQT	AQF	AQT	AQT	AQT
Geologic Formation	Cmn	Cmn	Cmn	Cm	CON	CON	Cr	Cr
Aquifer Zone	BDR	WT	BDR	WT	WT	WT	BDR	BDR
Weathered Rock - Depth	.	.	15.0	17.5	2.5	10.0	.	.
Weathered Rock - Elevation	.	.	907.85	988.50	928.61	945.47	.	.
Fresh Rock - Depth	30.0	.	19.0	.	.	.	.	12.0
Fresh Rock - Elevation	900.70	.	903.85	.	.	.	.	882.38
Total Depth Drilled	156.9	31.2	133.8	17.5	18.5	17.5	109.6	412.8
SURFACE/CONDUCTOR CASING								
Casing Depth	30.0	.	35.0	.	.	.	17.0	24.0
Casing Diameter	8.63	.	8.63	.	.	.	8.63	8.63
Casing Material	PVC/#40	none	Steel/F25	none	none	none	PVC/#40	PVC/#40
WELL CASING								
Borehole Depth	104.0	31.2	105.0	17.5	18.5	17.5	100.0	404.0
Borehole Diameter	6.62	8.00	6.62	6.00	8.00	6.00	7.87	6.62
Well Casing Depth	104.0	26.8	105.0	7.5	8.2	7.3	100.0	404.0
Well Casing Diameter	4.38	2.37	4.38	4.50	4.50	4.50	4.38	4.38
Well Casing Material	Steel	PVC/#40	Steel	PVC/#40	SS/#304	SS/#304	PVC/#40	Steel
MONITORED INTERVAL								
Top - Depth	104.0	26.0	105.0	6.5	5.5	6.5	100.0	404.0
Midpoint - Depth	130.5	28.6	119.4	12.0	12.0	11.9	104.8	408.4
Bottom - Depth	156.9	31.2	133.8	17.5	18.4	17.3	109.6	412.8
Top - Elevation	826.70	892.55	817.85	999.50	925.61	948.97	794.61	490.38
Midpoint - Elevation	800.25	889.95	803.45	994.00	919.16	943.57	789.81	485.98
Bottom - Elevation	773.80	887.35	789.05	988.50	912.71	938.17	785.01	481.58
Screen Material	.	PVC/sl	.	PVC/sw/.01	SS/sw/.01	SS/sw/.01	.	.
Screen Length	.	4.4	.	10.0	10.3	10.0	.	.
Open-Hole Length	52.9	.	28.8	.	.	.	9.6	8.8
Open-Hole Diameter	3.88	.	3.63	.	.	.	3.88	3.63

(Continued)

Monitoring Well Construction Details

Well Number	GW-218	GW-219	GW-220	GW-222	GW-223	GW-230	GW-232	GW-240
Location	UOV	UOV	NHP	NHP	NHP	EXP-UV	EXP-UV	NHP
GENERAL INFORMATION								
East Coordinate	58878.00	58929.00	64225.00	63324.00	63311.00	69616.86	66863.00	63726.00
North Coordinate	29136.00	29163.00	28949.00	28954.00	28938.00	28388.20	28546.00	28604.00
Measuring Pt. Elevation	936.01	935.84	915.84	911.82	911.82	923.14	931.42	922.90
Surface Elevation	932.77	931.27	912.74	908.82	908.97	919.57	929.52	919.50
Hydrostratigraphic Unit	AQF	AQF	AQF	AQF	AQF	AQF	AQF	AQF
Geologic Formation	Cmn	Cmn	Cmn	Cmn	Cmn	Cmn	Cmn	Cmn
Aquifer Zone	WT	WT	BDR	BDR	BDR	BDR	BDR	BDR
Weathered Rock - Depth	6.0	.	.	.	.	19.0	.	.
Weathered Rock - Elevation	926.77	.	.	.	.	900.57	.	.
Fresh Rock - Depth	.	.	11.0	10.0	10.0	38.0	.	14.0
Fresh Rock - Elevation	.	.	901.74	898.82	898.97	881.57	.	905.50
Total Depth Drilled	27.5	11.3	45.2	25.0	90.5	406.4	411.7	29.5
SURFACE/CONDUCTOR CASING								
Casing Depth	.	.	13.0	11.0	11.0	31.0	33.0	14.0
Casing Diameter	.	.	12.50	12.50	12.50	8.63	8.63	12.50
Casing Material	none	none	PVC/#40	PVC/#40	PVC/#40	Steel	PVC/#40	PVC/#40
WELL CASING								
Borehole Depth	27.5	11.3	45.2	25.0	90.5	341.0	401.0	29.5
Borehole Diameter	8.00	10.00	11.00	11.00	11.00	5.50	6.62	11.00
Well Casing Depth	17.1	5.7	34.7	19.5	80.0	341.0	401.0	24.0
Well Casing Diameter	4.50	4.50	4.50	4.50	4.50	4.38	4.38	4.50
Well Casing Material	SS/#304	SS/#304	PVC/#40	PVC/#40	PVC/#40	Steel	Steel	PVC/#40
MONITORED INTERVAL								
Top - Depth	14.4	4.3	31.0	18.0	79.0	341.0	401.0	21.0
Midpoint - Depth	21.0	7.8	38.1	21.5	84.8	373.7	406.4	25.3
Bottom - Depth	27.5	11.3	45.2	25.0	90.5	406.4	411.7	29.5
Top - Elevation	918.37	926.97	881.74	890.82	829.97	578.57	528.52	898.50
Midpoint - Elevation	911.82	923.47	874.64	887.32	824.22	545.87	523.17	894.25
Bottom - Elevation	905.27	919.97	867.54	883.82	818.47	513.17	517.82	890.00
Screen Material	SS/sw/.01	SS/sw/.01	PVC/sw/.01	PVC/sw/.01	PVC/sw/.01	.	.	PVC/sw/.01
Screen Length	10.0	5.6	10.0	5.0	10.0	.	.	5.0
Open-Hole Length	.	.	.	.	.	65.4	10.7	.
Open-Hole Diameter	.	.	.	.	.	3.63	3.88	.

(Continued)

Monitoring Well Construction Details

Well Number	GW-251	GW-253	GW-274	GW-275	GW-337	GW-380	GW-381	GW-382
Location	S2	S2	SY	SY	WC	NHP	NHP	NHP
GENERAL INFORMATION								
East Coordinate	53843.00	54057.00	53673.00	53688.00	54519.00	62938.00	62947.00	62956.00
North Coordinate	29467.00	29404.00	30152.00	30151.00	30057.00	28714.00	28715.00	28716.00
Measuring Pt. Elevation	1003.80	1004.24	995.63	995.36	987.57	913.75	913.36	913.17
Surface Elevation	1001.60	1001.60	992.94	993.08	984.12	913.66	913.44	913.16
Hydrostratigraphic Unit	AQF	AQF	AQT	AQT	AQT	AQF	AQF	AQF
Geologic Formation	Cmn	Cmn	Cn	Cn	Cn	Cmn	Cmn	Cmn
Aquifer Zone	BDR	WT	WT	BDR	WT	WT	BDR	BDR
Weathered Rock - Depth	.	.	3.0	5.0	.	15.5	13.5	12.7
Weathered Rock - Elevation	.	.	989.94	988.08	.	898.16	899.90	900.46
Fresh Rock - Depth	32.5	.	35.0	35.0	.	.	26.0	17.0
Fresh Rock - Elevation	969.10	.	957.94	958.08	.	.	887.40	896.16
Total Depth Drilled	51.0	50.0	35.0	65.5	22.1	15.5	60.4	173.0
SURFACE/CONDUCTOR CASING								
Casing Depth	.	.	.	38.0	.	.	13.5	12.7
Casing Diameter	.	.	.	10.63	.	.	13.00	10.75
Casing Material	none	none	none	PVC/#40	none	none	unknown	unknown
WELL CASING								
Borehole Depth	51.0	50.0	35.0	65.5	22.1	15.5	49.3	125.0
Borehole Diameter	8.25	8.25	8.00	10.00	10.00	10.00	9.50	9.50
Well Casing Depth	37.5	37.0	28.5	54.8	16.7	9.8	49.3	125.0
Well Casing Diameter	4.50	4.50	4.50	4.50	4.50	4.50	6.62	6.62
Well Casing Material	PVC/#40	PVC/#40	SS/#304	SS/#304	SS/#304	SS/#304	Steel/F25	Steel/F25
MONITORED INTERVAL								
Top - Depth	35.0	36.2	25.8	53.3	15.0	2.8	49.3	125.0
Midpoint - Depth	43.0	43.1	30.4	59.4	18.6	9.2	54.9	149.0
Bottom - Depth	51.0	50.0	35.0	65.5	22.1	15.5	60.4	173.0
Top - Elevation	966.60	965.40	967.14	939.78	969.12	910.86	864.10	788.16
Midpoint - Elevation	958.60	958.50	962.54	933.68	965.57	904.51	858.55	764.16
Bottom - Elevation	950.60	951.60	957.94	927.58	962.02	898.16	853.00	740.16
Screen Material	PVC/sw/.01	PVC/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	.	.
Screen Length	9.6	9.6	5.4	10.4	5.4	5.4	.	.
Open-Hole Length	.	.	.	.	.	.	11.1	48.0
Open-Hole Diameter	.	.	.	.	.	.	6.10	6.13

(Continued)

Monitoring Well Construction Details

Well Number	GW-383	GW-605	GW-606	GW-618	GW-620	GW-633	GW-656	GW-690
Location	NHP	EXP-I	EXP-I	EXP-E	FTF	RG	T0134	CPT
GENERAL INFORMATION								
East Coordinate	63522.00	62001.50	61951.42	54738.12	52894.57	53100.64	57439.12	55989.75
North Coordinate	29201.00	28706.83	28708.32	29798.46	29564.54	30144.44	29894.69	29787.18
Measuring Pt. Elevation	908.77	919.06	919.59	985.14	1015.54	996.30	954.79	967.36
Surface Elevation	906.00	916.97	916.98	982.64	1012.84	996.47	954.90	967.71
Hydrostratigraphic Unit	AQT	AQF	AQF	AQF	AQF	AQT	AQT	AQF
Geologic Formation	Cn	Cmn	Cmn	Cmn	Cmn	Cn	Cn	Cmn
Aquifer Zone	WT	BDR	BDR	WT	WT	WT	WT	BDR
Weathered Rock - Depth	11.5	.	.	27.0	41.0	8.5	12.0	24.0
Weathered Rock - Elevation	894.50	.	.	955.64	971.80	987.97	942.90	943.71
Fresh Rock - Depth	.	9.5	10.8	.	70.0	.	.	.
Fresh Rock - Elevation	.	907.47	906.18	.	942.80	.	.	.
Total Depth Drilled	24.1	40.5	175.0	37.0	75.0	15.0	21.5	53.0
SURFACE/CONDUCTOR CASING								
Casing Depth	5.0	9.5	10.8	27.5	42.5	.	.	26.0
Casing Diameter	10.75	11.75	16.00	10.75	10.75	.	.	10.00
Casing Material	unknown	Steel/J55	Steel/J55	Steel/J55	Steel/J55	none	none	PVC/#40
WELL CASING								
Borehole Depth	24.1	40.5	175.0	37.0	75.0	15.0	21.5	53.0
Borehole Diameter	8.75	10.60	9.63	9.50	9.50	10.50	9.50	8.50
Well Casing Depth	18.1	29.7	161.0	26.7	64.2	4.5	10.7	42.8
Well Casing Diameter	4.50	4.25	4.25	4.50	4.50	4.50	4.50	4.50
Well Casing Material	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	PVC	SS/#304	SS/#304
MONITORED INTERVAL								
Top - Depth	16.6	28.2	155.0	26.0	61.7	3.5	8.3	40.8
Midpoint - Depth	20.1	34.1	163.0	31.5	68.4	9.3	14.9	46.8
Bottom - Depth	23.6	39.9	171.0	37.0	75.0	15.0	21.5	52.8
Top - Elevation	889.40	888.77	761.98	956.64	951.10	992.97	946.60	926.91
Midpoint - Elevation	885.90	882.92	753.98	951.14	944.45	987.22	940.00	920.91
Bottom - Elevation	882.40	877.07	745.98	945.64	937.80	981.47	933.40	914.91
Screen Material	SS/sw/.01	SS/sw/.01	SS/pp/.01	SS/sw/.01	SS/sw/.01	PVC/sl/.01	SS/sw/.01	SS/sw/.01
Screen Length	5.0	10.0	10.0	10.3	10.8	10.0	10.0	10.0
Open-Hole Length	.	.	.	.	.	.	.	.
Open-Hole Diameter	.	.	.	.	.	.	.	.

(Continued)

Monitoring Well Construction Details

Well Number	GW-700	GW-722	GW-733	GW-735	GW-744	GW-747	GW-750	GW-762
Location	B8110	NHP	EXP-J	EXP-J	GRIDK1	GRIDK2	EXP-J	GRIDJ3
GENERAL INFORMATION								
East Coordinate	56827.67	64925.78	65057.00	64872.00	64324.00	64569.57	64835.48	63192.53
North Coordinate	29452.50	28532.41	28447.00	28867.00	30282.00	29729.81	28974.53	29114.91
Measuring Pt. Elevation	960.18	953.71	959.84	924.46	907.62	921.13	919.03	915.34
Surface Elevation	957.78	951.04	955.69	921.34	905.05	918.33	915.96	911.85
Hydrostratigraphic Unit	AQF	AQF	AQF	AQT	AQT	AQT	AQT	AQT
Geologic Formation	Cmn	Cmn	Cmn	Cn	Cpv	Cm	Cn	Cn
Aquifer Zone	WT	BDR	BDR	WT	BDR	BDR	BDR	BDR
Weathered Rock - Depth	31.0	54.0	42.5	19.0	9.6	10.5	18.5	12.0
Weathered Rock - Elevation	926.78	897.04	913.19	902.34	895.45	907.83	897.46	899.85
Fresh Rock - Depth	.	73.0	47.1	77.5	14.6	12.0	24.8	14.5
Fresh Rock - Elevation	.	878.04	908.59	843.84	890.45	906.33	891.16	897.35
Total Depth Drilled	31.0	644.3	256.5	83.0	69.5	79.9	72.8	60.2
SURFACE/CONDUCTOR CASING								
Casing Depth	.	56.2	51.8	25.5	27.6	23.8	21.7	11.5
Casing Diameter	.	10.75	11.75	11.75	10.75	10.75	11.75	16.75
Casing Material	none	Steel/J55	Steel/J55	Steel/J55	Steel/J55	Steel/J55	Steel/J55	Steel/J55
WELL CASING								
Borehole Depth	31.0	75.0	240.1	83.0	69.5	79.9	72.8	60.2
Borehole Diameter	12.00	6.00	10.60	10.60	9.87	9.87	10.60	9.87
Well Casing Depth	21.0	75.0	240.1	67.9	57.0	69.2	62.4	48.2
Well Casing Diameter	4.50	4.50	7.00	4.50	4.50	4.50	4.50	4.50
Well Casing Material	SS/#304	Steel/J55	Steel/F25	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304
MONITORED INTERVAL								
Top - Depth	19.0	75.0	240.1	67.5	55.0	67.4	61.2	46.4
Midpoint - Depth	25.0	359.7	248.3	73.4	62.3	73.5	67.0	52.6
Bottom - Depth	31.0	644.3	256.5	79.2	69.5	79.6	72.7	58.7
Top - Elevation	938.78	876.04	715.59	853.84	850.05	850.93	854.76	865.45
Midpoint - Elevation	932.78	591.39	707.39	847.99	842.80	844.83	849.01	859.30
Bottom - Elevation	926.78	306.74	699.19	842.14	835.55	838.73	843.26	853.15
Screen Material	SS/sw/.01	.	.	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01	SS/sw/.01
Screen Length	10.0	.	.	10.2	10.0	9.9	10.0	10.0
Open-Hole Length	.	569.3	16.4	.	.	.	.	.
Open-Hole Diameter	.	3.50	6.25	.	.	.	.	.

(Continued)

Monitoring Well Construction Details

Well Number	GW-763	GW-769	GW-770	GW-782	GW-783	GW-789	GW-791	GW-816
Location	GRIDJ3	GRIDG3	GRIDG3	GRIDE3	GRIDE3	GRIDF3	GRIDD2	EXP-SR
GENERAL INFORMATION								
East Coordinate	63219.76	60230.01	60255.00	58099.21	58112.53	59044.56	57423.24	64031.36
North Coordinate	29117.17	29510.42	29504.56	29718.84	29734.28	29644.68	30482.73	31581.50
Measuring Pt. Elevation	915.05	944.44	944.71	947.76	948.49	937.48	992.16	898.41
Surface Elevation	911.38	941.53	941.67	944.48	945.81	934.37	988.51	894.56
Hydrostratigraphic Unit	AQT	AQT	AQT	AQT	AQT	AQT	AQT	AQT
Geologic Formation	Cn	Cn	Cn	Cn	Cn	Cn	Cm	Cr
Aquifer Zone	WT	BDR	WT	BDR	WT	BDR	BDR	WT
Weathered Rock - Depth	17.0	14.2	12.0	1.0	1.0	.	14.7	.
Weathered Rock - Elevation	894.38	927.33	929.67	943.48	944.81	.	973.81	.
Fresh Rock - Depth	.	.	16.5	7.5	8.5	10.0	26.0	.
Fresh Rock - Elevation	.	.	925.17	936.98	937.31	924.37	962.51	.
Total Depth Drilled	17.0	61.4	20.0	36.0	16.3	23.8	70.6	16.1
SURFACE/CONDUCTOR CASING								
Casing Depth	.	14.2	.	.	.	.	31.5	.
Casing Diameter	.	16.75	.	.	.	.	10.75	.
Casing Material	none	Steel/J55	none	none	none	none	Steel/J55	none
WELL CASING								
Borehole Depth	17.0	61.4	20.0	36.0	16.3	23.8	70.6	15.8
Borehole Diameter	8.00	10.62	10.62	9.87	9.87	9.87	9.87	10.00
Well Casing Depth	5.2	49.4	8.5	25.0	4.2	12.2	59.0	4.2
Well Casing Diameter	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Well Casing Material	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304	SS/#304
MONITORED INTERVAL								
Top - Depth	4.0	48.2	7.5	23.8	3.6	10.7	57.5	2.9
Midpoint - Depth	10.0	54.3	13.3	29.9	10.0	17.3	64.1	9.4
Bottom - Depth	16.0	60.3	19.0	35.9	16.3	23.8	70.6	15.8
Top - Elevation	907.38	893.33	934.17	920.68	942.21	923.67	931.01	891.66
Midpoint - Elevation	901.38	887.28	928.42	914.63	935.86	917.12	924.46	885.21
Bottom - Elevation	895.38	881.23	922.67	908.58	929.51	910.57	917.91	878.76
Screen Material	SS/sw/.01	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	10.0	9.8	10.5	10.0	9.4
Open-Hole Length	.	.	.	.	.	.	.	.
Open-Hole Diameter	.	.	.	.	.	.	.	.

(Continued)

Monitoring Well Construction Details

Well Number	GW-820	GW-832	GW-845
Location	B9201-2	NHP	NHP
GENERAL INFORMATION			
East Coordinate	59772.96	64133.61	64391.98
North Coordinate	29174.65	29141.95	28600.91
Measuring Pt. Elevation	929.57	906.18	926.47
Surface Elevation	929.67	906.83	924.71
Hydrostratigraphic Unit	AQT	AQF	AQF
Geologic Formation	.	Cmn	Cmn
Aquifer Zone	BDR	WT	BDR
Weathered Rock - Depth	.	.	.
Weathered Rock - Elevation	.	.	.
Fresh Rock - Depth	.	.	19.8
Fresh Rock - Elevation	.	.	904.91
Total Depth Drilled	.	11.9	438.3
SURFACE/CONDUCTOR CASING			
Casing Depth	.	.	.
Casing Diameter	.	.	.
Casing Material	.	none	none
WELL CASING			
Borehole Depth	0.0	11.9	167.0
Borehole Diameter	.	12.00	12.25
Well Casing Depth	0.5	5.9	156.9
Well Casing Diameter	4.50	6.63	8.63
Well Casing Material	PVC/#40	PVC/#40	Steel
MONITORED INTERVAL			
Top - Depth	0.0	4.0	156.9
Midpoint - Depth	10.0	7.9	297.6
Bottom - Depth	0.0	11.8	438.3
Top - Elevation	.	902.83	767.81
Midpoint - Elevation	.	898.93	627.11
Bottom - Elevation	.	895.03	486.41
Screen Material	.	PVC/sl/.01	.
Screen Length	.	5.0	.
Open-Hole Length	.	.	281.4
Open-Hole Diameter	.	.	7.88

APPENDIX D

CY 2000 MONITORING DATA FOR THE BEAR CREEK HYDROGEOLOGIC REGIME

EXPLANATION

SAMPLING POINT:

BCK - Bear Creek Kilometer
GW - Monitoring Well
NT - Northern Tributary (Bear Creek)
SS - South Side (of Bear Creek, spring sampling station)

LOCATION:

BG - Bear Creek Burial Grounds WMA
EMWMF - Environmental Management Waste Management Facility
EXP - Exit Pathway Monitoring Location:
Maynardville Limestone Picket (-A, -B, -C, -W)
Spring or Surface Water Location (-SW)
OLF - Oil Landfarm WMA
RS - Rust Spoil Area
S3 - S-3 Site
SPI - Spoil Area I

MONITORING PROGRAM:

GWPP - Y-12 Groundwater Protection Program
WRRP - Water Resources Restoration Program

TYPE:

DUP - Field Duplicate Sample
DIS - Dissolved concentration (filtered sample)
TOT - Total concentration (unfiltered sample)
ACT - Activity
ERR - Counting Error (two standard deviations)
MDA - Minimum Detectable Activity

UNITS:

ft - feet (elevations are above mean sea level and depths are below grade)
ug/L - micrograms per liter
mg/L - milligrams per liter
mV - millivolts
umho/cm - micromhos per centimeter
NTU - Nephelometric Turbidity Units
pCi/L - picoCuries per liter
ppm - parts per million

EXPLANATION (continued)

NOTES:

Only the analytes that were detected above the program reporting limits in at least one sample are included in this appendix. Additionally, results that are below the reporting limits are replaced with missing values (e.g., " < ") to emphasize the detected results. The following sections describe the analytes, reporting limits, and data qualifiers for each sub-appendix. A comprehensive list of the GWPP analytes, analytical methods, and reporting limits is provided in Appendix B, Table B.5.

D.1 Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals:

Results for all of the field measurements, miscellaneous analytes, and major ions are included in this appendix. The reporting limits for the major ions are shown in the following summary.

Analyte	Reporting Limit (mg/L)		Analyte	Reporting Limit (mg/L)	
	GWPP	WRRP		GWPP	WRRP
Cations			**Anions**		
Calcium	0.2	0.25	Alkalinity - HCO3	1.0	1.0
Magnesium	0.2	0.05	Alkalinity - CO3	1.0	.
Potassium	2.0	0.25	Chloride	0.2	0.1
Sodium	0.2	0.25	Fluoride	0.1	0.05
			Nitrate (as Nitrogen)	0.028	0.1
			Sulfate	0.25	0.1

The major ion results for the following samples are qualitative because the ion charge balance error (relative percent difference [RPD]) exceeds 20% (see Section 2.6).

Sampling Point	Date Sampled	Ion Charge Balance (RPD)	Suspected Source of Error
GW-008	01/10/00	-26.3	High bicarbonate
GW-008	07/12/00	-23.3	High nitrate
GW-080 D	08/16/00	-33.2	High bicarbonate
GW-653	02/17/00	33.1	Low bicarbonate
GW-653	08/21/00	-38.4	High bicarbonate
GW-714	07/11/00	27.1	Low bicarbonate
GW-729-02	07/10/00	-48.2	High chloride
GW-730-21	08/17/00	-21.9	Unknown
GW-730-25	08/21/00	-33.4	Unknown
GW-730-35	08/22/00	24.7	Unknown
GW-790-02	06/08/00	-51.3	High chloride
GW-790-39	06/19/00	-32.8	Unknown

Note: D = field duplicate sample

EXPLANATION (continued)

Results for all trace metals are included in this appendix except for antimony, molybdenum, selenium, silver, thallium, and thorium. None of the results for these metals were detected above the reporting limits (shown below) for any of the CY 2000 groundwater or surface water samples collected in the Bear Creek Regime.

Analyte	Reporting Limit (mg/L)		Analyte	Reporting Limit (mg/L)	
	GWPP	WRRP		GWPP	WRRP
Trace Metals					
Aluminum	0.2	0.05	Lithium	0.01	0.01
Antimony (PMS)	0.0025	.	Manganese	0.005	0.005
Antimony	.	0.006	Mercury	0.0002	0.0002
Arsenic (PMS)	0.005	.	Molybdenum	0.05	.
Arsenic	.	0.005	Nickel	0.05	0.01
Barium	0.004	0.005	Selenium (PMS)	0.01	.
Beryllium	0.001	0.001	Selenium	.	0.005
Boron	0.1	0.01	Silver	0.02	0.005
Cadmium (PMS)	0.0005	.	Strontium	0.005	0.005
Cadmium	.	0.001	Thallium (PMS)	0.0005	.
Chromium	0.02	0.005	Thallium	.	0.002
Cobalt	0.02	0.005	Thorium	0.2	.
Copper	0.02	0.005	Uranium (PMS)	0.0005	.
Iron	0.05	0.01	Uranium (KPA)	.	0.004
Lead (PMS)	0.0005	.	Vanadium	0.02	0.01
Lead	.	0.003	Zinc	0.05	0.01

Metals analyses were performed using the inductively coupled plasma (ICP) spectroscopy method unless otherwise noted.

CVAA - Cold Vapor Atomic Absorption (EPA-7470)
KPA - Kinetic Phosphorescent Analysis (ASTM-D5174-M)
PMS - Plasma Mass Spectroscopy (EPA-200.8)

The samples for metals analysis by the ICP method from well GW-537 collected on March 1 and September 11 were diluted before analysis to obtain an optimum matrix, elevating the reporting limits by the associated dilution factor (2X). The detected results are valid, but some metals may be present at concentrations below the elevated reporting limits.

The following symbols are used in Appendix D.1:

. - Not analyzed

< - Analyzed but not detected at the project reporting level

DUP OUT - Duplicate sample results for mercury in the July 31 sample from well GW-724 differ by more than an order of magnitude and do not meet data quality objectives (see Section 2.6). The screened mercury results were <0.0002 mg/L for the regular sample and 0.0091 mg/L for the duplicate.

EXPLANATION (continued)

D.2 Volatile Organic Compounds:

Results for the compounds shown in bold typeface are included in this appendix. The other compounds were never detected at levels above the following reporting limits, in micrograms per liter.

Volatile Organic Compound	Reporting Limit		Volatile Organic Compound	Reporting Limit	
	GWPP	WRRP		GWPP	WRRP
Acetone	10	10	**1,1-Dichloroethene**	5	5
Acrolein	10	.	**cis-1,2-Dichloroethene**	5	5
Acrylonitrile	5	.	**trans-1,2-Dichloroethene**	5	5
Benzene	5	5	**1,2-Dichloropropane**	5	5
Bromochloromethane	10	.	cis-1,3-Dichloropropene	5	5
Bromodichloromethane	5	5	trans-1,3-Dichloropropene	5	5
Bromoform	5	5	**Dimethylbenzene**	5	5
Bromomethane	5	10	Ethanol	200	.
2-Butanone	5	10	**Ethylbenzene**	5	5
Carbon disulfide	5	5	Ethyl methacrylate	5	.
Carbon tetrachloride	5	5	2-Hexanone	5	10
Chlorobenzene	5	5	Iodomethane	5	.
Chloroethane	5	10	4-Methyl-2-pentanone	5	10
2-Chloroethyl vinyl ether	5	.	Methylene chloride	5	5
Chloroform	5	5	**Styrene**	5	5
Chloromethane	5	10	1,1,1,2-Tetrachloroethane	5	.
Dibromochloromethane	5	5	1,1,2,2-Tetrachloroethane	5	5
1,2-Dibromo-3-chloropropane	10	.	**Tetrachloroethene**	5	5
1,2-Dibromoethane	5	.	**Toluene**	5	5
Dibromomethane	5	.	**1,1,1-Trichloroethane**	5	5
1,2-Dichlorobenzene	5	.	**1,1,2-Trichloroethane**	5	5
1,4-Dichlorobenzene	5	.	**Trichloroethene**	5	5
1,4-Dichloro-2-butene	5	.	Trichlorofluoromethane	5	.
trans-1,4-Dichloro-2-butene	5	.	1,2,3-Trichloropropane	10	.
Dichlorodifluoromethane	5	.	Vinyl acetate	10	.
1,1-Dichloroethane	5	5	**Vinyl chloride**	5	2
1,2-Dichloroethane	5	5			

The following symbols and data qualifiers are used in Appendix D.2.

. - Not analyzed

< - Analyzed but not detected at the project reporting level (also false-positive results for data provided by the WRRP)

EXPLANATION (continued)

The following laboratory qualifiers are **NOT** presented with results in Appendix D.2:

D Six results were reported with a "D" qualifier, indicating that the analysis for a specific compound was performed at a secondary dilution factor to obtain an optimum matrix. This qualifier was reported with elevated results from wells GW-046 (1,1-dichloroethane, 1,1,1-trichloroethane, cis-1,2-dichloroethene, tetrachloroethene, and vinyl chloride) and GW-627 (tetrachloroethene). Additionally, the sample collected from surface water station NT-07 on January 25 was diluted (5X) before analysis which elevated the reporting limit for all compounds. The detected results for this sample are valid, but some compounds may be present at concentrations below the elevated reporting limits.

J A result less than the reporting limit is an estimated value and assigned a "J" qualifier by the laboratory. Based on the reporting limits shown above, results for all compounds except vinyl chloride that are less than 5 ug/L are estimated values. The following results are estimated values greater than or equal to 5 ug/L (or lower, if for vinyl chloride):

Sampling Location	Date Sampled	Compound	Reporting Limit (ug/L)	Result (ug/L)
GW-006	08/02/00	Trichloroethene	5	5
GW-046	01/11/00	1,1-Dichloroethane	250	250
GW-046	01/11/00	Dimethylbenzene	5	5
GW-046	07/19/00	Chloroethane	10	9
GW-053	02/21/00	Vinyl chloride	5	5
GW-315	09/05/00	Trichloroethene	5	5
GW-627	08/22/00	cis-1,2-Dichloroethene	5	5
GW-653	08/21/00	Tetrachloroethene	5	5
GW-653	02/17/00	Trichloroethene	5	5
GW-703	01/24/00	cis-1,2-Dichloroethene	5	5
GW-703	07/24/00	cis-1,2-Dichloroethene	5	5
GW-704	07/24/00	1,1-Dichloroethene	5	5
GW-729-22	07/12/00	Benzene	5	5
GW-729-44	07/18/00	Acetone	10	7
GW-835	11/14/00	Tetrachloroethene	5	5
NT-7	01/25/00	1,1-Dichloroethene	25	7
NT-7	01/25/00	Chloroform	25	8

EXPLANATION (continued)

D.3 Radiological Analytes:

The following summary shows the radiological analytes reported for at least one groundwater or surface water sample collected during CY 2000 in the Bear Creek Regime.

Analyte	No. of Results	No. Detected		Analyte	No. of Results	No. Detected	
		GWPP	WRRP			GWPP	WRRP
Gross Alpha	144	51	17	**Strontium-89/90**	44	0	6
Gross Beta	159	65	31	**Technetium-99**	60	2	15
Americium-241	20	0	3	Thorium-228	2	0	.
Bismuth-214	6	.	6	**Thorium-230**	2	1	.
Cesium-137	24	.	0	Thorium-232	2	0	.
Cobalt-60	24	.	0	**Thorium-234**	3	2	1
Iodine-129	2	0	.	Tritium	2	0	.
Lead-214	6	.	6	**Uranium-234**	90	2	67
Neptunium-237	20	2	16	**Uranium-235**	90	2	30
Plutonium-238	26	0	2	**Uranium-236**	88	.	24
Plutonium-239	26	0	0	**Uranium-238**	90	2	57
Radium-223/224/226	20	0	14				

All of the results for gross alpha and gross beta are presented in the first part of Appendix D.3, followed by the results for isotopes that were detected in at least one sample (shown in bold typeface above).

Results that are not detected or do not meet the data quality objectives are replaced with the following:

<MDA - Reported activity is less than the minimum detectable activity (MDA).
< CE - Reported activity is greater than or equal to the minimum detectable activity, but less than the associated counting error, summarized below.

Sampling Location	Date Sampled	Radioanalyte	MDA (pCi/L)	Activity ± Error (pCi/L)
BCK-11.97	08/20/00	Radium-223/224/226	0.17	0.19 ± 0.22
GW-044	04/13/00	Uranium-236	0.67	0.91 ± 1.01
GW-080	08/16/00	Uranium-236	0.19	0.21 ± 0.24
GW-080 D	08/16/00	Uranium-236	0.16	0.23 ± 0.24
GW-712	01/10/00	Uranium-234	0.24	0.26 ± 0.31
GW-713	01/06/00	Uranium-236	0.27	0.3 ± 0.35
GW-713	01/06/00	Uranium-238	0.25	0.27 ± 0.32
GW-715	01/05/00	Uranium-236	0.12	0.18 ± 0.19
GW-905	08/07/00	Uranium-236	0.15	0.17 ± 0.2

Note: D = field duplicate sample

EXPLANATION (continued)

Additional Analytes Not Presented in Appendix D tables:

Biological testing to assess microbial activity in groundwater was performed at the following wells for the GWPP during CY 2000.

Well Number	Date Sampled	Bacteria Results (colony forming units per milliliter)		
		Iron Related	Slime Forming	Sulfate Reducing
GW-079	02/22/00	100	500,000	100
GW-079	08/15/00	>100	500,000	<100
GW-080	02/21/00	<5,000	500,000	100
GW-080	08/14/00	<100,000	50,000	<100,000
GW-115	02/15/00	5,000	1,000	<100
GW-714	02/16/00	100	50,000	>1,000
GW-714	08/14/00	<5,000	50,000	<100
GW-715	02/16/00	100	50,000	<100
GW-715	08/14/00	<100,000	500,000	<100,000

The qualitative bacterial counts are estimates based on appearance of the sample after an eight- to nine-day growth period.

The WRRP requested field measurement of the following metal species at locations associated with remedial activities at the S-3 Site.

Well Number	Date Sampled	Manganese ++ (mg/L)	Iron ++ (mg/L)
GW-615	02/15/00	0.4	0.87
GW-615	06/08/00	188	0.15
GW-835	02/15/00	4.2	0
GW-835	06/16/00	2.6	0
GW-835	11/14/00	1.6	0.07

APPENDIX D.1

FIELD MEASUREMENTS, MISCELLANEOUS ANALYTES, MAJOR IONS, AND TRACE METALS

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	BCK-00.63		BCK-04.55		BCK-07.87		BCK-09.40	
Location	EXP-SW		EXP-SW		EXP-SW		EXP-SW	
Date Sampled	02/09/00	08/01/00	02/09/00	08/01/00	02/09/00	08/01/00	02/10/00	08/02/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP
Type								
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	6.7	20.3	6.8	18.6	6.9	19.5	4.7	20.3
pH (standard units)	7.96	6.67	8.05	7.22	7.97	7.49	8.19	7.06
Conductivity (umho/cm)	575	551	309	486	384	525	750	910
Dissolved Oxygen (ppm)	6.81	4.17	6.56	4.19	8.31	4.55	8.09	8.25
Oxidation/Reduction (mV)	193	194	149	202	150	69	224	185
Turbidity (NTU)	.	.	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	8.1	8.03	7.99	7.67	8.22	8.23	7.99	8.02
Conductivity (umho/cm)	369	326	401	351	529	536	671	657
Dissolved Solids (mg/L)	224	240	225	229	315	341	424	359
Suspended Solids (mg/L)	2	1	<	<	<	4	<	<
Turbidity (NTU)	1.56	4.07	1.34	5.92	0.894	9.35	1.24	2.03
MAJOR IONS (mg/L)								
Calcium	47.3	42.9	52.8	45.3	76.8	75.5	94.2	90.7
Magnesium	13	13	12.7	13.6	14.1	17.3	15.9	15.9
Potassium	<	<	<	<	2.02	2.47	2.57	3.26
Sodium	5.49	4.1	6.79	4.82	10.9	9.58	14.4	13.6
Alkalinity-HCO3	136	128	150	148	166	218	224	212
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	10.8	5.8	14.5	8.45	22.8	19.2	29.9	25.3
Fluoride	0.13	0.109	0.145	0.106	0.25	0.198	0.288	0.263
Nitrate-N	2.78	1.19	4.86	2.2	11.5	10.5	20.1	23.3
Sulfate	30	21.3	18.6	9.71	30.1	17.6	31.6	19.1
Ion Charge Balance (RPD)	-2.5	2.0	-2.2	0.4	0.9	-3.0	-5.2	-3.8
TRACE METALS (mg/L)								
Aluminum	<	0.369	<	0.53	<	0.928	<	<
Arsenic (PMS)	<	<	<	<	<	<	<	<
Arsenic	.	.	.	.	.	.	.	.
Barium	0.0555	0.0605	0.0618	0.0633	0.0837	0.1	0.109	0.125
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	0.188	0.255	0.346
Cadmium (PMS)	<	<	<	<	<	<	<	<
Cadmium	.	.	.	.	.	.	.	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.0635	0.27	<	0.33	<	0.547	0.0631	0.174
Lead (PMS)	<	<	<	0.000653	<	<	<	<
Lead	.	.	.	.	.	.	.	.
Lithium	<	<	<	<	0.0207	0.0337	0.05	0.0699
Manganese	0.0127	0.0184	0.00825	0.0381	0.00524	0.0301	0.0341	0.0447
Mercury (CVAA)	<	<	<	<	<	<	<	<
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	<	<	<	<	<	<	<
Strontium	0.137	0.119	0.106	0.0798	0.176	0.176	0.249	0.242
Uranium (PMS)	0.0399	0.0141	0.0691	0.0262	0.155	0.1	0.25	0.164
Uranium (KPA)	.	.	.	.	.	.	.	.
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	BCK-09.47		BCK-11.97		GW-006			
Location	EXP-SW		EXP-SW		EMWMF			
Date Sampled	01/25/00	08/16/00	02/10/00	08/02/00	02/08/00		04/12/00	
Monitoring Program	WRRP	WRRP	GWPP	GWPP	WRRP		WRRP	
Type						DUP		DUP
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	962.75	.	962.75	.
Depth to Water (ft)	.	.	.	.	9.39	.	8.49	.
Water-Level Elev. (ft)	.	.	.	.	953.36	.	954.26	.
Water Temp. (degrees C)	3.4	22.8	5.4	22.2	13.4	.	14.7	.
pH (standard units)	6.88	6.51	7.97	7.75	7.14	.	7.21	.
Conductivity (umho/cm)	209	291	978	1213	424	.	402	.
Dissolved Oxygen (ppm)	.	8.95	6.51	8.11	2.29	.	2.03	.
Oxidation/Reduction (mV)	.	132	209	168	201	.	181	.
Turbidity (NTU)	21	7	.	.	10	.	18	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	7.95	8.02	.	.	.	.
Conductivity (umho/cm)	.	.	1391	1245	.	.	.	.
Dissolved Solids (mg/L)	240	260	1030	877	290	280	280	270
Suspended Solids (mg/L)	<	<	<	<	<	8	5	<
Turbidity (NTU)	.	.	1.73	1.37	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	69.8	74.4	198	176	77.6	75.8	73.5	73.7
Magnesium	11.2	11.3	25.8	24.3	7.81	7.62	7.36	7.36
Potassium	2.29	3	4.12	5.02	2.06	2.02	1.97	1.99
Sodium	9.53	9.52	43.6	31.8	8.41	8.3	8.15	8.16
Alkalinity-HCO3	142	174	344	220	159	145	190	190
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	21.1	17.6	87.8	43.3	12.7	12.3	12.5	12
Fluoride	0.23	0.22	0.664	0.639	<	<	<	<
Nitrate-N	11.4	9.4	71.4	75.6	2.6	2.6	2.6	2.7
Sulfate	35.8	17.1	53.2	38.3	18.6	18.7	19.8	19.8
Ion Charge Balance (RPD)	-1.3	1.2	-5.4	1.8	9.1	11.6	1.3	1.5
TRACE METALS (mg/L)								
Aluminum	0.0747	0.08	<	<	<	<	<	<
Arsenic (PMS)	.	.	<	<	.	.	.	.
Arsenic	<	<	.	.	<	<	<	<
Barium	0.0778	0.104	0.264	0.284	0.27	0.264	0.255	0.255
Beryllium	<	<	<	<	<	<	<	<
Boron	0.165	0.499	<	<	0.0231	0.0209	0.0192	0.0189
Cadmium (PMS)	.	.	0.00359	<	.	.	.	.
Cadmium	<	<	.	.	0.0012	<	<	<
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.0961	0.229	<	<	<	<	<	<
Lead (PMS)	.	.	<	<	.	.	.	.
Lead	<	<	.	.	0.004	<	<	<
Lithium	0.0512	0.0905	<	<	0.0249	0.0243	0.0244	0.0244
Manganese	0.0255	0.0765	0.549	0.012	0.0268	0.0259	0.0184	0.0181
Mercury (CVAA)	<	<	<	<	<	<	<	<
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	.	.	<	<	.	.	.	.
Strontium	0.182	0.186	0.551	0.553	0.316	0.309	0.302	0.303
Uranium (PMS)	.	.	0.193	0.11	.	.	.	.
Uranium (KPA)	0.304	0.139	.	.	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-006		GW-008		GW-043			GW-044
Location	EMWMF		OLF		EMWMF			EMWMF
Date Sampled	08/02/00		01/10/00	07/12/00	02/09/00	04/13/00	08/03/00	02/09/00
Monitoring Program	WRRP		WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type		DUP						
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	962.75	.	965.39	965.39	1014.04	1014.04	1014.04	1014.20
Depth to Water (ft)	9.90	.	15.08	15.42	34.91	20.34	25.74	34.65
Water-Level Elev. (ft)	952.85	.	950.31	949.97	979.13	993.70	988.30	979.55
Water Temp. (degrees C)	18.7	.	11.3	17.1	12.3	9.6	18.4	14
pH (standard units)	7.33	.	5.69	5.03	6.9	6.79	6.47	6.98
Conductivity (umho/cm)	481	.	148	137	257	244	302	329
Dissolved Oxygen (ppm)	6.91	.	0.34	4.1	3.29	6.83	6.76	2.69
Oxidation/Reduction (mV)	216	.	96	111	183	209	223	222
Turbidity (NTU)	17	.	7	7	32	369	30	18
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	260	280	64	88	350	190	140	280
Suspended Solids (mg/L)	<	<	<	<	15	100	7	7.8
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	74.5	75.8	14.3	9.18	26.3	25.8	25.9	53.8
Magnesium	7.44	7.52	8.62	5.41	4.67	4.94	4.33	3.55
Potassium	1.98	1.99	1.14	0.999	0.775	1.39	0.814	0.671
Sodium	8.09	8.16	2.38	1.83	6.66	6.08	6.28	4.8
Alkalinity-HCO3	204	205	116	51	85	108	95	105
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	16.7	11.7	9.6	6.6	1.3	1.4	1.5	1.3
Fluoride	<	<	<	<	0.13	<	0.13	0.1
Nitrate-N	6.3	6.6	0.17	5.7	<	<	1.4	<
Sulfate	19.4	19.3	3.2	1.1	11.8	11.2	11.1	7.2
Ion Charge Balance (RPD)	-6.6	-4.9	-26.3	-23.3	0.5	-9.9	-8.0	16.6
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	0.198	2.17	0.284	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.246	0.248	0.0832	0.0732	0.0223	0.0316	0.0206	0.241
Beryllium	<	<	<	<	<	<	<	<
Boron	0.0195	0.0196	<	<	0.0128	0.0106	<	<
Cadmium (PMS)	.	.	.	.	.	.	.	.
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	0.0076	<	<
Cobalt	<	<	0.0178	0.0158	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	<	<	2.53	2.33	0.324	2.51	0.302	0.0142
Lead (PMS)	.	.	.	.	.	.	.	.
Lead	<	<	<	<	<	0.0045	<	<
Lithium	0.024	0.0243	<	<	<	0.0107	<	0.0102
Manganese	0.0148	0.0151	1.52	1.26	0.0066	0.0899	0.0117	0.0066
Mercury (CVAA)	<	<	<	<	<	<	<	<
Nickel	<	<	0.0227	0.0208	<	<	<	<
Selenium (PMS)	.	.	.	.	.	.	.	.
Strontium	0.295	0.297	0.0279	0.0202	0.0447	0.0461	0.0434	0.0853
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	0.0105	<	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-044		GW-046			GW-053		GW-056
Location	EMWMF		BG			BG		EXP-A
Date Sampled	04/13/00	08/03/00	01/11/00	07/13/00	07/19/00	02/21/00	08/22/00	01/12/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	GWPP	GWPP	GWPP
Type								
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1014.20	1014.20	921.17	921.17	921.17	903.40	903.40	891.50
Depth to Water (ft)	25.17	24.20	2.21	.	3.52	4.51	11.01	7.80
Water-Level Elev. (ft)	989.03	990.00	918.96	.	917.65	898.89	892.39	883.70
Water Temp. (degrees C)	13.1	17	14.9	.	20.4	11.1	16.2	14.4
pH (standard units)	7.27	6.8	4.79	.	5.28	7.07	6.78	7.24
Conductivity (umho/cm)	314	315	211	.	298	571	738	668
Dissolved Oxygen (ppm)	4.49	4.25	0.19	.	0.75	0.92	2.55	0.25
Oxidation/Reduction (mV)	148	225	199	.	201	75	15	-7
Turbidity (NTU)	0	18	9	.	0	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	7.45	7.29	7.44
Conductivity (umho/cm)	.	.	.	.	.	697	709	699
Dissolved Solids (mg/L)	220	190	90	280	.	473	416	424
Suspended Solids (mg/L)	<	<	<	<	.	5	<	115
Turbidity (NTU)	.	.	.	.	.	0.661	0.885	191
MAJOR IONS (mg/L)								
Calcium	51.7	50.8	22.4	36.2	.	119	123	85.9
Magnesium	3.61	3.46	6.76	7.5	.	14.5	13.9	20.3
Potassium	0.684	0.674	4.26	2.05	.	2.47	2.18	5.94
Sodium	5.04	4.86	5.51	9.06	.	9.13	8.65	42.1
Alkalinity-HCO3	149	150	36	.	70	344	350	256
Alkalinity-CO3	<	<	<	.	<	<	<	<
Chloride	1.2	1.4	42.6	.	47.8	18.5	19.5	60.1
Fluoride	<	<	<	.	<	<	<	<
Nitrate-N	<	1.4	0.24	2.7	.	<	<	0.339
Sulfate	7	7.4	8.4	.	2.7	18.4	17.3	25.4
Ion Charge Balance (RPD)	-0.7	-3.8	-1.8	.	.	-1.2	-1.2	3.8
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	.	<	<	21.4
Arsenic (PMS)	.	.	.	.	.	<	<	0.0205
Arsenic	<	<	<	<	.	.	.	.
Barium	0.257	0.246	0.224	0.23	.	0.196	0.21	0.18
Beryllium	<	<	<	<	.	<	<	0.00112
Boron	<	<	0.0383	0.0493	.	0.32	0.291	<
Cadmium (PMS)	.	.	.	.	.	<	<	0.00124
Cadmium	<	<	<	<	.	.	.	.
Chromium	<	<	<	<	.	<	<	0.169
Cobalt	<	<	0.0246	0.0058	.	<	<	<
Copper	<	<	<	<	.	<	<	0.0316
Iron	0.0248	0.0355	2.15	0.599	.	0.0574	0.209	24
Lead (PMS)	.	.	.	.	.	<	<	0.0398
Lead	<	<	<	<	.	.	.	.
Lithium	0.0111	0.0103	0.106	0.675	.	0.46	0.423	0.0274
Manganese	0.0191	0.0308	1.78	0.398	.	0.0834	0.0809	0.639
Mercury (CVAA)	<	<	<	0.00027	.	<	<	<
Nickel	<	<	0.0212	0.0168	.	<	<	0.216
Selenium (PMS)	.	.	.	.	.	<	0.0113	<
Strontium	0.0876	0.0809	0.0893	0.117	.	0.386	0.409	0.142
Uranium (PMS)	.	.	.	.	.	0.00262	0.0023	0.00436
Uranium (KPA)	<	<	<	<	.	.	.	.
Vanadium	<	<	<	<	.	<	<	0.0325
Zinc	<	<	<	<	.	<	<	0.468

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-056		GW-077		GW-078		GW-079	
Location	EXP-A		BG		BG		BG	
Date Sampled	01/12/00	07/11/00	02/17/00	08/15/00	02/17/00	08/15/00	02/22/00	
Monitoring Program	GWPP	GWPP	WRRP	WRRP	WRRP	WRRP	GWPP	WRRP
Type	DUP							
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	891.50	919.30	919.30	918.10	918.10	981.20	981.20
Depth to Water (ft)	.	7.89	5.32	9.93	4.20	9.10	19.14	19.14
Water-Level Elev. (ft)	.	883.61	913.98	909.37	913.90	909.00	962.06	962.06
Water Temp. (degrees C)	.	13.9	12	17.9	12.8	17.9	10.9	10.9
pH (standard units)	.	6.9	7.47	7.18	7.51	7.19	7.01	7.01
Conductivity (umho/cm)	.	727	373	330	370	363	301	301
Dissolved Oxygen (ppm)	.	1.44	1.05	4.45	5.12	4.06	2.86	2.86
Oxidation/Reduction (mV)	.	30	-79	-72	146	107	-44	-44
Turbidity (NTU)	.	.	11	27	8	20	.	19
MISCELLANEOUS ANALYTES								
pH (standard units)	7.45	7.5	.	.	.	.	.	.
Conductivity (umho/cm)	695	719	.	.	.	.	.	.
Dissolved Solids (mg/L)	416	432	190	210	200	180	.	180
Suspended Solids (mg/L)	205	234	11	5	<	<	.	6.5
Turbidity (NTU)	189	123	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	86.1	92	47.3	44.1	59.6	57.2	.	34.6
Magnesium	19.7	21.1	11.1	10.2	7.7	7.23	.	3.82
Potassium	3.19	2.07	2.26	2.19	1.46	1.19	.	1.65
Sodium	43.6	41.4	5.69	6.27	4.52	4.26	.	4.7
Alkalinity-HCO3	248	250	210	120	170	182	.	120
Alkalinity-CO3	<	<	<	<	<	<	.	<
Chloride	60.2	64.1	1.5	1.2	1.4	1.3	.	1.3
Fluoride	<	<	0.12	0.12	0.13	0.18	.	<
Nitrate-N	0.334	0.69	<	3.3	<	2.2	.	.
Sulfate	26.8	24.2	11.6	12.2	16	10.7	.	5.3
Ion Charge Balance (RPD)	4.4	5.3	-11.3	7.0	0.8	-5.2	.	-5.3
TRACE METALS (mg/L)								
Aluminum	8.96	4.06	<	<	<	<	.	<
Arsenic (PMS)	0.0144	0.00699	.	.	.	.	.	.
Arsenic	.	.	<	<	<	<	.	<
Barium	0.134	0.0975	0.419	0.432	0.172	0.175	.	0.266
Beryllium	<	<	<	<	<	<	.	<
Boron	<	<	0.0132	0.0153	0.0125	0.0121	.	<
Cadmium (PMS)	0.00101	0.00326	.	.	.	.	.	.
Cadmium	.	.	<	<	<	<	.	<
Chromium	0.167	0.584	<	<	<	<	.	<
Cobalt	<	<	<	<	<	<	.	<
Copper	<	<	<	<	<	<	.	<
Iron	14.2	6.47	0.153	0.131	0.0358	<	.	0.672
Lead (PMS)	0.0261	0.0145	.	.	.	.	.	.
Lead	.	.	0.0034	<	<	<	.	<
Lithium	0.0163	<	0.0107	<	0.0113	0.0103	.	<
Manganese	0.446	0.309	0.0739	0.0639	0.0081	0.0086	.	0.162
Mercury (CVAA)	<	0.00201	<	.	<	.	.	<
Nickel	0.23	0.292	<	<	<	<	.	<
Selenium (PMS)	<	<	.	.	.	.	.	.
Strontium	0.142	0.14	1.18	1.23	0.12	0.125	.	0.136
Uranium (PMS)	0.00432	0.00539	.	.	.	.	.	.
Uranium (KPA)	.	.	<	<	<	<	.	<
Vanadium	<	<	<	<	<	<	.	<
Zinc	0.265	0.0527	<	<	<	<	.	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-079		GW-080					
Location	BG		BG					
Date Sampled	08/15/00	08/16/00	02/21/00			08/14/00	08/16/00	
Monitoring Program	GWPP	WRRP	GWPP	WRRP		GWPP	WRRP	
Type					DUP			DUP
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	981.20	981.20	981.00	981.00	.	981.00	981.00	.
Depth to Water (ft)	22.28	22.23	18.37	18.37	.	24.64	24.52	.
Water-Level Elev. (ft)	958.92	958.97	962.63	962.63	.	956.36	956.48	.
Water Temp. (degrees C)	15	19.5	8.7	8.6	.	17.1	20.4	.
pH (standard units)	7.31	7.07	6.95	6.57	.	6.55	6.25	.
Conductivity (umho/cm)	273	287	470	177	.	212	260	.
Dissolved Oxygen (ppm)	1.12	3.7	6.29	5.75	.	1.56	4.55	.
Oxidation/Reduction (mV)	-184	-78	-14	9	.	-30	-14	.
Turbidity (NTU)	.	.	.	30	.	.	23	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	.	120	.	92	110	.	78	64
Suspended Solids (mg/L)	.	<	.	7	5.1	.	10	14
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	.	34.6	.	5.96	5.94	.	6.13	6.3
Magnesium	.	3.79	.	6.82	6.74	.	6.84	7.02
Potassium	.	1.76	.	1.32	1.32	.	1.39	1.46
Sodium	.	4.11	.	11.4	11.4	.	13.4	13.5
Alkalinity-HCO3	.	110	.	71	56	.	62	124
Alkalinity-CO3	.	<	.	<	<	.	<	<
Chloride	.	0.99	.	1	0.97	.	1.1	0.86
Fluoride	.	0.12	.	0.31	0.23	.	0.28	0.29
Nitrate-N	.	1.8	.	<	<	.	3	2.5
Sulfate	.	6.2	.	11.8	11.7	.	14.4	15.8
Ion Charge Balance (RPD)	.	-4.8	.	-10.4	-0.8	.	-9.5	-33.2
TRACE METALS (mg/L)								
Aluminum	.	<	.	0.0964	0.114	.	0.0743	0.177
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	.	<	.	<	<	.	<	<
Barium	.	0.266	.	0.0316	0.0305	.	0.0274	0.0294
Beryllium	.	<	.	<	<	.	<	<
Boron	.	<	.	0.0153	0.0147	.	0.0184	0.0178
Cadmium (PMS)	.	.	.	.	.	.	.	.
Cadmium	.	<	.	0.0012	0.001	.	0.0013	0.0011
Chromium	.	<	.	<	<	.	<	<
Cobalt	.	<	.	0.008	0.0077	.	0.0064	0.0065
Copper	.	<	.	<	<	.	<	<
Iron	.	0.565	.	4.1	4.1	.	3.55	3.9
Lead (PMS)	.	.	.	.	.	.	.	.
Lead	.	<	.	<	<	.	<	<
Lithium	.	<	.	<	<	.	<	<
Manganese	.	0.137	.	0.417	0.412	.	0.346	0.36
Mercury (CVAA)	.	.	.	<	<	.	.	.
Nickel	.	<	.	<	<	.	<	<
Selenium (PMS)	.	.	.	.	.	.	.	.
Strontium	.	0.135	.	0.0302	0.03	.	0.0281	0.0289
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	.	<	.	<	<	.	<	<
Vanadium	.	<	.	<	<	.	<	<
Zinc	.	<	.	<	<	.	<	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-085		GW-115			GW-226		GW-276
Location	OLF		S3			OLF		S3
Date Sampled	02/29/00	09/08/00	01/04/00	02/15/00	07/12/00	03/01/00	09/11/00	01/04/00
Monitoring Program	GWPP	GWPP	WRRP	GWPP	WRRP	GWPP	GWPP	WRRP
Type								
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	983.50	983.50	1055.01	1055.01	1055.01	943.60	943.60	1001.57
Depth to Water (ft)	13.90	16.15	15.04	9.12	10.80	12.62	19.32	4.90
Water-Level Elev. (ft)	969.60	967.35	1039.97	1045.89	1044.21	930.98	924.28	996.67
Water Temp. (degrees C)	16.8	16.8	16.4	16.7	19.2	14.8	16.2	17.1
pH (standard units)	6.98	6.92	7.28	7.45	6.99	7	6.37	5.81
Conductivity (umho/cm)	1523	1961	529	591	665	863	609	1151
Dissolved Oxygen (ppm)	1.34	2.02	0.67	0.8	4.95	1.39	0.29	3.65
Oxidation/Reduction (mV)	94	100	-121	-110	-121	83	101	269
Turbidity (NTU)	.	.	20	.	8	.	.	7
MISCELLANEOUS ANALYTES								
pH (standard units)	7.14	7.03	.	.	.	7.3	7.35	.
Conductivity (umho/cm)	1784	2160	.	.	.	1044	741	.
Dissolved Solids (mg/L)	391	1580	310	.	350	631	392	950
Suspended Solids (mg/L)	20	30	<	.	<	<	<	5.2
Turbidity (NTU)	16.8	16.9	.	.	.	8.92	3.5	.
MAJOR IONS (mg/L)								
Calcium	300	353	81.2	.	84.2	133	74.3	148
Magnesium	19.6	23.8	15.3	.	14.9	41.5	24.5	21
Potassium	2.37	3.02	3.56	.	2.05	3.6	6.63	12.1
Sodium	11.4	13	11.8	.	11.7	22	19.3	77.6
Alkalinity-HCO3	183	202	300	.	264	336	240	135
Alkalinity-CO3	<	<	<	.	<	<	<	<
Chloride	11.6	14.1	27.5	.	25.3	58.5	40.1	141
Fluoride	<	<	0.11	.	0.19	0.114	<	2.2
Nitrate-N	186	227	0.29	.	1.6	19.1	11.3	96.1
Sulfate	6.71	7.11	16.4	.	17.6	31.8	24.3	33.7
Ion Charge Balance (RPD)	-0.8	-1.4	-9.4	.	-3.9	3.3	-3.6	-5.7
TRACE METALS (mg/L)								
Aluminum	0.761	2.04	<	.	<	<	<	2.79
Arsenic (PMS)	<	<	.	.	.	<	<	.
Arsenic	.	.	<	.	<	.	.	<
Barium	0.793	0.955	0.218	.	0.215	0.201	0.112	0.289
Beryllium	<	<	<	.	<	<	<	0.0037
Boron	<	<	0.0181	.	0.0148	0.138	0.101	0.0303
Cadmium (PMS)	<	<	.	.	.	<	<	.
Cadmium	.	.	<	.	<	.	.	0.0218
Chromium	<	<	<	.	<	<	<	<
Cobalt	<	<	<	.	<	<	<	0.0746
Copper	<	<	<	.	<	<	<	0.0057
Iron	0.499	1.42	0.51	.	0.635	0.689	0.253	<
Lead (PMS)	0.00136	0.00133	.	.	.	<	<	.
Lead	.	.	<	.	<	.	.	<
Lithium	0.0212	0.0232	0.0212	.	0.0206	0.0191	0.0135	0.0162
Manganese	0.026	0.044	0.697	.	0.697	0.839	0.391	4.77
Mercury (CVAA)	<	<	<	.	<	<	<	<
Nickel	<	<	<	.	<	<	<	0.181
Selenium (PMS)	<	<	.	.	.	<	<	.
Strontium	0.691	0.825	0.154	.	0.146	0.663	0.357	0.305
Uranium (PMS)	<	<	.	.	.	0.015	0.00751	.
Uranium (KPA)	.	.	<	.	<	.	.	0.947
Vanadium	<	<	<	.	<	<	<	<
Zinc	<	<	<	.	<	<	<	0.0527

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-276	GW-287			GW-311		GW-315	
Location	S3	BG			RS		SPI	
Date Sampled	07/12/00	02/17/00		08/21/00	02/28/00	09/06/00	02/28/00	09/05/00
Monitoring Program	WRRP	GWPP		GWPP	GWPP	GWPP	GWPP	GWPP
Type			DUP					
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1001.57	927.07	.	927.07	999.65	999.65	1047.48	1047.48
Depth to Water (ft)	6.02	8.78	.	9.89	35.71	40.42	55.21	62.52
Water-Level Elev. (ft)	995.55	918.29	.	917.18	963.94	959.23	992.27	984.96
Water Temp. (degrees C)	22.8	11.8	.	17	14.6	19.2	14.6	17.7
pH (standard units)	5.47	7.11	.	6.08	7.24	7.09	7.31	6.95
Conductivity (umho/cm)	1869	244	.	250	374	609	641	835
Dissolved Oxygen (ppm)	4.6	2.86	.	2.35	4.53	4.25	0.41	0.79
Oxidation/Reduction (mV)	225	137	.	149	129	137	130	127
Turbidity (NTU)	20	.	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	6.98	7	6.59	7.21	7.46	7.42	7.49
Conductivity (umho/cm)	.	287	294	203	458	502	767	773
Dissolved Solids (mg/L)	1500	174	162	143	277	285	483	471
Suspended Solids (mg/L)	<	2	1	<	<	<	1	<
Turbidity (NTU)	.	3.07	2.9	2.59	0.838	0.268	0.433	0.236
MAJOR IONS (mg/L)								
Calcium	144	49.7	47.9	25.7	88.7	93.7	131	131
Magnesium	21.3	6	5.88	4.62	6.22	6.59	14.6	16.3
Potassium	10.7	<	<	<	<	<	3.61	3.5
Sodium	74.8	4.44	4.37	5.28	3.26	2.95	9.41	9.32
Alkalinity-HCO3	42	145	141	111	248	264	222	308
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	173	3.31	3.44	3.11	1.89	2.3	16.7	15.4
Fluoride	2.5	0.113	0.115	<	<	<	<	<
Nitrate-N	105	<	<	0.0502	0.3	0.348	9.06	8.73
Sulfate	42	7.45	7.27	10.7	3.06	3.82	87.1	84.7
Ion Charge Balance (RPD)	-6.6	0.2	-0.1	-14.4	-0.1	-0.9	5.6	-3.5
TRACE METALS (mg/L)								
Aluminum	2.66	<	<	0.315	<	<	<	<
Arsenic (PMS)	.	<	<	<	<	<	<	<
Arsenic	<	.	.	.	.	.	.	.
Barium	0.253	0.15	0.149	0.105	0.0203	0.0208	0.065	0.0682
Beryllium	0.0039	<	<	<	<	<	<	<
Boron	0.0261	<	<	<	<	<	<	<
Cadmium (PMS)	.	<	<	<	<	<	<	<
Cadmium	0.02	.	.	.	.	.	.	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	0.0572	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	<	<	<	0.16	<	<	<	<
Lead (PMS)	.	<	<	<	<	<	<	<
Lead	<	.	.	.	.	.	.	.
Lithium	0.0127	<	<	<	<	<	<	<
Manganese	4.24	<	<	0.0055	<	<	0.0316	0.113
Mercury (CVAA)	<	<	<	<	<	<	<	<
Nickel	0.181	<	<	<	<	<	<	<
Selenium (PMS)	.	<	<	<	<	<	<	<
Strontium	0.31	0.0908	0.0895	0.0582	0.0772	0.0832	0.218	0.225
Uranium (PMS)	.	<	<	<	<	0.000765	0.00264	0.00289
Uranium (KPA)	0.96	.	.	.	.	.	.	.
Vanadium	<	<	<	<	<	<	<	<
Zinc	0.038	<	<	<	<	<	<	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-526		GW-537			GW-615		
Location	S3		OLF			S3		
Date Sampled	02/22/00	08/16/00	03/01/00	09/11/00		02/15/00	06/08/00	08/30/00
Monitoring Program	WRRP	WRRP	GWPP	GWPP		WRRP	WRRP	WRRP
Type					DUP			
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	998.25	998.25	976.44	976.44	.	1017.55	1017.55	1017.55
Depth to Water (ft)	13.29	13.10	6.56	8.20	.	13.60	12.92	13.98
Water-Level Elev. (ft)	984.96	985.15	969.88	968.24	.	1003.95	1004.63	1003.57
Water Temp. (degrees C)	9.3	19.5	15.4	16.8	.	16.3	20.6	22
pH (standard units)	8.16	7.94	6.76	6.62	.	6.15	6.26	5.84
Conductivity (umho/cm)	6150	7560	4650	5340	.	3979	44500	55000
Dissolved Oxygen (ppm)	2.88	3.22	0.34	3.8	.	2.07	1.04	1.23
Oxidation/Reduction (mV)	200	194	135	146	.	86	-48	181
Turbidity (NTU)	18	29	.	.	.	15	23	20
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	7.01	6.94	7.02	.	.	.
Conductivity (umho/cm)	.	.	5450	5570	5560	.	.	.
Dissolved Solids (mg/L)	7200	1100	5120	4410	4530	.	.	.
Suspended Solids (mg/L)	18	<	1	<	<	.	.	.
Turbidity (NTU)	.	.	0.386	0.857	0.774	.	.	.
MAJOR IONS (mg/L)								
Calcium	154	125	989	967	969	8730	9380	9520
Magnesium	52.5	48.6	71.8	74.4	73.8	2100	2260	2320
Potassium	36	24.9	<	<	<	125	140	138
Sodium	1550	1260	42	39.9	39.7	2150	2470	2320
Alkalinity-HCO3	45	41	302	274	296	170	172	212
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	38.5	29	31.8	31.9	30.9	138	93.5	188
Fluoride	<	<	<	<	<	<	0.16	0.15
Nitrate-N	.	1340	680	734	737	12300	11700	14700
Sulfate	2.7	12.7	4.72	6.36	5.77	<	<	<
Ion Charge Balance (RPD)	.	-19.5	1.3	-2.4	-2.9	-11.3	-4.8	-15.8
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	0.0846	<	0.0564
Arsenic (PMS)	.	.	<	<	<	.	.	.
Arsenic	<	<	.	.	.	<	0.0067	<
Barium	14.5	11.8	2.4	2.38	2.37	348	388	381
Beryllium	<	<	<	<	<	<	<	<
Boron	0.219	0.181	<	<	<	0.279	0.314	0.3
Cadmium (PMS)	.	.	<	<	<	.	.	.
Cadmium	<	<	.	.	.	0.0147	0.0166	0.0169
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	0.0226	0.0605	0.0214
Copper	<	<	<	<	<	0.0106	0.0055	0.008
Iron	0.0331	0.0577	<	<	<	9.98	9.11	7.88
Lead (PMS)	.	.	<	<	<	.	.	.
Lead	<	<	.	.	.	<	<	<
Lithium	1.09	0.861	0.0409	0.0382	0.0374	1.38	1.04	1.34
Manganese	0.0318	0.0281	<	<	<	16.7	18.9	18.6
Mercury (CVAA)	<	.	<	<	<	<	.	.
Nickel	<	<	<	<	<	0.0834	0.0893	0.0884
Selenium (PMS)	.	.	<	<	<	.	.	.
Strontium	17.8	15.7	2.72	2.73	2.71	288	330	322
Uranium (PMS)	.	.	0.00137	0.00143	0.00131	.	.	.
Uranium (KPA)	<	<	.	.	.	0.877	0.786	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	0.0185	0.0208	0.0195

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-621		GW-627				GW-653	
Location	EXP-B		BG				BG	
Date Sampled	01/19/00	07/13/00	02/21/00	02/23/00	08/22/00	08/23/00	02/17/00	08/21/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP
Type								
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	925.44	925.44	943.65	943.65	943.65	943.65	931.80	931.80
Depth to Water (ft)	11.18	14.04	20.55	21.15	24.83	25.04	18.16	24.25
Water-Level Elev. (ft)	914.26	911.40	923.10	922.50	918.82	918.61	913.64	907.55
Water Temp. (degrees C)	13.7	15.6	14.6	15.2	17	16.5	13.9	15.1
pH (standard units)	7.57	7.34	9.54	9.03	8.98	8.71	5.2	5.21
Conductivity (umho/cm)	323	393	993	1016	1169	1155	34	68
Dissolved Oxygen (ppm)	4.49	2.94	0.07	0.5	2.43	1.71	5.21	4.6
Oxidation/Reduction (mV)	134	154	-286	-27	-272	-28	248	219
Turbidity (NTU)	.	.	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.79	7.76	9.31	9.06	9.2	9.08	5.56	5.5
Conductivity (umho/cm)	340	365	1231	1217	1236	1242	30.4	32.5
Dissolved Solids (mg/L)	199	225	803	788	731	740	38	41
Suspended Solids (mg/L)	13	6	1	<	<	<	2	<
Turbidity (NTU)	26.6	13.7	1.26	0.733	1.2	0.569	1.48	0.161
MAJOR IONS (mg/L)								
Calcium	53.4	58.2	1.27	0.901	1.21	0.932	1.74	2.13
Magnesium	9.19	10.2	0.257	0.217	0.24	0.213	1.01	1.06
Potassium	<	<	<	<	<	<	<	<
Sodium	1.56	3.1	300	297	294	294	1.97	2.14
Alkalinity-HCO3	172	170	542	557	498	523	3.74	30
Alkalinity-CO3	<	<	25.6	5.28	58	73.4	<	<
Chloride	3.48	5.68	42.9	39.4	43.7	32.2	0.934	0.921
Fluoride	<	<	5.08	5.6	5.62	5.65	<	<
Nitrate-N	1.91	2.43	<	<	<	<	<	<
Sulfate	2.66	5.52	12.9	33.8	21.2	23.4	1.47	1.56
Ion Charge Balance (RPD)	-3.3	0.4	0.0	-1.4	-0.9	-2.9	33.1	-38.4
TRACE METALS (mg/L)								
Aluminum	2.4	1.8	<	<	<	<	<	<
Arsenic (PMS)	<	<	<	<	<	<	<	<
Arsenic	.	.	.	.	.	.	.	.
Barium	0.0283	0.0276	0.0472	0.0474	0.0482	0.0464	0.0311	0.0325
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	0.474	0.474	0.47	0.471	<	<
Cadmium (PMS)	<	<	<	<	<	<	<	<
Cadmium	.	.	.	.	.	.	.	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	1.65	1.45	0.159	0.146	0.298	0.0915	<	<
Lead (PMS)	0.00127	0.00119	<	0.00145	<	<	<	0.000551
Lead	.	.	.	.	.	.	.	.
Lithium	<	<	0.0882	0.0894	0.0887	0.089	<	<
Manganese	0.0777	0.0588	0.013	<	0.0185	<	<	<
Mercury (CVAA)	<	<	<	<	<	<	<	<
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	<	<	<	<	<	<	<
Strontium	0.0563	0.07	0.0884	0.0799	0.088	0.0803	0.016	0.0173
Uranium (PMS)	0.00137	0.00343	<	<	<	<	<	<
Uranium (KPA)	.	.	.	.	.	.	.	.
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-683		GW-684		GW-685		GW-695	
Location	EXP-A		EXP-A		EXP-A		EXP-B	
Date Sampled	01/18/00	07/12/00	01/13/00	07/12/00	01/13/00	07/11/00	01/24/00	07/13/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP
Type								
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	972.26	972.26	898.86	898.86	892.31	892.31	939.57	939.57
Depth to Water (ft)	88.76	89.02	15.58	15.74	7.74	8.91	27.24	28.77
Water-Level Elev. (ft)	883.50	883.24	883.28	883.12	884.57	883.40	912.33	910.80
Water Temp. (degrees C)	13	13.9	13.5	13.4	13.4	16.7	10.4	15.3
pH (standard units)	7.46	7.4	7.45	7.31	7.07	6.22	7.44	7.28
Conductivity (umho/cm)	497	385	413	493	756	814	455	517
Dissolved Oxygen (ppm)	3.26	2.47	0.21	2.53	0.05	0.47	4.19	3.53
Oxidation/Reduction (mV)	166	131	171	194	123	64	172	139
Turbidity (NTU)	.	.	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.35	7.93	7.77	7.86	7.25	7.42	7.76	7.68
Conductivity (umho/cm)	504	395	527	429	851	853	502	524
Dissolved Solids (mg/L)	269	246	285	273	487	479	259	302
Suspended Solids (mg/L)	<	<	1	1	2	5	<	<
Turbidity (NTU)	0.925	0.53	0.398	3.62	50.1	57.9	0.409	0.49
MAJOR IONS (mg/L)								
Calcium	65.3	47.7	66.7	55.1	95.1	94.3	52.1	58
Magnesium	17	21.7	19.4	17.2	29	30.4	24.9	26.5
Potassium	<	<	8.9	6.82	<	<	2.79	2.18
Sodium	8.34	2.46	8.13	5	39.9	40.1	9.75	7.13
Alkalinity-HCO3	176	185	230	195	344	278	212	202
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	14.8	4.47	19.4	12.8	72.9	73.7	11.5	14.8
Fluoride	0.214	<	0.177	0.115	0.131	<	<	<
Nitrate-N	9.4	1.93	5.96	1.53	2	1.99	8.85	11.6
Sulfate	26.1	20.3	15.4	10.2	23.5	23.6	11.1	12.9
Ion Charge Balance (RPD)	-1.4	-1.3	-3.5	-0.3	-3.8	4.0	-2.7	-1.0
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Arsenic (PMS)	<	<	<	<	<	<	<	<
Arsenic	.	.	.	.	.	.	.	.
Barium	0.118	0.118	0.12	0.0914	0.114	0.11	0.0423	0.0439
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	<	<
Cadmium (PMS)	<	<	<	<	<	<	<	<
Cadmium	.	.	.	.	.	.	.	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	0.028	<	<	<	<	<
Iron	<	<	<	0.0765	3.65	6.11	<	<
Lead (PMS)	<	<	<	<	<	<	<	0.00187
Lead	.	.	.	.	.	.	.	.
Lithium	<	<	0.0343	0.029	<	<	<	<
Manganese	<	<	0.0454	0.0551	0.155	0.168	<	<
Mercury (CVAA)	<	0.00198	<	<	<	0.0125	<	0.00692
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	<	<	<	<	<	<	<
Strontium	0.142	0.149	0.143	0.115	0.13	0.134	0.0852	0.0905
Uranium (PMS)	0.0667	0.0203	0.0347	0.0199	0.00754	0.00736	0.00331	0.00458
Uranium (KPA)	.	.	.	.	.	.	.	.
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-703		GW-704		GW-706			
Location	EXP-B		EXP-B		EXP-B			
Date Sampled	01/24/00	07/24/00	01/25/00	07/24/00	01/31/00	02/01/00	07/25/00	07/26/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP
Type								
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	955.49	955.49	945.53	945.53	929.47	929.47	929.47	929.47
Depth to Water (ft)	42.51	44.05	33.00	37.03	14.57	14.57	19.35	19.35
Water-Level Elev. (ft)	912.98	911.44	912.53	908.50	914.90	914.90	910.12	910.12
Water Temp. (degrees C)	12.8	14.8	12.3	15.6	11.7	11.2	14.5	16.1
pH (standard units)	7.52	7.46	7.47	8.34	7.43	7.59	7.6	7.17
Conductivity (umho/cm)	484	648	447	367	800	576	828	659
Dissolved Oxygen (ppm)	0.06	1.22	1.89	1.96	1.1	7.87	1.32	1.98
Oxidation/Reduction (mV)	166	169	141	-221	179	94	146	129
Turbidity (NTU)	.	.	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.7	7.65	7.68	8.41	7.26	7.22	7.32	7.15
Conductivity (umho/cm)	616	656	679	393	992	745	740	729
Dissolved Solids (mg/L)	325	393	373	222	583	426	446	430
Suspended Solids (mg/L)	<	<	2	<	4	15	<	<
Turbidity (NTU)	0.346	2.4	6.32	2.74	12	28.1	0.949	0.776
MAJOR IONS (mg/L)								
Calcium	64.2	67.3	76.2	14.3	137	101	98.4	99.1
Magnesium	30.8	33	30.4	28	27.2	17.6	20.9	22.5
Potassium	6.05	5.13	2.02	12.2	6.43	2.8	5.74	3.07
Sodium	11.5	12	13.2	12.2	21	18.7	16.1	15
Alkalinity-HCO3	204	218	230	136	218	192	212	256
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	20.7	23.8	26.1	27.3	44.6	44.4	36	31.7
Fluoride	0.168	0.184	0.155	0.177	0.227	0.477	0.348	0.34
Nitrate-N	10.4	15.2	17.2	1.14	41.6	23.4	22.9	14.9
Sulfate	24.3	26.2	24.3	24.4	35.9	50.5	26.2	23
Ion Charge Balance (RPD)	3.8	0.4	-1.0	-2.9	4.1	-3.1	0.2	-0.3
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Arsenic (PMS)	<	<	<	<	<	<	<	<
Arsenic	.	.	.	.	.	.	.	.
Barium	0.0772	0.0821	0.122	0.0408	0.187	0.135	0.141	0.143
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	<	0.102
Cadmium (PMS)	<	0.000639	<	0.000687	<	<	<	<
Cadmium	.	.	.	.	.	.	.	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	<	0.267	0.716	0.338	1.87	4.85	0.281	0.283
Lead (PMS)	<	<	<	<	<	<	<	<
Lead	.	.	.	.	.	.	.	.
Lithium	0.0215	0.0207	0.0151	0.0234	0.0191	0.016	0.0157	0.0159
Manganese	0.0495	0.0503	0.00859	0.026	0.0107	0.0307	<	<
Mercury (CVAA)	<	0.00257	<	<	<	<	<	<
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	<	<	<	<	<	<	<
Strontium	0.238	0.257	0.338	0.0756	0.415	0.284	0.327	0.266
Uranium (PMS)	0.00426	0.00466	0.00744	0.0018	0.0808	0.277	0.139	0.125
Uranium (KPA)	.	.	.	.	.	.	.	.
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-712		GW-713		GW-714			
Location	EXP-W		EXP-W		EXP-W			
Date Sampled	01/10/00	07/10/00	01/06/00	07/10/00	01/05/00	02/16/00	07/11/00	08/14/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	GWPP	WRRP	GWPP
Type								
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	877.89	877.89	881.43	881.43	875.88	875.88	875.88	875.88
Depth to Water (ft)	34.30	34.72	38.37	38.13	30.13	28.75	30.70	30.84
Water-Level Elev. (ft)	843.59	843.17	843.06	843.30	845.75	847.13	845.18	845.04
Water Temp. (degrees C)	11.8	16.6	6.8	19.6	6.3	13	25.3	13.4
pH (standard units)	8.13	7.73	7.79	7.84	7.8	7.68	7.43	7.59
Conductivity (umho/cm)	387	480	363	511	327	381	531	466
Dissolved Oxygen (ppm)	1.17	4.62	0.95	3.56	6.39	0.46	5.52	0.4
Oxidation/Reduction (mV)	-189	-127	-161	-207	-142	145	80	120
Turbidity (NTU)	9	19	26	34	11	.	64	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	250	750	320	410	240	.	160	.
Suspended Solids (mg/L)	5.7	<	<	6.9	<	.	8.9	.
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	41.9	46.8	53.8	45.2	45.2	.	46.6	.
Magnesium	31.7	28.9	29.5	31.9	23.4	.	19.2	.
Potassium	2.22	1.84	2.42	3.57	2.9	.	1.32	.
Sodium	11.2	8.45	10.6	10.7	4.22	.	3.57	.
Alkalinity-HCO3	158	166	242	165	248	.	60	.
Alkalinity-CO3	<	<	<	<	<	.	<	.
Chloride	13.7	10.2	14.6	13.9	10.9	.	10.7	.
Fluoride	0.31	0.54	0.87	1.6	0.31	.	0.3	.
Nitrate-N	0.024	1.4	0.67	1.3	0.46	.	4	.
Sulfate	81.9	79.2	99.8	91.9	27.3	.	26.1	.
Ion Charge Balance (RPD)	-0.3	-2.4	-13.7	-3.1	-14.0	.	27.1	.
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	.	<	.
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	.	<	.
Barium	0.0322	0.0294	0.0397	0.0272	0.055	.	0.0507	.
Beryllium	<	<	<	<	<	.	<	.
Boron	0.0672	0.0543	0.0592	0.063	0.059	.	0.0521	.
Cadmium (PMS)	.	.	.	.	.	.	.	.
Cadmium	<	<	<	<	<	.	<	.
Chromium	<	<	<	<	<	.	<	.
Cobalt	<	<	<	<	<	.	<	.
Copper	<	<	<	<	<	.	<	.
Iron	1.79	1.08	3.34	3.31	3.11	.	1.69	.
Lead (PMS)	.	.	.	.	.	.	.	.
Lead	<	<	<	<	<	.	<	.
Lithium	0.0125	0.0104	0.0125	0.0141	<	.	<	.
Manganese	0.197	0.161	0.102	0.16	0.146	.	0.0167	.
Mercury (CVAA)	<	<	<	<	<	.	<	.
Nickel	<	<	<	<	<	.	<	.
Selenium (PMS)	.	.	.	.	.	.	.	.
Strontium	0.524	0.54	1.23	0.817	0.185	.	0.175	.
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	.	<	.
Vanadium	<	<	<	<	<	.	<	.
Zinc	<	<	<	<	<	.	<	.

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-715						GW-724	
Location	EXP-W						EXP-C	
Date Sampled	01/05/00		02/16/00	07/11/00		08/14/00	02/03/00	07/31/00
Monitoring Program	WRRP		GWPP	WRRP		GWPP	GWPP	GWPP
Type		DUP			DUP			
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	874.92	.	874.92	874.92	.	874.92	979.27	979.27
Depth to Water (ft)	28.23	.	27.71	28.94	.	28.80	29.96	32.03
Water-Level Elev. (ft)	846.69	.	847.21	845.98	.	846.12	949.31	947.24
Water Temp. (degrees C)	12.2	.	14.6	15.7	.	13.9	14.1	15.1
pH (standard units)	6.71	.	6.78	6.63	.	6.35	7.55	7.13
Conductivity (umho/cm)	334	.	458	578	.	516	732	688
Dissolved Oxygen (ppm)	5.31	.	5.49	5.84	.	2.53	0.25	1.49
Oxidation/Reduction (mV)	207	.	145	20	.	83	90	107
Turbidity (NTU)	8	.	.	17	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	7.55	7.61
Conductivity (umho/cm)	.	.	.	.	.	.	956	793
Dissolved Solids (mg/L)	290	270	.	320	310	.	550	482
Suspended Solids (mg/L)	<	<	.	9.9	6.5	.	<	<
Turbidity (NTU)	.	.	.	.	.	.	1.71	1.56
MAJOR IONS (mg/L)								
Calcium	64.9	64.5	.	57.7	64.8	.	95.6	67.1
Magnesium	12.4	12.2	.	10.4	11.7	.	41	39.5
Potassium	1.82	1.76	.	1.32	1.49	.	<	3.43
Sodium	20.3	20	.	15.3	17.1	.	29.3	28
Alkalinity-HCO3	252	253	.	162	186	.	220	190
Alkalinity-CO3	<	<	.	<	<	.	<	<
Chloride	44	43.6	.	34.2	34	.	84.7	78.3
Fluoride	<	<	.	<	<	.	0.247	0.233
Nitrate-N	2.9	3.4	.	2.8	2.9	.	26.4	17.6
Sulfate	13	12.9	.	9.8	9.9	.	27.7	26.8
Ion Charge Balance (RPD)	-13.1	-13.9	.	-1.9	-1.1	.	0.8	0.4
TRACE METALS (mg/L)								
Aluminum	<	<	.	<	<	.	<	<
Arsenic (PMS)	.	.	.	.	.	.	<	<
Arsenic	<	<	.	<	<	.	.	.
Barium	0.0725	0.071	.	0.0571	0.0641	.	0.18	0.153
Beryllium	<	<	.	<	<	.	<	<
Boron	0.0406	0.0398	.	0.0207	0.0233	.	<	<
Cadmium (PMS)	.	.	.	.	.	.	<	<
Cadmium	<	<	.	<	<	.	.	.
Chromium	0.0467	0.0321	.	0.0858	0.0809	.	<	<
Cobalt	<	<	.	<	<	.	<	<
Copper	<	<	.	<	<	.	<	<
Iron	0.268	0.222	.	0.282	0.279	.	0.174	DUP OUT
Lead (PMS)	.	.	.	.	.	.	<	<
Lead	<	<	.	<	<	.	.	.
Lithium	<	<	.	<	<	.	0.0183	0.0188
Manganese	0.014	0.0126	.	0.0076	0.0078	.	0.0143	0.0168
Mercury (CVAA)	<	<	.	<	<	.	<	<
Nickel	0.0458	0.0455	.	0.0955	0.1	.	<	<
Selenium (PMS)	.	.	.	.	.	.	<	<
Strontium	0.105	0.103	.	0.0631	0.0711	.	1.28	0.928
Uranium (PMS)	.	.	.	.	.	.	0.000556	<
Uranium (KPA)	0.0194	0.016	.	0.00562	0.0058	.	.	.
Vanadium	<	<	.	<	<	.	<	<
Zinc	<	<	.	<	<	.	<	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-724	GW-725				GW-727-02	GW-727-05	GW-727-08
Location	EXP-C	EXP-C				BG	BG	BG
Date Sampled	07/31/00	02/07/00	02/08/00	08/08/00	08/09/00	05/02/00	05/03/00	05/30/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP	WRRP	WRRP	WRRP
Type	DUP							
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	961.05	961.05	961.05	961.05	.	.	.
Depth to Water (ft)	.	11.36	11.47	13.01	13.01	.	.	.
Water-Level Elev. (ft)	.	949.69	949.58	948.04	948.04	.	.	.
Water Temp. (degrees C)	.	14.4	14	15.7	16.4	16.9	21.7	17.6
pH (standard units)	.	7.03	7.14	6.73	6.46	7.45	7.38	6.82
Conductivity (umho/cm)	.	872	872	1065	1078	4580	5500	71200
Dissolved Oxygen (ppm)	.	0.02	1.7	0.22	0.8	6.31	8.81	4.72
Oxidation/Reduction (mV)	.	133	-3	125	0	52	51	46
Turbidity (NTU)	.	.	.	.	.	.	95	57
MISCELLANEOUS ANALYTES								
pH (standard units)	7.59	7	6.96	6.99	7.12	.	.	.
Conductivity (umho/cm)	792	1051	1086	1045	1131	.	.	.
Dissolved Solids (mg/L)	468	650	679	509	822	31000	28000	<
Suspended Solids (mg/L)	<	1	11	<	3	88	76	<
Turbidity (NTU)	1.57	1.82	57.3	2.04	13.5	.	.	.
MAJOR IONS (mg/L)								
Calcium	63.4	156	156	151	159	1510	1270	2060
Magnesium	37.6	24.3	28	24.5	30.7	387	346	503
Potassium	3.29	3.28	3.14	3.15	3.11	58.2	56.3	93
Sodium	26.5	27.8	25.5	26.5	26.4	10700	10200	10900
Alkalinity-HCO3	204	308	314	330	326	49.2	33.6	22
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	76.8	69.9	69.2	73.6	77	21800	20100	26100
Fluoride	0.191	0.249	0.207	0.249	0.182	0.7	0.75	0.73
Nitrate-N	17.3	22.4	27.3	18.6	30.5	<	<	<
Sulfate	26.4	37.4	39.1	36.7	36.3	<	<	6
Ion Charge Balance (RPD)	-3.5	2.6	1.2	0.0	0.2	-3.5	-2.8	-8.6
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	0.211	0.214	1.09
Arsenic (PMS)	<	<	<	<	<	.	.	.
Arsenic	.	.	.	.	.	<	<	<
Barium	0.144	0.223	0.257	0.22	0.256	38.2	29.7	49.4
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	0.262	0.228	0.254
Cadmium (PMS)	<	<	<	<	<	.	.	.
Cadmium	.	.	.	.	.	<	<	<
Chromium	<	<	<	<	<	<	<	0.0075
Cobalt	<	<	<	<	<	<	<	0.0084
Copper	<	<	<	<	<	0.0116	<	0.0134
Iron	DUP OUT	0.153	6.78	0.166	1.77	8.77	8.04	13.9
Lead (PMS)	<	<	<	<	<	.	.	.
Lead	.	.	.	.	.	<	<	<
Lithium	0.0171	<	<	<	<	2.88	3.17	3.96
Manganese	0.0193	0.9	0.635	0.805	0.565	1.12	0.766	0.97
Mercury (CVAA)	0.0091	<	<	<	<	<	.	.
Nickel	<	<	<	<	<	<	<	0.0118
Selenium (PMS)	<	<	<	<	<	.	.	.
Strontium	0.868	0.35	0.477	0.369	0.542	190	153	278
Uranium (PMS)	<	0.0101	0.00803	0.00986	0.00751	.	.	.
Uranium (KPA)	.	.	.	.	.	0.00638	0.00456	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	0.195	0.224	0.156

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-727-13	GW-727-15	GW-727-18		GW-727-22	GW-727-25	GW-727-27	GW-727-30
Location	BG	BG	BG		BG	BG	BG	BG
Date Sampled	06/01/00	06/01/00	06/05/00		06/02/00	06/06/00	06/07/00	06/07/00
Monitoring Program	WRRP	WRRP	WRRP		WRRP	WRRP	WRRP	WRRP
Type				DUP				
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	17.4	20.2	16.7	.	17.5	14.7	14.9	14.9
pH (standard units)	8.55	9.23	8.4	.	8.76	8.81	8.94	8.69
Conductivity (umho/cm)	1089	9920	3040	.	1473	946	1448	1325
Dissolved Oxygen (ppm)	521	5.51	4.97	.	5.34	4.9	8.02	7.65
Oxidation/Reduction (mV)	216	169	186	.	183	135	203	197
Turbidity (NTU)	25	29	3	.	25	37	5	1
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	830	20	2200	2400	840	720	710	690
Suspended Solids (mg/L)	<	<	11	10	200	17	<	17
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	84.7	53.7	7.25	6.78	1.5	2.15	0.975	2.85
Magnesium	23.5	14.5	2.02	1.84	0.423	0.452	0.334	1.1
Potassium	25.8	24.2	10.8	10.1	4.16	3.37	3.25	3.81
Sodium	2480	2160	813	772	329	271	244	223
Alkalinity-HCO3	70	210	352	348	502	494	426	395
Alkalinity-CO3	<	<	32	40	72	70	60	<
Chloride	4970	3980	1240	1260	67.1	6.7	10.6	5.7
Fluoride	2.5	2	4.6	4.7	10.5	7.3	6.7	4.6
Nitrate-N	<	<	<	<	<	<	<	<
Sulfate	<	<	10.4	10.4	33.1	43.9	25.1	43.8
Ion Charge Balance (RPD)	-10.5	-8.4	-8.8	-12.1	-0.3	-3.0	-0.6	4.2
TRACE METALS (mg/L)								
Aluminum	3.41	1.97	<	<	0.474	0.188	0.0516	0.112
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	2.52	1.76	0.192	0.175	0.0297	0.0333	0.0194	0.0441
Beryllium	<	<	<	<	<	<	<	<
Boron	0.362	0.574	0.822	0.809	1.52	2.03	2.17	1.72
Cadmium (PMS)	.	.	.	.	.	.	.	.
Cadmium	<	<	<	<	<	<	<	<
Chromium	0.0101	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	0.0055	<	<	<	<	<	<	<
Iron	5.45	3.58	0.111	0.132	0.692	0.405	0.0741	0.135
Lead (PMS)	.	.	.	.	.	.	.	.
Lead	<	<	<	<	<	<	<	<
Lithium	1.29	1.2	0.557	0.526	0.247	0.203	0.193	0.179
Manganese	0.0813	0.0517	<	<	<	0.0072	<	<
Mercury (CVAA)	.	.	.	.	.	.	.	.
Nickel	0.0156	<	<	<	<	<	<	<
Selenium (PMS)	.	.	.	.	.	.	.	.
Strontium	10.5	6.41	0.752	0.689	0.113	0.106	0.0855	0.308
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	0.109	0.0565	0.0132	0.0324	0.0463	0.0187	0.0187	0.0245

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-729-02	GW-729-06	GW-729-15	GW-729-18	GW-729-22	GW-729-26		GW-729-30
Location	BG	BG	BG	BG	BG	BG		BG
Date Sampled	07/10/00	07/11/00	07/11/00	07/12/00	07/12/00	07/13/00	08/14/00	07/17/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type								
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	19.9	18.5	25.4	17.9	16.4	.	12.3	17.6
pH (standard units)	5.15	6.58	6.12	7.42	7.24	.	8.55	7.96
Conductivity (umho/cm)	85500	52.9	3.28	21900	22500	.	18.3	8490
Dissolved Oxygen (ppm)	1.56	6.43	6.18	5.39	4.17	.	4.35	5.12
Oxidation/Reduction (mV)	121	437	62	-90	-53	.	153	197
Turbidity (NTU)	12	18	212	55	19	.	3	16
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	1500	37000	3800	15000	20000	3200	.	5500
Suspended Solids (mg/L)	140	250	370	9.5	6	<	.	12
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	20800	3240	936	437	617	364	.	46.6
Magnesium	4120	733	232	100	168	89.6	.	13.3
Potassium	253	106	107	63.8	102	90.6	.	25.5
Sodium	6270	15400	7990	5970	7620	6660	.	2110
Alkalinity-HCO3	2	50	80	162	75	.	68	164
Alkalinity-CO3	<	<	<	<	<	.	<	<
Chloride	168000	34700	17700	10500	14000	.	12000	3460
Fluoride	0.1	0.31	0.48	0.8	0.54	.	0.57	0.99
Nitrate-N	<	<	<	<	<	<	.	0.036
Sulfate	<	<	<	<	<	.	15.7	<
Ion Charge Balance (RPD)	-48.2	-4.6	-9.3	-1.4	-2.3	.	.	-2.6
TRACE METALS (mg/L)								
Aluminum	0.144	1.63	9.96	0.37	0.403	<	.	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	.	<
Barium	891	94.6	25.2	9.86	18.5	8.51	.	0.544
Beryllium	<	<	0.0012	<	<	<	.	<
Boron	0.187	0.341	0.5	0.514	0.668	1.22	.	1.36
Cadmium (PMS)	.	.	.	.	.	.	.	.
Cadmium	0.0029	<	<	<	<	<	.	<
Chromium	0.136	<	0.0223	<	<	<	.	<
Cobalt	0.149	0.0054	0.0071	<	<	<	.	<
Copper	0.0258	0.014	0.0274	<	<	<	.	<
Iron	86.5	27.1	19.8	6.64	5.44	3.1	.	0.679
Lead (PMS)	.	.	.	.	.	.	.	.
Lead	<	<	<	<	<	<	.	<
Lithium	10.9	4.12	5.07	3.51	5.61	5.4	.	1.83
Manganese	10.6	3	0.617	0.35	0.233	0.0999	.	0.0218
Mercury (CVAA)	.	.	.	.	.	.	.	.
Nickel	0.0722	<	0.0214	<	<	<	.	<
Selenium (PMS)	.	.	.	.	.	.	.	.
Strontium	3310	454	136	60.9	84.9	51.1	.	4.79
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	.	<
Vanadium	<	<	0.0105	<	<	<	.	<
Zinc	10.2	0.129	0.377	0.0432	0.244	0.0224	.	0.114

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-729-34		GW-729-39	GW-729-44		GW-730-02	GW-730-11	GW-730-18
Location	BG		BG	BG		BG	BG	BG
Date Sampled	07/17/00	07/18/00	07/18/00	07/18/00		08/15/00	08/16/00	08/17/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP		WRRP	WRRP	WRRP
Type					DUP			
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	18.2	.	15.6	16.2	.	.	.	18.2
pH (standard units)	8.5	.	7.92	8.06	.	.	.	6.91
Conductivity (umho/cm)	1315	.	9740	315	.	.	.	59.9
Dissolved Oxygen (ppm)	5.74	.	4.48	4.5	.	.	.	8.25
Oxidation/Reduction (mV)	92	.	57	28	.	.	.	-41
Turbidity (NTU)	16	.	41	.	.	.	.	58
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	650	.	550	230	260	28000	5300	36000
Suspended Solids (mg/L)	<	.	6	<	<	31	32	180
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	6.49	.	45.4	59	60.2	1810	1540	3400
Magnesium	3.01	.	23.7	26.5	27.2	332	330	750
Potassium	6.05	.	6.46	1.21	1.23	68.5	53	78.4
Sodium	218	.	123	3.76	3.72	9130	8350	12100
Alkalinity-HCO3	101	.	106	224	230	52	62	32
Alkalinity-CO3	24	.	<	<	<	<	<	<
Chloride	280	.	267	6.8	6.8	22000	20100	35800
Fluoride	1.6	.	0.71	0.18	0.18	0.41	0.74	0.52
Nitrate-N	.	0.023	<	3.2	3.1	0.028	<	<
Sulfate	56	.	2.8	10.7	11.1	41.1	40.5	<
Ion Charge Balance (RPD)	-6.6	.	-0.1	1.8	.	-9.3	-9.7	-14.2
TRACE METALS (mg/L)								
Aluminum	<	.	0.79	<	<	1.32	0.239	2.08
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	.	<	<	<	<	<	<
Barium	0.0568	.	0.505	0.122	0.119	98.9	76.8	140
Beryllium	<	.	<	<	<	<	<	<
Boron	0.898	.	0.0777	0.0137	0.0135	0.136	0.172	0.163
Cadmium (PMS)	.	.	.	.	.	.	.	.
Cadmium	<	.	<	<	<	<	<	<
Chromium	0.005	.	<	<	0.0106	<	<	0.007
Cobalt	<	.	<	<	<	<	<	0.01
Copper	<	.	<	<	<	<	<	0.0147
Iron	0.382	.	2.32	0.0323	0.191	12.5	9.11	26.9
Lead (PMS)	.	.	.	.	.	.	.	.
Lead	<	.	<	<	<	<	<	<
Lithium	0.158	.	0.0668	0.0112	0.0113	2.11	2.45	3.03
Manganese	0.005	.	0.045	0.0831	0.0838	3.5	1.1	1.99
Mercury (CVAA)	.	.	.	.	.	.	.	.
Nickel	<	.	<	<	0.0108	<	<	<
Selenium (PMS)	.	.	.	.	.	.	.	.
Strontium	1.33	.	1.53	0.316	0.314	224	197	465
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	.	<	<	<	<	<	<	<
Vanadium	<	.	<	<	<	<	<	<
Zinc	0.467	.	0.0204	0.0343	0.0665	0.0556	0.125	0.229

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-730-21	GW-730-25	GW-730-28	GW-730-30		GW-730-35	GW-738	
Location	BG	BG	BG	BG		BG	EXP-C	
Date Sampled	08/17/00	08/21/00	08/21/00	08/22/00		08/22/00	02/03/00	07/31/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP		WRRP	GWPP	GWPP
Type					DUP			
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	983.08	983.08
Depth to Water (ft)	.	.	.	.	.	.	29.58	30.71
Water-Level Elev. (ft)	.	.	.	.	.	.	953.50	952.37
Water Temp. (degrees C)	23.7	17.9	16.9	16.6	.	12.1	13.8	15
pH (standard units)	6.65	7.46	7.31	8.26	.	8.97	7.2	6.95
Conductivity (umho/cm)	66.5	42.7	22.7	8.8	.	3	681	764
Dissolved Oxygen (ppm)	7.62	7.02	6.35	7.94	.	7.7	0.28	2.59
Oxidation/Reduction (mV)	9	-43	71	183	.	58	139	158
Turbidity (NTU)	58	20	62	32	.	19	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	7.13	7.16
Conductivity (umho/cm)	.	.	.	.	.	.	847	776
Dissolved Solids (mg/L)	30000	60000	2700	1700	1600	1200	483	480
Suspended Solids (mg/L)	3300	820	64	17	12	6	<	<
Turbidity (NTU)	.	.	.	.	.	.	0.525	1.3
MAJOR IONS (mg/L)								
Calcium	6440	5490	329	35.3	36.5	2.3	129	118
Magnesium	1460	1300	80.6	10.5	10.8	0.731	24	27.4
Potassium	161	127	32	21.1	20.8	5.74	2.39	2.08
Sodium	13800	14700	4330	1740	1700	443	8.44	6.75
Alkalinity-HCO3	20	12	90	272	292	318	314	344
Alkalinity-CO3	<	<	<	4	8	44	<	<
Chloride	57700	72600	10500	2800	3050	109	19.6	14
Fluoride	0.31	0.31	0.97	2	2.2	4.4	<	<
Nitrate-N	<	<	0.021	0.028	<	<	17.3	9.36
Sulfate	253	<	<	5.2	<	61.3	29.3	25.9
Ion Charge Balance (RPD)	-21.9	-33.4	-16.8	-3.6	-8.8	24.7	0.9	0.1
TRACE METALS (mg/L)								
Aluminum	1.28	1.43	0.133	0.198	0.339	0.0744	<	<
Arsenic (PMS)	.	.	.	.	.	.	<	<
Arsenic	<	<	<	<	<	<	.	.
Barium	261	240	8.31	1.04	1.08	0.0686	0.0602	0.0498
Beryllium	<	<	<	<	<	<	<	<
Boron	0.172	0.13	0.275	0.481	0.475	1.24	<	<
Cadmium (PMS)	.	.	.	.	.	.	<	<
Cadmium	<	<	<	<	<	<	.	.
Chromium	0.0168	0.104	0.0086	0.0066	0.0072	0.0072	<	<
Cobalt	0.0266	0.0259	<	<	<	<	<	<
Copper	0.0101	0.0109	<	<	<	<	<	<
Iron	36	37.1	2.98	1.29	1.78	0.191	<	0.0572
Lead (PMS)	.	.	.	.	.	.	0.00291	<
Lead	<	<	<	<	<	<	.	.
Lithium	5.37	6.93	1.72	1.01	1	0.345	<	<
Manganese	4.36	3.42	0.135	0.0219	0.0248	<	<	<
Mercury (CVAA)	.	.	.	.	.	.	<	<
Nickel	0.0106	0.115	<	<	<	<	<	<
Selenium (PMS)	.	.	.	.	.	.	<	<
Strontium	876	768	36.7	4.21	4.35	0.234	0.134	0.117
Uranium (PMS)	.	.	.	.	.	.	0.00229	0.0018
Uranium (KPA)	<	<	<	<	<	<	.	.
Vanadium	<	<	<	<	<	<	<	<
Zinc	0.119	0.148	0.0753	0.0564	0.0894	0.0329	<	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-740		GW-790-02	GW-790-05	GW-790-07	GW-790-14		GW-790-19
Location	EXP-C		BG	BG	BG	BG		BG
Date Sampled	02/02/00	07/27/00	06/08/00	06/12/00	06/13/00	06/14/00		06/15/00
Monitoring Program	GWPP	GWPP	WRRP	WRRP	WRRP	WRRP		WRRP
Type							DUP	
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1020.43	1020.43	.	.	.	.	.	.
Depth to Water (ft)	71.23	72.98	.	.	.	.	.	.
Water-Level Elev. (ft)	949.20	947.45	.	.	.	.	.	.
Water Temp. (degrees C)	13.1	16.1	16.6	19.7	18.9	17.6	.	20.3
pH (standard units)	7.5	6.74	6.2	7.18	6.86	8.64	.	8.97
Conductivity (umho/cm)	419	564	153900	43800	5700	10810	.	7350
Dissolved Oxygen (ppm)	2.38	2.34	6.42	4.9	7.89	5.9	.	6.3
Oxidation/Reduction (mV)	123	148	134	-97	22	221	.	170
Turbidity (NTU)	.	.	17	3	.	12	.	8
MISCELLANEOUS ANALYTES								
pH (standard units)	7.54	7.41	.	.	.	.	.	.
Conductivity (umho/cm)	550	539	.	.	.	.	.	.
Dissolved Solids (mg/L)	290	309	170000	31000	39000	13000	13000	5100
Suspended Solids (mg/L)	2	<	<	<	<	23	12	17
Turbidity (NTU)	5.57	1.31	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	64.2	64.6	9460	1020	1670	228	207	34.5
Magnesium	30.8	33.5	2050	245	385	42.1	37.8	8.72
Potassium	<	<	161	36.4	97.8	30.4	25.3	12.1
Sodium	1.81	1.79	8340	9150	11400	4390	4130	1890
Alkalinity-HCO3	286	268	30	44	18	42	34	64
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	6.83	6.46	111000	18400	24000	8470	8300	3380
Fluoride	0.237	0.164	0.33	1	0.94	1.7	1.6	2.5
Nitrate-N	2.69	2.4	<	<	<	<	<	<
Sulfate	13.9	12.1	<	<	<	<	<	<
Ion Charge Balance (RPD)	-4.8	0.7	-51.3	-5.0	-5.0	-7.5	-9.6	-6.5
TRACE METALS (mg/L)								
Aluminum	<	<	0.0638	0.495	0.273	<	<	0.514
Arsenic (PMS)	<	<	.	.	.	.	.	.
Arsenic	.	.	<	<	<	<	<	<
Barium	0.0881	0.087	362	26.2	38.1	5.78	5.11	1.12
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	0.101	0.214	0.203	0.277	0.244	0.368
Cadmium (PMS)	<	<	.	.	.	.	.	.
Cadmium	.	.	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	0.0144	<	<	<	<	<
Copper	<	<	0.0103	0.0056	<	<	<	<
Iron	1.23	0.632	53.2	5.7	11.1	0.313	0.233	0.842
Lead (PMS)	<	0.000966	.	.	.	.	.	.
Lead	.	.	<	<	<	<	<	<
Lithium	0.0135	0.0177	6.8	3.57	2.99	2.89	2.59	1.21
Manganese	0.0062	<	5.6	0.62	0.786	0.0737	0.0625	0.0192
Mercury (CVAA)	<	<	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	<	.	.	.	.	.	.
Strontium	0.0527	0.0546	1470	120	213	26.4	23.6	3.27
Uranium (PMS)	<	0.000676	.	.	.	.	.	.
Uranium (KPA)	.	.	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	0.113	0.081	0.0777	0.0123	0.0231	0.0104

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-790-23	GW-790-29	GW-790-32	GW-790-35	GW-790-39	GW-829		GW-835
Location	BG	BG	BG	BG	BG	OLF		S3
Date Sampled	06/15/00	06/19/00	06/19/00	06/19/00	06/19/00	02/29/00	09/08/00	02/15/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	GWPP	GWPP	WRRP
Type								
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	985.98	985.98	1000.91
Depth to Water (ft)	.	.	.	.	.	13.79	13.88	14.90
Water-Level Elev. (ft)	.	.	.	.	.	972.19	972.10	986.01
Water Temp. (degrees C)	20.9	20	19.1	19.7	20.1	15.5	18	15.8
pH (standard units)	9.06	8.96	8.85	7.59	8.57	9.04	8.87	6.75
Conductivity (umho/cm)	2500	900	601	441	755	543	586	1438
Dissolved Oxygen (ppm)	4.95	7.61	8.65	8.05	5.7	1.19	4	11.95
Oxidation/Reduction (mV)	190	57	67	132	180	114	119	126
Turbidity (NTU)	145	.	.	.	.	.	.	18
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	8.89	8.93	.
Conductivity (umho/cm)	.	.	.	.	.	583	577	.
Dissolved Solids (mg/L)	1600	710	510	320	100	1310	378	.
Suspended Solids (mg/L)	59	<	<	<	<	<	<	.
Turbidity (NTU)	.	.	.	.	.	1.11	0.899	.
MAJOR IONS (mg/L)								
Calcium	9.01	1.19	2.48	68.2	3.58	13.6	12.6	156
Magnesium	2.68	0.491	1.22	19.1	9.41	4.97	4.49	43.3
Potassium	6.66	4.29	4.1	1.69	2.74	4.94	4.53	6.72
Sodium	631	330	216	7.31	28.2	111	105	40.9
Alkalinity-HCO3	260	453	331	188	120	176	177	267
Alkalinity-CO3	40	163	60	<	40	14.6	16.4	<
Chloride	938	12.3	12.6	13	43.5	2.55	2.53	124
Fluoride	4.6	6.4	5.6	0.51	0.29	0.457	0.503	0.58
Nitrate-N	0.036	<	<	9.8	<	21.1	20.3	24.2
Sulfate	<	36.8	0.98	23.9	<	18	17.7	53.1
Ion Charge Balance (RPD)	-7.3	2.8	6.8	-0.1	-32.8	2.1	-0.9	6.4
TRACE METALS (mg/L)								
Aluminum	4.21	0.0937	<	0.135	<	<	<	0.0969
Arsenic (PMS)	.	.	.	.	.	<	<	.
Arsenic	<	<	<	<	<	.	.	<
Barium	0.133	0.0375	0.0543	0.0702	0.024	0.448	0.414	0.104
Beryllium	<	<	<	<	<	<	<	<
Boron	0.752	2.41	2.2	0.0438	0.0326	0.254	0.243	0.0612
Cadmium (PMS)	.	.	.	.	.	<	<	.
Cadmium	<	<	<	<	<	.	.	0.008
Chromium	0.0098	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	0.0084	<	<	<	<	<	<	<
Iron	5.59	0.124	0.141	0.428	0.0311	<	<	<
Lead (PMS)	.	.	.	.	.	<	0.00128	.
Lead	<	<	<	<	<	.	.	<
Lithium	0.488	0.292	0.192	<	0.0126	0.0538	0.0512	0.0239
Manganese	0.0793	<	<	0.0056	0.0133	<	<	3.6
Mercury (CVAA)	.	.	.	.	.	<	<	<
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	.	.	.	.	.	<	<	.
Strontium	0.335	0.111	0.236	0.162	0.0633	0.812	0.748	0.431
Uranium (PMS)	.	.	.	.	.	0.00127	0.0014	.
Uranium (KPA)	<	0.0169	<	0.0191	<	.	.	0.734
Vanadium	<	<	<	<	<	<	<	<
Zinc	0.0724	<	0.0247	0.0114	<	<	<	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-835			GW-838			GW-840	
Location	S3			EMWMF			EMWMF	
Date Sampled	06/16/00	08/29/00	11/14/00	02/14/00	04/12/00	08/07/00	02/10/00	04/11/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type								
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1000.91	1000.91	1000.91	967.73	967.73	967.73	1027.63	1027.63
Depth to Water (ft)	15.22	15.62	15.35	18.28	16.48	19.10	26.40	22.40
Water-Level Elev. (ft)	985.69	985.29	985.56	949.45	951.25	948.63	1001.23	1005.23
Water Temp. (degrees C)	18.1	20.4	17.9	13.7	13.5	17.7	11	14.8
pH (standard units)	6.47	6.66	6.44	7.36	7.08	6.96	6.6	6.46
Conductivity (umho/cm)	1066	1207	876	368	298	382	247	169
Dissolved Oxygen (ppm)	5.75	8.2	3.9	1.57	1.69	6.51	1.29	7.88
Oxidation/Reduction (mV)	175	173	116	182	162	156	229	177
Turbidity (NTU)	15	14	28	4	1	20	20	9
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	.	.	.	140	190	190	180	66
Suspended Solids (mg/L)	.	.	.	<	<	21	12	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	161	149	137	61.2	56.3	49.1	20.9	9.29
Magnesium	33.5	32.7	31.6	5.09	2.6	3.31	5.34	2.6
Potassium	6.78	6.41	6.13	0.84	0.853	0.566	2.1	1.61
Sodium	30.6	24.4	26.9	6.89	5.93	5.1	7.07	4.57
Alkalinity-HCO3	310	280	283	192	148	169	90	48
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	44.7	27.7	41.2	1.4	1.5	1.7	1.2	0.87
Fluoride	0.83	0.77	0.56	0.14	<	0.14	0.1	0.14
Nitrate-N	27.6	33.6	24.5	<	<	1.9	<	<
Sulfate	98.6	92.4	85.4	15.8	11.8	16.8	11	9.7
Ion Charge Balance (RPD)	3.2	2.8	1.8	-5.2	0.3	-14.0	-5.7	-13.0
TRACE METALS (mg/L)								
Aluminum	<	0.104	0.0664	<	<	<	0.135	0.304
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.0918	0.0923	0.0785	0.106	0.0782	0.0542	0.199	0.0978
Beryllium	<	<	<	<	<	<	<	<
Boron	0.0705	0.078	0.0678	<	<	<	0.0108	<
Cadmium (PMS)	.	.	.	.	.	.	.	.
Cadmium	0.0045	0.0089	0.0059	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	0.0073	0.0078
Iron	<	0.0237	0.0918	0.0271	0.0474	<	0.147	0.285
Lead (PMS)	.	.	.	.	.	.	.	.
Lead	<	<	<	<	<	<	<	<
Lithium	0.0262	0.0238	0.0213	0.01	<	<	<	<
Manganese	2.21	3.14	1.64	0.076	0.0316	0.0458	1.2	0.335
Mercury (CVAA)	.	.	.	<	<	<	<	<
Nickel	<	<	<	<	<	<	0.0254	0.0152
Selenium (PMS)	.	.	.	.	.	.	.	.
Strontium	0.436	0.424	0.399	0.084	0.0813	0.0628	0.0482	0.0248
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	1.05	0.883	0.279	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	0.0135	<	<	<	<	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-840	GW-904			GW-905			NT-01
Location	EMWMF	EMWMF			EMWMF			EXP-SW
Date Sampled	08/07/00	02/08/00	04/10/00	08/02/00	02/14/00	04/12/00	08/07/00	02/10/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	GWPP
Type								
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1027.63	952.88	952.88	952.88	973.59	973.59	973.59	.
Depth to Water (ft)	24.05	9.92	8.07	10.09	22.74	20.18	22.39	.
Water-Level Elev. (ft)	1003.58	942.96	944.81	942.79	950.85	953.41	951.20	.
Water Temp. (degrees C)	20.1	10.5	14.5	19.9	12.9	16.7	21.8	6.5
pH (standard units)	6.44	10.19	9.8	9.72	7.93	8.11	8.01	7.58
Conductivity (umho/cm)	290	1034	971	1297	339	343	508	1626
Dissolved Oxygen (ppm)	5.34	0.42	1.04	2.78	0.87	2.68	6.82	3.4
Oxidation/Reduction (mV)	92	15	18	58	-27	39	148	198
Turbidity (NTU)	0	42	25	38	0	5	12	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	6.81
Conductivity (umho/cm)	.	.	.	.	.	.	.	2250
Dissolved Solids (mg/L)	140	690	730	720	160	230	220	1670
Suspended Solids (mg/L)	28	8.1	8.7	7	<	<	26	<
Turbidity (NTU)	.	.	.	.	.	.	.	1.09
MAJOR IONS (mg/L)								
Calcium	34.7	1.83	1.85	1.69	44.4	43.8	45.2	334
Magnesium	7.03	0.626	0.599	0.515	7.42	6.13	8.45	43
Potassium	2.23	12.2	15.6	12.1	1.88	1.55	2.11	5.64
Sodium	8.53	237	233	224	16.3	23.9	23.9	43.3
Alkalinity-HCO3	119	2	520	270	157	174	180	158
Alkalinity-CO3	<	560	<	300	<	<	<	<
Chloride	2.1	2.7	2.8	2.8	1.1	1	1.2	24.6
Fluoride	0.11	3.5	3.6	3.2	0.12	0.12	0.14	1.18
Nitrate-N	<	<	<	3	<	<	3.7	217
Sulfate	3.7	38	38.2	38.7	15.7	19.7	17.9	22.5
Ion Charge Balance (RPD)	4.1	-7.1	-3.8	-11.1	1.1	-2.0	-2.8	5.6
TRACE METALS (mg/L)								
Aluminum	0.137	2.97	2.27	2.2	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	<
Arsenic	<	<	<	<	<	<	<	.
Barium	0.298	0.0397	0.0447	0.0417	0.11	0.12	0.117	0.775
Beryllium	<	<	<	<	<	<	<	<
Boron	0.0121	0.431	0.422	0.412	0.0204	0.0132	0.027	<
Cadmium (PMS)	.	.	.	.	.	.	.	0.00343
Cadmium	<	<	<	<	<	<	<	.
Chromium	<	0.0104	0.0104	0.0089	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	0.0187	0.0148	0.0096	<	<	<	<
Iron	0.138	1.53	1.47	1.25	0.101	0.14	0.173	<
Lead (PMS)	.	.	.	.	.	.	.	<
Lead	<	0.0031	<	<	<	<	<	.
Lithium	<	0.0937	0.0973	0.0894	0.0131	0.0192	0.0205	<
Manganese	1.27	0.0128	0.012	0.0106	0.0331	0.0242	0.0178	0.358
Mercury (CVAA)	<	<	<	<	<	<	<	<
Nickel	0.0131	<	<	<	<	<	<	<
Selenium (PMS)	.	.	.	.	.	.	.	<
Strontium	0.0682	0.101	0.0995	0.0896	0.427	0.275	0.562	0.998
Uranium (PMS)	.	.	.	.	.	.	.	0.0166
Uranium (KPA)	<	<	<	<	<	<	<	.
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	NT-01	NT-07		NT-08		SS-1		SS-4
Location	EXP-SW	EXP-SW		EXP-SW		EXP-SW		EXP-SW
Date Sampled	08/02/00	01/25/00	08/17/00	01/25/00	08/17/00	02/10/00	08/02/00	02/09/00
Monitoring Program	GWPP	WRRP	WRRP	WRRP	WRRP	GWPP	GWPP	GWPP
Type								
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	24.4	4.1	20	3.2	20	10.7	18.6	10.3
pH (standard units)	7.57	6.91	6.25	7.09	6.25	7.89	7.6	7.29
Conductivity (umho/cm)	1019	159	247	125	247	900	1227	689
Dissolved Oxygen (ppm)	8.02	.	9.58	.	9.58	6.89	8.39	4.76
Oxidation/Reduction (mV)	160	.	149	.	149	187	163	161
Turbidity (NTU)	.	20	11	19	11	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.56	.	.	.	.	7.55	7.54	7.3
Conductivity (umho/cm)	977	.	.	.	.	1164	1288	929
Dissolved Solids (mg/L)	691	170	470	140	560	751	770	603
Suspended Solids (mg/L)	6	<	17	<	14	<	9	1
Turbidity (NTU)	3.12	.	.	.	.	0.558	4.5	0.875
MAJOR IONS (mg/L)								
Calcium	133	54.9	71.6	47.5	65.8	184	200	130
Magnesium	19.3	8.37	11.4	6.11	8.61	18.4	20.2	22.4
Potassium	4.82	2.25	2.92	1.81	2.74	4.02	4.53	2.93
Sodium	27.8	5.37	7.8	4.56	7.45	35.6	34.7	21.4
Alkalinity-HCO3	195	123	170	124	168	336	366	220
Alkalinity-CO3	<	<	8	<	<	<	<	<
Chloride	28.3	19.3	53.7	12.2	16.9	97.8	123	41.7
Fluoride	0.693	<	0.14	0.1	0.21	0.325	0.299	0.523
Nitrate-N	48.6	0.31	<	2.4	5.4	17.2	19.8	40
Sulfate	31.2	23.6	<	19.3	12.8	66.3	51.8	51.3
Ion Charge Balance (RPD)	3.8	2.8	-1.5	-4.3	-1.3	1.0	-0.1	-1.0
TRACE METALS (mg/L)								
Aluminum	0.252	<	<	0.0614	0.0661	<	1.46	<
Arsenic (PMS)	<	.	.	.	.	<	<	<
Arsenic	.	<	<	<	<	.	.	.
Barium	0.239	0.0437	0.0604	0.0647	0.101	0.0891	0.106	0.162
Beryllium	<	<	<	<	<	<	<	<
Boron	<	0.204	0.403	0.54	0.629	<	<	<
Cadmium (PMS)	0.00217	.	.	.	.	<	0.000528	<
Cadmium	.	<	<	<	<	.	.	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.165	0.0716	0.124	0.16	0.322	<	1.2	0.0535
Lead (PMS)	<	.	.	.	.	<	0.0026	<
Lead	.	<	<	<	<	.	.	.
Lithium	<	0.106	0.0718	0.132	0.109	<	<	0.0168
Manganese	0.428	0.0089	0.0401	0.0875	0.113	0.00624	0.254	0.0176
Mercury (CVAA)	0.000254	<	.	<	.	<	<	<
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	.	.	.	.	<	<	<
Strontium	0.417	0.114	0.162	0.108	0.164	0.655	0.709	0.361
Uranium (PMS)	0.14	.	.	.	.	0.0444	0.0408	0.332
Uranium (KPA)	.	0.0194	0.0206	0.442	0.238	.	.	.
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	SS-4	SS-5		SS-6			SS-6.6	
Location	EXP-SW	EXP-SW		EXP-SW			EXP-SW	
Date Sampled	08/01/00	02/09/00	08/01/00	02/09/00		08/01/00	01/25/00	
Monitoring Program	GWPP	GWPP	GWPP	GWPP		GWPP	WRRP	
Type					DUP			DUP
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	17.7	12.5	14.9	11.4	.	15.3	7.3	.
pH (standard units)	7.11	7.91	7.51	7.79	.	7.15	6.34	.
Conductivity (umho/cm)	837	426	488	338	.	412	177	.
Dissolved Oxygen (ppm)	5.27	5.4	6.2	5.51	.	4.01	15.83	.
Oxidation/Reduction (mV)	112	150	92	142	.	157	.	.
Turbidity (NTU)	.	.	.	.	.	.	100	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.42	7.31	7.39	7.25	7.22	7.31	.	.
Conductivity (umho/cm)	882	541	518	431	431	422	.	.
Dissolved Solids (mg/L)	662	314	326	234	245	272	81	180
Suspended Solids (mg/L)	3	<	1	1	<	5	<	6.1
Turbidity (NTU)	1.78	1.61	3.15	1.85	1.83	10.8	.	.
MAJOR IONS (mg/L)								
Calcium	120	73.9	70.7	58.1	57.5	52.6	51.9	49.4
Magnesium	22	15.1	19.3	17.7	17.4	20.9	14.6	13.9
Potassium	3.45	2.05	2.14	<	<	<	1.16	1.08
Sodium	20.3	10.7	8.65	6.35	6.25	3.74	5.19	4.84
Alkalinity-HCO3	230	162	210	180	180	181	189	164
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	39.8	22.5	17.4	12.4	12.9	7.75	12.6	10.5
Fluoride	0.423	0.276	0.192	0.12	0.113	0.108	<	<
Nitrate-N	42.6	10.5	6.95	2.33	2.48	1.6	0.97	0.98
Sulfate	25.7	27.9	16.1	17.3	18.7	21.5	14.1	14.5
Ion Charge Balance (RPD)	-3.0	2.1	0.2	1.7	0.4	1.2	-5.3	-1.3
TRACE METALS (mg/L)								
Aluminum	<	<	0.269	<	<	0.971	0.0876	0.0737
Arsenic (PMS)	<	<	<	<	<	<	.	.
Arsenic	.	.	.	.	.	.	<	<
Barium	0.181	0.084	0.0946	0.0766	0.074	0.092	0.0492	0.047
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	0.0198	0.0188
Cadmium (PMS)	<	<	<	<	<	<	.	.
Cadmium	.	.	.	.	.	.	<	<
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.204	<	0.172	<	<	0.614	0.219	0.221
Lead (PMS)	0.0752	<	<	<	<	0.00325	.	.
Lead	.	.	.	.	.	.	<	<
Lithium	0.0135	0.0104	0.0107	<	<	<	<	<
Manganese	0.0332	<	0.00566	0.00596	0.00583	0.0327	0.0141	0.0162
Mercury (CVAA)	<	<	<	<	<	<	<	<
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	<	<	<	<	<	.	.
Strontium	0.338	0.166	0.149	0.0978	0.096	0.0834	0.0682	0.0647
Uranium (PMS)	0.108	0.132	0.0614	0.0212	0.0209	0.00863	.	.
Uranium (KPA)	.	.	.	.	.	.	0.00793	0.00715
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX D.1: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	SS-6.6		SS-7		SS-8	
Location	EXP-SW		EXP-SW		EXP-SW	
Date Sampled	08/16/00		01/25/00	08/16/00	01/25/00	08/16/00
Monitoring Program	WRRP		WRRP	WRRP	WRRP	WRRP
Type		DUP				
FIELD MEASUREMENTS						
Measuring Pt. Elev. (ft)	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.
Water Temp. (degrees C)	18.3	.	12.4	14.7	11.3	14.8
pH (standard units)	7.64	.	6.21	7.67	5.95	7.68
Conductivity (umho/cm)	203	.	139	185	116	158
Dissolved Oxygen (ppm)	11.25	.	12.18	12.83	12.9	12.79
Oxidation/Reduction (mV)	83	.	.	30	.	60
Turbidity (NTU)	380	.	20	274	22	192
MISCELLANEOUS ANALYTES						
pH (standard units)	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.
Dissolved Solids (mg/L)	200	190	140	190	110	140
Suspended Solids (mg/L)	91	600	<	<	<	<
Turbidity (NTU)	.	.	.	.	.	.
MAJOR IONS (mg/L)						
Calcium	60	48.8	37.5	43.4	35	44.6
Magnesium	17.1	13.5	14.7	17.4	8.58	10.8
Potassium	1.77	1.48	1.01	1.15	1	1.21
Sodium	3.83	3.03	4.64	4.69	5.12	2.57
Alkalinity-HCO3	164	182	124	158	126	150
Alkalinity-CO3	<	<	<	<	<	<
Chloride	6.7	6.6	9.3	7.8	11.5	3.7
Fluoride	<	<	<	<	<	<
Nitrate-N	0.62	0.64	1.3	1.7	0.29	<
Sulfate	9.1	9.1	10.3	7.8	6.6	2.8
Ion Charge Balance (RPD)	11.0	-4.4	4.1	2.3	-5.2	1.5
TRACE METALS (mg/L)						
Aluminum	6.13	7.01	<	0.0587	0.172	0.0783
Arsenic (PMS)	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<
Barium	0.104	0.106	0.051	0.0617	0.0409	0.0468
Beryllium	<	<	<	<	<	<
Boron	0.0267	0.0216	0.0237	0.0292	<	<
Cadmium (PMS)	.	.	.	.	.	.
Cadmium	<	<	<	<	<	<
Chromium	0.0088	0.0107	<	<	<	<
Cobalt	<	<	<	<	<	<
Copper	0.0066	0.0083	<	<	<	<
Iron	10.3	13.3	0.0281	0.0586	0.122	0.1
Lead (PMS)	.	.	.	.	.	.
Lead	0.0175	0.0237	<	<	<	<
Lithium	0.0135	0.0136	<	<	<	<
Manganese	0.132	0.139	<	<	<	0.0069
Mercury (CVAA)	0.00023	0.00037	<	<	<	<
Nickel	<	<	<	<	<	<
Selenium (PMS)	.	.	.	.	.	.
Strontium	0.0723	0.059	0.0466	0.0554	0.045	0.0546
Uranium (PMS)	.	.	.	.	.	.
Uranium (KPA)	0.00503	0.00444	0.0168	0.0136	<	<
Vanadium	0.0124	0.0148	<	<	<	<
Zinc	0.0475	0.0579	<	<	<	<

APPENDIX D.2

VOLATILE ORGANIC COMPOUNDS

APPENDIX D.2: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	BCK-00.63		BCK-04.55		BCK-07.87		BCK-09.40	
Location	EXP-SW		EXP-SW		EXP-SW		EXP-SW	
Date Sampled	02/09/00	08/01/00	02/09/00	08/01/00	02/09/00	08/01/00	02/10/00	08/02/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP
Type								
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	2	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	34	4
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	4	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	3	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	BCK-09.47		BCK-11.97		GW-006			
Location	EXP-SW		EXP-SW		EMWMF			
Date Sampled	01/25/00	08/16/00	02/10/00	08/02/00	02/08/00		04/12/00	
Monitoring Program	WRRP	WRRP	GWPP	GWPP	WRRP		WRRP	
Type						DUP		DUP
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	2	<	<	<	13	13	13	13
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	1	<	2	2
cis-1,2-Dichloroethene	33	3	<	<	7	8	9	9
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	5	<	<	<	<	<	<	1
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	1	1
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	4	<	<	<	4	4	4	4
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Volatile Organic Compounds (ug/L)

Sampling Point	GW-006		GW-008		GW-043			GW-044
Location	EMWMF		OLF		EMWMF			EMWMF
Date Sampled	08/02/00		01/10/00	07/12/00	02/09/00	04/13/00	08/03/00	02/09/00
Monitoring Program	WRRP		WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type		DUP						
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	1	2	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	1	<	<	<	<	<
1,1-Dichloroethane	11	11	11	9	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	2	5	5	<	<	<	<
cis-1,2-Dichloroethene	7	8	24	18	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	2	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	1	1	75	33	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	5	<	12	7	<	<	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-044		GW-046		GW-053		GW-056	
Location	EMWMF		BG		BG		EXP-A	
Date Sampled	04/13/00	08/03/00	01/11/00	07/19/00	02/21/00	08/22/00	01/12/00	
Monitoring Program	WRRP	WRRP	WRRP	WRRP	GWPP	GWPP	GWPP	
Type								DUP
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	21	25	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	26	9	<	<	<	<
Chloroform	<	<	2	4	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	250	160	7	6	<	<
1,2-Dichloroethane	<	<	<	5	<	<	<	<
1,1-Dichloroethene	<	<	170	78	<	<	<	<
cis-1,2-Dichloroethene	<	<	6200	11000	16	15	<	<
trans-1,2-Dichloroethene	<	<	26	28	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	5	2	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	1300	8400	<	<	<	<
Toluene	<	<	3	<	<	<	<	<
1,1,1-Trichloroethane	<	<	300	110	<	<	<	<
1,1,2-Trichloroethane	<	<	3	1	<	<	<	<
Trichloroethene	<	<	2800	4800	3	3	<	<
Vinyl chloride	<	<	760	760	5	3	<	<

(Continued)

APPENDIX D.2: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-056	GW-077		GW-078		GW-079		GW-080
Location	EXP-A	BG		BG		BG		BG
Date Sampled	07/11/00	02/17/00	08/15/00	02/17/00	08/15/00	02/22/00	08/16/00	08/16/00
Monitoring Program	GWPP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type								
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	3
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-080	GW-085		GW-115		GW-226		GW-276
Location	BG	OLF		S3		OLF		S3
Date Sampled	08/16/00	02/29/00	09/08/00	01/04/00	07/12/00	03/01/00	09/11/00	01/04/00
Monitoring Program	WRRP	GWPP	GWPP	WRRP	WRRP	GWPP	GWPP	WRRP
Type	DUP							
Acetone	<	<	<	<	140	<	<	<
Benzene	<	<	<	<	8	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	1
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	4	3	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	9
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	160	87	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

APPENDIX D.2: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-276	GW-287			GW-311		GW-315	
Location	S3	BG			RS		SPI	
Date Sampled	07/12/00	02/17/00		08/21/00	02/28/00	09/06/00	02/28/00	09/05/00
Monitoring Program	WRRP	GWPP		GWPP	GWPP	GWPP	GWPP	GWPP
Type			DUP					
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	2	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	3	3
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	14	<	<	3	<	<	13	10
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	4	6	6	5
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-526		GW-537			GW-615		
Location	S3		OLF			S3		
Date Sampled	02/22/00	08/16/00	03/01/00	09/11/00		02/15/00	06/08/00	08/30/00
Monitoring Program	WRRP	WRRP	GWPP	GWPP		WRRP	WRRP	WRRP
Type					DUP			
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	29	<
2-Butanone	<	<	<	<	<	<	<	2
Carbon disulfide	<	<	<	<	<	<	<	1
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	15	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

APPENDIX D.2: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-621		GW-627				GW-653	
Location	EXP-B		BG				BG	
Date Sampled	01/19/00	07/13/00	02/21/00	02/23/00	08/22/00	08/23/00	02/17/00	08/21/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP
Type								
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	62	5	34	7	5	4
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	16	<	9	<	<	<
cis-1,2-Dichloroethene	<	<	8	<	5	<	89	66
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	500	73	340	80	8	5
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	170	15	85	17	5	3
Vinyl chloride	<	<	17	<	7	<	<	<

(Continued)

Sampling Point	GW-683		GW-684		GW-685		GW-695	
Location	EXP-A		EXP-A		EXP-A		EXP-B	
Date Sampled	01/18/00	07/12/00	01/13/00	07/12/00	01/13/00	07/11/00	01/24/00	07/13/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP
Type								
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	4	<	<	<	<	<	3	3
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	6	6
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Volatile Organic Compounds (ug/L)

Sampling Point	GW-703		GW-704		GW-706			
Location	EXP-B		EXP-B		EXP-B			
Date Sampled	01/24/00	07/24/00	01/25/00	07/24/00	01/31/00	02/01/00	07/25/00	07/26/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP
Type								
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	5	<	<	<	<
cis-1,2-Dichloroethene	5	5	4	<	12	<	3	7
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	19	21	50	69	19	<	9	13
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-712		GW-713		GW-714		GW-715	
Location	EXP-W		EXP-W		EXP-W		EXP-W	
Date Sampled	01/10/00	07/10/00	01/06/00	07/10/00	01/05/00	07/11/00	01/05/00	
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	
Type								DUP
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	2	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Volatile Organic Compounds (ug/L)

Sampling Point	GW-715		GW-724			GW-725		
Location	EXP-W		EXP-C			EXP-C		
Date Sampled	07/11/00		02/03/00	07/31/00		02/07/00	02/08/00	08/08/00
Monitoring Program	WRRP		GWPP	GWPP		GWPP	GWPP	GWPP
Type		DUP			DUP			
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	3	3	3	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	3	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	130	120	120	12	55	13
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-725	GW-727-02	GW-727-05	GW-727-08	GW-727-13	GW-727-15	GW-727-18	
Location	EXP-C	BG	BG	BG	BG	BG	BG	
Date Sampled	08/09/00	05/02/00	05/03/00	05/30/00	06/01/00	06/01/00	06/05/00	
Monitoring Program	GWPP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	
Type								DUP
Acetone	<	<	<	<	<	<	<	<
Benzene	<	3	3	3	4	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	2	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	3	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	1	<	8	9
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	90	<	<	<	<	<	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

APPENDIX D.2: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-727-22	GW-727-25	GW-727-27	GW-727-30	GW-729-02	GW-729-06	GW-729-15	GW-729-18
Location	BG	BG	BG	BG	BG	BG	BG	BG
Date Sampled	06/02/00	06/06/00	06/07/00	06/07/00	07/10/00	07/11/00	07/11/00	07/12/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type								
Acetone	<	<	<	<	<	28	18	<
Benzene	<	<	1	<	1	5	3	3
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-729-22	GW-729-26	GW-729-30	GW-729-34	GW-729-39	GW-729-44	GW-730-02	GW-730-11
Location	BG	BG	BG	BG	BG	BG	BG	BG
Date Sampled	07/12/00	08/14/00	07/17/00	07/17/00	07/18/00	07/18/00	08/15/00	08/16/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type								
Acetone	<	<	<	<	<	7	<	<
Benzene	5	1	1	11	1	<	2	6
Bromomethane	<	<	<	<	<	<	<	4
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	2	<	<	<
Ethylbenzene	1	7	2	6	2	<	<	<
Styrene	1	5	2	5	3	<	<	2
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	1	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	2	<	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

APPENDIX D.2: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-730-18	GW-730-21	GW-730-25	GW-730-28	GW-730-30		GW-730-35	GW-738
Location	BG	BG	BG	BG	BG		BG	EXP-C
Date Sampled	08/17/00	08/17/00	08/21/00	08/21/00	08/22/00		08/22/00	02/03/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP		WRRP	GWPP
Type						DUP		
Acetone	<	<	<	<	<	<	<	<
Benzene	2	3	2	5	3	2	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	3	<	2	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	31
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-738	GW-740		GW-790-02	GW-790-05	GW-790-07	GW-790-14	
Location	EXP-C	EXP-C		BG	BG	BG	BG	
Date Sampled	07/31/00	02/02/00	07/27/00	06/08/00	06/12/00	06/13/00	06/14/00	
Monitoring Program	GWPP	GWPP	GWPP	WRRP	WRRP	WRRP	WRRP	
Type								DUP
Acetone	<	<	<	13	<	16	<	<
Benzene	<	<	<	2	5	3	4	4
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	35	63	62	<	<	<	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

APPENDIX D.2: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-790-19	GW-790-23	GW-790-29	GW-790-32	GW-790-35	GW-790-39	GW-829	
Location	BG	BG	BG	BG	BG	BG	OLF	
Date Sampled	06/15/00	06/15/00	06/19/00	06/19/00	06/19/00	06/19/00	02/29/00	09/08/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	GWPP	GWPP
Type								
Acetone	<	<	<	11	<	<	<	<
Benzene	3	<	<	1	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	1	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	2	<	<	<	<	<
Styrene	0.9	<	4	5	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-835				GW-838			GW-840
Location	S3				EMWMF			EMWMF
Date Sampled	02/15/00	06/16/00	08/29/00	11/14/00	02/14/00	04/12/00	08/07/00	02/10/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type								
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	1	4	4	5	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Volatile Organic Compounds (ug/L)

Sampling Point	GW-840		GW-904			GW-905		
Location	EMWMF		EMWMF			EMWMF		
Date Sampled	04/11/00	08/07/00	02/08/00	04/10/00	08/02/00	02/14/00	04/12/00	08/07/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type								
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	1
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	NT-01		NT-07		NT-08		SS-1	
Location	EXP-SW		EXP-SW		EXP-SW		EXP-SW	
Date Sampled	02/10/00	08/02/00	01/25/00	08/17/00	01/25/00	08/17/00	02/10/00	08/02/00
Monitoring Program	GWPP	GWPP	WRRP	WRRP	WRRP	WRRP	GWPP	GWPP
Type								
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	8	<	1	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	25	3	6	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	7	<	2	<	<	<
cis-1,2-Dichloroethene	<	<	410	36	100	4	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	4	<	92	6	12	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	74	6	8	<	<	<
Vinyl chloride	<	<	22	<	5	<	<	<

(Continued)

APPENDIX D.2: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	SS-4		SS-5		SS-6			SS-6.6
Location	EXP-SW		EXP-SW		EXP-SW			EXP-SW
Date Sampled	02/09/00	08/01/00	02/09/00	08/01/00	02/09/00		08/01/00	01/25/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP		GWPP	WRRP
Type						DUP		
Acetone	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	3	3	9	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	10	7	<	<	<	<	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	SS-6.6			SS-7		SS-8	
Location	EXP-SW			EXP-SW		EXP-SW	
Date Sampled	01/25/00	08/16/00		01/25/00	08/16/00	01/25/00	08/16/00
Monitoring Program	WRRP	WRRP		WRRP	WRRP	WRRP	WRRP
Type	DUP		DUP				
Acetone	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<
Chloroethane	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<
1,2-Dichloroethane	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<
1,2-Dichloropropane	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<
1,1,2-Trichloroethane	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<
Vinyl chloride	<	<	<	<	<	<	<

APPENDIX D.3

RADIOLOGICAL ANALYTES

APPENDIX D.3 BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Gross Alpha and Gross Beta Activity

Sampling Point	Location	Date Sampled	Program	Gross Alpha (pCi/L)			Gross Beta (pCi/L)		
				MDA	Result	Error	MDA	Result	Error
BCK-00.63	EXP-SW	02/09/00	GWPP	0.75	22	5	8.5	16	6
BCK-00.63	EXP-SW	08/01/00	GWPP	2.4	15	4.1	7.9	15	5.6
BCK-04.55	EXP-SW	02/09/00	GWPP	2.6	35	6.5	8.3	32	6.9
BCK-04.55	EXP-SW	08/01/00	GWPP	2.2	17	4.4	6.9	20	5.5
BCK-07.87	EXP-SW	02/09/00	GWPP	0.81	72	9.3	8.3	62	8.3
BCK-07.87	EXP-SW	08/01/00	GWPP	3.9	33	6.6	4.7	48	6.3
BCK-09.40	EXP-SW	02/10/00	GWPP	2.4	96	11	6.5	110	9.7
BCK-09.40	EXP-SW	08/02/00	GWPP	3.4	61	9	8.3	120	11
BCK-09.47	EXP-SW	01/25/00	WRRP	.	.	.	1.73	36.66	2.41
BCK-09.47	EXP-SW	08/16/00	WRRP	1.1	53.48	3.45	1.05	75.77	2.2
BCK-11.97	EXP-SW	02/10/00	GWPP	1.3	68	12	8	220	14
BCK-11.97	EXP-SW	08/02/00	GWPP	3.8	50	9.3	8.2	310	17
GW-008	OLF	01/10/00	WRRP	1.13	3.6	1.38	2.95	3.73	3.03
GW-008	OLF	07/12/00	WRRP	1.24	1.47	0.93	1.66	2.87	1.21
GW-046	BG	01/11/00	WRRP	0.43	1.04	0.49	0.98	4.37	1.07
GW-046	BG	07/13/00	WRRP	0.87	1.45	0.92	1.44	1.6	1.48
GW-053	BG	02/21/00	GWPP	2.9	3.3	2.4	8.1	<MDA	.
GW-053	BG	08/22/00	GWPP	3.7	<MDA	.	7.5	<MDA	.
GW-056	EXP-A	01/12/00	GWPP	4.2	18	6.4	8.8	20	6.5
GW-056 D	EXP-A	01/12/00	GWPP	1.3	19	6	9.9	25	7.5
GW-056	EXP-A	07/11/00	GWPP	4.6	5.6	3.6	8.7	12	5.8
GW-077	BG	02/17/00	WRRP	2.12	<MDA	.	1.78	2.03	1.24
GW-077	BG	08/15/00	WRRP	2.79	<MDA	.	2.07	5.64	1.69
GW-078	BG	02/17/00	WRRP	2.08	<MDA	.	2.1	<MDA	.
GW-078	BG	08/15/00	WRRP	2.2	<MDA	.	1.61	<MDA	.
GW-079	BG	02/22/00	WRRP	1.02	<MDA	.	1.91	<MDA	.
GW-079	BG	08/16/00	WRRP	1.65	<MDA	.	2	<MDA	.
GW-080	BG	02/21/00	WRRP	1.18	<MDA	.	1.94	<MDA	.
GW-080 D	BG	02/21/00	WRRP	1.22	<MDA	.	1.96	<MDA	.
GW-080	BG	08/16/00	WRRP	1.52	<MDA	.	1.97	<MDA	.
GW-080 D	BG	08/16/00	WRRP	1.42	<MDA	.	1.95	<MDA	.
GW-085	OLF	02/29/00	GWPP	3.8	9.1	4.3	8.9	120	11
GW-085	OLF	09/08/00	GWPP	13	<MDA	.	28	200	32
GW-115	S3	01/04/00	WRRP	2.89	<MDA	.	2.16	4.17	1.68
GW-115	S3	07/12/00	WRRP	2.43	<MDA	.	1.86	2.01	1.29
GW-226	OLF	03/01/00	GWPP	1	8.1	3.5	6.2	15	4.8
GW-226	OLF	09/11/00	GWPP	0.89	4.6	2.5	7	23	5.8
GW-276	S3	01/04/00	WRRP	2.49	117.75	8.95	1.72	175.34	4.75
GW-276	S3	07/12/00	WRRP	4.67	293.08	13.21	3.62	567.31	10.18
GW-287	BG	02/17/00	GWPP	2.2	<MDA	.	7	<MDA	.
GW-287 D	BG	02/17/00	GWPP	0.79	<MDA	.	9.7	<MDA	.
GW-287	BG	08/21/00	GWPP	0.75	<MDA	.	8.1	<MDA	.
GW-311	RS	02/28/00	GWPP	3.7	18	5	9.3	32	7.7
GW-311	RS	09/06/00	GWPP	1.1	2.8	2.1	7.2	7.2	4.7
GW-315	SPI	02/28/00	GWPP	3	<MDA	.	8.6	31	7
GW-315	SPI	09/05/00	GWPP	0.92	1.7	1.5	7	34	6.5
GW-526	S3	02/22/00	WRRP	27.64	31.04	27.87	43.19	<MDA	.
GW-526	S3	08/16/00	WRRP	48.76	<MDA	.	45.05	<MDA	.

APPENDIX D.3 BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Gross Alpha and Gross Beta Activity

Sampling Point	Location	Date Sampled	Program	Gross Alpha (pCi/L)			Gross Beta (pCi/L)		
				MDA	Result	Error	MDA	Result	Error
GW-537	OLF	03/01/00	GWPP	39	<MDA	.	58	600	72
GW-537	OLF	09/11/00	GWPP	11	<MDA	.	28	620	42
GW-537 D	OLF	09/11/00	GWPP	9	<MDA	.	27	570	40
GW-621	EXP-B	01/19/00	GWPP	2.6	<MDA	.	5.6	5.8	3.7
GW-621	EXP-B	07/13/00	GWPP	2.6	6.7	3	6.1	7.3	4.1
GW-627	BG	02/21/00	GWPP	3	<MDA	.	6.7	<MDA	.
GW-627	BG	02/23/00	GWPP	12	<MDA	.	6.4	6.6	4.2
GW-627	BG	08/22/00	GWPP	21	<MDA	.	82	<MDA	.
GW-627	BG	08/23/00	GWPP	32	<MDA	.	77	<MDA	.
GW-653	BG	02/17/00	GWPP	2.2	<MDA	.	7.2	<MDA	.
GW-653	BG	08/21/00	GWPP	1.9	<MDA	.	6.5	<MDA	.
GW-683	EXP-A	01/18/00	GWPP	2.7	31	6.2	5.8	42	6.3
GW-683	EXP-A	07/12/00	GWPP	0.76	11	3.6	7.1	8.5	4.7
GW-684	EXP-A	01/13/00	GWPP	3.1	14	4.2	7.3	29	6.1
GW-684	EXP-A	07/12/00	GWPP	2.6	9.5	3.5	6.1	11	4.4
GW-685	EXP-A	01/13/00	GWPP	3.6	5	3.1	7.2	11	5
GW-685	EXP-A	07/11/00	GWPP	0.95	4.6	2.5	7.1	7.1	4.6
GW-695	EXP-B	01/24/00	GWPP	3.7	4.9	2.9	7.1	35	6.6
GW-695	EXP-B	07/13/00	GWPP	0.78	25	5.3	5.1	34	5.5
GW-703	EXP-B	01/24/00	GWPP	2.4	24	5.5	8.3	46	7.7
GW-703	EXP-B	07/24/00	GWPP	2.5	2.6	2.1	6.9	46	7.3
GW-704	EXP-B	01/25/00	GWPP	3.4	3.8	2.7	5.9	34	5.9
GW-704	EXP-B	07/24/00	GWPP	2.7	<MDA	.	7	13	5.2
GW-706	EXP-B	01/31/00	GWPP	3.1	33	6.8	5.1	88	8.3
GW-706	EXP-B	02/01/00	GWPP	3.4	120	13	5.6	83	8.2
GW-706	EXP-B	07/25/00	GWPP	3.6	72	10	8	110	11
GW-706	EXP-B	07/26/00	GWPP	2	54	8.5	6.8	57	7.5
GW-712	EXP-W	01/10/00	WRRP	1.05	2.58	1.2	1.52	4.52	1.61
GW-712	EXP-W	07/10/00	WRRP	1.44	<MDA	.	2.19	2.35	2.24
GW-713	EXP-W	01/06/00	WRRP	3.28	<MDA	.	2.35	17.92	2.36
GW-713	EXP-W	07/10/00	WRRP	1.56	<MDA	.	1.98	2.87	2.04
GW-714	EXP-W	01/05/00	WRRP	2.36	<MDA	.	1.59	<MDA	.
GW-714	EXP-W	07/11/00	WRRP	1.58	<MDA	.	1.61	5.37	1.72
GW-715	EXP-W	01/05/00	WRRP	2.19	9.56	2.36	1.83	9.64	1.68
GW-715 D	EXP-W	01/05/00	WRRP	2.25	9	2.35	1.59	9.91	1.52
GW-715	EXP-W	07/11/00	WRRP	1.66	<MDA	.	1.07	3.86	1.15
GW-715 D	EXP-W	07/11/00	WRRP	1.44	<MDA	.	1.2	3.68	1.27
GW-724	EXP-C	02/03/00	GWPP	2.9	<MDA	.	7.6	60	8.2
GW-724	EXP-C	07/31/00	GWPP	2.7	<MDA	.	7.1	25	6
GW-724 D	EXP-C	07/31/00	GWPP	2.5	6.3	3	6.7	22	5.6
GW-725	EXP-C	02/07/00	GWPP	3.2	4.8	3.1	10	40	8.5
GW-725	EXP-C	02/08/00	GWPP	3.3	<MDA	.	7.1	29	6.5
GW-725	EXP-C	08/08/00	GWPP	3	4.5	2.9	7.3	32	6.6
GW-725	EXP-C	08/09/00	GWPP	2.9	5.4	3	7.5	35	6.8

APPENDIX D.3 BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Gross Alpha and Gross Beta Activity

Sampling Point	Location	Date Sampled	Program	Gross Alpha (pCi/L)			Gross Beta (pCi/L)		
				MDA	Result	Error	MDA	Result	Error
GW-727-02	BG	05/02/00	WRRP	122.6	<MDA	.	207.02	<MDA	.
GW-727-05	BG	05/03/00	WRRP	145.02	<MDA	.	170.14	<MDA	.
GW-727-08	BG	05/30/00	WRRP	331.24	<MDA	.	415.66	<MDA	.
GW-727-13	BG	06/01/00	WRRP	38.03	<MDA	.	43.28	<MDA	.
GW-727-15	BG	06/01/00	WRRP	35.21	<MDA	.	42.82	<MDA	.
GW-727-18	BG	06/05/00	WRRP	14.91	<MDA	.	12.72	<MDA	.
GW-727-18 D	BG	06/05/00	WRRP	16.5	<MDA	.	12.9	<MDA	.
GW-727-22	BG	06/02/00	WRRP	5.51	<MDA	.	4.76	<MDA	.
GW-727-25	BG	06/06/00	WRRP	1.78	<MDA	.	1.75	<MDA	.
GW-727-27	BG	06/07/00	WRRP	4.27	<MDA	.	4.37	<MDA	.
GW-727-30	BG	06/07/00	WRRP	3.79	<MDA	.	3.41	<MDA	.
GW-729-02	BG	07/10/00	WRRP	1639.28	<MDA	.	986.49	<MDA	.
GW-729-06	BG	07/11/00	WRRP	321.08	<MDA	.	328.92	<MDA	.
GW-729-15	BG	07/11/00	WRRP	105.5	151.28	109.34	163.45	173.13	167.22
GW-729-18	BG	07/12/00	WRRP	117.14	<MDA	.	111.12	<MDA	.
GW-729-22	BG	07/12/00	WRRP	137.07	<MDA	.	201.9	<MDA	.
GW-729-26	BG	07/13/00	WRRP	79.37	<MDA	.	165.25	<MDA	.
GW-729-30	BG	07/17/00	WRRP	41.13	<MDA	.	38.64	<MDA	.
GW-729-34	BG	07/18/00	WRRP	3.41	<MDA	.	3.43	<MDA	.
GW-729-39	BG	07/18/00	WRRP	2.07	<MDA	.	2.23	5.42	2.34
GW-729-44	BG	07/18/00	WRRP	0.81	<MDA	.	1.68	<MDA	.
GW-729-44 D	BG	07/18/00	WRRP	1.25	<MDA	.	1.65	2.95	1.71
GW-730-02	BG	08/15/00	WRRP	150.45	<MDA	.	182.31	<MDA	.
GW-730-11	BG	08/16/00	WRRP	85.13	<MDA	.	187	<MDA	.
GW-730-18	BG	08/17/00	WRRP	343.3	<MDA	.	380	<MDA	.
GW-730-21	BG	08/17/00	WRRP	302.48	<MDA	.	347	<MDA	.
GW-730-25	BG	08/21/00	WRRP	523.58	<MDA	.	386.28	<MDA	.
GW-730-28	BG	08/21/00	WRRP	78.57	<MDA	.	77.17	<MDA	.
GW-730-30	BG	08/22/00	WRRP	32.86	<MDA	.	36.58	<MDA	.
GW-730-30 D	BG	08/22/00	WRRP	47.83	<MDA	.	33	<MDA	.
GW-730-35	BG	08/22/00	WRRP	6.24	<MDA	.	7.45	<MDA	.
GW-738	EXP-C	02/03/00	GWPP	3.8	<MDA	.	8.5	43	7.6
GW-738	EXP-C	07/31/00	GWPP	4.2	<MDA	.	10	32	8.1
GW-740	EXP-C	02/02/00	GWPP	3.1	<MDA	.	7.7	<MDA	.
GW-740	EXP-C	07/27/00	GWPP	3.4	<MDA	.	5.2	8.4	3.7
GW-790-02	BG	06/08/00	WRRP	717.67	946.77	735.04	716.83	<MDA	.
GW-790-05	BG	06/12/00	WRRP	116.45	<MDA	.	219.49	<MDA	.
GW-790-07	BG	06/13/00	WRRP	274.32	<MDA	.	411.97	<MDA	.
GW-790-14	BG	06/14/00	WRRP	47.36	<MDA	.	64.03	<MDA	.
GW-790-14 D	BG	06/14/00	WRRP	84.44	<MDA	.	64.06	<MDA	.
GW-790-19	BG	06/15/00	WRRP	21.02	<MDA	.	29.97	<MDA	.
GW-790-23	BG	06/15/00	WRRP	16.36	<MDA	.	11.28	<MDA	.
GW-790-29	BG	06/19/00	WRRP	2.93	<MDA	.	3.59	<MDA	.
GW-790-32	BG	06/19/00	WRRP	1.37	<MDA	.	1.87	<MDA	.
GW-790-35	BG	06/19/00	WRRP	0.9	11.56	1.6	1.63	21.47	2.03
GW-790-39	BG	06/19/00	WRRP	1.17	<MDA	.	1.55	<MDA	.

APPENDIX D.3 BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Gross Alpha and Gross Beta Activity

Sampling Point	Location	Date Sampled	Program	Gross Alpha (pCi/L)			Gross Beta (pCi/L)		
				MDA	Result	Error	MDA	Result	Error
GW-829	OLF	02/29/00	GWPP	2.8	<MDA	.	7.1	8.4	4.8
GW-829	OLF	09/08/00	GWPP	3.6	<MDA	.	7.7	<MDA	.
NT-01	EXP-SW	02/10/00	GWPP	9.4	12	8.4	7.5	450	20
NT-01	EXP-SW	08/02/00	GWPP	3.3	51	8.7	8.3	230	14
SS-1	EXP-SW	02/10/00	GWPP	4.6	19	6.1	8.8	44	7.8
SS-1	EXP-SW	08/02/00	GWPP	5	16	5.7	7.2	56	7.7
SS-4	EXP-SW	02/09/00	GWPP	4.2	130	13	6.1	170	12
SS-4	EXP-SW	08/01/00	GWPP	0.91	41	7.4	6.6	160	11
SS-5	EXP-SW	02/09/00	GWPP	2.4	57	8.4	5.8	58	7.1
SS-5	EXP-SW	08/01/00	GWPP	2.4	29	6	5.8	25	5.3
SS-6	EXP-SW	02/09/00	GWPP	2.1	7.6	3	5.5	10	4
SS-6 D	EXP-SW	02/09/00	GWPP	3	9.9	3.6	6	12	4.5
SS-6	EXP-SW	08/01/00	GWPP	0.78	4.9	2.4	7.3	9.2	5
SS-6.6	EXP-SW	01/25/00	WRRP	.	.	.	1.92	3.89	1.42
SS-6.6 D	EXP-SW	01/25/00	WRRP	.	.	.	1.9	9.31	1.65
SS-6.6	EXP-SW	08/16/00	WRRP	1.25	16.32	2.64	2.68	16	2.97
SS-6.6 D	EXP-SW	08/16/00	WRRP	2.56	20.63	3.88	3.38	22.18	3.78
SS-7	EXP-SW	01/25/00	WRRP	.	.	.	1.7	5.24	1.35
SS-7	EXP-SW	08/16/00	WRRP	0.79	7.11	1.24	0.86	9.5	1.05
SS-8	EXP-SW	01/25/00	WRRP	.	.	.	1.65	<MDA	.
SS-8	EXP-SW	08/16/00	WRRP	0.86	<MDA	.	0.91	<MDA	.

APPENDIX D.3: BEAR CREEK HYDROGEOLOGIC REGIME, 2000
Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	BCK-07.87						BCK-09.47		
Location	EXP-SW						EXP-SW		
Date Sampled	02/09/00			08/03/00			01/25/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	.	.	.
Gross Beta	.	.	.	.	.	.	36.66	2.41	1.73
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	.	.	.	.	.	.	.	.	.
Technetium-99	<MDA	.	92.5	29.19	14.27	23.27	74.57	15.73	24.1
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	29.34	7.94	1.69	15.86	4.09	0.7	37.48	9.23	0.61
Uranium-235	4.33	2.63	2.09	0.94	0.63	0.54	1.67	0.96	0.62
Uranium-236	3.06	2.05	1.44	0.73	0.51	0.22	1.57	0.9	0.67
Uranium-238	63.78	14.6	1.96	33.32	7.92	0.61	96.52	22.54	0.64

(Continued)

Sampling Point	BCK-09.47			BCK-11.97					
Location	EXP-SW			EXP-SW					
Date Sampled	08/16/00			02/10/00			08/02/00		
Monitoring Program	WRRP			GWPP			GWPP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	53.48	3.45	1.1	68	12	1.3	50	9.3	3.8
Gross Beta	75.77	2.2	1.05	220	14	8	310	17	8.2
Americium-241	.	.	.	<MDA	.	0.47	<MDA	.	0.37
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	1.1	0.34	0.23	0.54	0.24	0.2
Plutonium-238	.	.	.	<MDA	.	0.4	<MDA	.	0.33
Radium-223/224/226	.	.	.	<MDA	.	0.72	< CE	0.22	0.17
Strontium-89/90	.	.	.	<MDA	.	2.4	<MDA	.	2.7
Technetium-99	111.75	14.01	19.69	350	12	12	390	14	13
Thorium-230	.	.	.	<MDA	.	1.1	0.45	0.32	0.32
Thorium-234	.	.	.	67	8.4	0.26	35	4.2	0.18
Uranium-234	29.48	7.04	0.5	38	5	0.44	21	2.7	0.23
Uranium-235	2.57	1.14	0.56	1.9	0.65	0.32	1.2	0.42	0.093
Uranium-236	2.52	1.07	0.23	.	.	.	.	.	.
Uranium-238	86.36	19.36	0.46	67	8.4	0.26	35	4.2	0.18

(Continued)

Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-006								
Location	EMWMF								
Date Sampled	02/08/00						04/12/00		
Monitoring Program	WRRP						WRRP		
Type				DUP					
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	.	.	.
Gross Beta	.	.	.	.	.	.	.	.	.
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	26.8	15.39	15.22	52.31	17.83	15.15
Lead-214	.	.	.	45.31	16.29	14.71	87.01	37.74	15.26
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	<MDA	.	2.02	<MDA	.	1.86	<MDA	.	0.44
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	<MDA	.	2.69	<MDA	.	2.6	<MDA	.	3.52
Technetium-99	<MDA	.	27.69	<MDA	.	14.27	<MDA	.	14.24
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	650.1	139.6	105.3
Uranium-234	<MDA	.	2.7	2.08	1.7	2.03	<MDA	.	0.29
Uranium-235	<MDA	.	1.83	<MDA	.	2.16	< CE	0.17	0.13
Uranium-236	<MDA	.	1.98	<MDA	.	1.49	<MDA	.	0.2
Uranium-238	<MDA	.	2.3	<MDA	.	2.54	<MDA	.	0.29

(Continued)

Sampling Point	GW-006								
Location	EMWMF								
Date Sampled	04/12/00			08/02/00					
Monitoring Program	WRRP			WRRP					
Type	DUP						DUP		
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	.	.	.
Gross Beta	.	.	.	.	.	.	.	.	.
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	57.7	19.9	17.22	.	.	.	.	.	.
Lead-214	67.78	26.64	17.87	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	<MDA	.	0.34	<MDA	.	0.68	<MDA	.	0.96
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	<MDA	.	3.9	<MDA	.	1.88	<MDA	.	1.82
Technetium-99	<MDA	.	14.46	<MDA	.	23.64	<MDA	.	20.28
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	<MDA	.	0.44	<MDA	.	0.96	<MDA	.	1.46
Uranium-235	<MDA	.	0.31	<MDA	.	0.62	<MDA	.	1.16
Uranium-236	<MDA	.	0.32	<MDA	.	0.56	<MDA	.	0.89
Uranium-238	0.3	0.27	0.29	0.71	0.59	0.66	<MDA	.	1.34

(Continued)

Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-008						GW-043		
Location	OLF						EMWMF		
Date Sampled	01/10/00			07/12/00			02/09/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	3.6	1.38	1.13	1.47	0.93	1.24	.	.	.
Gross Beta	3.73	3.03	2.95	2.87	1.21	1.66	.	.	.
Americium-241	<MDA	.	1.01	0.54	0.33	0.31	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	<MDA	.	1.24	1.01	0.62	0.7	.	.	.
Plutonium-238	.	.	.	.	.	.	<MDA	.	1.68
Radium-223/224/226	1.44	0.72	0.75	<MDA	.	0.78	.	.	.
Strontium-89/90	<MDA	.	3.51	<MDA	.	1.86	<MDA	.	3.1
Technetium-99	12.82	6.67	10.92	28.39	15.09	24.64	<MDA	.	69.06
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	<MDA	.	0.54	1.91	0.79	0.39	<MDA	.	2.06
Uranium-235	<MDA	.	0.51	<MDA	.	0.44	<MDA	.	1.89
Uranium-236	<MDA	.	0.27	0.33	0.3	0.18	<MDA	.	1.88
Uranium-238	0.79	0.55	0.42	0.68	0.43	0.35	<MDA	.	2.25

(Continued)

Sampling Point	GW-043						GW-044		
Location	EMWMF						EMWMF		
Date Sampled	04/13/00			08/03/00			02/09/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	.	.	.
Gross Beta	.	.	.	.	.	.	.	.	.
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	65.89	21.08	18.81	.	.	.	.	.	.
Lead-214	77.01	29.05	18.34	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	<MDA	.	1.48	<MDA	.	0.82	<MDA	.	1.68
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	<MDA	.	4.01	<MDA	.	4.86	<MDA	.	3.44
Technetium-99	<MDA	.	13.28	<MDA	.	22.25	<MDA	.	86.95
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	2.24	1.5	1.05	<MDA	.	1.18	<MDA	.	1.36
Uranium-235	<MDA	.	1.52	<MDA	.	0.91	<MDA	.	1.43
Uranium-236	<MDA	.	1.17	<MDA	.	0.81	<MDA	.	1.29
Uranium-238	<MDA	.	1.05	<MDA	.	1.11	1.42	1.26	1.36

(Continued)

Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-044						GW-046		
Location	EMWMF						BG		
Date Sampled	04/13/00			08/03/00			01/11/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	1.04	0.49	0.43
Gross Beta	.	.	.	.	.	.	4.37	1.07	0.98
Americium-241	.	.	.	.	.	.	<MDA	.	1.24
Bismuth-214	69.65	18.26	16.39	.	.	.	.	.	.
Lead-214	67.75	33.92	16.36	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	0.64	0.51	0.64
Plutonium-238	<MDA	.	2.15	<MDA	.	0.83	.	.	.
Radium-223/224/226	.	.	.	.	.	.	12.82	2.53	1.26
Strontium-89/90	<MDA	.	3.88	8.68	2.85	4.15	<MDA	.	4.04
Technetium-99	<MDA	.	13.69	62.68	13.83	21.22	54.84	9.36	13.91
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	2.64	1.62	1.03	<MDA	.	1.02	0.56	0.53	0.54
Uranium-235	<MDA	.	1.28	<MDA	.	0.44	<MDA	.	0.39
Uranium-236	< CE	1.01	0.67	<MDA	.	0.79	<MDA	.	0.35
Uranium-238	1.3	1.12	1.03	<MDA	.	1.15	<MDA	.	0.76

(Continued)

Sampling Point	GW-046			GW-077					
Location	BG			BG					
Date Sampled	07/13/00			02/17/00			08/15/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	1.45	0.92	0.87	<MDA	.	2.12	<MDA	.	2.79
Gross Beta	1.6	1.48	1.44	2.03	1.24	1.78	5.64	1.69	2.07
Americium-241	<MDA	.	1.9	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	1.07	0.63	0.6	.	.	.	.	.	.
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	1.41	0.68	0.64	.	.	.	.	.	.
Strontium-89/90	<MDA	.	2.99	.	.	.	.	.	.
Technetium-99	<MDA	.	22.48	.	.	.	.	.	.
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	<MDA	.	0.46	<MDA	.	0.82	1.36	0.62	0.35
Uranium-235	<MDA	.	0.31	<MDA	.	1.01	<MDA	.	0.33
Uranium-236	<MDA	.	0.28	<MDA	.	0.7	<MDA	.	0.3
Uranium-238	<MDA	.	0.48	<MDA	.	0.95	0.66	0.42	0.35

(Continued)

Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-078						GW-079		
Location	BG						BG		
Date Sampled	02/17/00			08/15/00			02/22/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	<MDA	.	2.08	<MDA	.	2.2	<MDA	.	1.02
Gross Beta	<MDA	.	2.1	<MDA	.	1.61	<MDA	.	1.91
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	.	.	.	.	.	.	.	.	.
Technetium-99	.	.	.	.	.	.	.	.	.
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	<MDA	.	1.76	1.38	0.61	0.44	0.83	0.59	0.7
Uranium-235	<MDA	.	1.39	0.32	0.29	0.17	<MDA	.	0.49
Uranium-236	<MDA	.	1.07	0.35	0.29	0.16	<MDA	.	0.58
Uranium-238	<MDA	.	1.45	<MDA	.	0.45	<MDA	.	0.78

(Continued)

Sampling Point	GW-079			GW-080					
Location	BG			BG					
Date Sampled	08/16/00			02/21/00					
Monitoring Program	WRRP			WRRP					
Type							DUP		
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	<MDA	.	1.65	<MDA	.	1.18	<MDA	.	1.22
Gross Beta	<MDA	.	2	<MDA	.	1.94	<MDA	.	1.96
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	.	.	.	.	.	.	.	.	.
Technetium-99	.	.	.	.	.	.	.	.	.
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	0.77	0.46	0.34	1.52	0.83	0.59	<MDA	.	0.57
Uranium-235	<MDA	.	0.19	<MDA	.	0.65	<MDA	.	0.58
Uranium-236	<MDA	.	0.29	<MDA	.	0.29	<MDA	.	0.45
Uranium-238	<MDA	.	0.42	0.68	0.53	0.26	<MDA	.	0.57

(Continued)

Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-080						GW-115		
Location	BG						S3		
Date Sampled	08/16/00						01/04/00		
Monitoring Program	WRRP						WRRP		
Type				DUP					
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	<MDA	.	1.52	<MDA	.	1.42	<MDA	.	2.89
Gross Beta	<MDA	.	1.97	<MDA	.	1.95	4.17	1.68	2.16
Americium-241	.	.	.	.	.	.	<MDA	.	0.73
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	1.68	1.07	1.11
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	.	.	.	.	.	.	2.33	1.24	1.27
Strontium-89/90	.	.	.	.	.	.	<MDA	.	3.82
Technetium-99	.	.	.	.	.	.	<MDA	.	13.98
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	0.61	0.41	0.29	0.67	0.4	0.24	1.7	1.02	0.73
Uranium-235	<MDA	.	0.21	<MDA	.	0.17	<MDA	.	0.45
Uranium-236	< CE	0.24	0.19	< CE	0.24	0.16	<MDA	.	0.4
Uranium-238	<MDA	.	0.37	<MDA	.	0.28	1.14	0.83	0.81

(Continued)

Sampling Point	GW-115			GW-276					
Location	S3			S3					
Date Sampled	07/12/00			01/04/00			07/12/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	<MDA	.	2.43	117.75	8.95	2.49	293.08	13.21	4.67
Gross Beta	2.01	1.29	1.86	175.34	4.75	1.72	567.31	10.18	3.62
Americium-241	0.38	0.3	0.34	<MDA	.	0.7	<MDA	.	1.01
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	1.72	0.69	0.5	18.94	6.68	2.94	20.09	4.43	0.57
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	1.26	0.73	0.88	7.94	2.22	1.52	2.89	0.99	0.63
Strontium-89/90	<MDA	.	1.78	9.15	2.97	4.25	2.23	1.04	1.56
Technetium-99	<MDA	.	21.42	734.64	18.51	12.95	360.63	18.28	19.22
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	0.76	0.44	0.42	153.2	38.44	1.19	139.2	38.22	0.82
Uranium-235	<MDA	.	0.33	9.72	5.09	1.46	8	3.24	0.5
Uranium-236	<MDA	.	0.25	9.13	4.71	2.24	7.32	2.96	0.77
Uranium-238	<MDA	.	0.36	366.5	86.92	2.36	314.3	84.92	0.81

(Continued)

Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-526						GW-615		
Location	S3						S3		
Date Sampled	02/22/00			08/16/00			02/15/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	31.04	27.87	27.64	<MDA	.	48.76	.	.	.
Gross Beta	<MDA	.	43.19	<MDA	.	45.05	.	.	.
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	.	.	.	.	.	.	.	.	.
Technetium-99	.	.	.	.	.	.	.	.	.
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	0.86	0.54	0.45	1.04	0.54	0.32	109.9	28.48	2.28
Uranium-235	<MDA	.	0.25	<MDA	.	0.44	11.65	5.05	2.06
Uranium-236	<MDA	.	0.38	<MDA	.	0.3	3.41	2.3	0.92
Uranium-238	<MDA	.	0.2	0.43	0.34	0.38	287	70.38	2.27

(Continued)

Sampling Point	GW-615						GW-704		
Location	S3						EXP-B		
Date Sampled	06/08/00			08/30/00			01/25/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	.	.	.
Gross Beta	.	.	.	.	.	.	.	.	.
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	.	.	.	.	.	.	.	.	.
Technetium-99	.	.	.	.	.	.	.	.	.
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	150.5	41.15	0.76	115.8	39.83	1.49	2.96	2.12	2.65
Uranium-235	9.29	3.55	0.94	3.64	2.43	0.82	<MDA	.	2.52
Uranium-236	7.61	2.98	0.42	2.95	2.06	1.26	<MDA	.	1.75
Uranium-238	376.7	101.5	1.03	296.1	99.57	1.82	3.53	2.21	2.03

(Continued)

Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-704			GW-706					
Location	EXP-B			EXP-B					
Date Sampled	07/24/00			01/31/00			07/25/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	.	.	.
Gross Beta	.	.	.	.	.	.	.	.	.
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	.	.	.	.	.	.	.	.	.
Technetium-99	.	.	.	.	.	.	.	.	.
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	3.35	2.24	2.26	16.44	6.27	2.67	29.51	8.28	1.91
Uranium-235	<MDA	.	1.74	7.2	4.19	3.29	1.68	1.54	0.91
Uranium-236	<MDA	.	1.56	<MDA	.	2.45	<MDA	.	1.64
Uranium-238	2.78	2.02	2.12	31.4	9.75	2.66	50.08	12.59	2.38

(Continued)

Sampling Point	GW-712						GW-713		
Location	EXP-W						EXP-W		
Date Sampled	01/10/00			07/10/00			01/06/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	2.58	1.2	1.05	<MDA	.	1.44	<MDA	.	3.28
Gross Beta	4.52	1.61	1.52	2.35	2.24	2.19	17.92	2.36	2.35
Americium-241	<MDA	.	1.31	0.39	0.33	0.31	<MDA	.	0.71
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	1.07	0.85	0.72	1.38	0.62	0.16	1.87	1	0.75
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	3.5	1.13	1.04	2.09	0.89	0.75	1.45	0.68	0.47
Strontium-89/90	<MDA	.	3.56	<MDA	.	3.46	1.81	1.15	1.8
Technetium-99	<MDA	.	14.65	<MDA	.	22.32	<MDA	.	14.5
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	< CE	0.31	0.24	<MDA	.	0.28	0.97	0.63	0.49
Uranium-235	<MDA	.	0.29	<MDA	.	0.29	<MDA	.	0.52
Uranium-236	<MDA	.	0.26	<MDA	.	0.16	< CE	0.35	0.27
Uranium-238	0.6	0.47	0.41	0.3	0.26	0.24	< CE	0.32	0.25

(Continued)

Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-713			GW-714					
Location	EXP-W			EXP-W					
Date Sampled	07/10/00			01/05/00			07/11/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	<MDA	.	1.56	<MDA	.	2.36	<MDA	.	1.58
Gross Beta	2.87	2.04	1.98	<MDA	.	1.59	5.37	1.72	1.61
Americium-241	<MDA	.	0.47	<MDA	.	0.47	<MDA	.	0.53
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	2.49	0.91	0.43	0.48	0.36	0.43	1.51	0.65	0.32
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	1.53	0.81	0.83	1.04	0.63	0.78	<MDA	.	0.69
Strontium-89/90	<MDA	.	3.71	<MDA	.	2.33	<MDA	.	3.63
Technetium-99	<MDA	.	20.53	<MDA	.	13.95	<MDA	.	29.41
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	0.6	0.41	0.18	0.58	0.35	0.21	1.1	0.61	0.61
Uranium-235	<MDA	.	0.22	<MDA	.	0.26	0.39	0.37	0.37
Uranium-236	<MDA	.	0.34	<MDA	.	0.23	<MDA	.	0.33
Uranium-238	<MDA	.	0.36	<MDA	.	0.3	0.8	0.49	0.42

(Continued)

Sampling Point	GW-715								
Location	EXP-W								
Date Sampled	01/05/00						07/11/00		
Monitoring Program	WRRP						WRRP		
Type				DUP					
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	9.56	2.36	2.19	9	2.35	2.25	<MDA	.	1.66
Gross Beta	9.64	1.68	1.83	9.91	1.52	1.59	3.86	1.15	1.07
Americium-241	<MDA	.	0.37	<MDA	.	0.43	<MDA	.	1.56
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	0.78	0.43	0.29	<MDA	.	0.48	0.77	0.47	0.48
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	1.36	0.65	0.56	1.26	0.64	0.49	<MDA	.	0.58
Strontium-89/90	2.31	1.32	2.03	<MDA	.	1.9	<MDA	.	3.21
Technetium-99	<MDA	.	14.87	15.7	8.8	14.47	<MDA	.	19.91
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	4.4	1.16	0.19	3.8	1.11	0.35	1.29	0.55	0.32
Uranium-235	0.41	0.3	0.14	0.59	0.39	0.34	<MDA	.	0.26
Uranium-236	< CE	0.19	0.12	<MDA	.	0.3	<MDA	.	0.14
Uranium-238	6.24	1.51	0.22	6.21	1.59	0.37	1.57	0.63	0.4

(Continued)

Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-715			GW-835					
Location	EXP-W			S3					
Date Sampled	07/11/00			02/15/00			08/29/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type	DUP								
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	<MDA	.	1.44	.	.	.	.	.	.
Gross Beta	3.68	1.27	1.2	.	.	.	.	.	.
Americium-241	<MDA	.	2	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	1.27	0.56	0.28	.	.	.	.	.	.
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	<MDA	.	0.83	.	.	.	.	.	.
Strontium-89/90	<MDA	.	3.66	.	.	.	.	.	.
Technetium-99	<MDA	.	18.43	.	.	.	.	.	.
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	1.79	0.7	0.28	79.13	16.65	0.72	184.4	63.77	2.28
Uranium-235	<MDA	.	0.17	12.95	4.01	1.04	8.95	4.47	1.39
Uranium-236	<MDA	.	0.31	9.11	3.05	0.47	8.71	4.28	1.76
Uranium-238	2.14	0.78	0.31	277.8	54.62	0.84	472.7	161.2	1.59

(Continued)

Sampling Point	GW-835			GW-838					
Location	S3			EMWMF					
Date Sampled	11/14/00			02/14/00			04/12/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	.	.	.
Gross Beta	.	.	.	.	.	.	.	.	.
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	39.84	20.06	19.19
Lead-214	.	.	.	.	.	.	46.75	20.68	19.63
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	.	.	.	<MDA	.	1.31	<MDA	.	0.3
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	.	.	.	<MDA	.	3.27	<MDA	.	3.47
Technetium-99	.	.	.	<MDA	.	27.08	<MDA	.	15.15
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	131.1	29.14	1.36	0.62	0.55	0.59	<MDA	.	0.3
Uranium-235	7.55	2.78	1.35	<MDA	.	0.73	<MDA	.	0.26
Uranium-236	5.81	2.25	1.04	<MDA	.	0.66	<MDA	.	0.24
Uranium-238	348.4	75.38	1.09	<MDA	.	0.66	<MDA	.	0.3

(Continued)

Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-838			GW-840					
Location	EMWMF			EMWMF					
Date Sampled	08/07/00			02/10/00			04/11/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	.	.	.
Gross Beta	.	.	.	.	.	.	.	.	.
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	0.38	0.31	0.26	<MDA	.	2.3	<MDA	.	1.06
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	<MDA	.	4.1	<MDA	.	3.17	<MDA	.	3.81
Technetium-99	<MDA	.	22.3	<MDA	.	28.01	<MDA	.	13.33
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	<MDA	.	0.25	0.6	0.48	0.54	0.55	0.47	0.44
Uranium-235	<MDA	.	0.16	0.41	0.41	0.28	<MDA	.	0.54
Uranium-236	<MDA	.	0.24	<MDA	.	0.25	<MDA	.	0.28
Uranium-238	0.41	0.29	0.22	0.88	0.57	0.45	0.74	0.55	0.44

(Continued)

Sampling Point	GW-840			GW-904					
Location	EMWMF			EMWMF					
Date Sampled	08/07/00			02/08/00			04/10/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	.	.	.
Gross Beta	.	.	.	.	.	.	.	.	.
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	<MDA	.	0.57	2.93	2.03	2.37	<MDA	.	0.52
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	<MDA	.	3.89	<MDA	.	2.17	<MDA	.	3.84
Technetium-99	<MDA	.	19.54	<MDA	.	19.88	<MDA	.	13.9
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	0.31	0.24	0.21	4.48	2.72	2.38	1.79	0.92	0.55
Uranium-235	<MDA	.	0.3	<MDA	.	2.53	0.71	0.63	0.68
Uranium-236	<MDA	.	0.27	<MDA	.	1.74	<MDA	.	0.52
Uranium-238	<MDA	.	0.24	3.89	2.59	2.87	1.1	0.7	0.47

(Continued)

Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-904			GW-905					
Location	EMWMF			EMWMF					
Date Sampled	08/02/00			02/14/00			04/12/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	.	.	.
Gross Beta	.	.	.	.	.	.	.	.	.
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	<MDA	.	0.82	<MDA	.	1.21	<MDA	.	0.33
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	4.54	1.34	1.79	<MDA	.	3.14	<MDA	.	3.96
Technetium-99	<MDA	.	23.72	<MDA	.	12.94	<MDA	.	14.26
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	0.94	0.72	0.81	<MDA	.	0.69	0.55	0.34	0.31
Uranium-235	<MDA	.	0.38	<MDA	.	0.71	<MDA	.	0.26
Uranium-236	<MDA	.	0.59	<MDA	.	0.32	<MDA	.	0.23
Uranium-238	<MDA	.	0.75	0.63	0.53	0.28	<MDA	.	0.29

(Continued)

Sampling Point	GW-905			NT-07					
Location	EMWMF			EXP-SW					
Date Sampled	08/07/00			01/25/00			08/17/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	.	.	.
Gross Beta	.	.	.	.	.	.	.	.	.
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	<MDA	.	0.46	.	.	.	.	.	.
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	<MDA	.	4.03	.	.	.	.	.	.
Technetium-99	<MDA	.	19.79	.	.	.	.	.	.
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	<MDA	.	0.38	7.88	3.09	2.17	5.95	1.94	0.85
Uranium-235	<MDA	.	0.4	<MDA	.	1.87	<MDA	.	0.78
Uranium-236	< CE	0.2	0.15	<MDA	.	1.55	<MDA	.	0.7
Uranium-238	<MDA	.	0.46	8.08	3.09	1.71	7.13	2.18	0.75

(Continued)

Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	NT-08						SS-4		
Location	EXP-SW						EXP-SW		
Date Sampled	01/25/00			08/17/00			02/09/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	.	.	.
Gross Beta	.	.	.	.	.	.	.	.	.
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	.	.	.	.	.	.	.	.	.
Technetium-99	.	.	.	.	.	.	.	.	.
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	32.16	7.67	1.79	34.45	7.81	0.28	73.55	17.92	2.47
Uranium-235	6.1	2.86	1.71	1.25	0.84	0.59	5.4	3.28	2.87
Uranium-236	<MDA	.	1.54	1.71	0.95	0.31	3.87	2.58	2.22
Uranium-238	154.9	28.54	1.6	109.3	22.73	0.47	137.9	31.08	2.45

(Continued)

Sampling Point	SS-4								
Location	EXP-SW								
Date Sampled	02/09/00			08/03/00					
Monitoring Program	WRRP			WRRP					
Type	DUP						DUP		
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	.	.	.
Gross Beta	.	.	.	.	.	.	.	.	.
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	.	.	.	.	.	.	.	.	.
Technetium-99	.	.	.	.	.	.	.	.	.
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	56.31	12.39	1.81	11.52	2.6	0.22	21.41	4.56	0.44
Uranium-235	5.31	2.79	1.73	0.18	0.17	0.1	0.89	0.53	0.32
Uranium-236	5.15	2.59	0.77	0.48	0.27	0.18	1.05	0.55	0.29
Uranium-238	114.6	22.63	2	19.1	4.12	0.24	42.47	8.51	0.55

(Continued)

Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	SS-5						SS-6		
Location	EXP-SW						EXP-SW		
Date Sampled	02/09/00			08/03/00			02/09/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	.	.	.
Gross Beta	.	.	.	.	.	.	.	.	.
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	.	.	.	.	.	.	.	.	.
Technetium-99	55.74	17.46	27.71	48.25	12.99	20.35	<MDA	.	26.54
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	39.15	10.58	2.36	12.71	3.04	0.29	5.87	2.94	2.43
Uranium-235	2.35	2.1	2.25	0.6	0.42	0.18	<MDA	.	1.92
Uranium-236	3.17	2.34	2.25	0.48	0.35	0.16	<MDA	.	1.47
Uranium-238	69.69	16.72	1.82	23.23	5.17	0.35	8.32	3.53	2

(Continued)

Sampling Point	SS-6			SS-6.6					
Location	EXP-SW			EXP-SW					
Date Sampled	08/03/00			01/25/00					
Monitoring Program	WRRP			WRRP					
Type							DUP		
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	.	.	.	.	.	.	.	.	.
Gross Beta	.	.	.	3.89	1.42	1.92	9.31	1.65	1.9
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	.	.	.	.	.	.	.	.	.
Technetium-99	<MDA	.	20.59	<MDA	.	17.39	16.56	8.73	14.31
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	2.11	0.89	0.49	1.91	0.73	0.36	1.8	0.66	0.32
Uranium-235	<MDA	.	0.38	<MDA	.	0.38	0.44	0.33	0.26
Uranium-236	<MDA	.	0.4	<MDA	.	0.15	<MDA	.	0.24
Uranium-238	3.24	1.17	0.43	2.57	0.89	0.45	3.23	0.96	0.36

(Continued)

Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	SS-6.6						SS-7		
Location	EXP-SW						EXP-SW		
Date Sampled	08/16/00						01/25/00		
Monitoring Program	WRRP						WRRP		
Type				DUP					
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	16.32	2.64	1.25	20.63	3.88	2.56	.	.	.
Gross Beta	16	2.97	2.68	22.18	3.78	3.38	5.24	1.35	1.7
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	.	.	.	.	.	.	.	.	.
Technetium-99	29.45	12.79	20.69	28.87	12.54	20.28	<MDA	.	14.63
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	3.13	1.82	1.28	2.25	1.4	1.41	2.89	0.91	0.33
Uranium-235	<MDA	.	1.22	<MDA	.	1.51	0.5	0.36	0.35
Uranium-236	1.99	1.42	0.94	<MDA	.	0.77	0.41	0.31	0.24
Uranium-238	4.12	2.15	0.98	3.42	1.78	1.44	5.25	1.37	0.41

(Continued)

Sampling Point	SS-7			SS-8					
Location	EXP-SW			EXP-SW					
Date Sampled	08/16/00			01/25/00			08/16/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	7.11	1.24	0.79	.	.	.	<MDA	.	0.86
Gross Beta	9.5	1.05	0.86	<MDA	.	1.65	<MDA	.	0.91
Americium-241	.	.	.	.	.	.	.	.	.
Bismuth-214	.	.	.	.	.	.	.	.	.
Lead-214	.	.	.	.	.	.	.	.	.
Neptunium-237	.	.	.	.	.	.	.	.	.
Plutonium-238	.	.	.	.	.	.	.	.	.
Radium-223/224/226	.	.	.	.	.	.	.	.	.
Strontium-89/90	.	.	.	.	.	.	.	.	.
Technetium-99	<MDA	.	20.8	<MDA	.	14.01	<MDA	.	18.9
Thorium-230	.	.	.	.	.	.	.	.	.
Thorium-234	.	.	.	.	.	.	.	.	.
Uranium-234	3.68	1.24	0.54	<MDA	.	0.47	0.7	0.47	0.55
Uranium-235	<MDA	.	0.5	<MDA	.	0.3	<MDA	.	0.39
Uranium-236	0.48	0.38	0.19	<MDA	.	0.33	<MDA	.	0.46
Uranium-238	5.58	1.67	0.4	<MDA	.	0.38	<MDA	.	0.48

APPENDIX E

CY 2000 MONITORING DATA FOR THE CHESTNUT RIDGE HYDROGEOLOGIC REGIME

EXPLANATION

SAMPLING POINT:

GW - Groundwater monitoring well (also 1090)
MCK - McCoy Branch Kilometer
OF 301 - Outfall 301: surface water station located where water exits Kerr Hollow Quarry
SCR - South Chestnut Ridge (tributary prefix for spring sampling locations)

LOCATION:

CDLVI - Construction/Demolition Landfill VI
CDLVII - Construction/Demolition Landfill VII
CRBAWP - Chestnut Ridge Borrow Area Waste Pile
CRSDB - Chestnut Ridge Sediment Disposal Basin
CRSP - Chestnut Ridge Security Pits
EXP - Exit Pathway (spring sampling location)
FCAP - Filled Coal Ash Pond
KHQ - Kerr Hollow Quarry
LII - Industrial Landfill II
LIV - Industrial Landfill IV
LV - Industrial Landfill V
UNCS - United Nuclear Corporation Site

MONITORING PROGRAM:

GWPP - Y-12 Groundwater Protection Program
WRRP - Water Resources Restoration Program

SAMPLE TYPE:

DUP - Field Duplicate Sample
SPLIT - Split sample analyzed by another laboratory (well GW-798)
DIS - Dissolved concentration (filtered sample)
TOT - Total concentration (unfiltered sample)
ACT - Activity
ERR - Counting Error (two standard deviations)
MDA - Minimum Detectable Activity

UNITS:

ft - feet (elevations are above mean sea level and depths are below grade)
ug/L - micrograms per liter
mg/L - milligrams per liter
mV - millivolts
umho/cm - micromhos per centimeter
NTU - Nephelometric Turbidity Units
pCi/L - picoCuries per liter
ppm - parts per million

EXPLANATION (continued)

NOTES:

Only the analytes that were detected above the program reporting limits in at least one sample are included in this appendix. Additionally, results that are below the reporting limits are replaced with missing values (e.g., " < ") to emphasize the detected results. The following sections describe the analytes, reporting limits, and data qualifiers for each sub-appendix. A comprehensive list of the GWPP analytes, analytical methods, and reporting limits is provided in Appendix B, Table B.5.

E.1 Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals:

All analytes are included in this appendix except the trace metals that were not detected in any sample at a level above the reporting limits shown in the following summary. Results for the trace metals shown in bold typeface are presented in Appendix E.1.

Analyte	Reporting Limit (mg/L)		Analyte	Reporting Limit (mg/L)	
	GWPP	WRRP		GWPP	WRRP
Cations			**Anions**		
Calcium	0.2	0.25	Alkalinity - HCO3	1.0	1.0
Magnesium	0.2	0.05	Alkalinity - CO3	1.0	1.0
Potassium	2.0	0.25	Chloride	0.2	0.1
Sodium	0.2	0.25	Fluoride	0.1	0.05
			Nitrate (as Nitrogen)	0.028	0.1
			Sulfate	0.25	0.1
Trace Metals					
Aluminum	0.2	0.05	**Lithium**	0.01	0.01
Antimony (PMS)	0.0025	.	**Manganese**	0.005	0.005
Antimony	.	0.006	Mercury (CVAA)	0.0002	0.0002
Arsenic (PMS)	0.005	.	**Molybdenum**	0.05	.
Arsenic	.	0.005	**Nickel**	0.05	0.01
Barium	0.004	0.005	Selenium (PMS)	0.01	.
Beryllium	0.001	0.001	Selenium	.	0.005
Boron	0.1	0.01	Silver	0.02	0.005
Cadmium (PMS)	0.0005	.	**Strontium**	0.005	0.005
Cadmium	.	0.001	Thallium (PMS)	0.0005	.
Chromium	0.02	0.005	Thallium	.	0.002
Cobalt	0.02	0.005	Thorium	0.2	.
Copper	0.02	0.005	**Uranium (PMS)**	0.0005	.
Iron	0.05	0.01	**Uranium (KPA)**	.	0.004
Lead (PMS)	0.0005	.	**Vanadium**	0.02	0.01
Lead	.	0.003	**Zinc**	0.05	0.01

Metals analyses were performed using the inductively coupled plasma spectroscopy method unless otherwise noted.

CVAA - Cold Vapor Atomic Absorption (EPA-7470)
KPA - Kinetic Phosphorescent Analysis (ASTM-D5174-M)
PMS - Plasma Mass Spectroscopy (EPA-200.8)

EXPLANATION (continued)

The following symbols are used in Appendix E.1:

. - Not analyzed or not applicable
< - Analyzed but not detected at the project reporting level

E.2 Volatile Organic Compounds:

Results for the compounds shown in bold typeface are included in this appendix. The other compounds were never detected at levels above the following reporting limits, in micrograms per liter.

Volatile Organic Compound	Reporting Limit		Volatile Organic Compound	Reporting Limit	
	GWPP	WRRP		GWPP	WRRP
Acetone	10	10	**1,1-Dichloroethene**	5	5
Acrolein	10	.	**cis-1,2-Dichloroethene**	5	5
Acrylonitrile	5	.	trans-1,2-Dichloroethene	5	5
Benzene	5	5	1,2-Dichloropropane	5	5
Bromochloromethane	10	.	cis-1,3-Dichloropropene	5	5
Bromodichloromethane	5	5	trans-1,3-Dichloropropene	5	5
Bromoform	5	5	Dimethylbenzene	5	5
Bromomethane	5	10	Ethanol	200	.
2-Butanone	5	10	Ethylbenzene	5	5
Carbon disulfide	5	5	Ethyl methacrylate	5	.
Carbon tetrachloride	5	5	2-Hexanone	5	10
Chlorobenzene	5	5	Iodomethane	5	.
Chloroethane	5	10	4-Methyl-2-pentanone	5	10
2-Chloroethyl vinyl ether	5	.	**Methylene chloride**	5	5
Chloroform	5	5	Styrene	5	5
Chloromethane	5	10	1,1,1,2-Tetrachloroethane	5	.
Dibromochloromethane	5	5	1,1,2,2-Tetrachloroethane	5	5
1,2-Dibromo-3-chloropropane	10	.	**Tetrachloroethene**	5	5
1,2-Dibromoethane	5	.	**Toluene**	5	5
Dibromomethane	5	.	**1,1,1-Trichloroethane**	5	5
1,2-Dichlorobenzene	5	.	1,1,2-Trichloroethane	5	5
1,4-Dichlorobenzene	5	.	**Trichloroethene**	5	5
1,4-Dichloro-2-butene	5	.	**Trichlorofluoromethane**	5	.
trans-1,4-Dichloro-2-butene	5	.	1,2,3-Trichloropropane	10	.
Dichlorodifluoromethane	5	.	Vinyl acetate	10	.
1,1-Dichloroethane	5	5	Vinyl chloride	5	2
1,2-Dichloroethane	5	5			

The following symbols are used in Appendix E.2.

. - Not analyzed or not applicable
< - Analyzed but not detected at the project reporting level (also false-positive results for data provided by the WRRP)

EXPLANATION (continued)

The following laboratory qualifier is **NOT** presented with results in Appendix E.2:

J A result less than the reporting limit is an estimated value and assigned a "J" qualifier by the laboratory. Based on the reporting limits shown above, results for all compounds except vinyl chloride that are less than 5 ug/L are estimated values. Only the following acetone results are estimated values greater than 5 ug/L.

Sampling Location	Date Sampled	Compound	Reporting Limit (ug/L)	Result (ug/L)
GW-141	02/07/00	Acetone	12.63	9.4
GW-217	02/07/00	Acetone	12.63	9.4
GW-522	02/07/00	Acetone	12.63	13
GW-557	01/26/00	Acetone	12.63	6
GW-709	02/03/00	Acetone	12.63	11
GW-796	01/27/00	Acetone	12.63	8.6
GW-797	02/01/00	Acetone	12.63	9.3
SCR4.3SP	02/02/00	Acetone	12.63	8.5

E.3 Radiological Analytes:

The following summary shows the radiological analytes reported for at least one groundwater sample collected during CY 2000 in the Chestnut Ridge Regime.

Analyte	No. of Results	No. Detected		Analyte	No. of Results	No. Detected	
		GWPP	WRRP			GWPP	WRRP
Gross Alpha	150	2	51	Thorium-228	38	.	0
Gross Beta	150	0	74	Thorium-230	38	.	0
Strontium-89/90	14	.	1	Thorium-232	38	.	0
Technetium-99	2	.	0				

All of the results for gross alpha and gross beta are presented in Appendix E.3. The detected strontium-90 result (2.22 ±1.27 pCi/L, MDA = 1.98 pCi/L) is for the August sample from well 1090.

Results that are not detected are replaced with the following:

<MDA - Reported activity is less than the minimum detectable activity.

EXPLANATION (continued)

Additional Analytes Not Presented in Appendix E tables:

Biological testing to assess microbial activity in groundwater was performed at the following wells for the GWPP during CY 2000.

Well Number	Date Sampled	Bacteria Results (colony forming units per milliliter)		
		Iron Related	Slime Forming	Sulfate Reducing
GW-203	02/23/00	5,000	50,000	<100
GW-203	08/15/00	<100	<50,000	<100
GW-302	02/23/00	<5,000	>100	<100
GW-302	08/14/00	<100,000	<50,000	<100
GW-305	02/07/00	5,000	500,000	100
GW-339	02/23/00	5,000	50,000	<100
GW-339	08/14/00	<5,000	<100	<100
GW-521	01/31/00	<100	<100	>100

The qualitative bacterial counts are estimates based on appearance of the sample after an eight- to nine-day growth period.

APPENDIX E.1

FIELD MEASUREMENTS, MISCELLANEOUS ANALYTES, MAJOR IONS, AND TRACE METALS

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	1090		GW-141		GW-142			
Location	UNCS		LIV		KHQ			
Date Sampled	02/22/00	08/09/00	02/07/00	07/26/00	04/03/00	04/04/00	04/05/00	04/06/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1104.48	1104.48	1186.23	1186.23	971.15	971.15	971.15	971.15
Depth to Water (ft)	50.29	56.73	98.03	96.76	135.81	134.86	133.41	133.13
Water-Level Elev. (ft)	1054.19	1047.75	1088.20	1089.47	835.34	836.29	837.74	838.02
Water Temp. (degrees C)	14.2	16.8	14.1	17.4	14.2	12.9	13.8	15.9
pH (standard units)	7.37	6.39	7.34	6.96	7.97	7.9	7.68	7.81
Conductivity (umho/cm)	585	513	435	325	418	387	398	397
Dissolved Oxygen (ppm)	6.29	6.59	6.51	6.36	5.7	1.53	2.94	2.41
Oxidation/Reduction (mV)	227	-2	162	146	-143	-173	-139	-146
Turbidity (NTU)	20	5	21	1	17	33	42	33
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	8	7.5	.	.	.	.
Conductivity (umho/cm)	.	.	427	385	.	.	.	.
Dissolved Solids (mg/L)	310	290	240	196	170	190	150	210
Suspended Solids (mg/L)	8.5	5	<	2	5.3	<	9.1	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	54.4	49.8	48.4	42.7	34.1	33.8	33	33.4
Magnesium	31.9	29.3	29.9	25.9	32	31.3	30.4	30.8
Potassium	0.96	0.874	1.27	0.65	4.18	4.18	4.01	4.03
Sodium	9.76	9.6	0.732	1.1	1.09	1.08	1.05	1.06
Alkalinity-HCO3	220	232	290	254	.	.	.	.
Alkalinity-CO3	<	<	<	<	.	.	.	.
Chloride	18.3	21.4	1.4	1.8	.	.	.	.
Fluoride	<	<	<	<	.	.	.	.
Nitrate-N	0.35	0.76	0.4	0.85	.	.	.	.
Sulfate	3.6	3.7	<	2.3	.	.	.	.
Ion Charge Balance (RPD)	7.2	-0.3	-9.2	-9.3	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	<	<	0.0823	<	<	<	<	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.0295	0.0282	0.016	0.014	0.454	0.448	0.438	0.444
Beryllium	<	<	<	0.0032	<	<	<	<
Boron	<	<	0.0122	<	0.0372	0.0378	0.036	0.0372
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.0372	0.0878	0.0834	0.075	4.36	2.46	2.13	2.02
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	<	<	.	.	0.0277	0.0277	0.0267	0.0271
Manganese	<	<	<	<	0.0703	0.0627	0.0602	0.0611
Molybdenum	.	.	<	<	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Strontium	0.0239	0.0241	0.015	0.012	0.393	0.393	0.379	0.383
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-142							
Location	KHQ							
Date Sampled	10/02/00	10/03/00	10/04/00	10/05/00	12/18/00	12/19/00	12/20/00	12/21/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	971.15	971.15	971.15	971.15	971.15	971.15	971.15	971.15
Depth to Water (ft)	139.39	140.83	140.25	139.92	138.20	138.08	138.06	138.10
Water-Level Elev. (ft)	831.76	830.32	830.90	831.23	832.95	833.07	833.09	833.05
Water Temp. (degrees C)	15.3	16.3	18.8	16.1	10.1	2.4	9	8.7
pH (standard units)	7.9	7.8	7.49	7.52	8.23	7.85	8.25	7.58
Conductivity (umho/cm)	346	320	474	354	330	262	385	338
Dissolved Oxygen (ppm)	3.68	4.89	5.35	5.38	9.79	10.47	8.48	8.89
Oxidation/Reduction (mV)	-211	-133	49	201	-47	-31	-165	-76
Turbidity (NTU)	28	28	34	45	.	28	0	44
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	180	200	200	200	.	.	.	.
Suspended Solids (mg/L)	7	<	7	97	.	.	.	.
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	31.5	31	34.3	33.4	.	.	.	.
Magnesium	29.6	28.9	32.8	31.6	.	.	.	.
Potassium	4	3.85	4.49	4.25	.	.	.	.
Sodium	0.965	0.931	1.2	1.14	.	.	.	.
Alkalinity-HCO3	.	.	.	.	.	.	.	.
Alkalinity-CO3	.	.	.	.	.	.	.	.
Chloride	.	.	.	.	.	.	.	.
Fluoride	.	.	.	.	.	.	.	.
Nitrate-N	.	.	.	.	.	.	.	.
Sulfate	.	.	.	.	.	.	.	.
Ion Charge Balance (RPD)	.	.	.	.	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	.	.	.	.
Antimony	<	<	<	<	.	.	.	.
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	.	.	.	.
Barium	0.433	0.417	0.445	0.432	.	.	.	.
Beryllium	<	<	<	<	.	.	.	.
Boron	<	<	0.0379	0.0376	.	.	.	.
Cadmium	<	0.001	<	<	.	.	.	.
Chromium	<	<	<	<	.	.	.	.
Copper	<	<	<	<	.	.	.	.
Iron	3.32	2.15	2.13	2.32	.	.	.	.
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	0.0277	0.0266	0.0293	0.028	.	.	.	.
Manganese	0.0685	0.0791	0.066	0.0653	.	.	.	.
Molybdenum	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	.	.	.	.
Strontium	0.367	0.353	0.378	0.365	.	.	.	.
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	.	.	.	.
Zinc	<	<	<	<	.	.	.	.

(Continued)

Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-143							
Location	KHQ							
Date Sampled	04/03/00		04/04/00	04/05/00	04/06/00	10/02/00		10/03/00
Monitoring Program	WRRP		WRRP	WRRP	WRRP	WRRP		WRRP
Type		DUP					DUP	
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	913.98	.	913.98	913.98	913.98	913.98	.	913.98
Depth to Water (ft)	79.39	.	79.72	78.20	78.16	82.15	.	82.90
Water-Level Elev. (ft)	834.59	.	834.26	835.78	835.82	831.83	.	831.08
Water Temp. (degrees C)	15.2	.	12.7	15.2	18.8	17.5	.	18.1
pH (standard units)	7.95	.	8.08	7.93	8.04	7.77	.	7.08
Conductivity (umho/cm)	473	.	448	464	506	370	.	350
Dissolved Oxygen (ppm)	2.53	.	2.47	1.91	1.79	2.38	.	5.12
Oxidation/Reduction (mV)	-144	.	-135	-151	-134	-133	.	-93
Turbidity (NTU)	8	.	10	12	8	4	.	7
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	190	230	260	240	270	260	260	280
Suspended Solids (mg/L)	<	<	<	<	<	<	<	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	31.6	31.5	31.1	30.8	31.4	31	30.6	27.9
Magnesium	26	25.9	25.6	25.3	25.9	25.2	25	22.6
Potassium	18.4	18.2	18.2	18	18.1	17.4	17.3	15.8
Sodium	21.6	21.6	21.7	21.6	22.1	21.7	21.5	19.8
Alkalinity-HCO3	.	.	.	.	.	.	.	.
Alkalinity-CO3	.	.	.	.	.	.	.	.
Chloride	.	.	.	.	.	.	.	.
Fluoride	.	.	.	.	.	.	.	.
Nitrate-N	.	.	.	.	.	.	.	.
Sulfate	.	.	.	.	.	.	.	.
Ion Charge Balance (RPD)	.	.	.	.	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	0.005
Barium	0.0459	0.0459	0.0453	0.0446	0.0452	0.0465	0.0455	0.0385
Beryllium	<	<	<	<	<	<	<	<
Boron	0.858	0.869	0.875	0.869	0.892	0.877	0.866	0.811
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.75	0.781	0.521	0.6	0.496	0.67	0.55	0.518
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	0.307	0.309	0.322	0.322	0.331	0.339	0.332	0.307
Manganese	0.0139	0.0136	0.013	0.0124	0.0126	0.0133	0.0128	0.0106
Molybdenum	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Strontium	3.09	3.09	3.07	3.02	3.08	3.06	3.01	2.66
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-143						GW-144	
Location	KHQ						KHQ	
Date Sampled	10/04/00	10/05/00	12/18/00	12/19/00	12/20/00	12/21/00	04/03/00	04/04/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	913.98	913.98	913.98	913.98	913.98	913.98	913.54	913.54
Depth to Water (ft)	82.85	82.84	81.56	81.38	81.95	81.74	79.25	76.91
Water-Level Elev. (ft)	831.13	831.14	832.42	832.60	832.03	832.24	834.29	836.63
Water Temp. (degrees C)	22.1	18.5	10	11.3	6.8	7.2	14.7	14.4
pH (standard units)	7.75	7.78	8.43	8.5	8.17	8.29	7.36	7.56
Conductivity (umho/cm)	455	446	399	409	350	352	333	282
Dissolved Oxygen (ppm)	4.62	3.38	6.82	5.75	7.03	9.59	6.14	6.78
Oxidation/Reduction (mV)	-134	-157	-89	-152	-124	-57	202	178
Turbidity (NTU)	18	9	0	34	0	24	8	11
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	260	260	.	.	.	.	190	210
Suspended Solids (mg/L)	<	6	.	.	.	.	43	10
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	32.2	31.6	.	.	.	.	64.7	51.4
Magnesium	26.5	25.7	.	.	.	.	17.5	17.3
Potassium	19.1	18.4	.	.	.	.	2.07	1.68
Sodium	22.3	21.8	.	.	.	.	3	1.76
Alkalinity-HCO3	.	.	.	.	.	.	.	.
Alkalinity-CO3	.	.	.	.	.	.	.	.
Chloride	.	.	.	.	.	.	.	.
Fluoride	.	.	.	.	.	.	.	.
Nitrate-N	.	.	.	.	.	.	.	.
Sulfate	.	.	.	.	.	.	.	.
Ion Charge Balance (RPD)	.	.	.	.	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	<	<	.	.	.	.	<	<
Antimony	<	<	.	.	.	.	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	.	.	.	.	<	<
Barium	0.0415	0.0394	.	.	.	.	0.056	0.0492
Beryllium	<	<	.	.	.	.	<	<
Boron	0.937	0.919	.	.	.	.	0.0477	0.0283
Cadmium	<	<	.	.	.	.	<	<
Chromium	<	<	.	.	.	.	<	<
Copper	<	<	.	.	.	.	<	<
Iron	0.518	0.592	.	.	.	.	0.0908	0.0464
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	0.366	0.355	.	.	.	.	0.0294	0.0274
Manganese	0.0111	0.0103	.	.	.	.	0.0227	<
Molybdenum	.	.	.	.	.	.	.	.
Nickel	<	<	.	.	.	.	<	<
Strontium	2.87	2.76	.	.	.	.	0.21	0.13
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	.	.	.	.	<	<
Zinc	<	<	.	.	.	.	<	<

(Continued)

Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-144							
Location	KHQ							
Date Sampled	04/05/00		04/06/00	10/02/00	10/03/00	10/04/00		10/05/00
Monitoring Program	WRRP		WRRP	WRRP	WRRP	WRRP		WRRP
Type		DUP					DUP	
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	913.54	.	913.54	913.54	913.54	913.54	.	913.54
Depth to Water (ft)	77.25	.	77.39	82.15	82.11	82.12	.	82.10
Water-Level Elev. (ft)	836.29	.	836.15	831.39	831.43	831.42	.	831.44
Water Temp. (degrees C)	15.1	.	15.6	15.9	16.1	16.1	.	15.9
pH (standard units)	7.42	.	7.49	7.38	7.22	7.49	.	7.46
Conductivity (umho/cm)	279	.	275	331	250	340	.	336
Dissolved Oxygen (ppm)	6.38	.	5.67	4.23	7.52	7.16	.	7.22
Oxidation/Reduction (mV)	149	.	147	163	99	122	.	145
Turbidity (NTU)	0	.	0	24	19	12	.	13
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	190	190	130	210	240	220	220	210
Suspended Solids (mg/L)	<	<	<	50	44	13	5	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	46.8	46.7	47.6	63.2	62.7	57.4	55.4	52.4
Magnesium	16.5	16.5	16.8	17.3	16	18.4	17.9	18.2
Potassium	1.34	1.33	1.35	1.63	1.59	1.78	1.71	1.66
Sodium	0.917	0.909	0.93	1.53	1.58	1.39	1.32	1.12
Alkalinity-HCO3	.	.	.	.	.	.	.	.
Alkalinity-CO3	.	.	.	.	.	.	.	.
Chloride	.	.	.	.	.	.	.	.
Fluoride	.	.	.	.	.	.	.	.
Nitrate-N	.	.	.	.	.	.	.	.
Sulfate	.	.	.	.	.	.	.	.
Ion Charge Balance (RPD)	.	.	.	.	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	0.05	<	<	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.0477	0.0469	0.0481	0.0573	0.0548	0.0535	0.0513	0.0504
Beryllium	<	<	<	<	<	<	<	<
Boron	0.0157	0.0139	0.0135	0.0313	0.0313	0.0237	0.0183	0.02
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.0545	0.0136	0.0432	0.0255	0.052	0.089	0.0686	0.322
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	0.0245	0.0245	0.0245	0.031	0.0299	0.0313	0.0301	<
Manganese	<	<	<	<	0.005	<	<	<
Molybdenum	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Strontium	0.081	0.0802	0.0817	0.158	0.167	0.118	0.112	0.0919
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	0.01	<	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-144				GW-145			
Location	KHQ				KHQ			
Date Sampled	12/18/00	12/19/00	12/20/00	12/21/00	04/03/00	04/04/00	04/05/00	04/06/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	913.54	913.54	913.54	913.54	840.24	840.24	840.24	840.24
Depth to Water (ft)	81.40	81.12	81.02	80.99	4.85	2.35	2.63	2.76
Water-Level Elev. (ft)	832.14	832.42	832.52	832.55	835.39	837.89	837.61	837.48
Water Temp. (degrees C)	13.1	11.8	9.7	6.4	14.8	11.7	13.7	17
pH (standard units)	7.4	8.05	7.49	7.46	7.6	7.51	7.46	7.5
Conductivity (umho/cm)	276	311	289	289	519	427	435	437
Dissolved Oxygen (ppm)	8.01	9.7	9.97	7.75	4.92	6.41	6.14	5.9
Oxidation/Reduction (mV)	108	158	223	165	215	159	132	150
Turbidity (NTU)	10	27	12	13	6	5	2	0
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	.	.	.	.	310	300	180	290
Suspended Solids (mg/L)	.	.	.	.	<	40	<	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	.	.	.	.	42.8	42.2	41.6	40.8
Magnesium	.	.	.	.	36.6	36.3	35.7	35
Potassium	.	.	.	.	19.3	19.1	18.4	18
Sodium	.	.	.	.	12.3	12.7	12.1	11.7
Alkalinity-HCO3	.	.	.	.	.	.	.	.
Alkalinity-CO3	.	.	.	.	.	.	.	.
Chloride	.	.	.	.	.	.	.	.
Fluoride	.	.	.	.	.	.	.	.
Nitrate-N	.	.	.	.	.	.	.	.
Sulfate	.	.	.	.	.	.	.	.
Ion Charge Balance (RPD)	.	.	.	.	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	.	.	.	.	<	<	0.0725	<
Antimony	.	.	.	.	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	.	.	.	.	<	<	<	<
Barium	.	.	.	.	0.0914	0.0911	0.0886	0.0864
Beryllium	.	.	.	.	<	<	<	<
Boron	.	.	.	.	0.242	0.244	0.24	0.235
Cadmium	.	.	.	.	<	<	<	<
Chromium	.	.	.	.	<	<	<	<
Copper	.	.	.	.	<	<	<	<
Iron	.	.	.	.	0.013	0.0107	0.0235	0.0216
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	.	.	.	.	0.122	0.126	0.123	0.121
Manganese	.	.	.	.	<	<	<	<
Molybdenum	.	.	.	.	.	.	.	.
Nickel	.	.	.	.	<	<	<	<
Strontium	.	.	.	.	7.93	7.77	7.65	7.5
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	0.0152	0.0142	0.0177	0.018
Vanadium	.	.	.	.	<	<	<	<
Zinc	.	.	.	.	<	<	<	<

(Continued)

Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-145							
Location	KHQ							
Date Sampled	10/02/00	10/03/00	10/04/00	10/05/00	12/18/00	12/19/00	12/20/00	12/21/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	840.24	840.24	840.24	840.24	840.24	840.24	840.24	840.24
Depth to Water (ft)	8.47	8.98	8.70	8.65	6.94	7.25	7.23	7.32
Water-Level Elev. (ft)	831.77	831.26	831.54	831.59	833.30	832.99	833.01	832.92
Water Temp. (degrees C)	19	20.4	20.8	20.4	7.9	6.2	5.9	7
pH (standard units)	7.7	7.61	7.49	7.6	7.48	7.59	7.53	7.52
Conductivity (umho/cm)	537	557	676	687	401	464	389	408
Dissolved Oxygen (ppm)	4.33	4.5	5.06	5.37	9.24	6.73	9.01	8.06
Oxidation/Reduction (mV)	160	116	176	193	156	165	193	185
Turbidity (NTU)	26	12	20	35	5	8	8	9
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	310	300	290	940	.	.	.	.
Suspended Solids (mg/L)	7	5.8	<	<	.	.	.	.
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	37.1	38.2	42.6	41.2	.	.	.	.
Magnesium	32.5	33.4	38	36.6	.	.	.	.
Potassium	19.4	19.5	21.7	20.8	.	.	.	.
Sodium	10.7	11.1	13	12.4	.	.	.	.
Alkalinity-HCO3	.	.	.	.	.	.	.	.
Alkalinity-CO3	.	.	.	.	.	.	.	.
Chloride	.	.	.	.	.	.	.	.
Fluoride	.	.	.	.	.	.	.	.
Nitrate-N	.	.	.	.	.	.	.	.
Sulfate	.	.	.	.	.	.	.	.
Ion Charge Balance (RPD)	.	.	.	.	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	.	.	.	.
Antimony	<	<	<	<	.	.	.	.
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	0.005	<	<	.	.	.	.
Barium	0.0849	0.0865	0.0909	0.0876	.	.	.	.
Beryllium	<	<	<	<	.	.	.	.
Boron	0.227	0.234	0.252	0.243	.	.	.	.
Cadmium	<	<	<	<	.	.	.	.
Chromium	<	0.005	<	<	.	.	.	.
Copper	<	<	<	<	.	.	.	.
Iron	0.0174	0.01	0.0152	<	.	.	.	.
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	0.129	0.132	0.146	0.14	.	.	.	.
Manganese	<	<	<	<	.	.	.	.
Molybdenum	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	.	.	.	.
Strontium	6.97	7.17	7.31	7.07	.	.	.	.
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	0.0213	0.0223	0.0196	0.0222	0.0152	0.0127	0.0126	0.0121
Vanadium	<	<	<	<	.	.	.	.
Zinc	<	0.01	<	<	.	.	.	.

(Continued)

Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-156							
Location	CRSDB							
Date Sampled	04/24/00	04/25/00	04/26/00	04/27/00		10/09/00	10/10/00	10/11/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP		WRRP	WRRP	WRRP
Type					DUP			
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1049.30	1049.30	1049.30	1049.30	.	1049.30	1049.30	1049.30
Depth to Water (ft)	142.92	142.95	142.92	142.95	.	143.66	143.67	143.67
Water-Level Elev. (ft)	906.38	906.35	906.38	906.35	.	905.64	905.63	905.63
Water Temp. (degrees C)	12.2	13.1	15.5	16.3	.	12	13.5	15
pH (standard units)	7.19	7.18	7.64	7.16	.	7.07	7.19	6.91
Conductivity (umho/cm)	506	548	673	678	.	566	664	668
Dissolved Oxygen (ppm)	8	7.26	8.13	8.26	.	6.41	6.45	5.93
Oxidation/Reduction (mV)	197	184	173	188	.	209	226	222
Turbidity (NTU)	3	5	4	0	.	20	20	18
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	380	360	380	350	360	400	400	380
Suspended Solids (mg/L)	<	<	<	<	5.1	77	15	6
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	66.5	66.7	66.6	64.8	64.5	69.7	68.6	69.8
Magnesium	41.9	42	41.9	41.2	40.9	42.3	42.2	43.1
Potassium	26.2	24.5	2.31	21.4	21.2	15.9	14.8	13.6
Sodium	7.94	7.47	6.78	6.12	5.97	5.52	5.21	4.84
Alkalinity-HCO3	.	.	.	.	.	.	.	.
Alkalinity-CO3	.	.	.	.	.	.	.	.
Chloride	.	.	.	.	.	.	.	.
Fluoride	.	.	.	.	.	.	.	.
Nitrate-N	.	.	.	.	.	.	.	.
Sulfate	.	.	.	.	.	.	.	.
Ion Charge Balance (RPD)	.	.	.	.	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.0412	0.0397	0.0371	0.0354	0.0349	0.0331	0.0314	0.0302
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	<	<
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.0184	0.0246	0.0171	0.0188	0.0212	0.0231	0.0131	0.0551
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	<	<	<	<	<	<	<	<
Manganese	<	<	<	<	<	<	<	<
Molybdenum	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Strontium	0.0261	0.0261	0.0258	0.0255	0.0253	0.0288	0.0281	0.028
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	0.0108	0.0133	<	<	0.0459	0.0348	0.0284

(Continued)

Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-156		GW-159					
Location	CRSDB		CRSDB					
Date Sampled	10/12/00		04/24/00	04/25/00	04/26/00	04/27/00	10/09/00	10/10/00
Monitoring Program	WRRP		WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type		DUP						
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1049.30	.	1051.40	1051.40	1051.40	1051.40	1051.40	1051.40
Depth to Water (ft)	143.66	.	116.73	116.98	117.13	117.23	118.75	119.95
Water-Level Elev. (ft)	905.64	.	934.67	934.42	934.27	934.17	932.65	931.45
Water Temp. (degrees C)	16	.	12.1	11.8	12.3	13.6	11.9	10.4
pH (standard units)	6.8	.	7.64	7.69	8.14	7.63	7.38	7.41
Conductivity (umho/cm)	669	.	363	326	416	415	369	377
Dissolved Oxygen (ppm)	7.05	.	7.27	7.32	7.91	7.69	6.58	6.3
Oxidation/Reduction (mV)	162	.	212	211	212	202	224	229
Turbidity (NTU)	24	.	0	0	2	6	24	10
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	310	350	180	180	180	190	250	250
Suspended Solids (mg/L)	<	<	<	<	<	<	11	80
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	64.2	63.1	41.1	40.1	41.3	41.3	43.4	43.2
Magnesium	39.1	38.6	26.9	26	26.9	26.9	25.9	26
Potassium	11	10.8	1.78	1.72	1.75	1.71	1.27	1.28
Sodium	3.98	3.83	0.563	0.554	0.575	0.548	0.597	0.601
Alkalinity-HCO3	.	.	.	.	.	.	.	.
Alkalinity-CO3	.	.	.	.	.	.	.	.
Chloride	.	.	.	.	.	.	.	.
Fluoride	.	.	.	.	.	.	.	.
Nitrate-N	.	.	.	.	.	.	.	.
Sulfate	.	.	.	.	.	.	.	.
Ion Charge Balance (RPD)	.	.	.	.	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.0259	0.025	0.0148	0.0146	0.0148	0.0149	0.0132	0.0137
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	<	<
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.0108	<	<	<	<	0.0103	0.0332	0.0479
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	<	<	<	<	<	<	<	<
Manganese	<	<	<	<	<	<	<	<
Molybdenum	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Strontium	0.0253	0.0244	0.023	0.0225	0.0229	0.023	0.0173	0.0176
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	0.0271	0.0224	<	<	<	<	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-159		GW-203		GW-205		GW-217	
Location	CRSDB		UNCS		UNCS		LIV	
Date Sampled	10/11/00	10/12/00	02/23/00	08/15/00	02/23/00	08/10/00	02/07/00	07/27/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1051.40	1051.40	1105.45	1105.45	1104.14	1104.14	1177.06	1177.06
Depth to Water (ft)	120.43	121.23	85.39	80.37	81.39	77.78	113.12	113.05
Water-Level Elev. (ft)	930.97	930.17	1020.06	1092.35	1022.75	1026.36	1063.94	1064.01
Water Temp. (degrees C)	14	13.1	15.2	18.6	15.8	19.4	13.9	20.9
pH (standard units)	7.42	7.04	7.61	7.94	10.37	10.16	7.91	7.98
Conductivity (umho/cm)	407	406	330	336	426	420	.	301
Dissolved Oxygen (ppm)	6.18	7.17	7.63	5.79	4.05	5.54	8.78	6.16
Oxidation/Reduction (mV)	223	232	179	164	89	108	198	112
Turbidity (NTU)	27	17	0	16	18	0	0	0
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	8.32	8.2
Conductivity (umho/cm)	.	.	.	.	.	.	343	341
Dissolved Solids (mg/L)	220	200	120	120	190	660	200	175
Suspended Solids (mg/L)	<	<	6	5	7	<	<	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	42.5	43.9	33.7	34.4	1.35	1.26	35.1	34.2
Magnesium	25.5	26.3	18.9	19.1	9.96	8.7	22	21.1
Potassium	1.22	1.23	0.755	0.734	79	76	3.25	1.8
Sodium	0.592	0.609	0.527	0.477	11.6	11.7	7.35	5.6
Alkalinity-HCO3	.	.	143	116	10	<	215	217
Alkalinity-CO3	.	.	<	<	140	88	<	<
Chloride	.	.	2.2	1.6	2.2	2.4	2.1	2.1
Fluoride	.	.	<	<	<	<	<	<
Nitrate-N	.	.	.	3.2	.	8.4	0.4	0.79
Sulfate	.	.	1.6	1.2	1.2	1.6	<	6.8
Ion Charge Balance (RPD)	.	.	5.2	11.9	1.4	10.7	-6.1	-10.3
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.0131	0.0134	0.0113	0.0105	<	<	0.0297	0.027
Beryllium	<	<	<	<	<	<	<	0.0032
Boron	<	<	<	<	<	<	0.114	0.094
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	<	<	0.01	0.0175	0.0244	<	<	<
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	<	<	<	<	0.126	0.119	.	.
Manganese	<	<	<	<	<	<	<	<
Molybdenum	.	.	.	.	.	.	<	<
Nickel	<	<	<	<	<	<	<	<
Strontium	0.017	0.0176	0.0106	0.0101	0.0056	<	0.0164	0.013
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	0.0334	0.022

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-221		GW-231					
Location	UNCS		KHQ					
Date Sampled	02/22/00	08/09/00	04/03/00	04/04/00	04/05/00	04/06/00	10/02/00	10/03/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1106.16	1106.16	849.67	849.67	849.67	849.67	849.67	849.67
Depth to Water (ft)	87.14	81.49	14.03	10.26	10.40	10.77	17.57	17.57
Water-Level Elev. (ft)	1019.02	1024.67	835.64	839.41	839.27	838.90	832.10	832.10
Water Temp. (degrees C)	14.9	17.9	12.8	12.1	11.6	12.3	17.8	15.6
pH (standard units)	7.56	6.03	7.18	6.81	6.89	6.91	7.27	6.71
Conductivity (umho/cm)	242	303	305	262	217	226	280	269
Dissolved Oxygen (ppm)	8.62	4.54	4.76	8.3	4.68	4.12	1.86	1.66
Oxidation/Reduction (mV)	145	173	215	179	180	184	83	147
Turbidity (NTU)	10	5	8	3	1	0	0	0
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	170	270	130	160	160	190	210	200
Suspended Solids (mg/L)	<	<	<	7.2	<	<	600	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	30.4	28.2	35.6	32.8	33.1	33.3	44.7	44.4
Magnesium	17.9	16.9	18.6	16.8	16.6	16.5	23	22.9
Potassium	0.867	0.815	4.12	1.77	1.23	1.11	1.3	1.22
Sodium	0.444	0.44	0.981	0.797	0.776	0.778	0.702	0.677
Alkalinity-HCO3	144	2	.	.	.	.	.	.
Alkalinity-CO3	<	172	.	.	.	.	.	.
Chloride	1.3	1.5	.	.	.	.	.	.
Fluoride	<	<	.	.	.	.	.	.
Nitrate-N	<	2.4	.	.	.	.	.	.
Sulfate	1.1	1.2	.	.	.	.	.	.
Ion Charge Balance (RPD)	1.6	-12.9	.	.	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.0073	0.0076	0.0676	0.0651	0.0652	0.0644	0.105	0.104
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	<	0.01
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	<	<	0.037	0.0788	0.0695	0.108	0.0897	0.0724
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	<	<	0.0108	<	<	<	<	<
Manganese	<	<	0.0234	0.0104	<	<	0.0155	0.0151
Molybdenum	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Strontium	0.0089	0.0091	0.0341	0.0341	0.0417	0.0431	0.0425	0.0423
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-231						GW-301	
Location	KHQ						CRBAWP	
Date Sampled	10/04/00	10/05/00	12/18/00	12/19/00	12/20/00	12/21/00	01/31/00	
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	
Type								DUP
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	849.67	849.67	849.67	849.67	849.67	849.67	1086.55	.
Depth to Water (ft)	17.70	17.70	15.97	15.91	15.95	16.02	136.42	.
Water-Level Elev. (ft)	831.97	831.97	833.70	833.76	833.72	833.65	950.13	.
Water Temp. (degrees C)	16.2	16.3	11.8	12.5	10.5	12	10.6	.
pH (standard units)	7.14	7.16	7.03	7.01	7.02	7.01	7.49	.
Conductivity (umho/cm)	390	390	275	181	281	263	323	.
Dissolved Oxygen (ppm)	1.82	2.01	8.06	7.18	9.29	8.05	7.21	.
Oxidation/Reduction (mV)	135	128	158	187	190	189	213	.
Turbidity (NTU)	0	0	0	6	0	7	5	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	230	260	.	.	.	.	170	180
Suspended Solids (mg/L)	<	6	.	.	.	.	<	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	46.8	46.4	.	.	.	.	38.1	37.9
Magnesium	25.1	24.6	.	.	.	.	24.7	24.4
Potassium	1.38	1.4	.	.	.	.	0.707	0.699
Sodium	0.832	0.812	.	.	.	.	0.862	0.855
Alkalinity-HCO3	.	.	.	.	.	.	.	.
Alkalinity-CO3	.	.	.	.	.	.	.	.
Chloride	.	.	.	.	.	.	.	.
Fluoride	.	.	.	.	.	.	.	.
Nitrate-N	.	.	.	.	.	.	.	.
Sulfate	.	.	.	.	.	.	.	.
Ion Charge Balance (RPD)	.	.	.	.	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	<	<	.	.	.	.	<	<
Antimony	<	<	.	.	.	.	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	.	.	.	.	<	<
Barium	0.107	0.105	.	.	.	.	0.0204	0.0202
Beryllium	<	<	.	.	.	.	<	<
Boron	<	<	.	.	.	.	<	<
Cadmium	<	<	.	.	.	.	<	<
Chromium	<	<	.	.	.	.	<	<
Copper	<	<	.	.	.	.	<	<
Iron	0.0363	0.0262	.	.	.	.	<	<
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	<	<	.	.	.	.	<	<
Manganese	0.0138	0.0131	.	.	.	.	<	<
Molybdenum	.	.	.	.	.	.	.	.
Nickel	<	<	.	.	.	.	<	<
Strontium	0.043	0.0426	.	.	.	.	0.0202	0.0199
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	.	.	.	.	<	<
Zinc	<	<	.	.	.	.	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-301		GW-302		GW-305			
Location	CRBAWP		UNCS		LIV			
Date Sampled	07/19/00		02/23/00	08/14/00	02/07/00	05/23/00	07/27/00	11/06/00
Monitoring Program	WRRP		WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type		DUP						
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1086.55	.	1141.84	1141.84	1183.75	1183.75	1183.75	1183.75
Depth to Water (ft)	133.89	.	102.70	103.52	125.97	123.12	124.23	129.50
Water-Level Elev. (ft)	952.66	.	1039.14	1038.32	1057.78	1060.63	1059.52	1054.25
Water Temp. (degrees C)	20.2	.	17.5	19.5	10.1	17.9	22.2	13.5
pH (standard units)	7.48	.	7.19	7.2	8	8.17	8.09	7.78
Conductivity (umho/cm)	368	.	460	530	408	274	228	269
Dissolved Oxygen (ppm)	1.59	.	7.99	7.63	10.95	6.56	6.2	10.4
Oxidation/Reduction (mV)	178	.	135	134	231	181	135	119
Turbidity (NTU)	9	.	.	43	14	0.25	0	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	8.38	8.45	8.3	8.2
Conductivity (umho/cm)	.	.	.	.	287	778	284	274
Dissolved Solids (mg/L)	230	210	250	230	160	150	141	150
Suspended Solids (mg/L)	8	13	<	77	<	<	<	<
Turbidity (NTU)	.	.	.	.	0.2	.	.	.
MAJOR IONS (mg/L)								
Calcium	42.2	42.9	51.9	42.7	28.3	26.8	27.9	28.2
Magnesium	25.4	25.9	31.5	26	19.6	19.6	19.4	20
Potassium	0.735	0.751	1.02	0.886	1.33	1.44	0.62	0.88
Sodium	0.623	0.629	13	11.7	2.1	2.13	2.7	2.7
Alkalinity-HCO3	.	.	225	190	183	178	188	.
Alkalinity-CO3	.	.	<	<	2	2	1.2	.
Chloride	.	.	33.9	27	1.8	2.3	2.4	3.4
Fluoride	.	.	<	<	<	<	<	0.18
Nitrate-N	.	.	.	3.3	0.3	.	0.77	0.64
Sulfate	.	.	3.6	3.5	<	1.6	1.6	2.5
Ion Charge Balance (RPD)	.	.	2.2	-0.7	-9.5	-10.0	-12.1	0.2
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Antimony	<	<	<	<	<	<	<	0.0087
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.0197	0.0196	0.023	0.0207	0.0108	0.00932	0.0079	0.019
Beryllium	<	<	<	<	<	<	0.0032	<
Boron	<	<	<	<	0.0195	0.0184	0.014	0.019
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	0.0209	0.034	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.02	0.0149	0.559	1.01	<	0.0312	<	0.041
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	<	<	<	<	.	.	.	.
Manganese	<	<	<	0.0255	<	<	<	0.0074
Molybdenum	.	.	.	.	<	<	<	<
Nickel	<	<	<	0.154	0.0555	0.05	0.13	0.23
Strontium	0.0196	0.02	0.0185	0.0166	0.0129	0.0126	0.012	0.017
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	0.113	0.0445	0.016	0.014

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-339				GW-521		GW-522	
Location	UNCS				LIV		LIV	
Date Sampled	02/23/00		08/14/00		01/31/00	07/25/00	02/07/00	07/25/00
Monitoring Program	WRRP		WRRP		WRRP	WRRP	WRRP	WRRP
Type		DUP		DUP				
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1124.83	.	1124.83	.	1182.88	1182.88	1175.49	1175.49
Depth to Water (ft)	71.82	.	76.78	.	90.27	84.25	112.00	106.30
Water-Level Elev. (ft)	1053.01	.	1048.05	.	1092.61	1098.63	1063.49	1069.19
Water Temp. (degrees C)	13.6	.	17.3	.	12.9	16.2	12.9	18
pH (standard units)	7.28	.	7.15	.	8.58	7.98	8.28	7.94
Conductivity (umho/cm)	658	.	576	.	330	259	291	244
Dissolved Oxygen (ppm)	2.75	.	4.68	.	5.32	6.1	7.15	6.1
Oxidation/Reduction (mV)	36	.	145	.	186	99	201	137
Turbidity (NTU)	16	.	31	.	9	0	18	2
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	8.37	8.2	8.29	8.1
Conductivity (umho/cm)	.	.	.	.	275	280	259	279
Dissolved Solids (mg/L)	250	290	280	280	160	145	140	146
Suspended Solids (mg/L)	<	<	9	7	<	<	<	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	59.4	58.7	56.7	54.6	26.4	27.1	27.7	30.3
Magnesium	34.7	34.3	33.1	31.8	21.2	19.1	17.3	18.2
Potassium	1.23	1.19	1.18	1.13	1.6	0.73	1.45	0.83
Sodium	10.4	10.3	11.5	10.9	4.07	2.3	0.541	0.81
Alkalinity-HCO3	268	260	230	224	176	195	166	180
Alkalinity-CO3	<	<	<	<	24	<	<	<
Chloride	21.9	21.8	19	19.3	1.1	1.5	1.2	1.6
Fluoride	<	<	<	<	<	<	<	<
Nitrate-N	.	.	2.8	2.9	0.3	0.68	0.4	0.82
Sulfate	3.7	3.6	3.7	3.6	<	1.6	<	0.82
Ion Charge Balance (RPD)	2.0	2.8	5.9	4.9	-11.2	-14.9	-9.3	-9.7
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	0.0534	<	<	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.0217	0.0217	0.0218	0.0211	0.00574	0.0062	0.00688	0.0063
Beryllium	<	<	<	<	0.00103	0.0031	<	0.0032
Boron	<	<	<	<	<	<	<	<
Cadmium	<	<	<	<	<	<	<	<
Chromium	0.0058	0.0052	0.0097	0.009	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.285	0.24	0.247	0.232	0.0701	<	0.013	<
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	<	<	<	<	.	.	.	.
Manganese	0.0101	0.0089	0.0056	<	<	<	<	<
Molybdenum	.	.	.	.	<	<	<	<
Nickel	0.184	<	0.246	0.221	<	<	<	<
Strontium	0.0244	0.0242	0.0272	0.0261	0.0084	0.0073	0.0102	0.0089
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-539		GW-540		GW-542		GW-543	
Location	LII		LII		CDLVI		CDLVI	
Date Sampled	02/02/00	08/01/00	02/02/00	07/26/00	02/01/00	07/27/00	02/02/00	07/31/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1093.22	1093.22	1072.32	1072.32	1051.77	1051.77	1023.98	1023.98
Depth to Water (ft)	111.65	109.86	86.55	85.22	70.58	70.87	64.86	64.85
Water-Level Elev. (ft)	981.57	983.36	985.77	987.10	981.19	980.90	959.12	959.13
Water Temp. (degrees C)	9.8	22.9	12.6	16.7	12.1	17.3	10.6	17.3
pH (standard units)	8.1	7.95	7.99	7.9	6.31	6.25	7.19	7.01
Conductivity (umho/cm)	305	396	411	410	204	185	489	454
Dissolved Oxygen (ppm)	6.64	5.8	1.44	14.01	5.07	4.53	7.02	5.95
Oxidation/Reduction (mV)	117	170	27	124	205	209	223	163
Turbidity (NTU)	17	20	19	18	20	60	14	0
MISCELLANEOUS ANALYTES								
pH (standard units)	8.42	8.2	8.23	8.1	7.35	7	7.97	7.7
Conductivity (umho/cm)	331	326	393	385	227	189	469	463
Dissolved Solids (mg/L)	180	144	220	195	130	104	260	237
Suspended Solids (mg/L)	<	<	<	<	<	<	<	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	34.1	35.3	35.6	33.2	26.5	22.3	53	54.3
Magnesium	20.9	21.7	25.7	25	13.6	10.2	30.9	31.8
Potassium	1.24	1.5	2	1.3	2.12	2	<	0.84
Sodium	2.2	2.1	11.1	12.1	1.2	1.1	1.32	0.89
Alkalinity-HCO3	193	198	254	264	156	117	302	293
Alkalinity-CO3	2	<	<	<	<	<	<	<
Chloride	6.2	6	1.6	1.8	0.8	1.2	1.7	2.1
Fluoride	<	0.084	<	0.049	<	0.082	<	<
Nitrate-N	0.5	0.92	0.6	<	0.3	0.73	0.3	0.75
Sulfate	<	6.7	<	8.2	<	2.4	<	11.5
Ion Charge Balance (RPD)	-7.8	-10.0	-8.3	-12.5	-11.8	-10.1	-7.6	-7.2
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	0.0624	1	<	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.00724	0.0076	0.0101	0.0081	0.0139	0.014	0.0097	0.011
Beryllium	<	<	<	0.0032	<	0.0036	<	<
Boron	0.0112	<	<	<	<	<	0.0129	<
Cadmium	<	<	<	<	<	<	<	<
Chromium	0.0144	0.02	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.015	0.13	<	<	0.103	1.2	<	0.045
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	.	.	.	.	.	.	.	.
Manganese	<	<	<	<	<	0.02	<	<
Molybdenum	<	<	<	<	<	<	<	<
Nickel	0.05	0.049	<	<	<	<	<	<
Strontium	0.0176	0.017	0.026	0.02	0.0194	0.015	0.0263	0.026
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	0.024	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-544		GW-557				GW-560	
Location	CDLVI		LV				CDLVII	
Date Sampled	02/02/00	07/31/00	01/26/00		07/20/00		07/27/00	10/30/00
Monitoring Program	WRRP	WRRP	WRRP		WRRP		WRRP	WRRP
Type				DUP		DUP		
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1045.20	1045.20	1081.36	.	1081.36	.	949.05	949.05
Depth to Water (ft)	64.48	63.64	123.92	.	121.98	.	43.57	47.25
Water-Level Elev. (ft)	980.72	981.56	957.44	.	959.38	.	905.48	901.80
Water Temp. (degrees C)	11.5	20.4	11.8	.	16.9	.	16.5	16.8
pH (standard units)	7.01	7.52	7.47	.	7.53	.	7.29	7.47
Conductivity (umho/cm)	446	562	255	.	320	.	343	316
Dissolved Oxygen (ppm)	6.2	4.46	7.03	.	8.21	.	4.48	7.36
Oxidation/Reduction (mV)	232	203	223	.	87	.	240	98
Turbidity (NTU)	31	22	22	.	0	.	.	6
MISCELLANEOUS ANALYTES								
pH (standard units)	8.25	8	7.83	8.01	8	7.9	7.9	7.6
Conductivity (umho/cm)	488	491	334	335	330	331	306	281
Dissolved Solids (mg/L)	270	261	170	170	174	176	152	160
Suspended Solids (mg/L)	<	<	<	<	<	1.5	<	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	51.2	53	38.1	38.8	36.5	36.1	39.3	38.1
Magnesium	29.8	31.3	22.2	22.6	21.2	21	16.5	16.4
Potassium	1.88	1.6	<	1.1	1.3	1.1	1.2	1.5
Sodium	5.19	5.2	0.513	0.565	1.2	1.3	0.87	1.4
Alkalinity-HCO3	283	293	212	207	224	212	195	163
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	12.2	11.2	1.4	1	1.7	1.7	1.5	2.1
Fluoride	<	<	<	<	<	<	0.091	0.21
Nitrate-N	0.6	0.92	0.8	41	1.1	1.1	0.66	0.3
Sulfate	10	14.7	<	<	1.8	1.8	2.2	2.4
Ion Charge Balance (RPD)	-8.9	-9.2	-7.5	-30.3	-12.2	-10.0	-8.6	-0.1
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.0116	0.012	0.0102	0.0103	0.01	0.0093	0.22	0.23
Beryllium	<	<	<	<	0.0032	0.0033	0.0032	0.0013
Boron	<	<	<	0.0129	<	<	<	<
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	<	0.045	0.0604	0.0509	<	<	<	0.032
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	.	.	.	.	.	.	.	.
Manganese	<	<	<	<	<	<	<	<
Molybdenum	<	<	<	<	<	<	<	<
Nickel	<	0.017	<	<	<	<	<	<
Strontium	0.0254	0.025	0.0173	0.0174	0.014	0.014	0.021	0.024
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	0.0122	<	<	<	<	<	0.011	0.013

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-560		GW-562				GW-564	
Location	CDLVII		CDLVII				CDLVII	
Date Sampled	11/28/00	12/11/00	07/25/00	10/31/00	11/28/00	12/12/00	07/26/00	10/30/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	949.05	949.05	934.69	934.69	934.69	934.69	937.97	937.97
Depth to Water (ft)	48.11	48.37	7.77	11.61	12.47	12.67	11.62	11.36
Water-Level Elev. (ft)	900.94	900.68	926.92	923.08	922.22	922.02	926.35	926.61
Water Temp. (degrees C)	15.3	14	19.8	14.8	12.3	9.7	16.9	18.6
pH (standard units)	7.76	7.59	7.4	7.4	7.45	7.3	6.94	6.72
Conductivity (umho/cm)	296	236	383	393	352	249	256	294
Dissolved Oxygen (ppm)	9.49	8.12	7.18	8.24	9.92	10.19	12.7	8
Oxidation/Reduction (mV)	222	98	221	198	240	131	257	129
Turbidity (NTU)	51	27	97	56	48	44	19	0
MISCELLANEOUS ANALYTES								
pH (standard units)	7.2	7.9	8	7.7	7.2	7.9	7.5	7
Conductivity (umho/cm)	297	303	367	327	349	353	274	232
Dissolved Solids (mg/L)	159	179	198	215	189	212	144	123
Suspended Solids (mg/L)	<	<	31	12	3.2	5.2	<	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	37.3	39.4	39.1	40.3	39.3	41	32.6	31.5
Magnesium	16.1	17.2	22.7	23.7	23	24.3	14.5	13
Potassium	1.4	1.4	0.64	0.71	0.69	0.69	1.3	1.8
Sodium	2	<	3.8	1.4	3.6	1.5	0.86	3
Alkalinity-HCO3	160	162	242	189	189	192	178	119
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	1.4	2	1.9	2.5	2	2.6	1.7	3.7
Fluoride	0.07	0.078	<	0.18	<	0.052	0.044	0.1
Nitrate-N	0.29	0.28	0.7	0.34	0.34	0.32	0.82	0.46
Sulfate	2.5	2.4	2.2	2.2	2.2	2	2.7	6.5
Ion Charge Balance (RPD)	-0.2	2.2	-12.3	2.4	1.0	2.6	-12.4	0.3
TRACE METALS (mg/L)								
Aluminum	<	<	1.2	0.84	0.51	0.56	<	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.23	0.23	0.014	0.015	0.014	0.012	0.012	0.019
Beryllium	<	<	0.0034	<	<	<	0.0031	0.0014
Boron	<	<	<	<	<	<	<	<
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	0.0052	<	<	<	<
Iron	0.013	0.015	1.7	1.2	0.6	0.54	<	0.062
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	.	.	.	.	.	.	.	.
Manganese	<	<	0.026	0.02	0.011	0.011	<	<
Molybdenum	<	<	<	<	<	<	<	<
Nickel	<	<	0.04	<	<	<	<	<
Strontium	0.024	0.024	0.017	0.022	0.02	0.021	0.021	0.04
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	0.021	0.019	0.022	0.014	<	<	<	0.017

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APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-564			GW-609		GW-709		GW-731
Location	CDLVII			CRSP		LII		CRSDB
Date Sampled	11/27/00	12/11/00		02/01/00	07/19/00	02/03/00	08/01/00	04/24/00
Monitoring Program	WRRP	WRRP		WRRP	WRRP	WRRP	WRRP	WRRP
Type			DUP					
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	937.97	937.97	.	1112.31	1112.31	906.78	906.78	1049.38
Depth to Water (ft)	12.39	12.45	.	169.79	168.02	29.67	29.11	124.70
Water-Level Elev. (ft)	925.58	925.52	.	942.52	944.29	877.11	877.67	924.68
Water Temp. (degrees C)	15.2	14.6	.	9.5	17.8	7.3	21	13.4
pH (standard units)	6.21	6.78	.	7.4	7.69	9.07	8.43	7.55
Conductivity (umho/cm)	208	201	.	375	400	223	297	209
Dissolved Oxygen (ppm)	11.06	8.19	.	6.34	2.72	0.88	4.68	6.08
Oxidation/Reduction (mV)	196	95	.	225	191	202	96	209
Turbidity (NTU)	30	24	.	5	.	18	10	20
MISCELLANEOUS ANALYTES								
pH (standard units)	7.3	7.3	.	.	.	9.06	8.3	.
Conductivity (umho/cm)	244	255	.	.	.	247	272	.
Dissolved Solids (mg/L)	138	156	.	61	180	120	131	140
Suspended Solids (mg/L)	<	<	.	<	11	<	<	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	31.8	29.9	31.9	40	42.6	16.6	20.1	29.6
Magnesium	12.5	11.6	12.4	24.4	25.4	24.8	24.4	18.6
Potassium	1.4	1.5	1.6	1	1.08	1.17	0.86	1.35
Sodium	2	0.44	1.9	1.67	1.46	1.06	0.52	0.709
Alkalinity-HCO3	115	113	.	.	.	124	198	.
Alkalinity-CO3	<	<	.	.	.	14	<	.
Chloride	3.7	4.1	.	.	.	1.4	1.9	.
Fluoride	<	0.053	.	.	.	<	0.089	.
Nitrate-N	0.52	0.48	.	.	.	<	<	.
Sulfate	9.4	10.2	.	.	.	<	3.3	.
Ion Charge Balance (RPD)	-0.4	-2.8	.	.	.	1.8	-13.6	.
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.021	0.021	0.021	0.0125	0.0133	0.398	0.48	0.0087
Beryllium	<	<	<	<	<	<	<	<
Boron	0.013	<	<	<	<	<	<	<
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.07	0.025	0.026	0.0151	0.0523	<	0.021	0.0136
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	.	.	.	<	<	.	.	<
Manganese	<	<	<	<	<	<	<	<
Molybdenum	<	<	<	.	.	<	<	.
Nickel	<	<	<	<	<	<	<	<
Strontium	0.047	0.048	0.049	0.013	0.0134	0.0305	0.036	0.0151
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	0.018	0.018	0.019	<	0.0105	<	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-731							GW-732
Location	CRSDB							CRSDB
Date Sampled	04/25/00	04/26/00	04/27/00	10/09/00	10/10/00	10/11/00	10/12/00	04/24/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1049.38	1049.38	1049.38	1049.38	1049.38	1049.38	1049.38	1064.29
Depth to Water (ft)	124.78	124.76	124.75	125.18	125.20	125.21	125.21	157.64
Water-Level Elev. (ft)	924.60	924.62	924.63	924.20	924.18	924.17	924.17	906.65
Water Temp. (degrees C)	14.1	16.3	17.8	13.4	14.6	16	16.8	13.7
pH (standard units)	7.8	7.95	7.78	9.01	9.01	8.56	8.1	7.71
Conductivity (umho/cm)	243	228	220	262	243	229	235	252
Dissolved Oxygen (ppm)	4.91	5.81	5.45	6.37	8.79	8.59	8.14	6.04
Oxidation/Reduction (mV)	224	154	170	134	122	111	117	218
Turbidity (NTU)	19	18	24	2	4	2	0	23
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	140	180	150	190	190	190	150	160
Suspended Solids (mg/L)	5.1	<	<	17	<	12	<	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	29.8	30.7	28.7	26.4	27.2	28.3	27.4	28
Magnesium	18.9	19.5	18.1	18.6	18.6	19	18.7	19.2
Potassium	1.21	1.15	0.985	8.09	6.31	4.85	6.69	3
Sodium	0.645	0.627	0.543	2.05	1.66	1.35	1.76	6.13
Alkalinity-HCO3	.	.	.	.	.	.	.	.
Alkalinity-CO3	.	.	.	.	.	.	.	.
Chloride	.	.	.	.	.	.	.	.
Fluoride	.	.	.	.	.	.	.	.
Nitrate-N	.	.	.	.	.	.	.	.
Sulfate	.	.	.	.	.	.	.	.
Ion Charge Balance (RPD)	.	.	.	.	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	0.269	<	<	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.0084	0.0086	0.0084	0.0071	0.0071	0.0073	0.007	0.0216
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	<	<
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	<	<	<	0.0691	0.048	0.0118	0.0221	0.015
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	<	<	<	<	<	<	<	<
Manganese	<	<	<	<	<	<	<	<
Molybdenum	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Strontium	0.0144	0.014	0.0132	0.0108	0.0115	0.0119	0.0114	0.0509
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-732							
Location	CRSDB							
Date Sampled	04/25/00		04/26/00	04/27/00	10/09/00	10/10/00		10/11/00
Monitoring Program	WRRP		WRRP	WRRP	WRRP	WRRP		WRRP
Type		DUP					DUP	
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1064.29	.	1064.29	1064.29	1064.29	1064.29	.	1064.29
Depth to Water (ft)	157.27	.	157.69	157.75	157.90	157.77	.	157.91
Water-Level Elev. (ft)	907.02	.	906.60	906.54	906.39	906.52	.	906.38
Water Temp. (degrees C)	13.5	.	13.7	13.7	12.9	12.2	.	13.3
pH (standard units)	7.66	.	7.42	7.53	8.57	8	.	8.04
Conductivity (umho/cm)	283	.	262	241	285	380	.	232
Dissolved Oxygen (ppm)	5.99	.	5.68	6.4	7.69	9.8	.	9.47
Oxidation/Reduction (mV)	209	.	223	208	180	211	.	195
Turbidity (NTU)	29	.	21	19	1	3	.	4
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	160	150	190	150	180	180	190	180
Suspended Solids (mg/L)	6.3	<	<	<	10	8	30	6
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	28.6	28.7	20.7	29.4	28.8	25.6	26.2	26
Magnesium	19.2	19.5	20.5	19.2	17.2	17.4	17.6	17.5
Potassium	2.29	2.51	2.31	1.74	4.84	2.86	3	4.02
Sodium	4.48	4.99	4.41	3.04	1.93	1.35	1.49	2.62
Alkalinity-HCO3	.	.	.	.	.	.	.	.
Alkalinity-CO3	.	.	.	.	.	.	.	.
Chloride	.	.	.	.	.	.	.	.
Fluoride	.	.	.	.	.	.	.	.
Nitrate-N	.	.	.	.	.	.	.	.
Sulfate	.	.	.	.	.	.	.	.
Ion Charge Balance (RPD)	.	.	.	.	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.0213	0.0222	0.0224	0.0217	0.0215	0.0129	0.0134	0.0145
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	<	<
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	<	<	<	<	0.109	0.0283	0.0242	0.0531
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	<	<	<	<	0.0117	<	<	<
Manganese	<	<	<	<	<	<	<	<
Molybdenum	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Strontium	0.0515	0.0538	0.0523	0.0455	0.0355	0.0231	0.0238	0.0244
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-732	GW-757		GW-796		GW-797		
Location	CRSDB	LII		LV		LV		
Date Sampled	10/12/00	02/03/00	08/01/00	01/27/00	07/24/00	02/01/00	07/24/00	08/01/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1064.29	961.61	961.61	1052.62	1052.62	1060.00	1060.00	1060.00
Depth to Water (ft)	157.77	84.66	84.32	86.71	78.95	76.08	74.03	74.32
Water-Level Elev. (ft)	906.52	876.95	877.29	965.91	973.67	983.92	985.97	985.68
Water Temp. (degrees C)	14.3	7.9	20.9	13.4	16.7	7.8	18.6	20.3
pH (standard units)	8.96	9.72	9.67	8.23	7.91	7.92	7.81	7.68
Conductivity (umho/cm)	189	255	333	246	225	301	268	255
Dissolved Oxygen (ppm)	9.23	3.23	3	7.85	1.32	7	6.84	5.68
Oxidation/Reduction (mV)	141	199	154	196	185	204	122	99
Turbidity (NTU)	.	3	26	32	25	13	0	0
MISCELLANEOUS ANALYTES								
pH (standard units)	.	9.83	9.7	8.28	8.2	8.21	8.1	.
Conductivity (umho/cm)	.	286	277	228	229	331	333	.
Dissolved Solids (mg/L)	120	150	142	110	124	190	183	.
Suspended Solids (mg/L)	14	<	<	<	1.5	<	<	.
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	25.8	4.76	4.2	27.7	24.1	35.6	35.3	.
Magnesium	14.6	11.4	7.7	16.5	14.2	21.2	20.7	.
Potassium	7.28	16	16.7	1.43	0.81	1.29	1.1	.
Sodium	4.04	31.4	35.1	14.9	2.5	9.98	3.6	.
Alkalinity-HCO3	.	66	159	146	149	229	205	.
Alkalinity-CO3	.	38	16.8	<	5	<	5	.
Chloride	.	1.7	2.2	1.3	1.8	1.9	2.7	.
Fluoride	.	1.6	1.5	<	<	<	0.17	.
Nitrate-N	.	0.2	0.66	0.4	<	0.4	0.87	.
Sulfate	.	<	13.1	<	1	<	10.4	.
Ion Charge Balance (RPD)	.	12.9	-17.2	6.3	-13.0	-8.2	-12.7	.
TRACE METALS (mg/L)								
Aluminum	0.262	<	<	0.0911	<	<	<	.
Antimony	<	<	<	<	<	<	<	.
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	.
Barium	0.0298	0.103	0.092	0.00704	0.0064	0.00741	0.0065	.
Beryllium	<	<	<	<	0.0033	<	0.0032	.
Boron	<	0.0142	<	<	<	0.0101	<	.
Cadmium	<	<	<	<	<	<	<	.
Chromium	<	0.0102	<	<	<	<	<	.
Copper	<	<	<	<	<	<	<	.
Iron	0.232	<	0.018	0.111	<	<	<	.
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	0.0201	.	.	.	.	.	.	.
Manganese	0.0051	<	<	<	<	<	<	.
Molybdenum	.	<	0.01	<	<	<	<	.
Nickel	<	<	<	<	<	<	<	.
Strontium	0.0465	0.337	0.27	0.0124	0.0097	0.0213	0.017	.
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	.
Vanadium	<	<	<	<	<	<	<	.
Zinc	<	<	<	<	<	<	<	.

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-798						GW-799	
Location	CDLVII						LV	
Date Sampled	01/31/00	07/20/00		10/30/00	11/27/00	12/11/00	01/27/00	07/25/00
Monitoring Program	WRRP	WRRP		WRRP	WRRP	WRRP	WRRP	WRRP
Type			SPLIT					
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1006.00	1006.00	.	1006.00	1006.00	1006.00	981.29	981.29
Depth to Water (ft)	84.37	79.07	.	84.42	85.24	85.56	18.95	17.44
Water-Level Elev. (ft)	921.63	926.93	.	921.58	920.76	920.44	962.34	963.85
Water Temp. (degrees C)	12.8	17.2	.	15.7	14.7	14.4	12.8	17.6
pH (standard units)	7.39	7.12	.	7.64	7.52	7.62	8.34	7.93
Conductivity (umho/cm)	341	286	.	269	260	242	264	371
Dissolved Oxygen (ppm)	7.43	8.5	.	8.63	12.07	9.64	1.95	7.12
Oxidation/Reduction (mV)	220	187	.	185	97	108	127	207
Turbidity (NTU)	7	23	.	13	51	28	26	21
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	8	7.9	8.2	8.1	8.36	8.3
Conductivity (umho/cm)	.	.	261	228	253	263	275	282
Dissolved Solids (mg/L)	97	330	145	142	242	152	140	146
Suspended Solids (mg/L)	<	<	1.5	<	<	<	<	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	29.7	27.6	28.5	28.5	28.8	25.8	34.1	31.8
Magnesium	16.8	15.4	16.1	16.2	16.6	14.7	18.1	17.1
Potassium	2.06	1.26	1.3	1.9	1.7	1.8	1.27	0.77
Sodium	0.51	0.397	0.74	1.8	<	<	0.941	1.5
Alkalinity-HCO3	.	.	168	129	132	132	159	176
Alkalinity-CO3	.	.	<	<	<	<	<	<
Chloride	.	.	1.4	1.8	1.2	1.5	0.8	1.5
Fluoride	.	.	<	0.18	<	0.078	<	0.067
Nitrate-N	.	.	1.1	0.68	0.71	0.74	1.3	1.4
Sulfate	.	.	2.8	2.6	2.8	4.2	<	4
Ion Charge Balance (RPD)	.	.	-11.1	2.4	2.1	-3.7	-1.6	-9.4
TRACE METALS (mg/L)								
Aluminum	<	<	<	0.065	<	<	0.0672	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.0106	0.0093	0.01	0.0097	0.0096	0.011	<	<
Beryllium	<	<	0.0031	0.0014	<	<	0.00102	0.0029
Boron	<	<	<	<	<	<	<	<
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	0.0368	0.044
Copper	<	<	<	<	<	<	<	<
Iron	0.0325	0.0241	<	0.091	0.021	0.015	0.0782	<
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	<	<	.	.	.	.	.	.
Manganese	<	<	<	<	<	<	<	<
Molybdenum	.	.	<	<	<	<	<	<
Nickel	<	<	<	<	<	<	<	<
Strontium	0.0177	0.0149	0.015	0.018	0.017	0.019	0.0177	0.017
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-801		GW-827		GW-831		MCK 2.0	
Location	LV		CDLVI		FCAP		EXP	
Date Sampled	01/31/00	07/24/00	02/01/00	07/31/00	01/27/00	07/24/00	02/07/00	08/29/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1097.16	1097.16	1051.58	1051.58	1091.29	1091.29	.	.
Depth to Water (ft)	116.62	181.00	45.67	43.10	123.40	129.04	.	.
Water-Level Elev. (ft)	980.54	916.16	1005.91	1008.48	967.89	962.25	.	.
Water Temp. (degrees C)	12.3	15.6	.	15	7	17.7	11.3	18.5
pH (standard units)	7.6	7.73	6.91	7.4	7.96	8.28	7.09	7.57
Conductivity (umho/cm)	337	238	263	278	310	402	149	177
Dissolved Oxygen (ppm)	7.9	7.36	3.18	4.8	5.82	2.8	14.69	10.42
Oxidation/Reduction (mV)	216	118	221	231	204	167	.	37
Turbidity (NTU)	22	3	8	28	12	35	1	55
MISCELLANEOUS ANALYTES								
pH (standard units)	8.06	8	8.04	8	.	.	.	.
Conductivity (umho/cm)	281	275	295	292	.	.	.	.
Dissolved Solids (mg/L)	160	151	160	145	200	190	200	210
Suspended Solids (mg/L)	<	<	<	5	<	<	<	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	34.8	30.4	33.6	33.5	40.6	40.2	46.8	42.3
Magnesium	20.1	17.6	20	19.8	24.5	25.6	16.3	14.9
Potassium	<	0.54	1.41	1.3	1.63	1.63	4.36	3.99
Sodium	0.587	0.79	1.22	0.79	0.552	0.535	2.12	1.98
Alkalinity-HCO3	185	188	192	200	.	.	160	146
Alkalinity-CO3	<	<	<	<	.	.	<	<
Chloride	0.7	1.7	0.8	1.1	.	.	1.8	1.8
Fluoride	<	<	<	0.063	.	.	0.14	0.13
Nitrate-N	<	0.63	<	0.57	.	.	.	.
Sulfate	<	2.9	<	1.6	.	.	20.6	22.7
Ion Charge Balance (RPD)	-4.6	-12.4	-6.7	-10.0	.	.	2.6	1.1
TRACE METALS (mg/L)								
Aluminum	0.569	<	<	<	<	<	0.0622	0.0602
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	0.0228	0.0159
Barium	0.00553	<	0.00759	0.0091	0.0177	0.0181	0.0896	0.0588
Beryllium	<	0.0032	<	<	<	<	<	<
Boron	<	<	<	<	<	<	0.241	0.212
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.488	<	<	0.15	0.148	0.154	0.088	0.112
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	.	.	.	.	<	<	0.0761	0.0678
Manganese	0.00798	<	<	0.0089	0.0823	0.0468	0.0768	0.0909
Molybdenum	<	<	<	<	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Strontium	0.018	0.013	0.017	0.017	0.0261	0.0253	0.802	0.772
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	MCK 2.05				OF 301		SCR1.25SP	
Location	EXP				KHQ		EXP	
Date Sampled	02/07/00		08/29/00		05/30/00	11/02/00	02/07/00	08/29/00
Monitoring Program	WRRP		WRRP		WRRP	WRRP	WRRP	WRRP
Type		DUP		DUP				
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	13.9	.	16.6	.	21.9	15.4	11.1	18.7
pH (standard units)	6.92	.	6.11	.	8.58	8.17	6.05	7.4
Conductivity (umho/cm)	153	.	181	.	141	906	121	164
Dissolved Oxygen (ppm)	12.81	.	11.38	.	8.05	9.12	14.63	10.82
Oxidation/Reduction (mV)	.	.	29	.	.	259	.	27
Turbidity (NTU)	17	.	43	.	0	13	33	52
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	200	210	190	190	110	240	150	170
Suspended Solids (mg/L)	<	<	<	<	<	<	8	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	46.2	45.6	40.7	40.4	32.8	44.5	34.7	39.2
Magnesium	16.4	16.2	14.5	14.4	15.6	23.3	14.4	17.3
Potassium	4.17	4.12	3.83	3.79	1.2	1.37	1	1.13
Sodium	2.05	2	1.89	1.86	0.808	0.925	2.52	1.49
Alkalinity-HCO3	137	142	156	162	166	.	136	158
Alkalinity-CO3	<	<	<	<	<	.	<	<
Chloride	1.9	1.9	1.9	1.9	1.7	1.7	5	3.2
Fluoride	0.12	0.14	0.13	0.13	<	<	0.13	0.11
Nitrate-N	.	.	.	.	2.5	1.8	.	.
Sulfate	20.8	20.8	22.8	23.8	4.1	2.9	12.3	5.6
Ion Charge Balance (RPD)	8.7	6.6	-3.5	-5.8	-7.3	5.5	-7.2	1.5
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	0.0421	<	<	<
Antimony	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	0.117	0.14	0.0442	0.0487	<	<	<	<
Barium	0.0893	0.0918	0.0784	0.0778	0.0584	0.0802	0.0442	0.065
Beryllium	<	<	<	<	<	<	<	<
Boron	0.232	0.231	0.205	0.205	0.0075	<	0.0117	0.0155
Cadmium	<	<	<	<	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	0.0011	<	<	<
Iron	2.2	2.73	0.785	0.91	0.0214	0.0753	0.044	0.075
Lead (PMS)	.	.	.	.	.	.	.	.
Lithium	0.0733	0.0722	0.0653	0.0647	0.0028	<	<	<
Manganese	1.22	1.19	1.04	1.01	0.0031	<	0.0124	0.0221
Molybdenum	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Strontium	0.798	0.784	0.749	0.739	0.0406	0.0568	0.045	0.0519
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	<	<	<	<	<	<	<	<
Vanadium	<	<	<	<	0.00032	<	<	<
Zinc	<	<	<	<	0.0022	<	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	SCR2.1SP				SCR2.2SP			
Location	EXP				EXP			
Date Sampled	03/06/00		08/17/00		03/06/00		08/17/00	
Monitoring Program	GWPP		GWPP		GWPP		GWPP	
Type								
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	12.8	.	17.8	.	13.2	.	15.3	.
pH (standard units)	7.01	.	6.94	.	7.14	.	6.85	.
Conductivity (umho/cm)	365	.	380	.	257	.	353	.
Dissolved Oxygen (ppm)	10.5	.	4.81	.	6.38	.	5.05	.
Oxidation/Reduction (mV)	174	.	162	.	183	.	176	.
Turbidity (NTU)	.	.	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.51	.	7.42	.	7.53	.	7.42	.
Conductivity (umho/cm)	204	.	387	.	287	.	365	.
Dissolved Solids (mg/L)	112	.	217	.	175	.	215	.
Suspended Solids (mg/L)	<	.	322	.	<	.	<	.
Turbidity (NTU)	3.02	.	73.3	.	4.88	.	2.31	.
MAJOR IONS (mg/L)								
Calcium	22.8	22.7	49.7	47.8	49.7	48.9	52.2	52
Magnesium	8.78	8.78	22.2	20.7	7.95	7.95	14.4	14.1
Potassium	<	<	<	<	<	<	<	<
Sodium	3.6	3.78	1.89	2.32	2.23	2.16	2.06	2.13
Alkalinity-HCO3	93.8	.	193	.	135	.	184	.
Alkalinity-CO3	<	.	<	.	<	.	<	.
Chloride	6.54	.	3.13	.	4.04	.	3.64	.
Fluoride	<	.	<	.	<	.	<	.
Nitrate-N	0.211	.	0.249	.	1.54	.	0.627	.
Sulfate	8.74	.	5.16	.	11.4	.	10.4	.
Ion Charge Balance (RPD)	-5.6	.	3.8	.	1.1	.	-2.0	.
TRACE METALS (mg/L)								
Aluminum	<	<	1.42	<	0.31	<	<	<
Antimony	.	.	.	.	.	.	.	.
Arsenic (PMS)	<	<	<	<	<	<	<	<
Arsenic	.	.	.	.	.	.	.	.
Barium	0.0226	0.0224	0.0593	0.0522	0.0272	0.0261	0.042	0.041
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	<	<
Cadmium	.	.	.	.	.	.	.	.
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.0981	<	1.24	<	0.23	<	0.0529	<
Lead (PMS)	<	0.000568	0.000843	<	<	<	<	<
Lithium	<	<	<	<	<	<	<	<
Manganese	<	0.0119	0.0476	0.0542	<	<	<	0.0149
Molybdenum	<	<	<	<	<	<	<	<
Nickel	<	<	<	<	<	<	<	<
Strontium	0.0317	0.0322	0.0639	0.0645	0.0635	0.0622	0.0715	0.0708
Uranium (PMS)	0.00381	0.00176	0.00398	0.0041	0.000519	0.000557	0.000886	0.000806
Uranium (KPA)	.	.	.	.	.	.	.	.
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	SCR3.4SP				SCR3.5SP		SCR4.3SP	
Location	EXP				EXP		CDLVII	
Date Sampled	03/06/00		08/17/00		02/07/00	08/29/00	02/02/00	07/25/00
Monitoring Program	GWPP		GWPP		WRRP	WRRP	WRRP	WRRP
Type								
	TOT	DIS	TOT	DIS	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	14	.	20.1	.	8.3	17.5	6.7	16.6
pH (standard units)	7.19	.	6.71	.	6.83	5.93	6.35	6.74
Conductivity (umho/cm)	220	.	445	.	151	181	327	342
Dissolved Oxygen (ppm)	6.74	.	5.29	.	17.7	9.93	6.95	7.6
Oxidation/Reduction (mV)	171	.	48	.	.	117	82	207
Turbidity (NTU)	.	.	.	.	0	20	25	31
MISCELLANEOUS ANALYTES								
pH (standard units)	7.24	.	7.62	.	.	.	7.4	7.2
Conductivity (umho/cm)	238	.	389	.	.	.	284	319
Dissolved Solids (mg/L)	128	.	217	.	210	190	160	169
Suspended Solids (mg/L)	<	.	27	.	<	6	<	12
Turbidity (NTU)	4.73	.	11.5	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	29.3	29.7	49.1	52	48.8	47.4	33.9	39.7
Magnesium	13	13	21.4	22.5	16.2	16.2	11.7	23
Potassium	<	<	<	2.39	1.93	2.22	1.88	0.77
Sodium	0.635	0.662	0.926	1.11	1.56	1.46	3.52	3.2
Alkalinity-HCO3	132	.	193	.	170	176	127	205
Alkalinity-CO3	<	.	<	.	<	<	<	<
Chloride	1.43	.	1.56	.	2.3	2	9.7	3
Fluoride	<	.	0.141	.	0.14	0.14	<	0.082
Nitrate-N	0.343	.	0.208	.	.	.	1.9	0.96
Sulfate	7.15	.	7.8	.	14.7	10.2	17	7.5
Ion Charge Balance (RPD)	-5.4	.	2.0	.	1.4	0.3	-8.1	-6.4
TRACE METALS (mg/L)								
Aluminum	<	<	1.48	<	0.0691	0.158	0.216	1.2
Antimony	.	.	.	.	<	<	<	<
Arsenic (PMS)	<	<	<	0.00694	.	.	.	.
Arsenic	.	.	.	.	<	0.0084	<	<
Barium	0.0625	0.0622	0.115	0.124	0.0781	0.0948	0.11	0.014
Beryllium	<	<	<	<	<	<	<	0.0033
Boron	<	<	<	<	0.0763	0.0843	0.0111	<
Cadmium	.	.	.	.	<	<	<	<
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.0803	<	1.05	0.546	0.116	0.343	0.0979	1.7
Lead (PMS)	<	<	0.000913	<	.	.	.	.
Lithium	<	<	0.0132	0.0136	0.0174	0.0204	.	.
Manganese	0.0104	<	0.127	0.885	0.0464	0.21	<	0.024
Molybdenum	<	<	<	<	.	.	<	<
Nickel	<	<	<	<	<	<	<	<
Strontium	0.126	0.128	0.232	0.262	0.275	0.293	0.095	0.017
Uranium (PMS)	0.00387	0.00556	0.000696	0.00095	.	.	.	.
Uranium (KPA)	.	.	.	.	<	<	<	<
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	0.0555	<	<	<	0.02

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	SCR5.1SP						SCR5.4SP	
Location	EXP						EXP	
Date Sampled	03/06/00				08/17/00		03/06/00	
Monitoring Program	GWPP				GWPP		GWPP	
Type			DUP					
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	13.5	.	.	.	14.2	.	15.4	.
pH (standard units)	6.99	.	.	.	6.54	.	7.15	.
Conductivity (umho/cm)	138	.	.	.	671	.	349	.
Dissolved Oxygen (ppm)	8.22	.	.	.	5.92	.	5.51	.
Oxidation/Reduction (mV)	176	.	.	.	189	.	182	.
Turbidity (NTU)	.	.	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	6.72	.	6.72	.	7.72	.	7.11	.
Conductivity (umho/cm)	133.3	.	132.8	.	297	.	400	.
Dissolved Solids (mg/L)	72	.	61	.	161	.	256	.
Suspended Solids (mg/L)	<	.	<	.	5	.	3	.
Turbidity (NTU)	5.84	.	5.21	.	1.61	.	16.1	.
MAJOR IONS (mg/L)								
Calcium	13.8	14.1	13.9	14.1	32.5	32.1	74.7	74.1
Magnesium	7.88	8.03	7.98	8.01	19.6	19.5	6.63	6.47
Potassium	<	<	<	<	<	2.22	<	<
Sodium	0.637	0.642	0.632	0.686	0.52	0.816	6.15	6.08
Alkalinity-HCO3	62	.	56.6	.	147	.	182	.
Alkalinity-CO3	<	.	<	.	<	.	<	.
Chloride	1.66	.	1.58	.	1.08	.	14.1	.
Fluoride	<	.	<	.	<	.	<	.
Nitrate-N	2.46	.	2.37	.	1.74	.	2.44	.
Sulfate	3.33	.	3.25	.	2.29	.	17.9	.
Ion Charge Balance (RPD)	-5.7	.	-1.3	.	1.8	.	-0.5	.
TRACE METALS (mg/L)								
Aluminum	<	<	0.432	<	<	<	0.872	<
Antimony	.	.	.	.	.	.	.	.
Arsenic (PMS)	<	<	<	<	<	<	<	<
Arsenic	.	.	.	.	.	.	.	.
Barium	0.0176	0.0169	0.0182	0.0167	0.0141	0.0142	0.0327	0.0304
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	<	<
Cadmium	.	.	.	.	.	.	.	.
Chromium	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.124	<	0.305	0.0565	0.0534	<	0.527	<
Lead (PMS)	<	<	<	<	<	<	<	<
Lithium	<	<	<	<	<	<	<	<
Manganese	<	<	0.0145	0.0138	<	<	0.0105	0.0174
Molybdenum	<	<	<	<	<	<	<	<
Nickel	<	<	<	<	<	<	<	<
Strontium	0.0149	0.015	0.0151	0.0151	0.0187	0.0189	0.132	0.129
Uranium (PMS)	<	<	<	<	<	<	<	<
Uranium (KPA)	.	.	.	.	.	.	.	.
Vanadium	<	<	<	<	<	<	<	<
Zinc	<	<	<	<	<	<	<	<

(Continued)

APPENDIX E.1: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	SCR5.4SP			
Location	EXP			
Date Sampled	08/17/00			
Monitoring Program	GWPP			
Type			DUP	
	TOT	DIS	TOT	DIS
FIELD MEASUREMENTS				
Measuring Pt. Elev. (ft)	.	.	.	.
Depth to Water (ft)	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.
Water Temp. (degrees C)	15.5	.	.	.
pH (standard units)	6.57	.	.	.
Conductivity (umho/cm)	581	.	.	.
Dissolved Oxygen (ppm)	5.87	.	.	.
Oxidation/Reduction (mV)	192	.	.	.
Turbidity (NTU)	.	.	.	.
MISCELLANEOUS ANALYTES				
pH (standard units)	7.09	.	7.15	.
Conductivity (umho/cm)	557	.	557	.
Dissolved Solids (mg/L)	323	.	322	.
Suspended Solids (mg/L)	<	.	<	.
Turbidity (NTU)	4.05	.	4.45	.
MAJOR IONS (mg/L)				
Calcium	97.3	96.4	96.9	97.2
Magnesium	10.1	10.1	9.79	9.81
Potassium	<	<	<	<
Sodium	4.9	4.99	4.91	5.05
Alkalinity-HCO3	288	.	274	.
Alkalinity-CO3	<	.	<	.
Chloride	10	.	9.25	.
Fluoride	<	.	<	.
Nitrate-N	4.24	.	4.31	.
Sulfate	25.4	.	16	.
Ion Charge Balance (RPD)	-7.6	.	-4.3	.
TRACE METALS (mg/L)				
Aluminum	<	<	<	<
Antimony	.	.	.	.
Arsenic (PMS)	<	<	<	<
Arsenic	.	.	.	.
Barium	0.0364	0.036	0.0358	0.036
Beryllium	<	<	<	<
Boron	<	<	<	<
Cadmium	.	.	.	.
Chromium	<	<	<	<
Copper	<	<	<	<
Iron	0.113	<	0.0882	<
Lead (PMS)	<	<	<	<
Lithium	<	<	<	<
Manganese	<	0.0133	<	<
Molybdenum	<	<	<	<
Nickel	<	<	<	<
Strontium	0.169	0.17	0.17	0.17
Uranium (PMS)	0.000703	0.00053	<	0.000519
Uranium (KPA)	.	.	.	.
Vanadium	<	<	<	<
Zinc	<	<	<	<

APPENDIX E.2

VOLATILE ORGANIC COMPOUNDS

APPENDIX E.2: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-141		GW-142					
Location	LIV		KHQ					
Date Sampled	02/07/00	07/26/00	04/03/00	04/04/00	04/05/00	04/06/00	10/02/00	10/03/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type								
Acetone	9.4	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Methylene chloride	<	0.89	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	<	<	.	.	.	.	.	.

(Continued)

Sampling Point	GW-142		GW-143					
Location	KHQ		KHQ					
Date Sampled	10/04/00	10/05/00	04/03/00		04/04/00	04/05/00	04/06/00	10/02/00
Monitoring Program	WRRP	WRRP	WRRP		WRRP	WRRP	WRRP	WRRP
Type				DUP				
Acetone	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	.	.	.	.	.	.	.	.

(Continued)

APPENDIX E.2: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-143				GW-144			
Location	KHQ				KHQ			
Date Sampled	10/02/00	10/03/00	10/04/00	10/05/00	04/03/00	04/04/00	04/05/00	
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	
Type	DUP							DUP
Acetone	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	.	.	.	.	.	.	.	.

(Continued)

Sampling Point	GW-144						GW-145	
Location	KHQ						KHQ	
Date Sampled	04/06/00	10/02/00	10/03/00	10/04/00		10/05/00	04/03/00	04/04/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP		WRRP	WRRP	WRRP
Type					DUP			
Acetone	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	.	.	.	.	.	.	.	.

(Continued)

APPENDIX E.2: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-145						GW-217	
Location	KHQ						LIV	
Date Sampled	04/05/00	04/06/00	10/02/00	10/03/00	10/04/00	10/05/00	02/07/00	07/27/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type								
Acetone	<	<	<	<	<	<	9.4	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	1	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	.	.	.	.	.	.	<	<

(Continued)

Sampling Point	GW-231							
Location	KHQ							
Date Sampled	04/03/00	04/04/00	04/05/00	04/06/00	10/02/00	10/03/00	10/04/00	10/05/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type								
Acetone	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	1	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	.	.	.	.	.	.	.	.

(Continued)

APPENDIX E.2: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-301				GW-305			
Location	CRBAWP				LIV			
Date Sampled	01/31/00		07/19/00		02/07/00	05/23/00	07/27/00	11/06/00
Monitoring Program	WRRP		WRRP		WRRP	WRRP	WRRP	WRRP
Type		DUP		DUP				
Acetone	<	<	<	<	<	<	<	<
Bromomethane	2	<	<	<	<	<	<	<
2-Butanone	<	2	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	2	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	9	11	11	9
1,1-Dichloroethene	<	<	<	<	4.2	4.3	3.3	3.9
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	18	24	26	14
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	.	.	.	.	<	<	<	<

(Continued)

Sampling Point	GW-521		GW-522		GW-539		GW-540	
Location	LIV		LIV		LII		LII	
Date Sampled	01/31/00	07/25/00	02/07/00	07/25/00	02/02/00	08/01/00	02/02/00	07/26/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type								
Acetone	3	<	13	<	<	<	48	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	<	<	<	<	<	<	<	<

(Continued)

APPENDIX E.2: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-542		GW-543		GW-544		GW-557	
Location	CDLVI		CDLVI		CDLVI		LV	
Date Sampled	02/01/00	07/27/00	02/02/00	07/31/00	02/02/00	07/31/00	01/26/00	
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	
Type								DUP
Acetone	<	<	<	<	<	<	6	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	1.4	1.2	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-557		GW-560				GW-562	
Location	LV		CDLVII				CDLVII	
Date Sampled	07/20/00		07/27/00	10/30/00	11/28/00	12/11/00	07/25/00	10/31/00
Monitoring Program	WRRP		WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type		DUP						
Acetone	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	1.4	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	<	<	<	<	<	<	<	<

(Continued)

APPENDIX E.2: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-562		GW-564					
Location	CDLVII		CDLVII					
Date Sampled	11/28/00	12/12/00	07/26/00	10/30/00		11/27/00	12/11/00	
Monitoring Program	WRRP	WRRP	WRRP	WRRP		WRRP	WRRP	
Type					DUP			DUP
Acetone	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroform	<	<	<	0.39	0.38	0.57	0.81	0.78
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	0.28	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-609		GW-709		GW-757		GW-796	
Location	CRSP		LII		LII		LV	
Date Sampled	02/01/00	07/19/00	02/03/00	08/01/00	02/03/00	08/01/00	01/27/00	07/24/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type								
Acetone	<	<	11	<	<	<	8.6	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Tetrachloroethene	2	2	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	1.2	0.94
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	.	.	<	<	<	<	<	<

(Continued)

APPENDIX E.2: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-797		GW-798					
Location	LV		CDLVII					
Date Sampled	02/01/00	08/01/00	01/31/00	07/20/00		10/30/00	11/27/00	12/11/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP		WRRP	WRRP	WRRP
Type					Split			
Acetone	9.3	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	2	<	<	<	<	<
Chlorobenzene	<	<	2	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	1	1.3	0.87	0.91	0.94
1,1-Dichloroethene	<	<	<	1	1.8	1.7	1.3	1.5
cis-1,2-Dichloroethene	<	<	<	2	2.5	2.2	2	2.1
Methylene chloride	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	1	2	3.1	2.6	2.2	2.6
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	2	2.1	1.2	1.3	1.4
Trichloroethene	<	<	<	<	0.33	0.29	0.26	0.26
Trichlorofluoromethane	<	<	.	.	7.1	3.7	3.7	4.4

(Continued)

Sampling Point	GW-799		GW-801		GW-827		GW-831	
Location	LV		LV		CDLVI		FCAP	
Date Sampled	01/27/00	07/25/00	01/31/00	07/31/00	02/01/00	07/31/00	01/27/00	07/24/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type								
Acetone	31	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	1.4	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	<	<	<	<	<	<	.	.

(Continued)

APPENDIX E.2: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	SCR1.25SP		SCR2.1SP		SCR2.2SP		SCR3.4SP	
Location	EXP		EXP		EXP		EXP	
Date Sampled	02/07/00	08/29/00	03/06/00	08/17/00	03/06/00	08/17/00	03/06/00	08/17/00
Monitoring Program	WRRP	WRRP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP
Type								
Acetone	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	.	.	<	<	<	<	<	<

(Continued)

Sampling Point	SCR3.5SP		SCR4.3SP		SCR5.1SP			SCR5.4SP
Location	EXP		CDLVII		EXP			EXP
Date Sampled	02/07/00	08/29/00	02/02/00	07/25/00	03/06/00		08/17/00	03/06/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	GWPP		GWPP	GWPP
Type						DUP		
Acetone	<	<	8.5	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Chlorobenzene	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	1.5	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	.	.	<	<	<	<	<	<

(Continued)

APPENDIX E.2: CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	SCR5.4SP	
Location	EXP	
Date Sampled	08/17/00	
Monitoring Program	GWPP	
Type		DUP
Acetone	<	<
Bromomethane	<	<
2-Butanone	<	<
Chlorobenzene	<	<
Chloroform	<	<
Chloromethane	<	<
1,1-Dichloroethane	<	<
1,1-Dichloroethene	<	<
cis-1,2-Dichloroethene	<	<
Methylene chloride	<	<
Tetrachloroethene	<	<
Toluene	<	<
1,1,1-Trichloroethane	<	<
Trichloroethene	<	<
Trichlorofluoromethane	<	<

APPENDIX E.3

RADIOLOGICAL ANALYTES

APPENDIX D.3 CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Gross Alpha and Gross Beta Activity

Sampling Point	Location	Program	Date Sampled	Gross Alpha (pCi/L)			Gross Beta (pCi/L)		
				MDA	Result	Error	MDA	Result	Error
1090	UNCS	WRRP	02/22/00	1.82	2.11	1.41	2.08	<MDA	.
1090	UNCS	WRRP	08/09/00	2.17	<MDA	.	1.66	4.49	1.28
GW-141	LIV	WRRP	02/07/00	0.886	<MDA	.	2.87	3.3	1.5
GW-141	LIV	WRRP	07/26/00	1.05	<MDA	.	3	<MDA	.
GW-142	KHQ	WRRP	04/03/00	1.78	<MDA	.	1.46	3.38	1.17
GW-142	KHQ	WRRP	04/04/00	1.47	<MDA	.	1.42	3.07	1.12
GW-142	KHQ	WRRP	04/05/00	1.54	<MDA	.	1.49	4.09	1.2
GW-142	KHQ	WRRP	04/06/00	0.67	1.45	0.73	0.85	4.41	0.94
GW-142	KHQ	WRRP	10/02/00	1.81	4.4	1.6	1.9	8.93	1.62
GW-142	KHQ	WRRP	10/03/00	1.84	3.12	1.5	1.78	6.9	1.49
GW-142	KHQ	WRRP	10/04/00	1.66	<MDA	.	1.59	5.78	1.29
GW-142	KHQ	WRRP	10/05/00	1.35	1.43	1.05	1.62	3.58	1.27
GW-143	KHQ	WRRP	04/03/00	2.28	3.06	2	1.89	15.75	2.01
GW-143 DUP	KHQ	WRRP	04/03/00	2.65	4.13	2.18	1.72	15.92	1.81
GW-143	KHQ	WRRP	04/04/00	1.85	2.89	1.65	1.62	14.63	1.74
GW-143	KHQ	WRRP	04/05/00	1.97	2.48	1.61	1.49	17.55	1.67
GW-143	KHQ	WRRP	04/06/00	0.88	3.75	1.15	1.71	16.15	2.02
GW-143	KHQ	WRRP	10/02/00	2.98	5.52	2.44	2.14	20.1	2.16
GW-143 DUP	KHQ	WRRP	10/02/00	3.06	4.68	2.39	2.14	20.3	2.17
GW-143	KHQ	WRRP	10/03/00	2.77	8.04	2.62	1.87	24.7	2.24
GW-143	KHQ	WRRP	10/04/00	2.64	3.82	2.05	2.12	15.7	1.96
GW-143	KHQ	WRRP	10/05/00	2.49	<MDA	.	2.04	18.3	2.06
GW-144	KHQ	WRRP	04/03/00	1.73	<MDA	.	1.45	2.18	1.11
GW-144	KHQ	WRRP	04/04/00	1.48	2.44	1.23	1.42	<MDA	.
GW-144	KHQ	WRRP	04/05/00	1.2	2.2	1.08	1.78	<MDA	.
GW-144 DUP	KHQ	WRRP	04/05/00	0.56	2.27	0.78	1.23	1.29	0.92
GW-144	KHQ	WRRP	04/06/00	0.9	1.78	0.96	0.95	1.22	0.98
GW-144	KHQ	WRRP	10/02/00	2.08	4.82	1.8	2.05	3.94	1.49
GW-144	KHQ	WRRP	10/03/00	2.27	2.92	1.73	1.84	4.17	1.39
GW-144	KHQ	WRRP	10/04/00	1.42	2.9	1.24	1.7	1.76	1.17
GW-144 DUP	KHQ	WRRP	10/04/00	1.31	3.17	1.24	1.84	<MDA	.
GW-144	KHQ	WRRP	10/05/00	1.55	1.81	1.23	1.56	<MDA	.
GW-145	KHQ	WRRP	04/03/00	3.25	15.65	3.62	1.93	20.2	2.11
GW-145	KHQ	WRRP	04/04/00	2.58	15.28	3.08	2.07	18.43	2.23
GW-145	KHQ	WRRP	04/05/00	2.5	13.58	2.89	1.79	18	1.87
GW-145	KHQ	WRRP	04/06/00	0.99	14.15	1.84	1.46	20.09	1.85
GW-145	KHQ	WRRP	10/02/00	3.16	16.19	3.54	2.13	23.46	2.27
GW-145	KHQ	WRRP	10/03/00	3.14	14.01	3.43	2.4	27.9	2.74
GW-145	KHQ	WRRP	10/04/00	2.14	16.95	3.34	2.07	23.04	2.28
GW-145	KHQ	WRRP	10/05/00	2.95	11.71	3.08	1.65	22.1	1.93
GW-203	UNCS	WRRP	02/23/00	0.66	1.07	0.62	1.04	<MDA	.
GW-203	UNCS	WRRP	08/15/00	1.35	<MDA	.	1.93	<MDA	.
GW-205	UNCS	WRRP	02/23/00	2.22	<MDA	.	1.85	74.39	3.13
GW-205	UNCS	WRRP	08/10/00	1.95	<MDA	.	2.17	81.21	3.53
GW-217	LIV	WRRP	02/07/00	0.906	<MDA	.	2.86	<MDA	.
GW-217	LIV	WRRP	07/27/00	1.05	<MDA	.	2.85	3.36	1.5
GW-221	UNCS	WRRP	02/22/00	1	<MDA	.	1.9	<MDA	.
GW-221	UNCS	WRRP	08/09/00	1.07	<MDA	.	1.86	<MDA	.

APPENDIX D.3 CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Gross Alpha and Gross Beta Activity

Sampling Point	Location	Program	Date Sampled	Gross Alpha (pCi/L)			Gross Beta (pCi/L)		
				MDA	Result	Error	MDA	Result	Error
GW-231	KHQ	WRRP	04/03/00	1.64	<MDA	.	1.69	4	1.36
GW-231	KHQ	WRRP	04/04/00	1.53	<MDA	.	1.76	1.84	1.31
GW-231	KHQ	WRRP	04/05/00	0.55	0.89	0.53	1.22	1.34	0.91
GW-231	KHQ	WRRP	04/06/00	0.73	<MDA	.	1.39	<MDA	.
GW-231	KHQ	WRRP	10/02/00	1.91	5.45	1.77	1.92	4.5	1.44
GW-231	KHQ	WRRP	10/03/00	1.95	2.91	1.54	1.8	4.66	1.39
GW-231	KHQ	WRRP	10/04/00	1.6	<MDA	.	1.33	1.61	0.94
GW-231	KHQ	WRRP	10/05/00	1.34	<MDA	.	1.48	<MDA	.
GW-301	CRBAWP	WRRP	01/31/00	1.6	<MDA	.	1.52	<MDA	.
GW-301 DUP	CRBAWP	WRRP	01/31/00	1.55	<MDA	.	1.51	<MDA	.
GW-301	CRBAWP	WRRP	07/19/00	1.56	<MDA	.	1.86	2.03	1.29
GW-301 DUP	CRBAWP	WRRP	07/19/00	1.87	<MDA	.	1.91	<MDA	.
GW-302	UNCS	WRRP	02/23/00	1.61	<MDA	.	1.63	<MDA	.
GW-302	UNCS	WRRP	08/14/00	0.47	2.8	1.03	0.31	7.9	0.93
GW-305	LIV	WRRP	02/07/00	0.975	<MDA	.	2.8	<MDA	.
GW-305	LIV	WRRP	07/27/00	1.06	<MDA	.	2.77	<MDA	.
GW-305	LIV	WRRP	11/06/00	1.2	<MDA	.	1.8	<MDA	.
GW-339	UNCS	WRRP	02/23/00	0.99	1	0.84	1.18	1.23	0.99
GW-339 DUP	UNCS	WRRP	02/23/00	1.42	<MDA	.	1.55	<MDA	.
GW-339	UNCS	WRRP	08/14/00	1.92	<MDA	.	1.82	2.11	1.36
GW-339 DUP	UNCS	WRRP	08/14/00	2.4	<MDA	.	2.34	<MDA	.
GW-521	LIV	WRRP	01/31/00	1.02	<MDA	.	2.83	<MDA	.
GW-521	LIV	WRRP	07/25/00	1.33	<MDA	.	2.7	<MDA	.
GW-522	LIV	WRRP	02/07/00	0.972	<MDA	.	2.83	<MDA	.
GW-522	LIV	WRRP	07/25/00	1.77	<MDA	.	2.78	<MDA	.
GW-539	LII	WRRP	02/02/00	1.12	<MDA	.	2.85	<MDA	.
GW-539	LII	WRRP	08/01/00	0.96	1.07	0.7	2.69	<MDA	.
GW-540	LII	WRRP	02/02/00	1.15	<MDA	.	2.81	<MDA	.
GW-540	LII	WRRP	07/26/00	1.34	<MDA	.	2.84	<MDA	.
GW-542	CDLVI	WRRP	02/01/00	0.964	<MDA	.	2.77	2.98	1.5
GW-542	CDLVI	WRRP	07/27/00	0.935	<MDA	.	2.9	<MDA	.
GW-543	CDLVI	WRRP	02/02/00	0.964	<MDA	.	2.91	<MDA	.
GW-543	CDLVI	WRRP	07/31/00	1.29	<MDA	.	2.83	<MDA	.
GW-544	CDLVI	WRRP	02/02/00	0.972	1.09	0.73	2.92	<MDA	.
GW-544	CDLVI	WRRP	07/31/00	1.25	1.51	0.92	2.84	<MDA	.
GW-557	LV	WRRP	01/26/00	1.66	<MDA	.	2.84	2.84	1.5
GW-557 DUP	LV	WRRP	01/26/00	1.55	<MDA	.	2.93	4.11	1.6
GW-557	LV	WRRP	07/20/00	1.51	<MDA	.	2.65	5.17	1.6
GW-557 DUP	LV	WRRP	07/20/00	1.67	<MDA	.	2.7	<MDA	.
GW-560	CDLVII	WRRP	07/27/00	1.03	<MDA	.	2.77	<MDA	.
GW-560	CDLVII	WRRP	10/30/00	1.3	<MDA	.	2	<MDA	.
GW-560	CDLVII	WRRP	11/28/00	1.3	<MDA	.	1.8	<MDA	.
GW-560	CDLVII	WRRP	12/11/00	1.4	<MDA	.	2.1	2.5	0
GW-562	CDLVII	WRRP	07/25/00	1.97	2.11	1.4	2.89	10.6	2
GW-562	CDLVII	WRRP	10/31/00	2	2.6	0	3	<MDA	.
GW-562	CDLVII	WRRP	11/28/00	1.4	<MDA	.	1.8	<MDA	.
GW-562	CDLVII	WRRP	12/12/00	1.7	<MDA	.	2.1	<MDA	.

APPENDIX D.3 CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Gross Alpha and Gross Beta Activity

Sampling Point	Location	Program	Date Sampled	Gross Alpha (pCi/L)			Gross Beta (pCi/L)		
				MDA	Result	Error	MDA	Result	Error
GW-564	CDLVII	WRRP	07/26/00	1.01	<MDA	.	2.94	<MDA	.
GW-564	CDLVII	WRRP	10/30/00	1.4	<MDA	.	1.9	<MDA	.
GW-564 DUP	CDLVII	WRRP	10/30/00	1.9	<MDA	.	2.4	2.4	0
GW-564	CDLVII	WRRP	11/27/00	1.4	<MDA	.	1.9	<MDA	.
GW-564	CDLVII	WRRP	12/11/00	1.4	<MDA	.	1.9	2	0
GW-564 DUP	CDLVII	WRRP	12/11/00	1.2	<MDA	.	1.7	1.9	0
GW-609	CRSP	WRRP	02/01/00	1.22	<MDA	.	1.44	<MDA	.
GW-609	CRSP	WRRP	07/19/00	1.63	<MDA	.	1.87	<MDA	.
GW-709	LII	WRRP	02/03/00	0.674	<MDA	.	2.8	<MDA	.
GW-709	LII	WRRP	08/01/00	0.919	1.45	0.75	2.91	<MDA	.
GW-757	LII	WRRP	02/03/00	0.93	2.77	1.1	2.9	14.4	2.1
GW-757	LII	WRRP	08/01/00	2.15	<MDA	.	2.76	17.1	2.3
GW-796	LV	WRRP	01/27/00	1.07	<MDA	.	2.77	<MDA	.
GW-796	LV	WRRP	07/24/00	1.08	<MDA	.	2.74	<MDA	.
GW-797	LV	WRRP	02/01/00	0.985	<MDA	.	2.85	<MDA	.
GW-797	LV	WRRP	07/24/00	1.5	<MDA	.	2.75	<MDA	.
GW-798	CDLVII	WRRP	01/31/00	1.43	<MDA	.	1.56	3.21	1.63
GW-798	CDLVII	WRRP	07/20/00	0.79	<MDA	.	1.36	1.84	1.03
GW-798 SPLIT	CDLVII	WRRP	07/20/00	1.31	<MDA	.	2.58	2.96	1.4
GW-798	CDLVII	WRRP	10/30/00	2.1	<MDA	.	1.9	<MDA	.
GW-798	CDLVII	WRRP	11/27/00	1.6	<MDA	.	2	<MDA	.
GW-798	CDLVII	WRRP	12/11/00	1.4	<MDA	.	2	2.1	0
GW-799	LV	WRRP	01/27/00	1.28	<MDA	.	2.83	<MDA	.
GW-799	LV	WRRP	07/25/00	2.04	<MDA	.	2.93	<MDA	.
GW-801	LV	WRRP	01/31/00	0.814	0.909	0.61	2.89	<MDA	.
GW-801	LV	WRRP	07/24/00	1.34	<MDA	.	2.77	<MDA	.
GW-827	CDLVI	WRRP	02/01/00	0.942	<MDA	.	2.86	<MDA	.
GW-827	CDLVI	WRRP	07/31/00	0.929	0.962	0.65	2.83	<MDA	.
GW-831	FCAP	WRRP	01/27/00	0.53	1.33	0.61	1.44	2.38	1.49
GW-831	FCAP	WRRP	07/24/00	0.73	1.78	0.84	1.48	1.49	1.02
MCK 2.0	EXP	WRRP	02/07/00	1.32	<MDA	.	1.41	5.25	1.18
MCK 2.0	EXP	WRRP	08/29/00	2.08	<MDA	.	1.82	4.89	1.42
MCK 2.05	EXP	WRRP	02/07/00	1.04	1.25	0.86	1.57	4.82	1.25
MCK 2.05 DUP	EXP	WRRP	02/07/00	1.31	<MDA	.	1.43	4.1	1.13
MCK 2.05	EXP	WRRP	08/29/00	2.39	<MDA	.	2.08	5.43	1.61
MCK 2.05 DUP	EXP	WRRP	08/29/00	1.96	<MDA	.	2.19	4.15	1.91
OF 301	KHQ	WRRP	05/30/00	1.58	<MDA	.	1.69	1.83	1.17
OF 301	KHQ	WRRP	11/02/00	1.54	<MDA	.	1.86	<MDA	.
SCR1.25SP	EXP	WRRP	02/07/00	1.34	<MDA	.	1.37	1.74	1.17
SCR1.25SP	EXP	WRRP	08/29/00	1.91	2.36	1.44	1.79	2.67	1.28
SCR2.1SP	EXP	GWPP	03/06/00	2	2.3	1.7	5.6	<MDA	.
SCR2.1SP	EXP	GWPP	08/17/00	3.8	<MDA	.	7.6	<MDA	.
SCR2.2SP	EXP	GWPP	03/06/00	2.1	<MDA	.	6.3	<MDA	.
SCR2.2SP	EXP	GWPP	08/17/00	3.4	<MDA	.	7.7	<MDA	.
SCR3.4SP	EXP	GWPP	03/06/00	3.2	<MDA	.	7	<MDA	.
SCR3.4SP	EXP	GWPP	08/17/00	3.1	<MDA	.	7.2	<MDA	.

APPENDIX D.3 CHESTNUT RIDGE HYDROGEOLOGIC REGIME, 2000
Gross Alpha and Gross Beta Activity

Sampling Point	Location	Program	Date Sampled	Gross Alpha (pCi/L)			Gross Beta (pCi/L)		
				MDA	Result	Error	MDA	Result	Error
SCR3.5SP	EXP	WRRP	02/07/00	1.09	1.52	0.94	1.65	<MDA	.
SCR3.5SP	EXP	WRRP	08/29/00	2.52	<MDA	.	1.95	2.99	1.4
SCR4.3SP	EXP	WRRP	02/02/00	1.02	<MDA	.	2.63	<MDA	.
SCR4.3SP	EXP	WRRP	07/25/00	1.46	<MDA	.	2.84	<MDA	.
SCR5.1SP	EXP	GWPP	03/06/00	0.69	1.5	1.3	6.8	<MDA	.
SCR5.1SP DUP	EXP	GWPP	03/06/00	2.3	<MDA	.	8.3	<MDA	.
SCR5.1SP	EXP	GWPP	08/17/00	2.2	<MDA	.	5.3	<MDA	.
SCR5.4SP	EXP	GWPP	03/06/00	0.77	<MDA	.	7.5	<MDA	.
SCR5.4SP	EXP	GWPP	08/17/00	0.93	<MDA	.	6.1	<MDA	.
SCR5.4SP DUP	EXP	GWPP	08/17/00	2.4	<MDA	.	6.8	<MDA	.

APPENDIX F

CY 2000 MONITORING DATA FOR THE UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME

EXPLANATION

SAMPLING POINT:

GHK	-	Gum Hollow Branch Kilometer (surface water sampling location)
GW	-	Groundwater Monitoring Well; Westbay well GW-722
LRSPW	-	Lake Reality Emergency Spillway (surface water sampling location)
NPR	-	North of Pine Ridge near the Scarboro Community (surface water sampling location)
OF	-	Storm drain outfall (surface water sampling location)
SCR	-	Spring sampling location in Union Valley
SP	-	Spring sampling location
STATION	-	Surface water sampling location in Upper East Fork Poplar Creek

LOCATION:

B4	-	Beta-4 Security Pits
B9201-2	-	Building 9201-2
B9201-5	-	Building 9201-5 (sump sampling location)
B9204-2	-	Building 9204-2 (two sump sampling locations)
B9204-2E	-	Building 9204-2E (sump sampling location)
B9204-4	-	Building 9204-4 (sump sampling location)
EXP	-	Exit Pathway monitoring location: ● -E, -I, or -J: Maynardville Limestone Picket monitoring well. ● -NPR: Surface water station located north of Pine Ridge ● -SW: Onsite spring or surface water station ● -SR: Along Scarboro Road in the gap through Pine Ridge ● -UV: East of the Oak Ridge Reservation boundary in Union Valley
FTF	-	Fire Training Facility
GRID	-	Comprehensive Groundwater Monitoring Plan Grid Location
NHP	-	New Hope Pond
S2	-	S-2 Site
S3	-	S-3 Ponds Site
T0134	-	Tank 0134-U
T2331	-	Tank 2331-U
UOV	-	Uranium Oxide Vault
WC	-	Waste Coolant Processing Area

MONITORING PROGRAM:

GWPP	-	Y-12 Groundwater Protection Program
WRRP	-	Water Resources Restoration Program

TYPE:

DUP	-	Field Duplicate Sample
DIS	-	Dissolved concentration (filtered sample)
TOT	-	Total concentration (unfiltered sample)
ACT	-	Activity
ERR	-	Counting Error (two standard deviations)
MDA	-	Minimum Detectable Activity

EXPLANATION (continued)

UNITS:

ft	-	feet (elevations are above mean sea level and depths are below grade)
ug/L	-	micrograms per liter
mg/L	-	milligrams per liter
mV	-	millivolts
umho/cm	-	micromhos per centimeter
NTU	-	nephelometric turbidity units
pCi/L	-	picoCuries per liter
ppm	-	parts per million

NOTES:

Only the analytes that were detected above the reporting limits for the applicable monitoring program in at least one sample are included in this appendix. Additionally, results that are below the reporting limits are replaced with missing values (e.g., " < ") to emphasize the detected results. The following sections describe the analytes, reporting limits, and data qualifiers for each subappendix. A comprehensive list of the GWPP analytes, analytical methods, and reporting limits is provided in Appendix B, Table B.5.

F.1 Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals:

Results for all of the field measurements, miscellaneous analytes, and major ions are included in this appendix. The reporting limits for the major ions are shown in the following summary.

Analyte	Reporting Limit (mg/L)		Analyte	Reporting Limit (mg/L)	
	GWPP	WRRP		GWPP	WRRP
Cations			**Anions**		
Calcium	0.2	0.25	Alkalinity - HCO3	1.0	1.0
Magnesium	0.2	0.05	Alkalinity - CO3	1.0	1.0
Potassium	2.0	0.25	Chloride	0.2	0.1
Sodium	0.2	0.25	Fluoride	0.1	0.05
			Nitrate (as Nitrogen)	0.028	0.1
			Sulfate	0.25	0.1

The major ion results for the following samples are qualitative because the ion charge balance (relative percent difference [RPD]) exceeds 20% (see Section 2.6).

Sampling Point	Date Sampled	Ion Charge Balance RPD	Suspected Source of Error
GW-620	05/10/00	-44.8	High hydroxide (OH ion)
GW-620	10/10/00	44.2	Low alkalinity

EXPLANATION (continued)

Results for all trace metals are included in this appendix except for antimony, molybdenum, thorium, and vanadium. None of the results for these metals were detected above the reporting limits (shown below) for any of the CY 2000 groundwater or surface water samples collected in the East Fork Regime.

Analyte	Reporting Limit (mg/L)		Analyte	Reporting Limit (mg/L)	
	GWPP	WRRP		GWPP	WRRP
Aluminum	0.2	0.05	Lithium	0.01	0.01
Antimony (PMS)	0.0025	.	Manganese	0.005	0.005
Antimony	.	0.006	Mercury	0.0002	0.0002
Arsenic (PMS)	0.005	.	Molybdenum	0.05	.
Arsenic	.	0.005	Nickel (PMS)	0.005	.
Barium	0.004	0.005	Nickel	0.05	0.01
Beryllium	0.001	0.001	Selenium (PMS)	0.01	.
Boron	0.1	0.01	Selenium	.	0.005
Cadmium (PMS)	0.0005	.	Silver	0.02	0.005
Cadmium	0.01	0.001	Strontium	0.005	0.005
Chromium (PMS)	0.0025	.	Thallium (PMS)	0.0005	.
Chromium	0.02	0.005	Thallium	.	0.002
Cobalt	0.02	0.005	Thorium	0.2	.
Copper	0.02	0.005	Uranium (PMS)	0.0005	.
Iron	0.05	0.01	Uranium (KPA)	.	0.004
Lead (PMS)	0.0005	.	Vanadium	0.02	0.01
Lead	.	0.003	Zinc	0.05	0.01

All metals analyses were performed using the inductively coupled plasma (ICP) spectroscopy method unless otherwise noted.

CVAA - Cold Vapor Atomic Absorption (EPA-7470)
KPA - Kinetic Phosphorescent Analysis (ASTM-D5174-M)
PMS - Plasma Mass Spectroscopy (EPA-200.8)

The following symbols are used in Appendix F.1:

. - Not analyzed or not applicable
< - Analyzed but not detected at the project reporting level

DUP OUT - Two sets of duplicate samples differ by more than an order of magnitude and do not meet data quality objectives (see Section 2.6). The screened results were for lead in the April samples from LRSPW (regular sample = <0.0005 mg/L; duplicate = 0.00728 mg/L) and for zinc in the December samples from GW-722-26 (0.199 mg/L; duplicate = 0.0142 mg/L).

ICP Dilution Factor - A factor of 1 indicates that the results less than the standard reporting limits (shown above) were replaced with the "<" symbol. Eight samples from four wells were diluted before analysis to obtain an optimum matrix, elevating the reporting limits by the associated dilution factor. The detected results for this sample are valid, but some metals may be present at concentrations below the elevated reporting limits.

EXPLANATION (continued)

F.2 Volatile Organic Compounds:

The following volatile organic compounds were reported for at least one groundwater or surface water sample during CY 2000. Results for the compounds shown in bold typeface were detected in more than one sample and are included in this appendix.

Volatile Organic Compound	Reporting Limit		Volatile Organic Compound	Reporting Limit	
	GWPP	WRRP		GWPP	WRRP
Acetone	10	10	**1,1-Dichloroethene**	5	5
Acrolein	10	.	**cis-1,2-Dichloroethene**	5	5
Acrylonitrile	5	.	**trans-1,2-Dichloroethene**	5	5
Benzene	5	5	1,2-Dichloropropane	5	5
Bromochloromethane	10	.	cis-1,3-Dichloropropene	5	5
Bromodichloromethane	5	5	trans-1,3-Dichloropropene	5	5
Bromoform	5	5	**Dimethylbenzene**	5	5
Bromomethane	5	10	Ethanol	200	.
2-Butanone	5	10	**Ethylbenzene**	5	5
Carbon disulfide	5	5	Ethyl methacrylate	5	.
Carbon tetrachloride	5	5	2-Hexanone	5	10
Chlorobenzene	5	5	Iodomethane	5	.
Chloroethane	5	10	4-Methyl-2-pentanone	5	10
2-Chloroethyl vinyl ether	5/10	.	**Methylene chloride**	5	5
Chloroform	5	5	**Styrene**	5	5
Chloromethane	5	10	1,1,1,2-Tetrachloroethane	5	.
Dibromochloromethane	5	5	1,1,2,2-Tetrachloroethane	5	5
1,2-Dibromo-3-chloropropane	10	.	**Tetrachloroethene**	5	5
1,2-Dibromoethane	5	.	**Toluene**	5	5
Dibromomethane	5	.	**1,1,1-Trichloroethane**	5	5
1,2-Dichlorobenzene	5	.	1,1,2-Trichloroethane	5	5
1,4-Dichlorobenzene	5	.	**Trichloroethene**	5	5
1,4-Dichloro-2-butene	5	.	**Trichlorofluoromethane**	5	.
trans-1,4-Dichloro-2-butene	5	.	1,2,3-Trichloropropane	10	.
Dichlorodifluoromethane	5	.	Vinyl acetate	10	.
1,1-Dichloroethane	5	5	**Vinyl chloride**	5/2	2
1,2-Dichloroethane	5	5			

The other compounds (not shown in bold typeface) were not detected in samples collected during CY 2000 except for one detected result reported for each of the following compounds.

Compound	Sampling Location	Date Sampled	Result (ug/L)
Chlorobenzene	GW-230	08/08/00	1 J
Dibromochloromethane	GW-153	05/11/00	3 J
1,2-Dichloropropane	GW-656	10/25/00	6
Note: J = estimated value below the reporting limit			

EXPLANATION (continued)

The following symbols are used in Appendix F.2.

. - Not analyzed or not applicable
< - Analyzed but not detected at the project reporting level (also the false-positive results for data provided by the WRRP)

The following laboratory qualifiers are **NOT** presented with results in Appendix F.2:

D Sixty-six results from 20 sampling locations were reported with a "D" qualifier, indicating that the analysis for a specific compound was performed at a secondary dilution factor. These are valid results (typically greater than 200 ug/L) that were re-analyzed because the undiluted results exceeded the instrument calibration. However, two samples were diluted before analyses and have elevated detection limits: the May 18 sample from well GW-382 (10X dilution) and the July 17 sample from well GW-606 (5X dilution). The detected results for these samples are valid, but some compounds may be present at concentrations below the elevated reporting limits.

A result less than the reporting limit is an estimated value and assigned a "J" qualifier by the laboratory. Based on the reporting limits shown above, results for all compounds except vinyl chloride that are less than 5 ug/L are estimated values. The following results are estimated values greater than or equal to 5 ug/L (or lower, if for vinyl chloride):

Sampling Location	Date Sampled	Compound	Reporting Limit (ug/L)	Result (ug/L)
GW-192	05/09/00	Tetrachloroethene	5	5
GW-220	05/15/00	cis-1,2-Dichloroethene	5	5
GW-274	05/30/00	cis-1,2-Dichloroethene	5	5
GW-381	05/17/00	Tetrachloroethene	5	5
GW-382	05/18/00	Tetrachloroethene	50	17
GW-606	07/17/00	Tetrachloroethene	25	7
GW-618	11/08/00	Trichloroethene	5	5
GW-722-14	07/26/00	Trichlorofluoromethane	5	5
GW-722-17	03/21/00	Trichloroethene	5	5
GW-722-17	03/21/00	Trichlorofluoromethane	5	5
GW-722-22	07/25/00	Trichloroethene	5	5
GW-722-26	09/14/00	Carbon Tetrachloride	5	5
GW-820	06/13/00	1,4-Dichlorobenzene	5	5
GW-820	10/26/00	1,4-Dichlorobenzene	5	5
GW-820 D	10/26/00	1,4-Dichlorobenzene	5	5
LRSPW	12/19/00	Tetrachloroethene	5	5

Note: D = field duplicate sample

EXPLANATION (continued)

F.3 Radiological Analytes:

The following summary shows the radiological analytes reported for at least one groundwater or surface water sample collected during CY 2000 in the East Fork Regime.

Analyte	No. of Results	No. Detected		Analyte	No. of Results	No. Detected	
		GWPP	WRRP			GWPP	WRRP
Gross Alpha	218	38	47	Uranium-234	31	6	20
Gross Beta	218	32	75	Uranium-235	31	5	8
Technetium-99	29	7	2	Uranium-236	25	.	7
				Uranium-238	31	6	19

All of the results for gross alpha and gross beta are presented in the first part of Appendix F.3, followed by the results for isotopes.

Results that are not detected or do not meet data quality objectives are replaced with the following:

<MDA - Reported activity is less than the minimum detectable activity (MDA).

< CE - Reported activity is greater than or equal to the minimum detectable activity, but less than the associated counting error do not meet data quality objectives. The following results were screened for this reason:

Radioanalyte	Sampling Location	Date Sampled	MDA (pCi/L)	Activity ± Error (pCi/L)
Gross Alpha	GHK2.51ESW	04/19/00	0.75	0.83 ± 0.96
Gross Alpha	GW-109	05/25/00	100	110 ± 130
Gross Beta	GW-722-06	11/30/00	3.45	3.45 ± 3.53
Uranium-235	OF 51	04/10/00	0.32	0.36 ± 0.42

EXPLANATION (continued)

Additional Analytes Not Presented in Appendix F tables:

Biological testing to assess microbial activity in groundwater was performed by the GWPP at the following wells for the GWPP during CY 2000.

Well Number	Date Sampled	Bacteria Results (colony forming units per milliliter)		
		Iron Related	Slime Forming	Sulfate Reducing
GW-220	05/15/00	100	100	<100
GW-220 D	05/15/00	100	100	<100
GW-380	05/16/00	>5,000	100	>10,000
GW-380 D	05/16/00	>5,000	50,000	100,000
GW-381	05/17/00	<100	<1,000	<100
GW-381 D	05/17/00	<100	<100	<100
GW-656	06/12/00	100	50,000	<100
GW-656 D	06/12/00	100	50,000	<100
GW-782	05/01/00	100	<100	1,000
GW-782 D	05/01/00	100	<100	<100
GW-783	05/01/00	5,000	1,000	100
GW-783 D	05/01/00	5,000	<100	<100
GW-791	05/02/00	<100	<100	<100
GW-791 D	05/02/00	<100	<100	<100

Note: D = field duplicate sample

The qualitative bacterial counts are estimates based on appearance of the sample after an eight- to nine-day growth period.

Additionally, a sample was analyzed for the following parameters to assess possible contamination from a leaking sewer line.

Building Sump	Date Sampled	Fecal Coliform (colonies per 100 milliliters)	Total Phosphate as Phosphorous (mg/L)	Surfactants (mg/L)
9212-W-2-BSTM	03/08/00	<1	0	<0.07

EXPLANATION (continued)

The WRRP requested field measurement of the following parameters to assess the potential for natural attenuation.

Well Number	Date Sampled	Field Measurements		Ethane (ug/L)	Methane (ug/L)
		Iron ++ (mg/L)	Manganese ++ (mg/L)		
GW-151	05/16/00	0.01	0.2	5U	5U
GW-151	08/17/00	.	.	5U	5U
GW-154	05/17/00	0.03	0.07	5U	62
GW-154	08/22/00	.	.	5U	13
GW-169	01/25/00	1	0.03	.	.
GW-169	05/18/00	0.04	0.7	.	.
GW-170	01/24/00	0.21	1	.	.
GW-170	05/22/00	0.04	0.2	.	.
GW-170	11/01/00	0.11	0.3	.	.
GW-171	05/17/00	2.54	8.5	.	.
GW-172	05/17/00	0.96	1	.	.
GW-220	08/22/00	.	.	5U	3
GW-230	01/20/00	9.9	0.8	.	.
GW-230	05/17/00	8.9	3.2	.	.
GW-232	01/25/00	0.03	0.2	.	.
GW-232	05/18/00	0.03	0.1	.	.
GW-232	11/01/00	0.03	0.2	.	.
GW-253	05/23/00	1.1	40	13	20
GW-253	11/02/00	0.09	75	4	11
GW-618	05/23/00	0.14	0.9	5U	4
GW-618	11/08/00	0.06	1.6	5U	5U
GW-735	05/15/00	0.42	0.24	5U	11
GW-735	08/21/00	.	.	5U	4
GW-762	05/16/00	0.05	0.08	5U	71
GW-762 D	05/16/00	.	.	5U	70
GW-762	08/21/00	.	.	5U	61
GW-762 D	08/21/00	.	.	5U	63
GW-832	05/17/00	0.05	0.11	5U	7
GW-832	08/23/00	.	.	5U	8

Note: D = field duplicate sample

APPENDIX F.1

FIELD MEASUREMENTS, MISCELLANEOUS ANALYTES, MAJOR IONS, AND TRACE METALS

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	55-2C		56-2C		9212-W-2-BSTM	9215-STACK11	GHK2.51ESW	
Location	Y12		Y12		B9212	B9215	EXP-NPR	
Date Sampled	05/22/00	10/17/00	05/22/00	10/17/00	03/08/00	11/30/00	04/19/00	
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	
Type								
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	DIS
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	977.06	977.06	964.94	964.94	.	.	.	.
Depth to Water (ft)	7.89	8.54	9.65	9.90	.	7.50	.	.
Water-Level Elev. (ft)	969.17	968.52	955.29	955.04	.	.	.	.
Water Temp. (degrees C)	19	19.8	18.9	19.6	22.3	13	13.1	.
pH (standard units)	6.97	6.87	8.4	8.18	7.4	7.49	7.15	.
Conductivity (umho/cm)	1730	1819	514	526	250	970	266	.
Dissolved Oxygen (ppm)	2.31	0.73	3.51	1.67	0	6.3	4.16	.
Oxidation/Reduction (mV)	168	150	85	68	0	243	124	.
Turbidity (NTU)	.	.	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	6.97	6.88	8.47	8.39	7.56	8.25	7.3	.
Conductivity (umho/cm)	1740	1772	509	510	267	587	310	.
Dissolved Solids (mg/L)	1540	1290	306	326	125	408	158	.
Suspended Solids (mg/L)	<	<	2.5	<	2	<	1	.
Turbidity (NTU)	0.225	0.581	4.47	0.912	0.193	0.499	1.39	.
MAJOR IONS (mg/L)								
Calcium	221	215	6.32	6.73	33.7	97.6	59.4	59.5
Magnesium	34.1	37.5	1.78	1.96	6.83	14.4	2.64	2.65
Potassium	11.7	12.2	4.49	4.94	<	5.43	<	<
Sodium	59.4	65.5	108	105	9.1	10.5	0.736	0.791
Alkalinity-HCO3	222	212	194	190	82.6	226	163	.
Alkalinity-CO3	<	<	<	<	<	<	<	.
Chloride	13.4	13.3	17.5	19.2	18.2	15.8	0.728	.
Fluoride	<	<	0.244	0.228	0.553	0.586	<	.
Nitrate-N	144	154	<	0.0847	1.13	0.215	<	.
Sulfate	18.7	18.7	29.3	30.4	16.8	75.8	6.52	.
Ion Charge Balance (RPD)	3.8	3.0	2.7	2.0	0.3	0.5	-3.0	.
TRACE METALS (mg/L)								
Aluminum	<	<	0.264	<	<	<	<	<
Arsenic (PMS)	<	<	<	<	<	<	<	<
Arsenic	.	.	.	.	.	.	.	.
Barium	1.32	1.33	0.142	0.145	0.0925	0.0798	0.0262	0.0273
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	0.654	0.68	<	<	<	<
Cadmium (PMS)	<	<	<	<	<	0.000566	<	<
Cadmium	.	.	.	.	.	.	.	.
Chromium (PMS)	.	<	.	<	.	0.00471	.	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	0.0759	<	<	<
Iron	<	<	0.237	<	0.147	0.482	0.0527	<
Lead (PMS)	0.000705	0.000692	0.00216	0.00696	0.00173	0.00897	<	<
Lead	.	.	.	.	.	.	.	.
Lithium	0.0389	0.0397	0.0701	0.067	<	0.0696	<	<
Manganese	0.526	0.529	<	<	0.00564	0.0167	0.0621	0.0825
Mercury (CVAA)	<	<	<	<	<	<	<	<
Nickel (PMS)	.	0.00992	.	<	.	0.0058	.	.
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	0.0135	0.013	<	<	<	<	<	<
Selenium	.	.	.	.	.	.	.	.
Silver	<	<	<	<	<	<	<	<
Strontium	4.26	4.49	0.346	0.373	0.0778	0.207	0.0888	0.0893
Thallium (PMS)	0.000508	0.000681	<	0.000511	<	<	<	<
Thallium	.	.	.	.	.	.	.	.
Uranium (PMS)	<	<	<	<	<	15.4	<	<
Uranium (KPA)	.	.	.	.	.	.	.	.
Zinc	<	<	<	<	0.0552	0.698	<	<
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GHK2.51ESW		GHK2.51WSW					
Location	EXP-NPR		EXP-NPR					
Date Sampled	11/09/00		04/19/00				11/09/00	
Monitoring Program	GWPP		GWPP				GWPP	
Type					DUP			
	TOT	DIS	TOT	DIS	TOT	DIS	TOT	DIS
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	15.6	.	11.9	.	.	.	15.2	.
pH (standard units)	6.98	.	7.61	.	.	.	7.4	.
Conductivity (umho/cm)	376	.	158	.	.	.	403	.
Dissolved Oxygen (ppm)	5.15	.	9.98	.	.	.	5.3	.
Oxidation/Reduction (mV)	212	.	122	.	.	.	202	.
Turbidity (NTU)	.	.	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.32	.	7.56	.	7.62	.	7.32	.
Conductivity (umho/cm)	172	.	139	.	138.9	.	169.3	.
Dissolved Solids (mg/L)	125	.	83	.	83	.	126	.
Suspended Solids (mg/L)	26	.	2	.	2	.	31	.
Turbidity (NTU)	23.2	.	4.5	.	4.34	.	23.5	.
MAJOR IONS (mg/L)								
Calcium	18.9	18.2	16.3	16	15.9	16.1	19.2	18.3
Magnesium	5.83	5.52	4.99	4.81	4.82	4.82	5.92	5.54
Potassium	4.46	4.09	2.21	<	2.23	2.03	4.52	4.06
Sodium	1.68	1.65	1.57	1.52	1.53	1.54	1.71	1.69
Alkalinity-HCO3	50.8	.	52.8	.	48.6	.	52.4	.
Alkalinity-CO3	<	.	<	.	<	.	<	.
Chloride	1.73	.	0.877	.	0.928	.	1.74	.
Fluoride	<	.	<	.	<	.	<	.
Nitrate-N	0.0682	.	0.033	.	<	.	0.068	.
Sulfate	20.8	.	15.7	.	15.7	.	20.8	.
Ion Charge Balance (RPD)	3.5	.	-2.2	.	-0.4	.	3.2	.
TRACE METALS (mg/L)								
Aluminum	1.46	<	0.336	<	0.308	<	1.47	<
Arsenic (PMS)	<	<	<	<	<	<	<	<
Arsenic	.	.	.	.	.	.	.	.
Barium	0.0651	0.052	0.0448	0.0411	0.0428	0.0419	0.0652	0.052
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	<	<
Cadmium (PMS)	<	<	<	<	<	<	<	<
Cadmium	.	.	.	.	.	.	.	.
Chromium (PMS)	<	<	.	.	.	.	<	<
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	0.0276
Iron	1.39	0.24	0.25	<	0.226	<	1.4	0.209
Lead (PMS)	0.00101	<	<	<	<	<	0.00109	<
Lead	.	.	.	.	.	.	.	.
Lithium	<	<	<	<	<	<	<	<
Manganese	0.131	0.0708	0.0268	0.0234	0.0254	0.0243	0.13	0.072
Mercury (CVAA)	<	<	<	<	<	<	<	<
Nickel (PMS)	<	<	.	.	.	.	<	<
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	<	<	<	<	<	<	<
Selenium	.	.	.	.	.	.	.	.
Silver	<	<	<	<	<	<	<	<
Strontium	0.0614	0.0585	0.053	0.0514	0.0518	0.0521	0.0625	0.0586
Thallium (PMS)	<	<	<	<	<	<	<	<
Thallium	.	.	.	.	.	.	.	.
Uranium (PMS)	<	<	0.00177	<	0.00114	<	0.000741	<
Uranium (KPA)	.	.	.	.	.	.	.	.
Zinc	<	<	<	<	<	<	<	<
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-108		GW-109			GW-151		GW-153
Location	S3		S3			NHP		NHP
Date Sampled	01/11/00	07/18/00	05/25/00	06/08/00	10/19/00	05/16/00	08/17/00	05/11/00
Monitoring Program	WRRP	WRRP	GWPP	GWPP	GWPP	WRRP	WRRP	GWPP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	999.00	999.00	998.20	998.20	998.20	916.17	916.17	921.64
Depth to Water (ft)	8.07	7.52	4.20	4.25	5.97	15.17	13.77	20.43
Water-Level Elev. (ft)	990.93	991.48	994.00	993.95	992.23	901.00	902.40	901.21
Water Temp. (degrees C)	17.2	22.3	19.8	18.3	19.6	16.7	20.8	14.8
pH (standard units)	5.21	5.4	5.39	5.46	5.84	7.44	7	7.73
Conductivity (umho/cm)	4440	55400	52400	43900	57000	705	664	368
Dissolved Oxygen (ppm)	0.8	6.42	0.22	0.35	0.7	5.72	6.03	2.15
Oxidation/Reduction (mV)	300	263	261	251	252	78	239	171
Turbidity (NTU)	10	18	.	.	.	0	21	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	5.75	.	6.05	.	.	7.78
Conductivity (umho/cm)	.	.	49200	.	51500	.	.	420
Dissolved Solids (mg/L)	50000	29000	51400	.	54600	380	260	209
Suspended Solids (mg/L)	93	120	4	.	9	<	6	<
Turbidity (NTU)	.	.	0.859	.	2.28	.	.	9.78
MAJOR IONS (mg/L)								
Calcium	12000	12300	10500	.	11900	55.7	57.7	46.3
Magnesium	1140	1180	1310	.	1460	23.9	25.6	20.3
Potassium	59.5	54.2	92.7	.	95	4.27	2.87	2.03
Sodium	620	504	546	.	501	8.3	8.33	6.83
Alkalinity-HCO3	112	276	754	.	722	200	210	192
Alkalinity-CO3	<	<	<	.	<	<	<	<
Chloride	58.5	66.4	177	.	143	15.7	13.3	11.6
Fluoride	<	<	16.6	.	6.88	0.1	0.12	0.163
Nitrate-N	8980	13300	9090	.	9520	1.4	8.6	0.646
Sulfate	5.9	8.9	14.3	.	3.2	19.7	15.7	12.1
Ion Charge Balance (RPD)	5.6	-13.2	-0.9	.	2.7	3.6	-0.9	-1.6
TRACE METALS (mg/L)								
Aluminum	0.143	0.0531	6.31	.	4.49	<	<	0.249
Arsenic (PMS)	.	.	<	.	<	.	.	<
Arsenic	<	<	.	.	.	<	<	.
Barium	107	101	68.3	.	84.2	0.211	0.218	0.0456
Beryllium	<	<	<	.	<	<	<	<
Boron	0.0259	0.0316	<	.	<	0.0882	0.0913	<
Cadmium (PMS)	.	.	2.19	.	.	.	.	<
Cadmium	<	<	.	.	1.86	<	<	.
Chromium (PMS)	.	.	.	.	<	.	.	.
Chromium	<	<	<	.	<	<	<	<
Cobalt	0.124	0.139	0.565	.	0.466	<	<	<
Copper	0.0076	<	<	.	<	<	<	<
Iron	<	0.232	<	.	<	<	<	0.256
Lead (PMS)	.	.	0.00777	.	0.00525	.	.	0.0011
Lead	0.0078	0.0091	.	.	.	<	<	.
Lithium	0.566	0.54	0.595	.	0.595	0.015	0.0102	<
Manganese	140	143	114	.	97.3	<	<	0.00825
Mercury (CVAA)	<	<	0.00416	.	0.0102	.	.	<
Nickel (PMS)	.	.	.	.	.	.	.	.
Nickel	0.158	0.163	4.03	.	3.59	<	<	<
Selenium (PMS)	.	.	<	.	0.0255	.	.	0.0221
Selenium	<	0.0132	.	.	.	<	<	.
Silver	<	0.0092	<	.	<	<	<	<
Strontium	35	34.4	55	.	65.9	0.547	0.579	0.194
Thallium (PMS)	.	.	0.00371	.	0.00192	.	.	<
Thallium	<	<	.	.	.	<	<	.
Uranium (PMS)	.	.	0.0118	.	0.00948	.	.	0.000908
Uranium (KPA)	<	<	.	.	.	<	<	.
Zinc	<	<	<	.	<	<	<	<
ICP Dilution Factor	1	1	20	.	20	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-153	GW-154		GW-169			GW-170	
Location	NHP	NHP		EXP-UV			EXP-UV	
Date Sampled	10/12/00	05/17/00	08/22/00	01/25/00	05/18/00	08/09/00	01/24/00	
Monitoring Program	GWPP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	
Type								DUP
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	921.64	911.70	911.70	932.12	932.12	932.12	932.63	.
Depth to Water (ft)	20.68	9.80	9.82	29.98	32.35	31.40	32.39	.
Water-Level Elev. (ft)	900.96	901.90	901.88	902.14	899.77	900.72	900.24	.
Water Temp. (degrees C)	15	18	23.8	11	17	16	10.1	.
pH (standard units)	7.65	7.03	7.06	6.76	6.96	6.88	11.98	.
Conductivity (umho/cm)	375	812	763	171	367	401	314	.
Dissolved Oxygen (ppm)	3.57	5.41	7.59	7.34	5.75	6.06	0.53	.
Oxidation/Reduction (mV)	164	167	223	203	164	115	-274	.
Turbidity (NTU)	.	.	37	15	0	26	35	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.88	.	.	.	.	.	.	.
Conductivity (umho/cm)	401	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	220	490	620	120	250	570	96	120
Suspended Solids (mg/L)	1	<	31	<	<	<	15	11
Turbidity (NTU)	9.13	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	43.7	117	119	.	.	.	.	.
Magnesium	21.2	21.6	22.1	.	.	.	.	.
Potassium	2.14	7.31	8.8	.	.	.	.	.
Sodium	7.6	13.9	13.3	.	.	.	.	.
Alkalinity-HCO3	174	350	288	125	160	<	<	<
Alkalinity-CO3	<	<	<	<	<	<	30	18
Chloride	13.5	4.3	4.2	1.2	1.6	1.4	12.1	14.2
Fluoride	0.188	0.27	0.57	0.12	4.9	<	0.18	0.1
Nitrate-N	0.668	0.32	2.8	0.65	0.82	2.4	<	<
Sulfate	12.9	91	92.2	3	6.2	6.2	2.1	2.1
Ion Charge Balance (RPD)	1.5	-3.5	3.2	.	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	0.212	0.124	0.415	.	.	.	.	.
Arsenic (PMS)	<	.	.	.	.	.	.	.
Arsenic	.	<	<	.	.	.	.	.
Barium	0.0452	0.123	0.262	.	.	.	.	.
Beryllium	<	<	<	.	.	.	.	.
Boron	<	0.104	0.153	.	.	.	.	.
Cadmium (PMS)	<	.	.	.	.	.	.	.
Cadmium	.	<	0.0014	.	.	.	.	.
Chromium (PMS)	<	.	.	.	.	.	.	.
Chromium	<	<	<	.	.	.	.	.
Cobalt	<	<	<	.	.	.	.	.
Copper	<	<	0.0154	.	.	.	.	.
Iron	0.166	0.282	1.15	.	.	.	.	.
Lead (PMS)	0.000564	.	.	.	.	.	.	.
Lead	.	<	0.008	.	.	.	.	.
Lithium	<	<	0.0129	.	.	.	.	.
Manganese	0.00653	1.73	6.62	.	.	.	.	.
Mercury (CVAA)	<	.	.	.	.	.	.	.
Nickel (PMS)	<	.	.	.	.	.	.	.
Nickel	<	<	<	.	.	.	.	.
Selenium (PMS)	0.0132	.	.	.	.	.	.	.
Selenium	.	<	<	.	.	.	.	.
Silver	<	<	<	.	.	.	.	.
Strontium	0.189	0.459	0.47	.	.	.	.	.
Thallium (PMS)	<	.	.	.	.	.	.	.
Thallium	.	<	<	.	.	.	.	.
Uranium (PMS)	0.000883	.	.	.	.	.	.	.
Uranium (KPA)	.	0.766	0.609	.	.	.	.	.
Zinc	<	0.0201	0.0616	.	.	.	.	.
ICP Dilution Factor	1	1	1	.	.	.	.	.

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-170						GW-171	
Location	EXP-UV						EXP-UV	
Date Sampled	05/22/00		08/08/00		11/01/00		01/19/00	05/17/00
Monitoring Program	WRRP		WRRP		WRRP		WRRP	WRRP
Type		DUP		DUP		DUP		
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	932.63	.	932.63	.	932.63	.	920.72	920.72
Depth to Water (ft)	33.27	.	35.08	.	36.98	.	10.92	9.50
Water-Level Elev. (ft)	899.36	.	897.55	.	895.65	.	909.80	911.22
Water Temp. (degrees C)	14.6	.	17.3	.	12.8	.	14.8	14.7
pH (standard units)	11.55	.	11.02	.	11.44	.	6.18	6.37
Conductivity (umho/cm)	535	.	455	.	527	.	471	582
Dissolved Oxygen (ppm)	1.03	.	5.46	.	2.28	.	0.36	1.18
Oxidation/Reduction (mV)	-268	.	-135	.	-217	.	-10	-33
Turbidity (NTU)	0	.	16	.	12	.	106	24
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	170	86	140	170	130	120	100	330
Suspended Solids (mg/L)	9.5	6	<	<	<	<	36	8.3
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	.	.	.	.	.	.	.	.
Magnesium	.	.	.	.	.	.	.	.
Potassium	.	.	.	.	.	.	.	.
Sodium	.	.	.	.	.	.	.	.
Alkalinity-HCO3	<	<	2	<	<	<	167	210
Alkalinity-CO3	140	140	84	32	67	59.1	<	<
Chloride	13.4	11.4	10.6	10.6	11.1	75.6	14.1	5.8
Fluoride	0.17	0.12	0.15	0.13	0.17	0.15	<	<
Nitrate-N	<	<	<	<	0.029	0.023	0.027	<
Sulfate	2.6	2.6	2.6	2.6	2.4	2.5	9.6	9.8
Ion Charge Balance (RPD)	.	.	.	.	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	.	.	.	.	.	.	.	.
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	.	.	.	.	.	.	.	.
Barium	.	.	.	.	.	.	.	.
Beryllium	.	.	.	.	.	.	.	.
Boron	.	.	.	.	.	.	.	.
Cadmium (PMS)	.	.	.	.	.	.	.	.
Cadmium	.	.	.	.	.	.	.	.
Chromium (PMS)	.	.	.	.	.	.	.	.
Chromium	.	.	.	.	.	.	.	.
Cobalt	.	.	.	.	.	.	.	.
Copper	.	.	.	.	.	.	.	.
Iron	.	.	.	.	.	.	.	.
Lead (PMS)	.	.	.	.	.	.	.	.
Lead	.	.	.	.	.	.	.	.
Lithium	.	.	.	.	.	.	.	.
Manganese	.	.	.	.	.	.	.	.
Mercury (CVAA)	.	.	.	.	.	.	.	.
Nickel (PMS)	.	.	.	.	.	.	.	.
Nickel	.	.	.	.	.	.	.	.
Selenium (PMS)	.	.	.	.	.	.	.	.
Selenium	.	.	.	.	.	.	.	.
Silver	.	.	.	.	.	.	.	.
Strontium	.	.	.	.	.	.	.	.
Thallium (PMS)	.	.	.	.	.	.	.	.
Thallium	.	.	.	.	.	.	.	.
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	.	.	.	.	.	.	.	.
Zinc	.	.	.	.	.	.	.	.
ICP Dilution Factor	.	.	.	.	.	.	.	.

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-171		GW-172			GW-192		
Location	EXP-UV		EXP-UV			B4		
Date Sampled	08/07/00	08/08/00	01/19/00	05/17/00	08/08/00	05/09/00		10/09/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	GWPP		GWPP
Type							DUP	
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	920.72	920.72	926.57	926.57	926.57	1008.83	.	1008.83
Depth to Water (ft)	8.91	.	20.43	18.48	18.69	6.20	.	7.05
Water-Level Elev. (ft)	911.81	.	906.14	908.09	907.88	1002.63	.	1001.78
Water Temp. (degrees C)	17	.	12.6	15.1	19.2	17.3	.	17.3
pH (standard units)	6.05	.	7	6.95	6.46	6.36	.	6.88
Conductivity (umho/cm)	507	.	564	691	563	593	.	638
Dissolved Oxygen (ppm)	2.31	.	1.32	1.18	1.27	0.89	.	2.98
Oxidation/Reduction (mV)	32	.	-23	-74	-63	93	.	-23
Turbidity (NTU)	67	.	9	0	18	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	6.55	6.56	7.13
Conductivity (umho/cm)	.	.	.	.	.	563	565	612
Dissolved Solids (mg/L)	.	230	250	540	380	320	315	349
Suspended Solids (mg/L)	.	25	<	<	<	4	4	7
Turbidity (NTU)	.	.	.	.	.	24.7	27.5	67.8
MAJOR IONS (mg/L)								
Calcium	.	.	.	.	.	95.5	98.4	97
Magnesium	.	.	.	.	.	8.48	8.64	11.6
Potassium	.	.	.	.	.	<	<	4.59
Sodium	.	.	.	.	.	8.13	8.42	7.87
Alkalinity-HCO3	.	178	223	322	364	264	266	266
Alkalinity-CO3	.	<	<	<	<	<	<	<
Chloride	.	4.8	32.4	34.5	28	21.6	21.3	24.4
Fluoride	.	0.11	<	<	<	<	0.119	0.216
Nitrate-N	.	1.5	<	<	1.4	<	<	0.0294
Sulfate	.	9.9	2.8	2.2	2.8	4.15	4.16	4.87
Ion Charge Balance (RPD)	.	.	.	.	.	-1.3	-0.2	1.1
TRACE METALS (mg/L)								
Aluminum	.	.	.	.	.	<	<	<
Arsenic (PMS)	.	.	.	.	.	<	<	0.00814
Arsenic	.	.	.	.	.	.	.	.
Barium	.	.	.	.	.	0.14	0.143	0.149
Beryllium	.	.	.	.	.	<	<	<
Boron	.	.	.	.	.	<	<	<
Cadmium (PMS)	.	.	.	.	.	<	<	<
Cadmium	.	.	.	.	.	.	.	.
Chromium (PMS)	.	.	.	.	.	.	.	<
Chromium	.	.	.	.	.	<	<	<
Cobalt	.	.	.	.	.	<	<	<
Copper	.	.	.	.	.	<	<	<
Iron	.	.	.	.	.	2.67	2.7	5.98
Lead (PMS)	.	.	.	.	.	0.00102	0.00162	<
Lead	.	.	.	.	.	.	.	.
Lithium	.	.	.	.	.	0.0168	0.0177	0.0169
Manganese	.	.	.	.	.	1.7	1.74	1.19
Mercury (CVAA)	.	.	.	.	.	<	<	<
Nickel (PMS)	.	.	.	.	.	.	.	<
Nickel	.	.	.	.	.	<	<	<
Selenium (PMS)	.	.	.	.	.	<	<	<
Selenium	.	.	.	.	.	.	.	.
Silver	.	.	.	.	.	<	<	<
Strontium	.	.	.	.	.	0.154	0.157	0.188
Thallium (PMS)	.	.	.	.	.	0.000577	0.000761	<
Thallium	.	.	.	.	.	.	.	.
Uranium (PMS)	.	.	.	.	.	0.000648	0.000596	<
Uranium (KPA)	.	.	.	.	.	.	.	.
Zinc	.	.	.	.	.	<	<	<
ICP Dilution Factor	.	.	.	.	.	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-193		GW-204		GW-207		GW-208	
Location	T2331		T0134		EXP-SR		EXP-SR	
Date Sampled	01/12/00	07/18/00	06/07/00	10/24/00	04/05/00	11/07/00	04/05/00	11/07/00
Monitoring Program	WRRP	WRRP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	934.17	934.17	958.77	958.77	898.80	898.80	897.72	897.72
Depth to Water (ft)	9.01	9.42	8.91	11.43	1.98	4.94	0.00	4.95
Water-Level Elev. (ft)	925.16	924.75	949.86	947.34	896.82	893.86	897.72	892.77
Water Temp. (degrees C)	13	20.8	21.9	22.2	14.9	16.2	13.9	16
pH (standard units)	7.76	7.24	7.78	7.36	7.58	7.4	7.85	7.91
Conductivity (umho/cm)	568	836	305	702	511	534	599	605
Dissolved Oxygen (ppm)	0.64	5.12	1.38	0.48	1.34	4.45	0.9	1.49
Oxidation/Reduction (mV)	-138	-134	150	80	-75	-51	-149	-132
Turbidity (NTU)	12	16	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	7.85	7.44	7.62	7.52	7.68	7.71
Conductivity (umho/cm)	.	.	284	653	587	605	644	656
Dissolved Solids (mg/L)	380	420	174	417	343	327	411	395
Suspended Solids (mg/L)	<	<	<	<	<	2	14	2
Turbidity (NTU)	.	.	0.841	0.986	4.15	8.07	26.2	11.4
MAJOR IONS (mg/L)								
Calcium	103	102	42.1	101	59.1	58.3	82.8	79.5
Magnesium	20.6	19.2	6.15	17.2	39	39.5	28.1	27.5
Potassium	6.08	5.42	2.2	3.21	3.18	3.04	3.28	3.32
Sodium	7.8	5.56	1.73	9.06	10.7	10.4	17	16.2
Alkalinity-HCO3	64	280	109	202	264	268	232	224
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	9	6	2.82	5.1	1.26	1.6	1.83	0.872
Fluoride	0.36	0.34	0.799	0.812	0.178	0.135	0.286	0.248
Nitrate-N	<	1.2	0.939	0.0575	<	<	<	<
Sulfate	56.2	46	27	129	50.7	49.3	115	47.2
Ion Charge Balance (RPD)	45.8	1.6	-3.4	0.1	2.5	1.9	1.2	12.2
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	<	<	<	<	<	<
Arsenic	<	<	.	.	.	.	.	.
Barium	0.141	0.12	0.0553	0.138	0.0526	0.0508	0.045	0.0424
Beryllium	<	<	<	<	<	<	<	<
Boron	0.0756	0.0841	<	<	0.111	0.119	0.233	0.231
Cadmium (PMS)	.	.	<	0.000544	<	<	0.00259	<
Cadmium	<	<	.	.	.	.	.	.
Chromium (PMS)	.	.	.	<	.	<	.	<
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.0458	0.0134	<	<	0.447	0.516	2.64	1.13
Lead (PMS)	.	.	<	<	0.000695	0.0013	0.00902	0.00202
Lead	<	<	.	.	.	.	.	.
Lithium	<	<	0.0505	0.146	0.033	0.0313	0.0327	0.0329
Manganese	1.26	0.823	0.00544	1.73	0.0166	0.0136	0.024	0.0202
Mercury (CVAA)	<	<	<	<	<	<	<	<
Nickel (PMS)	.	.	.	0.00518	.	<	.	<
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	.	.	<	<	<	<	<	<
Selenium	<	<	.	.	.	.	.	.
Silver	<	<	<	<	<	<	<	<
Strontium	0.461	0.405	0.102	0.263	0.56	0.538	1.61	1.46
Thallium (PMS)	.	.	<	<	<	<	<	<
Thallium	<	<	.	.	.	.	.	.
Uranium (PMS)	.	.	0.0665	0.117	<	<	<	<
Uranium (KPA)	0.00438	<	.	.	.	.	.	.
Zinc	<	<	<	<	<	<	6.29	1.97
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-218			GW-219			GW-220	
Location	UOV			UOV			NHP	
Date Sampled	05/31/00	10/30/00	11/06/00	06/06/00		10/30/00	05/15/00	08/22/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP		GWPP	GWPP	WRRP
Type					DUP			
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	936.01	936.01	936.01	935.84	.	935.84	915.84	915.84
Depth to Water (ft)	13.47	10.35	9.91	9.12	.	10.65	16.39	16.48
Water-Level Elev. (ft)	922.54	925.66	926.10	926.72	.	925.19	899.45	899.36
Water Temp. (degrees C)	16.6	19.6	18.7	19.4	.	22.5	16.3	16.3
pH (standard units)	7.53	7.58	7.56	7.12	.	7.03	7.54	7.27
Conductivity (umho/cm)	511	479	431	517	.	652	468	500
Dissolved Oxygen (ppm)	2.11	1.62	3.51	5.78	.	2.22	0.98	1.59
Oxidation/Reduction (mV)	164	131	181	168	.	81	146	250
Turbidity (NTU)	.	.	.	.	.	.	.	16
MISCELLANEOUS ANALYTES								
pH (standard units)	7.65	7.64	.	7.76	7.33	7.23	7.66	.
Conductivity (umho/cm)	496	451	.	481	479	599	493	.
Dissolved Solids (mg/L)	296	231	.	281	286	327	281	310
Suspended Solids (mg/L)	<	<	.	<	<	<	<	<
Turbidity (NTU)	1.34	0.365	.	1.52	1.51	1	1.1	.
MAJOR IONS (mg/L)								
Calcium	62.6	58.7	.	71.1	70.7	99.1	58.4	56.3
Magnesium	19	16.6	.	8.88	8.83	10.7	25.1	25.4
Potassium	2.6	2.94	.	4.7	4.53	3.66	2.33	2.58
Sodium	9.39	10.7	.	11.6	11.8	14.1	4.95	5.31
Alkalinity-HCO3	216	196	.	220	220	282	232	184
Alkalinity-CO3	<	<	.	<	<	<	<	<
Chloride	11.3	12	.	2.32	2.32	7.56	12.5	12.4
Fluoride	0.13	0.174	.	0.102	0.122	0.117	<	0.74
Nitrate-N	3.99	.	1.58	0.233	0.182	<	0.863	3.3
Sulfate	15.1	23.9	.	21.5	22.3	21.7	13.7	14.7
Ion Charge Balance (RPD)	-0.8	0.8	.	-0.3	-0.6	1.8	-0.8	6.0
TRACE METALS (mg/L)								
Aluminum	<	<	.	<	<	<	<	0.0733
Arsenic (PMS)	<	<	.	<	<	<	<	.
Arsenic	.	.	.	.	.	.	.	<
Barium	0.0477	0.0463	.	0.0637	0.0631	0.0654	0.103	0.104
Beryllium	<	<	.	<	<	<	<	<
Boron	<	<	.	<	<	0.115	<	0.0608
Cadmium (PMS)	<	<	.	<	<	<	<	.
Cadmium	.	.	.	.	.	.	.	<
Chromium (PMS)	.	0.00382	.	.	.	0.0129	.	.
Chromium	<	<	.	<	<	<	<	<
Cobalt	<	<	.	<	<	<	<	<
Copper	<	<	.	<	<	<	<	<
Iron	<	0.0502	.	0.0926	0.0727	<	<	0.0656
Lead (PMS)	<	<	.	0.000999	<	<	<	.
Lead	.	.	.	.	.	.	.	<
Lithium	<	<	.	<	<	<	<	<
Manganese	0.00853	0.0416	.	0.0177	0.0177	0.0107	<	<
Mercury (CVAA)	<	<	.	<	<	<	<	.
Nickel (PMS)	.	0.0152	.	.	.	0.0402	.	.
Nickel	<	<	.	<	<	<	<	<
Selenium (PMS)	<	<	.	<	<	<	<	.
Selenium	.	.	.	.	.	.	.	<
Silver	<	<	.	<	<	<	<	<
Strontium	0.0719	0.0819	.	0.162	0.161	0.172	0.421	0.425
Thallium (PMS)	<	0.000554	.	<	<	<	0.000516	.
Thallium	.	.	.	.	.	.	.	<
Uranium (PMS)	0.00421	0.00743	.	0.494	0.568	0.449	<	.
Uranium (KPA)	.	.	.	.	.	.	.	<
Zinc	<	<	.	<	<	<	<	<
ICP Dilution Factor	1	1	.	1	1	1	1	1

(Continued)

Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-220		GW-222		GW-223		GW-230	
Location	NHP		NHP		NHP		EXP-UV	
Date Sampled	10/12/00		06/13/00	10/26/00	06/12/00	10/31/00	01/20/00	05/17/00
Monitoring Program	GWPP		GWPP	GWPP	GWPP	GWPP	WRRP	WRRP
Type		DUP						
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	915.84	.	911.82	911.82	911.82	911.82	923.14	923.14
Depth to Water (ft)	16.56	.	9.39	10.59	9.34	10.72	16.40	15.20
Water-Level Elev. (ft)	899.28	.	902.43	901.23	902.48	901.10	906.74	907.94
Water Temp. (degrees C)	16.3	.	16.4	19.8	16.9	17.6	13.1	15.3
pH (standard units)	7.5	.	7.01	7.09	6.13	7.31	7.29	7.33
Conductivity (umho/cm)	482	.	524	717	591	677	781	250
Dissolved Oxygen (ppm)	0.51	.	0.18	0.86	1.6	0.73	0.48	2.16
Oxidation/Reduction (mV)	178	.	-8	-53	-32	-25	-159	-161
Turbidity (NTU)	.	.	.	.	.	.	23	0
MISCELLANEOUS ANALYTES								
pH (standard units)	7.76	7.76	7.46	7.13	7.04	7.21	.	.
Conductivity (umho/cm)	485	486	576	743	684	658	.	.
Dissolved Solids (mg/L)	277	278	358	415	421	369	380	590
Suspended Solids (mg/L)	1	1	<	<	<	<	<	<
Turbidity (NTU)	2.03	2.99	0.613	12.7	3.23	2.47	.	.
MAJOR IONS (mg/L)								
Calcium	56.1	58	84.4	111	108	103	.	.
Magnesium	26.6	27.4	13.5	17.1	12.6	13.5	.	.
Potassium	2.49	2.43	3.72	3.53	<	2.33	.	.
Sodium	5.22	5.39	11.9	18	12.6	13.4	.	.
Alkalinity-HCO3	210	206	230	340	296	264	384	420
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	14	13.9	14.2	29.7	29.5	29.5	102	94
Fluoride	<	<	0.256	0.195	0.131	0.118	<	<
Nitrate-N	0.846	0.819	0.0367	0.0963	<	<	0.096	<
Sulfate	14.4	14.9	41.8	17.3	36.1	37.2	<	<
Ion Charge Balance (RPD)	3.2	5.5	0.4	-1.2	-3.7	0.0	.	.
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	.	.
Arsenic (PMS)	<	<	<	<	<	<	.	.
Arsenic	.	.	.	.	.	.	.	.
Barium	0.102	0.106	0.149	0.221	0.293	0.271	.	.
Beryllium	<	<	<	<	<	<	.	.
Boron	<	<	<	<	<	<	.	.
Cadmium (PMS)	<	<	<	<	<	<	.	.
Cadmium	.	.	.	.	.	.	.	.
Chromium (PMS)	<	0.00787	.	<	.	<	.	.
Chromium	<	<	<	<	<	<	.	.
Cobalt	<	<	<	<	<	<	.	.
Copper	<	<	<	<	<	<	.	.
Iron	0.0683	<	0.23	1.39	0.565	0.423	.	.
Lead (PMS)	<	<	<	<	<	<	.	.
Lead	.	.	.	.	.	.	.	.
Lithium	<	<	<	<	<	<	.	.
Manganese	<	<	0.467	1.23	0.717	0.656	.	.
Mercury (CVAA)	<	<	<	<	<	<	.	.
Nickel (PMS)	<	<	.	<	.	<	.	.
Nickel	<	<	<	<	<	<	.	.
Selenium (PMS)	<	<	<	<	<	<	.	.
Selenium	.	.	.	.	.	.	.	.
Silver	<	<	<	<	<	<	.	.
Strontium	0.419	0.432	0.286	0.316	0.276	0.261	.	.
Thallium (PMS)	0.00063	0.000593	<	0.000642	<	0.00067	.	.
Thallium	.	.	.	.	.	.	.	.
Uranium (PMS)	<	<	0.136	0.0812	0.0221	0.0221	.	.
Uranium (KPA)	.	.	.	.	.	.	.	.
Zinc	<	<	<	<	<	<	.	.
ICP Dilution Factor	1	1	1	1	1	1	.	.

(Continued)

Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-230	GW-232				GW-240		GW-251
Location	EXP-UV	EXP-UV				NHP		S2
Date Sampled	08/08/00	01/25/00	05/18/00	08/09/00	11/01/00	05/17/00	10/11/00	05/09/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	GWPP	GWPP	GWPP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	923.14	931.42	931.42	931.42	931.42	922.90	922.90	1003.80
Depth to Water (ft)	15.68	31.22	31.88	34.43	36.15	21.08	21.28	17.38
Water-Level Elev. (ft)	907.46	900.20	899.54	896.99	895.27	901.82	901.62	986.42
Water Temp. (degrees C)	19.1	7.4	17.3	21	13.6	14.8	16.1	17.2
pH (standard units)	7.24	9.78	9.57	9.62	9.64	7.44	7.38	6.1
Conductivity (umho/cm)	1087	596	963	1003	762	491	439	890
Dissolved Oxygen (ppm)	0.86	0.81	2.64	2.92	2.78	4.9	5.14	0.73
Oxidation/Reduction (mV)	-181	-167	-115	-64	-214	170	135	213
Turbidity (NTU)	18	9	7	4	13	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	7.56	7.56	6.38
Conductivity (umho/cm)	.	.	.	.	.	489	446	903
Dissolved Solids (mg/L)	470	470	620	600	460	275	213	573
Suspended Solids (mg/L)	23	<	<	<	5	<	<	<
Turbidity (NTU)	.	.	.	.	.	3.55	0.571	1.63
MAJOR IONS (mg/L)								
Calcium	.	.	.	.	.	49.5	46.6	112
Magnesium	.	.	.	.	.	18.2	17.5	14.2
Potassium	.	.	.	.	.	<	<	3.44
Sodium	.	.	.	.	.	25.7	18.6	15.4
Alkalinity-HCO3	312	290	34	180	296	178	154	152
Alkalinity-CO3	<	160	176	184	165	<	<	<
Chloride	106	12.8	12.4	12.2	11.2	32.2	26.2	8.16
Fluoride	<	2.1	2.2	0.64	2.4	0.17	0.256	0.981
Nitrate-N	1.7	<	0.052	1.6	<	0.846	1.32	63.2
Sulfate	<	13.9	13.1	11.8	10	13.3	21.9	15.6
Ion Charge Balance (RPD)	.	.	.	.	.	2.8	2.2	-4.1
TRACE METALS (mg/L)								
Aluminum	.	.	.	.	.	<	<	<
Arsenic (PMS)	.	.	.	.	.	<	<	<
Arsenic	.	.	.	.	.	.	.	.
Barium	.	.	.	.	.	0.0404	0.0404	0.119
Beryllium	.	.	.	.	.	<	<	<
Boron	.	.	.	.	.	<	<	<
Cadmium (PMS)	.	.	.	.	.	<	<	0.125
Cadmium	.	.	.	.	.	.	.	.
Chromium (PMS)	.	.	.	.	.	.	<	.
Chromium	.	.	.	.	.	<	<	<
Cobalt	.	.	.	.	.	<	<	0.0227
Copper	.	.	.	.	.	<	<	0.284
Iron	.	.	.	.	.	0.143	<	0.0748
Lead (PMS)	.	.	.	.	.	0.00164	<	0.00422
Lead	.	.	.	.	.	.	.	.
Lithium	.	.	.	.	.	<	<	<
Manganese	.	.	.	.	.	0.00512	<	4.03
Mercury (CVAA)	.	.	.	.	.	<	<	<
Nickel (PMS)	.	.	.	.	.	.	<	.
Nickel	.	.	.	.	.	<	<	<
Selenium (PMS)	.	.	.	.	.	<	<	<
Selenium	.	.	.	.	.	.	.	.
Silver	.	.	.	.	.	<	<	<
Strontium	.	.	.	.	.	0.0635	0.0779	0.229
Thallium (PMS)	.	.	.	.	.	0.000679	<	0.00246
Thallium	.	.	.	.	.	.	.	.
Uranium (PMS)	.	.	.	.	.	0.00387	0.00353	0.00375
Uranium (KPA)	.	.	.	.	.	.	.	.
Zinc	.	.	.	.	.	<	<	0.0621
ICP Dilution Factor	.	.	.	.	.	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-251	GW-253		GW-274		GW-275		GW-337
Location	S2	S2		SY		SY		WC
Date Sampled	10/09/00	05/23/00	11/02/00	05/30/00	10/18/00	05/30/00	10/18/00	05/23/00
Monitoring Program	GWPP	WRRP	WRRP	GWPP	GWPP	GWPP	GWPP	GWPP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	1003.80	1004.24	1004.24	995.63	995.63	995.36	995.36	987.57
Depth to Water (ft)	24.36	14.28	28.45	4.16	5.44	3.35	4.78	11.19
Water-Level Elev. (ft)	979.44	989.96	975.79	991.47	990.19	992.01	990.58	976.38
Water Temp. (degrees C)	15.4	18	17.4	17.9	17.7	18	18	16.9
pH (standard units)	6.65	5.29	5.51	5.53	5.69	6.56	6.68	6.74
Conductivity (umho/cm)	570	5200	6000	24200	25500	37600	42900	529
Dissolved Oxygen (ppm)	3.19	2.44	6.49	0.34	0.57	2.65	4.75	2.37
Oxidation/Reduction (mV)	207	293	114	231	224	153	177	163
Turbidity (NTU)	.	101	34	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	6.98	.	.	5.77	5.8	6.63	6.68	6.92
Conductivity (umho/cm)	597	.	.	27600	26400	40600	43700	513
Dissolved Solids (mg/L)	337	5000	5700	25500	24000	41900	43400	300
Suspended Solids (mg/L)	<	<	16	39	68	<	<	<
Turbidity (NTU)	0.885	.	.	24.2	40.3	0.926	0.725	0.785
MAJOR IONS (mg/L)								
Calcium	77.4	573	725	5080	5070	8710	8900	88.8
Magnesium	10.9	148	181	717	755	1210	1260	8.33
Potassium	2.37	12.1	17.1	<	<	<	<	<
Sodium	7.64	152	187	365	364	107	108	4.35
Alkalinity-HCO3	156	70	86.7	670	632	70	55.2	222
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	5.25	133	140	94.4	97	43.9	46.2	16.5
Fluoride	1.47	3	2.2	<	<	<	<	<
Nitrate-N	26.3	1010	1280	5410	3890	7150	7160	<
Sulfate	9.35	69.9	75.2	<	3.36	<	<	9.22
Ion Charge Balance (RPD)	-2.5	11.9	-24.7	-10.1	6.0	2.4	3.6	2.0
TRACE METALS (mg/L)								
Aluminum	<	4.2	3.07	<	<	<	<	<
Arsenic (PMS)	<	.	.	<	0.0051	<	<	<
Arsenic	.	0.0071	<	.	.	.	.	.
Barium	0.0558	0.342	0.362	35.7	34.3	123	125	0.195
Beryllium	<	0.0108	0.0084	<	<	<	<	<
Boron	<	0.316	0.291	<	<	<	<	<
Cadmium (PMS)	0.0509	.	.	0.00137	0.00139	<	<	<
Cadmium	.	4.35	3.92	.	.	.	.	.
Chromium (PMS)	<	.	.	.	0.00367	.	<	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	0.279	0.226	<	<	<	<	<
Copper	0.102	49.1	37.4	<	<	<	<	<
Iron	<	0.0698	0.0672	1.83	3.14	<	<	<
Lead (PMS)	<	.	.	0.00136	0.00203	<	<	<
Lead	.	0.0277	0.0206	.	.	.	.	.
Lithium	<	0.0606	0.0601	<	<	0.323	0.294	<
Manganese	1.34	51.8	57.6	112	115	1.98	2	0.00558
Mercury (CVAA)	<	.	.	0.000793	0.000436	<	<	<
Nickel (PMS)	0.0102	.	.	.	0.227	.	0.0111	.
Nickel	<	2.38	2.04	<	<	<	<	<
Selenium (PMS)	<	.	.	0.0258	0.0235	0.0122	0.0223	<
Selenium	.	<	<	.	.	.	.	.
Silver	<	<	<	<	<	<	<	<
Strontium	0.113	1.15	1.3	15.9	15.6	66	67.6	0.223
Thallium (PMS)	0.00131	.	.	<	0.000582	<	0.00068	<
Thallium	.	0.0084	<	.	.	.	.	.
Uranium (PMS)	0.00267	.	.	0.0229	0.0177	0.00268	0.00141	0.00151
Uranium (KPA)	.	<	<	.	.	.	.	.
Zinc	<	5.84	5.24	<	<	<	<	<
ICP Dilution Factor	1	1	1	20	20	20	20	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-337	GW-380	GW-381		GW-382		GW-383	
Location	WC	NHP	NHP		NHP		NHP	
Date Sampled	10/19/00	05/16/00	05/17/00	10/16/00	05/18/00	09/11/00	05/15/00	08/17/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	WRRP	WRRP	GWPP	WRRP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	987.57	913.75	913.36	913.36	913.17	913.17	908.77	908.77
Depth to Water (ft)	12.20	10.65	10.85	11.18	.	12.11	9.65	9.53
Water-Level Elev. (ft)	975.37	903.10	902.51	902.18	.	901.06	899.12	899.24
Water Temp. (degrees C)	19.4	16	16.7	18.9	.	20.4	16.6	22.3
pH (standard units)	7.11	7	7.59	7.34	.	7.05	7.28	7.41
Conductivity (umho/cm)	562	553	602	674	.	715	655	750
Dissolved Oxygen (ppm)	0.78	2.9	0.79	2.05	.	6.7	1.87	4.4
Oxidation/Reduction (mV)	113	66	200	-174	.	82	-8	78
Turbidity (NTU)	.	.	.	.	.	69	.	24
MISCELLANEOUS ANALYTES								
pH (standard units)	7.03	.	7.43	7.24	.	.	7.44	.
Conductivity (umho/cm)	498	.	655	745	.	.	618	.
Dissolved Solids (mg/L)	304	.	339	385	460	360	347	300
Suspended Solids (mg/L)	<	.	7	15	<	17	<	<
Turbidity (NTU)	0.765	.	53.5	155	.	.	5.8	.
MAJOR IONS (mg/L)								
Calcium	89.1	.	72.6	87.8	85	83	95.4	89.5
Magnesium	8.68	.	23.3	26.4	24.5	23.2	11.4	11.7
Potassium	<	.	2.22	2.96	5.43	4.98	2.59	3.24
Sodium	4.49	.	20.8	19.7	9.16	8.33	13.3	14
Alkalinity-HCO3	222	.	204	242	248	260	234	210
Alkalinity-CO3	<	.	<	<	<	<	<	<
Chloride	15.9	.	81.5	76.7	45.1	44.7	45	45.4
Fluoride	<	.	<	<	0.21	0.24	<	<
Nitrate-N	<	.	<	<	0.81	0.04	<	3.9
Sulfate	8.69	.	1.07	3.27	4.6	4.6	16.8	19.9
Ion Charge Balance (RPD)	2.8	.	0.8	2.9	3.5	-0.2	0.4	-0.4
TRACE METALS (mg/L)								
Aluminum	<	.	<	<	<	<	<	<
Arsenic (PMS)	<	.	<	<	.	.	<	.
Arsenic	.	.	.	.	<	<	.	<
Barium	0.199	.	0.141	0.25	0.592	0.578	0.636	0.657
Beryllium	<	.	<	<	<	<	<	<
Boron	<	.	<	<	0.0232	0.0237	<	0.101
Cadmium (PMS)	0.000698	.	<	<	.	.	<	.
Cadmium	.	.	.	.	<	<	.	<
Chromium (PMS)	<	.	.	<	.	.	.	.
Chromium	<	.	<	<	<	<	<	<
Cobalt	<	.	<	<	<	<	<	<
Copper	<	.	<	<	<	<	<	<
Iron	<	.	4.72	10.7	1.63	4.02	0.675	0.892
Lead (PMS)	<	.	0.000973	<	.	.	0.000924	.
Lead	.	.	.	.	<	<	.	<
Lithium	<	.	<	<	<	<	0.0157	0.0181
Manganese	0.0508	.	0.228	0.406	0.0358	0.0375	0.265	0.127
Mercury (CVAA)	<	.	<	<	.	.	<	.
Nickel (PMS)	0.00525	.	.	<	.	.	.	.
Nickel	<	.	<	<	<	<	<	<
Selenium (PMS)	<	.	0.0124	0.0123	.	.	<	.
Selenium	.	.	.	.	<	<	.	<
Silver	<	.	<	<	<	<	<	<
Strontium	0.226	.	0.128	0.175	0.309	0.283	0.435	0.446
Thallium (PMS)	<	.	0.00061	<	.	.	0.000549	.
Thallium	.	.	.	.	<	<	.	<
Uranium (PMS)	0.000866	.	<	<	.	.	<	.
Uranium (KPA)	.	.	.	.	<	<	.	<
Zinc	<	.	<	<	<	<	<	<
ICP Dilution Factor	1	.	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-383	GW-605				GW-606		GW-618
Location	NHP	EXP-I				EXP-I		EXP-E
Date Sampled	10/16/00	01/12/00		07/17/00		01/12/00	07/17/00	05/23/00
Monitoring Program	GWPP	WRRP		WRRP		WRRP	WRRP	WRRP
Type			DUP		DUP			
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	908.77	919.06	.	919.06	.	919.59	919.59	985.14
Depth to Water (ft)	9.88	11.14	.	11.44	.	13.71	14.05	14.11
Water-Level Elev. (ft)	898.89	907.92	.	907.62	.	905.88	905.54	971.03
Water Temp. (degrees C)	19.3	16.2	.	18.3	.	14.7	19.6	17.4
pH (standard units)	7.17	7.43	.	7.11	.	8.56	8.43	6.77
Conductivity (umho/cm)	617	483	.	593	.	377	482	684
Dissolved Oxygen (ppm)	0.21	0.86	.	2.5	.	1.84	3.76	1.08
Oxidation/Reduction (mV)	-60	187	.	96	.	153	91	-34
Turbidity (NTU)	.	8	.	30	.	8	16	0
MISCELLANEOUS ANALYTES								
pH (standard units)	7.42	.	.	.	.	.	.	.
Conductivity (umho/cm)	606	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	345	330	310	290	350	900	300	360
Suspended Solids (mg/L)	<	<	<	<	<	<	<	<
Turbidity (NTU)	11.1	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	90.7	70	70.6	81.1	83.5	39.1	39.4	105
Magnesium	12.2	15.9	16.6	18.2	18.7	30.6	27.7	8.93
Potassium	3.11	2.36	2.43	2.51	2.57	3.89	3.79	4.41
Sodium	14.8	10.5	10.7	10.9	11.1	5.77	5.68	18
Alkalinity-HCO3	222	43.8	43.3	244	248	45.2	90	306
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	43.5	18	19	22.9	21.6	30.4	36.9	14.3
Fluoride	<	0.13	0.14	<	0.13	0.14	0.13	0.31
Nitrate-N	<	0.22	0.21	2.6	2.6	2.65	6.3	0.084
Sulfate	21.1	29.8	29.1	28.3	27.7	95.5	93	21
Ion Charge Balance (RPD)	1.2	44.8	45.5	-1.7	-0.6	9.9	-6.6	5.7
TRACE METALS (mg/L)								
Aluminum	<	<	0.0853	0.189	0.159	<	<	<
Arsenic (PMS)	<	.	.	.	.	.	.	.
Arsenic	.	<	<	<	<	<	<	<
Barium	0.641	0.0455	0.0467	0.0496	0.0503	0.0847	0.0737	0.0566
Beryllium	<	<	<	<	<	<	<	<
Boron	0.113	0.0849	0.0873	0.101	0.102	0.0345	0.0355	0.11
Cadmium (PMS)	<	.	.	.	.	.	.	.
Cadmium	.	<	<	<	<	<	<	0.0022
Chromium (PMS)	<	.	.	.	.	.	.	.
Chromium	<	0.0108	0.011	0.0185	0.0168	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.847	0.514	0.529	0.422	0.388	<	0.0116	0.303
Lead (PMS)	<	.	.	.	.	.	.	.
Lead	.	<	<	<	<	<	<	<
Lithium	0.0179	<	<	<	<	0.0118	0.0119	<
Manganese	0.13	0.0965	0.116	0.776	0.731	<	<	1.55
Mercury (CVAA)	<	<	<	<	<	<	<	.
Nickel (PMS)	<	.	.	.	.	.	.	.
Nickel	<	0.0165	0.017	0.0158	0.0148	<	<	<
Selenium (PMS)	0.0101	.	.	.	.	.	.	.
Selenium	.	<	<	<	<	<	<	<
Silver	<	<	<	<	<	<	<	<
Strontium	0.445	0.132	0.137	0.149	0.152	0.597	0.588	0.2
Thallium (PMS)	0.00056	.	.	.	.	.	.	.
Thallium	.	<	<	<	<	<	<	<
Uranium (PMS)	<	.	.	.	.	.	.	.
Uranium (KPA)	.	0.0847	0.085	0.0897	0.0915	<	0.00525	<
Zinc	<	<	<	<	<	<	<	<
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-618	GW-620		GW-633		GW-656		GW-690
Location	EXP-E	FTF		RG		T0134		CPT
Date Sampled	11/08/00	05/10/00	10/10/00	06/08/00	10/24/00	06/12/00	10/25/00	06/19/00
Monitoring Program	WRRP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	985.14	1015.54	1015.54	996.30	996.30	954.79	954.79	967.36
Depth to Water (ft)	16.25	25.75	30.55	2.23	3.68	10.22	10.52	10.63
Water-Level Elev. (ft)	968.89	989.79	984.99	994.07	992.62	944.57	944.27	956.73
Water Temp. (degrees C)	17.9	16.8	15.4	19.1	22.7	18.2	20.5	19
pH (standard units)	6.51	12.12	9.96	5.11	5.53	6.54	6.83	6.87
Conductivity (umho/cm)	622	1328	234	13210	13920	567	697	1267
Dissolved Oxygen (ppm)	6.07	1.56	3.37	0.37	0.74	1.34	0.79	3.35
Oxidation/Reduction (mV)	14	-35	139	221	209	-12	1	118
Turbidity (NTU)	6	.	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	11.71	10.4	5.38	5.54	6.8	7.01	7.2
Conductivity (umho/cm)	.	1113	144.4	14810	14220	614	717	1403
Dissolved Solids (mg/L)	420	257	65	13000	11900	400	441	1110
Suspended Solids (mg/L)	12	<	<	3	<	<	<	<
Turbidity (NTU)	.	0.492	1.8	0.86	0.917	3.59	5.46	2.29
MAJOR IONS (mg/L)								
Calcium	108	96.8	7.4	2730	2640	102	126	268
Magnesium	9.16	<	0.324	232	232	5.54	7	32.1
Potassium	4.59	14.7	17.1	<	<	<	2.27	4.56
Sodium	20.1	2.33	2.52	93.7	92.8	8.44	10.6	7.15
Alkalinity-HCO3	342	<	<	304	306	179	220	296
Alkalinity-CO3	<	24	<	<	<	<	<	<
Chloride	13.4	2.35	2.05	60.1	69.8	51.2	54.7	29.3
Fluoride	0.24	0.158	0.129	<	0.169	<	0.109	<
Nitrate-N	0.61	1.11	1.37	2200	1890	0.0685	<	3.72
Sulfate	18.4	5.22	5.34	2.76	3.44	52.6	52.9	460
Ion Charge Balance (RPD)	-3.5	-44.8	44.2	-1.7	3.9	-1.7	2.3	-0.4
TRACE METALS (mg/L)								
Aluminum	<	0.838	<	<	<	<	<	<
Arsenic (PMS)	.	<	<	<	<	<	<	<
Arsenic	<	.	.	.	.	.	.	.
Barium	0.0567	0.0374	0.0362	13.4	12.5	0.155	0.188	0.026
Beryllium	<	<	<	<	<	<	<	<
Boron	0.128	<	<	<	<	<	<	<
Cadmium (PMS)	.	<	<	0.000687	0.00106	<	<	<
Cadmium	0.0025	.	.	.	.	.	.	.
Chromium (PMS)	.	.	0.00323	.	<	.	0.00333	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.274	<	<	<	<	1.11	1.04	0.0814
Lead (PMS)	.	<	<	<	0.00061	<	<	<
Lead	<	.	.	.	.	.	.	.
Lithium	<	0.0223	0.0219	0.194	<	<	<	0.0102
Manganese	1.65	<	<	2.97	6.07	0.596	0.94	0.0207
Mercury (CVAA)	.	<	<	<	<	<	<	<
Nickel (PMS)	.	.	<	.	0.281	.	0.0153	.
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	.	<	<	0.0131	0.0173	<	<	<
Selenium	<	.	.	.	.	.	.	.
Silver	<	<	<	<	<	<	<	<
Strontium	0.208	0.378	0.442	6.7	6.37	0.192	0.235	0.376
Thallium (PMS)	.	<	<	<	0.000727	<	0.00061	<
Thallium	<	.	.	.	.	.	.	.
Uranium (PMS)	.	<	<	0.0018	0.0022	<	0.000748	<
Uranium (KPA)	<	.	.	.	.	.	.	.
Zinc	<	<	<	<	<	<	<	<
ICP Dilution Factor	1	1	1	10	20	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-690	GW-700		GW-722-06			
Location	CPT	B8110		EXP-J			
Date Sampled	10/25/00	06/19/00	10/25/00	03/14/00		07/17/00	
Monitoring Program	GWPP	GWPP	GWPP	GWPP		GWPP	
Type							
	TOT	TOT	TOT	TOT	DIS	TOT	DIS
FIELD MEASUREMENTS							
Measuring Pt. Elev. (ft)	967.36	960.18	960.18	.	.	.	.
Depth to Water (ft)	11.36	19.58	20.49	.	.	.	.
Water-Level Elev. (ft)	956.00	940.60	939.69	.	.	.	.
Water Temp. (degrees C)	19	17	18.9	17.4	.	20.6	.
pH (standard units)	7.09	6.6	7.09	7.94	.	7.7	.
Conductivity (umho/cm)	1127	616	675	811	.	900	.
Dissolved Oxygen (ppm)	1.69	1.22	0.16	3.31	.	3.12	.
Oxidation/Reduction (mV)	73	155	74	-63	.	-97	.
Turbidity (NTU)	.	.	.	.	.	.	.
MISCELLANEOUS ANALYTES							
pH (standard units)	7.05	7.17	6.93	8.1	.	8	.
Conductivity (umho/cm)	1294	649	761	1002	.	1001	.
Dissolved Solids (mg/L)	914	419	462	535	.	571	.
Suspended Solids (mg/L)	<	<	<	1	.	7	.
Turbidity (NTU)	1.93	1.09	0.444	3.95	.	9.37	.
MAJOR IONS (mg/L)							
Calcium	228	103	122	19.4	18.7	19.4	18.6
Magnesium	32.9	8.98	11.1	14.7	14.3	13.9	14.1
Potassium	4.33	<	<	5.14	5.09	5.03	5.05
Sodium	6.84	17.9	20.1	174	171	172	172
Alkalinity-HCO3	268	198	232	232	.	230	.
Alkalinity-CO3	<	<	<	<	.	<	.
Chloride	38.3	21.8	25.6	141	.	141	.
Fluoride	<	<	0.118	0.901	.	0.927	.
Nitrate-N	1.77	0.19	0.091	<	.	<	.
Sulfate	368	106	111	45	.	47.7	.
Ion Charge Balance (RPD)	0.9	-1.0	1.2	1.4	.	0.5	.
TRACE METALS (mg/L)							
Aluminum	<	<	<	<	<	<	<
Arsenic (PMS)	<	<	<	<	<	0.00979	0.0111
Arsenic	.	.	.	.	.	.	.
Barium	0.0256	0.0408	0.0445	0.0529	0.0703	0.0442	0.0468
Beryllium	<	<	<	<	<	<	<
Boron	<	0.105	0.12	0.622	0.611	0.63	0.628
Cadmium (PMS)	<	<	<	<	<	<	0.00074
Cadmium	.	.	.	.	.	.	.
Chromium (PMS)	<	.	<	.	.	.	.
Chromium	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<
Iron	0.0616	0.101	<	0.0892	<	0.145	<
Lead (PMS)	<	<	<	<	<	<	<
Lead	.	.	.	.	.	.	.
Lithium	<	<	<	0.125	0.121	0.127	0.125
Manganese	0.0264	0.103	0.585	0.00845	0.008	0.00962	0.00726
Mercury (CVAA)	<	<	<	<	<	0.0235	0.0696
Nickel (PMS)	<	.	<	.	.	.	.
Nickel	<	<	<	<	<	<	<
Selenium (PMS)	<	<	<	0.0157	0.0243	0.0593	0.0673
Selenium	.	.	.	.	.	.	.
Silver	<	<	<	<	<	<	<
Strontium	0.342	0.147	0.17	4.33	4.19	4.16	4.17
Thallium (PMS)	0.000657	<	0.000702	<	<	<	<
Thallium	.	.	.	.	.	.	.
Uranium (PMS)	<	0.000761	0.00119	<	<	<	<
Uranium (KPA)	.	.	.	.	.	.	.
Zinc	<	<	<	<	<	<	<
ICP Dilution Factor	1	1	1	1	1	1	1

Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-722-06				GW-722-10			
Location	EXP-J				EXP-J			
Date Sampled	09/12/00			11/30/00	03/20/00		07/20/00	
Monitoring Program	GWPP		WRRP	WRRP	GWPP		GWPP	
Type								
	TOT	DIS	TOT	TOT	TOT	DIS	TOT	DIS
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	.	.	18.2	10.3	14.9	.	19.4	.
pH (standard units)	.	.	8.28	6.17	7.69	.	7.48	.
Conductivity (umho/cm)	.	.	106	424	666	.	750	.
Dissolved Oxygen (ppm)	.	.	5.01	11.89	11.2	.	9.05	.
Oxidation/Reduction (mV)	.	.	-60	111	-9	.	-16	.
Turbidity (NTU)	.	.	.	16	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	7.76	.	7.91	.
Conductivity (umho/cm)	.	.	.	.	814	.	820	.
Dissolved Solids (mg/L)	.	.	540	550	447	.	473	.
Suspended Solids (mg/L)	.	.	5	<	<	.	<	.
Turbidity (NTU)	.	.	.	.	1.44	.	3.06	.
MAJOR IONS (mg/L)								
Calcium	.	.	30.7	9.4	38.1	38	34.9	35.3
Magnesium	.	.	22.3	6.9	26.9	26.9	25.1	25.7
Potassium	.	.	3.26	5.47	3.45	3.56	3.55	3.57
Sodium	.	.	99.5	85	104	104	103	104
Alkalinity-HCO3	.	.	195	227	210	.	208	.
Alkalinity-CO3	.	.	<	<	<	.	<	.
Chloride	.	.	125	143	90.1	.	98.2	.
Fluoride	.	.	1.7	0.99	0.736	.	0.738	.
Nitrate-N	.	.	<	<	0.225	.	0.195	.
Sulfate	.	.	61.6	45.5	55.8	.	53.5	.
Ion Charge Balance (RPD)	.	.	-6.2	-32.5	4.6	.	1.7	.
TRACE METALS (mg/L)								
Aluminum	.	.	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	<	<	0.00799	0.00859
Arsenic	.	.	<	<	.	.	.	.
Barium	.	.	0.064	0.0186	0.0662	0.0654	0.0618	0.0625
Beryllium	.	.	<	<	<	<	<	<
Boron	.	.	0.428	0.307	0.386	0.381	0.389	0.399
Cadmium (PMS)	.	.	.	.	<	<	0.000669	0.00083
Cadmium	.	.	<	<	.	.	.	.
Chromium (PMS)	.	.	.	.	.	.	.	.
Chromium	.	.	<	<	<	<	<	<
Cobalt	.	.	<	<	<	<	<	<
Copper	.	.	<	<	<	<	<	<
Iron	.	.	0.0784	0.0343	0.41	0.0738	0.214	0.0572
Lead (PMS)	.	.	.	.	<	<	<	<
Lead	.	.	<	<	.	.	.	.
Lithium	.	.	0.12	0.0749	0.0806	0.0809	0.0822	0.0838
Manganese	.	.	0.005	<	0.00914	0.00692	0.00708	0.00756
Mercury (CVAA)	<	<	.	.	<	<	0.00454	<
Nickel (PMS)	.	.	.	.	.	.	.	.
Nickel	.	.	<	<	<	<	<	<
Selenium (PMS)	.	.	.	.	0.0164	0.0158	0.0497	0.054
Selenium	.	.	<	<	.	.	.	.
Silver	.	.	<	<	<	<	<	<
Strontium	.	.	2.3	1.99	2.34	2.32	2.33	2.37
Thallium (PMS)	.	.	.	.	<	<	<	<
Thallium	.	.	<	<	.	.	.	.
Uranium (PMS)	.	.	.	.	<	<	0.000501	<
Uranium (KPA)	.	.	<	0.004	.	.	.	.
Zinc	.	.	0.0167	<	<	<	<	<
ICP Dilution Factor	.	.	1	1	1	1	1	1

(Continued)

Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-722-10				GW-722-14			
Location	EXP-J				EXP-J			
Date Sampled	09/12/00			11/30/00	03/21/00		07/26/00	
Monitoring Program	GWPP		WRRP	WRRP	GWPP		GWPP	
Type								
	TOT	DIS	TOT	TOT	TOT	DIS	TOT	DIS
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	.	.	18.9	11.2	17.7	.	19.2	.
pH (standard units)	.	.	8.22	6.49	7.79	.	7.11	.
Conductivity (umho/cm)	.	.	190	364	446	.	243.1	.
Dissolved Oxygen (ppm)	.	.	5.05	11.18	2.5	.	3.07	.
Oxidation/Reduction (mV)	.	.	110	147	117	.	191	.
Turbidity (NTU)	.	.	.	0	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	7.73	.	7.8	.
Conductivity (umho/cm)	.	.	.	.	550	.	726	.
Dissolved Solids (mg/L)	.	.	630	390	292	.	361	.
Suspended Solids (mg/L)	.	.	7	<	<	.	6	.
Turbidity (NTU)	.	.	.	.	4.26	.	8.12	.
MAJOR IONS (mg/L)								
Calcium	.	.	18.6	35.6	51.5	49.8	50	49.2
Magnesium	.	.	14.6	24.5	29.8	29.6	30.6	30.4
Potassium	.	.	4.63	5.59	<	<	<	<
Sodium	.	.	156	122	21.8	21.2	22.4	22.8
Alkalinity-HCO3	.	.	209	139	212	.	210	.
Alkalinity-CO3	.	.	<	<	<	.	<	.
Chloride	.	.	153	84.8	24.7	.	30	.
Fluoride	.	.	1.8	0.6	0.341	.	0.377	.
Nitrate-N	.	.	<	0.029	2.08	.	2.39	.
Sulfate	.	.	51.8	37.7	29.5	.	28.4	.
Ion Charge Balance (RPD)	.	.	-3.4	21.4	2.2	.	1.4	.
TRACE METALS (mg/L)								
Aluminum	.	.	<	<	<	<	<	<
Arsenic (PMS)	.	.	.	.	<	<	<	<
Arsenic	.	.	<	<	.	.	.	.
Barium	.	.	0.0603	0.0644	0.0982	0.0994	0.106	0.1
Beryllium	.	.	<	<	<	<	<	<
Boron	.	.	0.665	0.471	<	<	<	<
Cadmium (PMS)	.	.	.	.	<	<	<	<
Cadmium	.	.	<	<	.	.	.	.
Chromium (PMS)	.	.	.	.	.	.	.	.
Chromium	.	.	<	<	<	<	<	<
Cobalt	.	.	<	<	<	<	<	<
Copper	.	.	<	<	<	<	<	<
Iron	.	.	0.105	0.138	0.105	<	0.0507	<
Lead (PMS)	.	.	.	.	<	<	<	<
Lead	.	.	<	<	.	.	.	.
Lithium	.	.	0.185	0.129	0.0183	0.017	0.0202	0.0194
Manganese	.	.	0.0097	0.0055	<	<	<	<
Mercury (CVAA)	<	<	.	.	<	<	<	0.000204
Nickel (PMS)	.	.	.	.	.	.	.	.
Nickel	.	.	<	<	<	<	<	<
Selenium (PMS)	.	.	.	.	<	<	<	<
Selenium	.	.	<	<	.	.	.	.
Silver	.	.	<	<	<	<	<	<
Strontium	.	.	4.18	2.76	0.805	0.79	0.786	0.777
Thallium (PMS)	.	.	.	.	<	<	<	<
Thallium	.	.	<	<	.	.	.	.
Uranium (PMS)	.	.	.	.	<	<	<	<
Uranium (KPA)	.	.	<	0.004	.	.	.	.
Zinc	.	.	0.0207	<	0.0696	<	<	<
ICP Dilution Factor	.	.	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-722-14		GW-722-17					
Location	EXP-J		EXP-J					
Date Sampled	09/13/00	11/30/00	03/21/00		07/26/00		09/13/00	11/30/00
Monitoring Program	WRRP	WRRP	GWPP		GWPP		WRRP	WRRP
Type	TOT	TOT	TOT	DIS	TOT	DIS	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	17.5	12	17.2	.	20.3	.	18.7	13.2
pH (standard units)	8.13	7.07	7.72	.	7.36	.	8.14	7.29
Conductivity (umho/cm)	943	227	435	.	248	.	441	217
Dissolved Oxygen (ppm)	5.44	10.54	1.64	.	3.14	.	6.21	9.88
Oxidation/Reduction (mV)	194	110	125	.	127	.	161	102
Turbidity (NTU)	.	6	.	.	.	.	.	11
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	7.74	.	7.81	.	.	.
Conductivity (umho/cm)	.	.	519	.	520	.	.	.
Dissolved Solids (mg/L)	590	290	269	.	334	.	34	310
Suspended Solids (mg/L)	15	<	1	.	3	.	5	8.3
Turbidity (NTU)	.	.	5.37	.	10.9	.	.	.
MAJOR IONS (mg/L)								
Calcium	45.7	50.6	51.7	51.2	51.9	51.1	46.4	51.7
Magnesium	28	28.8	31.2	31.3	31.5	31.7	28.6	29.7
Potassium	1.58	2.09	<	<	<	<	1.44	2.03
Sodium	19.2	21.8	13.4	13.5	13.9	14	13.1	21.3
Alkalinity-HCO3	215	227	238	.	248	.	205	210
Alkalinity-CO3	<	<	<	.	<	.	<	<
Chloride	22.7	22.6	21.8	.	23.6	.	22.4	31.1
Fluoride	2	0.35	0.308	.	0.323	.	1.7	0.32
Nitrate-N	2.4	1.5	1.77	.	2.51	.	2.4	1.8
Sulfate	24	23	26.8	.	25.5	.	27.7	29.5
Ion Charge Balance (RPD)	-2.3	1.0	-2.9	.	-4.6	.	-2.7	1.4
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Arsenic (PMS)	.	.	<	<	<	<	.	.
Arsenic	<	<	.	.	.	.	<	<
Barium	0.102	0.102	0.0824	0.0825	0.0807	0.0812	0.0934	0.106
Beryllium	<	<	<	<	<	<	<	<
Boron	0.106	0.13	<	<	<	<	0.067	0.101
Cadmium (PMS)	.	.	<	<	<	<	.	.
Cadmium	<	<	.	.	.	.	<	<
Chromium (PMS)	.	.	.	.	.	.	.	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.0284	<	<	<	0.0631	<	0.0446	0.0243
Lead (PMS)	.	.	<	<	<	<	.	.
Lead	<	<	.	.	.	.	<	<
Lithium	0.0224	0.024	0.013	0.0119	0.0121	0.0131	0.0166	0.0237
Manganese	<	<	<	<	<	<	<	<
Mercury (CVAA)	.	.	<	0.000272	<	<	.	.
Nickel (PMS)	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	.	.	<	<	<	<	.	.
Selenium	<	<	.	.	.	.	<	<
Silver	<	<	<	<	<	<	<	<
Strontium	0.789	0.794	0.961	0.96	0.915	0.918	0.727	0.784
Thallium (PMS)	.	.	0.000688	<	<	<	.	.
Thallium	<	<	.	.	.	.	<	<
Uranium (PMS)	.	.	<	0.00142	<	<	.	.
Uranium (KPA)	<	0.004	.	.	.	.	<	0.004
Zinc	0.0158	<	<	<	<	<	0.0115	<
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-722-20						GW-722-22	
Location	EXP-J						EXP-J	
Date Sampled	03/21/00		07/25/00		09/13/00	12/04/00	03/21/00	
Monitoring Program	GWPP		GWPP		WRRP	WRRP	GWPP	
Type								
	TOT	DIS	TOT	DIS	TOT	TOT	TOT	DIS
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	15.5	.	18.8	.	18.7	11	14.2	.
pH (standard units)	7.37	.	7.65	.	800	7.59	7.4	.
Conductivity (umho/cm)	414	.	460	.	459	227	411	.
Dissolved Oxygen (ppm)	2.67	.	5.89	.	6.02	15.02	2.42	.
Oxidation/Reduction (mV)	122	.	127	.	106	139	199	.
Turbidity (NTU)	.	.	.	.	.	8	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.87	.	8.05	.	.	.	7.78	.
Conductivity (umho/cm)	534	.	536	.	.	.	528	.
Dissolved Solids (mg/L)	277	.	317	.	360	300	282	.
Suspended Solids (mg/L)	<	.	<	.	12	<	<	.
Turbidity (NTU)	1.44	.	3.98	.	.	.	0.651	.
MAJOR IONS (mg/L)								
Calcium	50.9	50.6	51.3	50.1	49.8	50.1	51.6	50.7
Magnesium	28.6	28.7	29.6	28.9	30.4	29.6	28.3	27.5
Potassium	<	<	<	<	1.59	1.84	<	<
Sodium	19.7	19.8	19.1	18.9	17.4	16.6	18.9	18.8
Alkalinity-HCO3	206	.	220	.	260	206	210	.
Alkalinity-CO3	<	.	<	.	<	<	<	.
Chloride	24.1	.	26.8	.	27.2	23.6	24.3	.
Fluoride	0.355	.	0.358	.	0.8	0.54	0.296	.
Nitrate-N	0.937	.	1.53	.	1.4	1.9	1.41	.
Sulfate	30.4	.	26.4	.	29.6	28.7	28.6	.
Ion Charge Balance (RPD)	2.1	.	0.0	.	-7.5	1.4	1.2	.
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Arsenic (PMS)	<	<	<	<	.	.	<	<
Arsenic	.	.	.	.	<	<	.	.
Barium	0.0684	0.0683	0.0669	0.0663	0.0718	0.0677	0.0955	0.0935
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	0.069	0.0718	<	<
Cadmium (PMS)	<	<	<	<	.	.	<	<
Cadmium	.	.	.	.	<	<	.	.
Chromium (PMS)	.	.	.	.	.	.	.	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.127	<	0.0714	<	0.0194	0.0212	<	<
Lead (PMS)	<	<	<	<	.	.	<	<
Lead	.	.	.	.	<	<	.	.
Lithium	0.0137	0.0133	0.0144	0.0175	0.019	0.0169	0.013	0.0135
Manganese	<	<	<	<	<	<	<	<
Mercury (CVAA)	<	<	<	<	.	.	<	<
Nickel (PMS)	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	<	<	<	.	.	<	<
Selenium	.	.	.	.	<	<	.	.
Silver	<	<	<	<	<	<	<	<
Strontium	0.715	0.719	0.712	0.703	0.733	0.74	0.691	0.692
Thallium (PMS)	<	<	<	<	.	.	<	<
Thallium	.	.	.	.	<	<	.	.
Uranium (PMS)	<	<	<	<	.	.	<	0.000552
Uranium (KPA)	.	.	.	.	<	<	.	.
Zinc	0.0575	<	<	<	0.02	0.014	<	<
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-722-22						GW-722-26	
Location	EXP-J						EXP-J	
Date Sampled	07/25/00				09/13/00	12/04/00	03/15/00	
Monitoring Program	GWPP				WRRP	WRRP	GWPP	
Type			DUP					
	TOT	DIS	TOT	DIS	TOT	TOT	TOT	DIS
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	18.3	.	.	.	21.2	11.8	17.2	.
pH (standard units)	7.64	.	.	.	8.12	7.71	7.88	.
Conductivity (umho/cm)	221	.	.	.	487	204	377.4	.
Dissolved Oxygen (ppm)	5.51	.	.	.	5.62	13.63	2.69	.
Oxidation/Reduction (mV)	157	.	.	.	171	90	-95	.
Turbidity (NTU)	.	.	.	.	.	11	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.74	.	7.93	.	.	.	7.65	.
Conductivity (umho/cm)	534	.	528	.	.	.	455	.
Dissolved Solids (mg/L)	313	.	315	.	360	290	229	.
Suspended Solids (mg/L)	<	.	<	.	15	<	1	.
Turbidity (NTU)	1.82	.	1.84	.	.	.	10.4	.
MAJOR IONS (mg/L)								
Calcium	51.4	51.3	49.7	50.9	38.8	51.1	57.4	58.4
Magnesium	27.9	28.4	27.2	28	22.1	28.7	21.9	22.6
Potassium	<	<	<	<	1.05	1.71	2.47	2.85
Sodium	18.2	18.7	17.6	18.4	12.3	17.3	3.13	3.32
Alkalinity-HCO3	198	.	212	.	203	210	228	.
Alkalinity-CO3	<	.	<	.	<	<	<	.
Chloride	22.2	.	21.8	.	24	22.1	3.57	.
Fluoride	0.345	.	0.298	.	6.7	0.38	1.19	.
Nitrate-N	1.53	.	1.5	.	1.8	1.4	<	.
Sulfate	27	.	26.2	.	27.6	25.9	<	.
Ion Charge Balance (RPD)	3.5	.	-0.3	.	-14.6	2.0	1.5	.
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Arsenic (PMS)	<	<	<	<	.	.	<	<
Arsenic	.	.	.	.	<	<	.	.
Barium	0.0931	0.0932	0.0902	0.0918	0.072	0.0918	0.251	0.261
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	0.0521	0.0834	<	<
Cadmium (PMS)	<	<	<	<	.	.	<	<
Cadmium	.	.	.	.	<	<	.	.
Chromium (PMS)	.	.	.	.	.	.	.	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.0961	<	0.0683	<	0.0138	0.0207	2.51	2.28
Lead (PMS)	<	<	<	<	.	.	<	<
Lead	.	.	.	.	<	<	.	.
Lithium	0.016	0.0148	0.0132	0.0157	0.0136	0.0171	<	<
Manganese	<	<	<	<	<	<	0.115	0.116
Mercury (CVAA)	<	<	<	<	.	.	<	<
Nickel (PMS)	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	<	<	<	.	.	<	<
Selenium	.	.	.	.	<	<	.	.
Silver	<	<	<	<	<	<	<	<
Strontium	0.674	0.688	0.652	0.675	0.521	0.699	1.73	1.82
Thallium (PMS)	<	<	<	<	.	.	<	<
Thallium	.	.	.	.	<	<	.	.
Uranium (PMS)	<	<	<	<	.	.	<	<
Uranium (KPA)	.	.	.	.	<	<	.	.
Zinc	<	<	<	<	0.0107	0.0196	0.0816	<
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-722-26							
Location	EXP-J							
Date Sampled	03/15/00		07/18/00		09/14/00		12/04/00	
Monitoring Program	GWPP		GWPP		WRRP		WRRP	
Type	DUP					DUP		DUP
	TOT	DIS	TOT	DIS	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	.	.	17.9	.	17	.	10.8	.
pH (standard units)	.	.	7.26	.	7.75	.	7.8	.
Conductivity (umho/cm)	.	.	193	.	863	.	174	.
Dissolved Oxygen (ppm)	.	.	3.71	.	7.33	.	14.2	.
Oxidation/Reduction (mV)	.	.	-97	.	157	.	131	.
Turbidity (NTU)	.	.	.	.	.	.	6	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.76	.	7.52	.	.	.	.	.
Conductivity (umho/cm)	448	.	453	.	.	.	.	.
Dissolved Solids (mg/L)	232	.	246	.	280	270	220	250
Suspended Solids (mg/L)	1	.	<	.	22	6	<	<
Turbidity (NTU)	8.57	.	6.63	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	59.4	56.9	56.4	58.2	48.8	59.5	49.3	54.2
Magnesium	22.2	22	21.7	22.3	19.8	24.2	20.9	22.3
Potassium	2.59	2.68	2.69	2.62	1.99	2.55	2.28	2.66
Sodium	3.01	3.25	3.12	3.06	2.32	2.89	3.23	3.44
Alkalinity-HCO3	238	.	250	.	244	217	218	218
Alkalinity-CO3	<	.	<	.	<	<	<	<
Chloride	3.78	.	4.2	.	4.2	4.1	3.6	3.5
Fluoride	1.19	.	1.21	.	2.4	2.8	1.3	1.3
Nitrate-N	<	.	<	.	<	<	0.024	<
Sulfate	<	.	<	.	0.99	0.76	0.29	<
Ion Charge Balance (RPD)	0.6	.	-3.7	.	-9.9	5.5	-1.8	2.5
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	<
Arsenic (PMS)	<	<	<	<	.	.	.	.
Arsenic	.	.	.	.	<	<	<	<
Barium	0.241	0.255	0.239	0.232	0.191	0.24	0.196	0.204
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	0.0374	0.0517	0.0822	0.0455
Cadmium (PMS)	<	<	0.000533	0.000556	.	.	.	.
Cadmium	.	.	.	.	<	<	<	<
Chromium (PMS)	.	.	.	.	.	.	.	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	1.63	2.23	2.68	2.63	0.617	1.78	0.37	1.42
Lead (PMS)	<	<	<	0.00114	.	.	.	.
Lead	.	.	.	.	<	<	<	<
Lithium	<	<	<	<	<	<	<	<
Manganese	0.122	0.113	0.118	0.12	0.126	0.135	0.143	0.123
Mercury (CVAA)	<	<	<	0.000804	.	.	.	.
Nickel (PMS)	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	<	<	<	.	.	.	.
Selenium	.	.	.	.	<	<	<	<
Silver	<	<	<	<	<	<	<	<
Strontium	1.68	1.77	1.69	1.72	1.42	1.79	1.45	1.58
Thallium (PMS)	<	<	<	<	.	.	.	.
Thallium	.	.	.	.	<	<	<	<
Uranium (PMS)	<	<	<	<	.	.	.	.
Uranium (KPA)	.	.	.	.	<	<	<	<
Zinc	0.202	<	0.112	<	0.0132	0.0129	DUP OUT	DUP OUT
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-722-30						GW-722-32	
Location	EXP-J						EXP-J	
Date Sampled	03/15/00		07/18/00		09/14/00	12/06/00	03/20/00	
Monitoring Program	GWPP		GWPP		WRRP	WRRP	GWPP	
Type								
	TOT	DIS	TOT	DIS	TOT	TOT	TOT	DIS
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	17.3	.	17	.	18.3	10.2	14.3	.
pH (standard units)	7.83	.	7.16	.	8.22	7.59	6.82	.
Conductivity (umho/cm)	245	.	282	.	293	163	165	.
Dissolved Oxygen (ppm)	2.14	.	7.31	.	5.91	14.9	4.7	.
Oxidation/Reduction (mV)	-27	.	-36	.	10	.	164	.
Turbidity (NTU)	.	.	.	.	.	17	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.92	.	7.93	.	.	.	7.46	.
Conductivity (umho/cm)	300	.	302	.	.	.	437	.
Dissolved Solids (mg/L)	155	.	168	.	190	150	235	.
Suspended Solids (mg/L)	3	.	<	.	5	<	6	.
Turbidity (NTU)	4.15	.	3.9	.	.	.	5.61	.
MAJOR IONS (mg/L)								
Calcium	38.4	37.6	38.1	36.6	37.7	38.6	73.1	71.5
Magnesium	14.8	14.6	14.9	14.4	15.2	14.7	10.8	10.6
Potassium	<	<	<	<	1.22	1.31	2.13	<
Sodium	0.605	1.27	0.598	0.968	0.56	0.666	3.1	3.11
Alkalinity-HCO3	139	.	142	.	139	140	212	.
Alkalinity-CO3	<	.	<	.	<	<	<	.
Chloride	1.97	.	2.57	.	2.8	2.3	3.32	.
Fluoride	0.209	.	0.174	.	1.1	0.21	<	.
Nitrate-N	<	.	<	.	0.027	0.14	0.653	.
Sulfate	8.41	.	8.28	.	8.8	9.1	10.7	.
Ion Charge Balance (RPD)	2.3	.	1.0	.	1.4	2.0	1.3	.
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	0.579	<
Arsenic (PMS)	<	<	<	<	.	.	<	<
Arsenic	.	.	.	.	<	<	.	.
Barium	0.0523	0.058	0.0474	0.0496	0.0494	0.0454	0.0345	0.0345
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	<	<
Cadmium (PMS)	<	<	<	<	.	.	<	<
Cadmium	.	.	.	.	<	<	.	.
Chromium (PMS)	.	.	.	.	.	.	.	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.295	0.149	0.257	0.116	0.145	0.043	0.818	<
Lead (PMS)	<	<	<	<	.	.	0.00116	<
Lead	.	.	.	.	<	<	.	.
Lithium	<	<	<	<	<	<	<	<
Manganese	0.00892	0.00871	0.00855	0.0093	0.0095	0.006	0.0129	<
Mercury (CVAA)	<	<	<	<	.	.	<	<
Nickel (PMS)	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	<	<	<	.	.	<	<
Selenium	.	.	.	.	<	<	.	.
Silver	<	<	<	<	<	<	<	<
Strontium	0.0835	0.124	0.0873	0.128	0.0681	0.0582	0.0705	0.073
Thallium (PMS)	<	<	<	<	.	.	<	<
Thallium	.	.	.	.	<	<	.	.
Uranium (PMS)	<	<	<	<	.	.	<	<
Uranium (KPA)	.	.	.	.	<	<	.	.
Zinc	<	<	<	<	<	<	<	<
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-722-32						GW-722-33	
Location	EXP-J						EXP-J	
Date Sampled	07/18/00		09/14/00			12/05/00	03/20/00	
Monitoring Program	GWPP		GWPP		WRRP	WRRP	GWPP	
Type								
	TOT	DIS	TOT	DIS	TOT	TOT	TOT	DIS
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	20.6	.	.	.	19.7	12.2	12	.
pH (standard units)	7.1	.	.	.	7.84	5.43	6.84	.
Conductivity (umho/cm)	188	.	.	.	303	274	326	.
Dissolved Oxygen (ppm)	4.73	.	.	.	6.77	13.17	7.9	.
Oxidation/Reduction (mV)	138	.	.	.	36	99	226	.
Turbidity (NTU)	.	.	.	.	.	17	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.45	.	.	.	.	.	7.53	.
Conductivity (umho/cm)	439	.	.	.	.	.	425	.
Dissolved Solids (mg/L)	250	.	.	.	150	280	218	.
Suspended Solids (mg/L)	<	.	.	.	5	<	3	.
Turbidity (NTU)	0.635	.	.	.	.	.	2.39	.
MAJOR IONS (mg/L)								
Calcium	69.8	69.5	.	.	68.9	78.3	69.1	71
Magnesium	11.6	11.7	.	.	13.6	15.9	9.97	10.2
Potassium	<	<	.	.	1.85	2.58	<	<
Sodium	2.95	2.97	.	.	2.74	3.68	3.03	3.14
Alkalinity-HCO3	212	.	.	.	209	240	206	.
Alkalinity-CO3	<	.	.	.	<	<	<	.
Chloride	3.97	.	.	.	4	3.7	3.35	.
Fluoride	<	.	.	.	0.58	0.11	<	.
Nitrate-N	0.796	.	.	.	0.99	0.91	0.619	.
Sulfate	11.2	.	.	.	12.6	11.2	10.9	.
Ion Charge Balance (RPD)	-0.8	.	.	.	0.7	2.3	-0.9	.
TRACE METALS (mg/L)								
Aluminum	<	<	.	.	<	<	<	<
Arsenic (PMS)	<	<	.	.	.	.	<	<
Arsenic	.	.	.	.	<	<	.	.
Barium	0.0309	0.032	.	.	0.0371	0.0432	0.0419	0.0358
Beryllium	<	<	.	.	<	<	<	<
Boron	<	<	.	.	<	<	<	<
Cadmium (PMS)	0.000529	0.000737	.	.	.	.	<	<
Cadmium	.	.	.	.	<	<	.	.
Chromium (PMS)	.	.	.	.	.	.	.	.
Chromium	<	<	.	.	<	<	<	<
Cobalt	<	<	.	.	<	<	<	<
Copper	<	<	.	.	<	<	<	<
Iron	0.0582	<	.	.	0.0759	0.0567	0.214	<
Lead (PMS)	<	<	.	.	.	.	0.0376	<
Lead	.	.	.	.	<	<	.	.
Lithium	<	<	.	.	<	<	<	<
Manganese	<	<	.	.	<	<	0.00609	<
Mercury (CVAA)	0.0289	<	<	<	.	.	<	<
Nickel (PMS)	.	.	.	.	.	.	.	.
Nickel	<	<	.	.	<	<	<	<
Selenium (PMS)	<	<	.	.	.	.	<	<
Selenium	.	.	.	.	<	<	.	.
Silver	<	<	.	.	<	<	<	<
Strontium	0.0698	0.0763	.	.	0.0676	0.0816	0.084	0.0784
Thallium (PMS)	<	<	.	.	.	.	<	<
Thallium	.	.	.	.	<	<	.	.
Uranium (PMS)	<	<	.	.	.	.	0.00136	<
Uranium (KPA)	.	.	.	.	<	<	.	.
Zinc	<	<	.	.	<	<	0.0825	<
ICP Dilution Factor	1	1	.	.	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-722-33				GW-733			GW-735
Location	EXP-J				EXP-J			EXP-J
Date Sampled	07/18/00		09/18/00	12/05/00	01/13/00	01/19/00	07/17/00	04/25/00
Monitoring Program	GWPP		WRRP	WRRP	WRRP	WRRP	WRRP	GWPP
Type								
	TOT	DIS	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	959.84	959.84	959.84	924.46
Depth to Water (ft)	.	.	.	.	57.56	57.68	58.33	22.69
Water-Level Elev. (ft)	.	.	.	.	902.28	902.16	901.51	901.77
Water Temp. (degrees C)	21	.	17.4	12.3	13.7	8.2	18.5	14.5
pH (standard units)	7.29	.	7.94	5.98	7.99	7.79	7.6	7.1
Conductivity (umho/cm)	189	.	422	254	278	310	355	614
Dissolved Oxygen (ppm)	2.21	.	6.4	11.91	2.03	2.54	3.61	0.3
Oxidation/Reduction (mV)	187	.	158	108	104	207	72	-4
Turbidity (NTU)	.	.	.	13	6	40	20	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.56	.	.	.	.	.	.	7.05
Conductivity (umho/cm)	425	.	.	.	.	.	.	668
Dissolved Solids (mg/L)	253	.	250	260	240	.	180	369
Suspended Solids (mg/L)	<	.	6	<	<	.	<	<
Turbidity (NTU)	7.74	.	.	.	.	.	.	2.51
MAJOR IONS (mg/L)								
Calcium	67.6	67.5	59.7	76.6	39.3	.	41.2	124
Magnesium	11.3	11.4	12.9	16.3	17.6	.	16.9	9.5
Potassium	<	<	2.44	6.06	2.22	.	1.97	2.45
Sodium	2.85	2.9	2.62	3.92	3.08	.	2.77	3.41
Alkalinity-HCO3	206	.	224	232	29.5	.	166	316
Alkalinity-CO3	<	.	<	<	<	.	<	<
Chloride	3.92	.	4.3	3.6	9.3	.	8.8	15.9
Fluoride	<	.	0.11	<	0.21	.	0.18	<
Nitrate-N	0.904	.	0.86	0.83	.	0.1	2.5	<
Sulfate	10.3	.	13.2	10.8	9	.	8.4	19.3
Ion Charge Balance (RPD)	-0.9	.	-7.9	4.4	54.8	.	-4.1	0.1
TRACE METALS (mg/L)								
Aluminum	0.468	<	<	<	<	.	<	<
Arsenic (PMS)	<	<	.	.	.	.	.	<
Arsenic	.	.	<	<	<	.	<	.
Barium	0.0357	0.0333	0.0432	0.046	0.0278	.	0.0244	0.4
Beryllium	<	<	<	<	<	.	<	<
Boron	<	<	<	<	0.0121	.	0.0103	<
Cadmium (PMS)	0.000572	0.000605	.	.	.	.	.	<
Cadmium	.	.	<	<	<	.	<	.
Chromium (PMS)	.	.	.	.	.	.	.	.
Chromium	<	<	<	<	<	.	<	<
Cobalt	<	<	<	<	<	.	<	<
Copper	<	<	<	<	<	.	<	<
Iron	0.648	<	0.0111	0.0696	0.065	.	0.055	0.319
Lead (PMS)	0.000978	<	.	.	.	.	.	<
Lead	.	.	<	<	<	.	<	.
Lithium	<	<	<	<	<	.	<	<
Manganese	0.0151	<	<	<	0.0438	.	<	0.464
Mercury (CVAA)	<	<	.	.	<	.	<	<
Nickel (PMS)	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	<	.	<	<
Selenium (PMS)	<	<	.	.	.	.	.	<
Selenium	.	.	<	<	<	.	<	.
Silver	<	<	<	<	<	.	<	<
Strontium	0.0844	0.0792	0.0614	0.0923	0.11	.	0.101	0.304
Thallium (PMS)	<	<	.	.	.	.	.	<
Thallium	.	.	<	<	<	.	<	.
Uranium (PMS)	<	<	.	.	.	.	.	<
Uranium (KPA)	.	.	<	<	<	.	<	.
Zinc	<	<	<	0.0123	<	.	<	<
ICP Dilution Factor	1	1	1	1	1	.	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-735			GW-744			GW-747	
Location	EXP-J			GRIDK1			GRIDK2	
Date Sampled	05/15/00	08/21/00	11/02/00	04/17/00	11/01/00		04/24/00	11/01/00
Monitoring Program	WRRP	WRRP	GWPP	GWPP	GWPP		GWPP	GWPP
Type						DUP		
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	924.46	924.46	924.46	907.62	907.62	.	921.13	921.13
Depth to Water (ft)	23.37	.	24.58	5.63	8.76	.	5.36	9.19
Water-Level Elev. (ft)	901.09	.	899.88	901.99	898.86	.	915.77	911.94
Water Temp. (degrees C)	16.4	16.7	15.2	17.3	18.4	.	14.6	18.2
pH (standard units)	7.08	7.01	6.86	8.11	8.44	.	7.61	7.51
Conductivity (umho/cm)	613	88300	688	405	427	.	422	401
Dissolved Oxygen (ppm)	2.49	7.42	1.49	1.38	1.09	.	1.34	2.68
Oxidation/Reduction (mV)	-29	13	151	-270	-244	.	146	153
Turbidity (NTU)	2	70	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	7.02	8.04	7.85	7.92	7.77	7.79
Conductivity (umho/cm)	.	.	773	429	457	458	404	413
Dissolved Solids (mg/L)	390	480	436	251	257	241	238	230
Suspended Solids (mg/L)	<	9	<	<	<	<	<	<
Turbidity (NTU)	.	.	1.06	0.666	0.398	0.399	0.945	0.376
MAJOR IONS (mg/L)								
Calcium	115	118	138	42.5	45.5	44.2	36.3	34.5
Magnesium	9.61	9.66	10.4	11.2	11.7	11.3	7.58	7.93
Potassium	2.98	2.95	2.35	3.54	3.6	3.43	2.06	2.14
Sodium	3.7	3.64	10.9	36	36.1	35	44.5	42.8
Alkalinity-HCO3	320	294	344	174	200	210	210	175
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	15.7	16.1	18.7	7.68	8.29	4.23	1.77	2.01
Fluoride	<	<	<	<	<	<	0.219	0.201
Nitrate-N	<	2.9	0.902	<	<	<	<	0.0607
Sulfate	20.5	19.9	36.8	10.8	11.8	6.6	14.1	14.7
Ion Charge Balance (RPD)	-3.6	-0.2	0.3	9.0	4.4	3.1	-1.4	5.1
TRACE METALS (mg/L)								
Aluminum	<	0.107	<	<	<	<	<	<
Arsenic (PMS)	.	.	<	<	<	<	<	<
Arsenic	<	<	.	.	.	.	.	.
Barium	0.414	0.409	0.332	0.278	0.29	0.285	0.149	0.149
Beryllium	<	<	<	<	<	<	<	<
Boron	0.0276	0.0256	<	<	<	<	<	<
Cadmium (PMS)	.	.	<	<	<	<	<	<
Cadmium	<	<	.	.	.	.	.	.
Chromium (PMS)	.	.	<	.	<	<	.	<
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.463	0.441	0.0624	0.12	0.0586	0.0594	0.09	0.0643
Lead (PMS)	.	.	<	<	<	<	<	<
Lead	<	<	.	.	.	.	.	.
Lithium	<	<	<	0.0277	0.0266	0.0257	0.0193	0.0194
Manganese	0.52	0.49	0.0126	0.0384	0.0362	0.0334	0.0173	0.0153
Mercury (CVAA)	.	.	<	<	<	<	<	<
Nickel (PMS)	.	.	<	.	<	<	.	<
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	.	.	<	<	<	<	<	<
Selenium	<	<	.	.	.	.	.	.
Silver	<	<	<	<	<	<	<	<
Strontium	0.306	0.306	0.284	1.31	1.32	1.28	0.488	0.493
Thallium (PMS)	.	.	<	<	<	<	<	<
Thallium	<	<	.	.	.	.	.	.
Uranium (PMS)	.	.	<	<	<	<	0.000878	<
Uranium (KPA)	<	<	.	.	.	.	.	.
Zinc	<	<	<	<	<	<	<	<
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-750		GW-762				GW-763	
Location	EXP-J		GRIDJ3				GRIDJ3	
Date Sampled	04/25/00	11/02/00	05/16/00		08/21/00		05/10/00	05/11/00
Monitoring Program	GWPP	GWPP	WRRP		WRRP		GWPP	GWPP
Type				DUP		DUP		
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	919.03	919.03	915.34	.	915.34	.	915.05	915.05
Depth to Water (ft)	12.18	15.54	13.86	.	23.40	.	9.71	9.71
Water-Level Elev. (ft)	906.85	903.49	901.48	.	891.94	.	905.34	905.34
Water Temp. (degrees C)	14.1	16.3	19.4	.	15.8	.	18.7	22.9
pH (standard units)	7.33	7.14	7.07	.	6.71	.	6.96	7.16
Conductivity (umho/cm)	485	473	512	.	647	.	766	786
Dissolved Oxygen (ppm)	0.25	0.92	2.14	.	2.37	.	0.2	5.27
Oxidation/Reduction (mV)	-35	59	123	.	207	.	141	-102
Turbidity (NTU)	.	.	0	.	32	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.3	7.42	.	.	.	.	6.68	6.86
Conductivity (umho/cm)	523	497	.	.	.	.	744	766
Dissolved Solids (mg/L)	281	270	460	510	470	740	364	397
Suspended Solids (mg/L)	<	<	<	<	<	5	41	61
Turbidity (NTU)	2.35	0.77	.	.	.	.	249	122
MAJOR IONS (mg/L)								
Calcium	83.5	74.2	84.1	82.5	78.4	89.1	109	129
Magnesium	11.6	12	24.9	24.4	23.6	27.1	14.5	13.3
Potassium	4.45	4.88	5.05	3.68	3.77	4.39	<	<
Sodium	6.16	6.74	9.68	9.42	9.31	10.7	15.3	12.1
Alkalinity-HCO3	250	242	284	260	236	224	266	298
Alkalinity-CO3	<	<	<	<	8	<	<	<
Chloride	4.75	5.21	41.3	40.1	42.4	42.9	71.3	56
Fluoride	<	<	<	<	<	<	0.212	0.158
Nitrate-N	<	<	1	2.1	2.8	2.7	<	<
Sulfate	18.8	15.4	16	16	15.8	15.8	0.895	1.38
Ion Charge Balance (RPD)	-0.2	-1.9	-2.7	-0.2	-1.9	7.8	-0.4	3.1
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	<	1.09
Arsenic (PMS)	<	<	.	.	.	.	<	<
Arsenic	.	.	<	<	<	<	.	.
Barium	0.738	0.713	0.552	0.541	0.525	0.601	0.0515	0.0929
Beryllium	<	<	<	<	<	<	<	<
Boron	<	0.106	0.0789	0.0741	0.0741	0.084	<	<
Cadmium (PMS)	<	<	.	.	.	.	<	<
Cadmium	.	.	<	<	<	<	.	.
Chromium (PMS)	.	<	.	.	.	.	.	.
Chromium	<	<	<	<	<	<	<	0.0256
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.209	0.0965	0.0284	0.0247	0.0268	0.0266	26.9	27.4
Lead (PMS)	<	0.000815	.	.	.	.	0.00172	0.0033
Lead	.	.	<	<	<	<	.	.
Lithium	0.01	<	0.0237	0.0165	0.0153	0.0177	<	<
Manganese	0.0574	0.0484	0.0617	0.0607	0.0559	0.0638	0.787	1.18
Mercury (CVAA)	<	<	.	.	.	.	<	<
Nickel (PMS)	.	<	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	<	.	.	.	.	<	<
Selenium	.	.	<	<	<	<	.	.
Silver	<	<	<	<	<	<	<	<
Strontium	0.677	0.705	0.762	0.746	0.732	0.839	0.216	0.255
Thallium (PMS)	<	<	.	.	.	.	0.000979	0.000592
Thallium	.	.	<	<	<	<	.	.
Uranium (PMS)	<	<	.	.	.	.	<	0.00129
Uranium (KPA)	.	.	<	<	<	<	.	.
Zinc	<	<	<	<	<	<	<	<
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-763		GW-769		GW-770			GW-782
Location	GRIDJ3		GRIDG3		GRIDG3			GRIDE3
Date Sampled	10/10/00	10/11/00	04/27/00	10/03/00	04/26/00	10/02/00		05/01/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP		GWPP
Type							DUP	
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	915.05	915.05	944.44	944.44	944.71	944.71	.	947.76
Depth to Water (ft)	10.24	10.30	8.46	11.09	10.22	14.10	.	9.61
Water-Level Elev. (ft)	904.81	904.75	935.98	933.35	934.49	930.61	.	938.15
Water Temp. (degrees C)	22.6	21	19	.	16.6	.	.	17.5
pH (standard units)	6.78	6.65	7.33	.	7.02	.	.	7.38
Conductivity (umho/cm)	820	837	527	.	326	.	.	642
Dissolved Oxygen (ppm)	0.65	4.43	0.74	.	4.3	.	.	0.46
Oxidation/Reduction (mV)	123	-65	123	.	113	.	.	81
Turbidity (NTU)	.	.	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	6.8	6.78	7.43	7.51	7.24	7.24	7.3	7.42
Conductivity (umho/cm)	760	775	486	475	338	396	396	540
Dissolved Solids (mg/L)	401	408	278	282	197	242	245	315
Suspended Solids (mg/L)	31	66	<	<	<	<	<	2
Turbidity (NTU)	157	167	0.162	0.187	1.41	4.72	5.36	12.9
MAJOR IONS (mg/L)								
Calcium	107	111	79	76	54.3	62	65.4	80.6
Magnesium	15	15.1	8.91	9.92	4.78	5.25	5.52	16
Potassium	<	<	2.74	2.93	2.13	2.36	2.69	4.99
Sodium	15.5	14.5	8.06	7.38	5.94	7.77	8.15	10.1
Alkalinity-HCO3	264	276	214	202	129	154	157	240
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	69.1	70.2	11.7	16.1	7.29	11.1	11.5	12.3
Fluoride	0.253	0.236	<	<	0.199	0.266	0.268	<
Nitrate-N	<	<	0.269	0.0997	0.572	0.738	0.721	0.197
Sulfate	1.09	0.86	18.1	20.8	23.1	25.6	25.6	19.5
Ion Charge Balance (RPD)	-0.1	-0.8	0.9	0.7	1.5	-0.8	1.0	3.0
TRACE METALS (mg/L)								
Aluminum	<	1.62	<	<	<	<	<	<
Arsenic (PMS)	<	<	<	<	<	<	<	<
Arsenic	.	.	.	.	.	.	.	.
Barium	0.0543	0.0683	0.378	0.407	0.0584	0.0709	0.0724	0.61
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	<	0.119
Cadmium (PMS)	<	<	<	<	<	<	<	<
Cadmium	.	.	.	.	.	.	.	.
Chromium (PMS)	<	<	.	<	.	0.132	0.0402	.
Chromium	<	<	<	<	<	0.0804	0.0355	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	23.8	25.7	<	<	0.104	1.71	0.71	1.17
Lead (PMS)	<	0.00128	<	<	<	0.000662	<	0.000772
Lead	.	.	.	.	.	.	.	.
Lithium	<	<	0.0135	0.0169	<	<	<	0.0211
Manganese	0.84	0.986	<	0.00964	<	0.0355	0.0192	0.0519
Mercury (CVAA)	<	<	<	<	<	<	<	<
Nickel (PMS)	<	<	.	<	.	0.101	0.0841	.
Nickel	<	<	<	<	0.0815	0.0861	0.0839	<
Selenium (PMS)	<	<	<	<	<	<	<	<
Selenium	.	.	.	.	.	.	.	.
Silver	<	<	<	<	<	<	<	<
Strontium	0.227	0.229	0.36	0.401	0.0804	0.0912	0.0953	1.14
Thallium (PMS)	<	<	<	<	<	<	<	0.000783
Thallium	.	.	.	.	.	.	.	.
Uranium (PMS)	<	<	<	<	0.00112	0.00179	0.00158	0.00202
Uranium (KPA)	.	.	.	.	.	.	.	.
Zinc	<	<	<	<	<	<	<	<
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-782	GW-783	GW-789			GW-791		
Location	GRIDE3	GRIDE3	GRIDF3			GRIDD2		
Date Sampled	10/03/00	05/01/00	04/26/00		10/02/00	05/02/00	05/03/00	10/03/00
Monitoring Program	GWPP	GWPP	GWPP		GWPP	GWPP	GWPP	GWPP
Type				DUP				
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	947.76	948.49	937.48	.	937.48	992.16	992.16	992.16
Depth to Water (ft)	8.99	10.60	3.67	.	3.85	23.37	23.51	23.83
Water-Level Elev. (ft)	938.77	937.89	933.81	.	933.63	968.79	968.65	968.33
Water Temp. (degrees C)	.	16.9	15.1	.	.	19.9	22.5	.
pH (standard units)	.	7.45	7.44	.	.	7.33	7.43	.
Conductivity (umho/cm)	.	433	440	.	.	481	468	.
Dissolved Oxygen (ppm)	.	5.2	1.19	.	.	0.66	2.52	.
Oxidation/Reduction (mV)	.	80	166	.	.	7	90	.
Turbidity (NTU)	.	.	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.42	.	7.64	7.64	7.67	7.41	7.52	7.6
Conductivity (umho/cm)	545	.	419	423	423	447	456	437
Dissolved Solids (mg/L)	313	.	245	255	253	262	271	236
Suspended Solids (mg/L)	3	.	<	<	<	<	<	<
Turbidity (NTU)	13.6	.	0.495	0.5	0.175	0.587	0.944	0.641
MAJOR IONS (mg/L)								
Calcium	77.3	.	62.5	62.2	62.1	68.2	71.1	63.9
Magnesium	17.3	.	10.9	10.8	12	14.2	13.9	14.8
Potassium	5.24	.	2.9	2.92	3.3	<	<	2.21
Sodium	8.7	.	5.86	5.82	6.01	7.56	7.41	7.52
Alkalinity-HCO3	268	.	180	184	182	218	214	220
Alkalinity-CO3	<	.	<	<	<	<	<	<
Chloride	13.6	.	8.81	8.7	10.2	6.07	6.68	6.3
Fluoride	<	.	<	<	0.116	<	<	<
Nitrate-N	<	.	0.897	0.903	0.824	<	<	<
Sulfate	17.4	.	18	17.9	18.4	10.4	11.2	10.3
Ion Charge Balance (RPD)	-2.6	.	0.7	-0.5	0.7	1.6	3.2	0.0
TRACE METALS (mg/L)								
Aluminum	<	.	<	<	<	<	<	<
Arsenic (PMS)	<	.	<	<	<	<	<	<
Arsenic	.	.	.	.	.	.	.	.
Barium	0.584	.	0.353	0.352	0.374	0.27	0.261	0.266
Beryllium	<	.	<	<	<	<	<	<
Boron	0.123	.	<	<	<	<	<	<
Cadmium (PMS)	<	.	<	<	<	<	<	<
Cadmium	.	.	.	.	.	.	.	.
Chromium (PMS)	<	.	.	.	<	.	.	<
Chromium	<	.	<	<	<	<	<	<
Cobalt	<	.	<	<	<	<	<	<
Copper	<	.	<	<	<	<	<	<
Iron	1.86	.	<	<	<	0.0899	0.127	0.0966
Lead (PMS)	<	.	<	<	<	<	<	<
Lead	.	.	.	.	.	.	.	.
Lithium	0.0199	.	0.0111	0.0107	0.014	0.0135	0.0137	0.0126
Manganese	0.0558	.	<	<	0.00538	0.0175	0.017	0.019
Mercury (CVAA)	<	.	<	<	<	<	<	<
Nickel (PMS)	<	.	.	.	<	.	.	<
Nickel	<	.	<	<	<	<	<	<
Selenium (PMS)	<	.	<	<	<	<	<	<
Selenium	.	.	.	.	.	.	.	.
Silver	<	.	<	<	<	<	<	<
Strontium	1.16	.	0.318	0.317	0.335	0.425	0.379	0.44
Thallium (PMS)	<	.	<	<	<	<	<	<
Thallium	.	.	.	.	.	.	.	.
Uranium (PMS)	0.00142	.	<	0.000655	<	<	<	<
Uranium (KPA)	.	.	.	.	.	.	.	.
Zinc	<	.	<	<	<	<	<	<
ICP Dilution Factor	1	.	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	GW-791	GW-816		GW-820			GW-832	
Location	GRIDD2	EXP-SR		B9201-2			NHP	
Date Sampled	10/04/00	04/10/00	11/08/00	06/13/00	10/26/00		05/17/00	08/23/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP		WRRP	WRRP
Type						DUP		
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	992.16	898.41	898.41	929.57	929.57	.	906.18	906.18
Depth to Water (ft)	23.92	12.82	14.36	9.63	9.84	.	8.05	7.17
Water-Level Elev. (ft)	968.24	885.59	884.05	919.94	919.73	.	898.13	899.01
Water Temp. (degrees C)	.	14.5	18.4	19.9	21.6	.	19.5	19.5
pH (standard units)	.	6.81	6.53	7.16	7.33	.	7.37	7.31
Conductivity (umho/cm)	.	423	450	477	552	.	384	450
Dissolved Oxygen (ppm)	.	0.76	4.29	0.62	0.91	.	4.64	5.42
Oxidation/Reduction (mV)	.	-95	-40	-97	-110	.	166	214
Turbidity (NTU)	.	.	.	.	.	.	21	25
MISCELLANEOUS ANALYTES								
pH (standard units)	7.46	6.88	6.98	7.6	7.39	7.45	.	.
Conductivity (umho/cm)	453	441	424	494	527	526	.	.
Dissolved Solids (mg/L)	277	240	208	315	301	300	320	280
Suspended Solids (mg/L)	1	30	20	<	<	<	<	6
Turbidity (NTU)	3.12	158	171	9.08	16.5	17.2	.	.
MAJOR IONS (mg/L)								
Calcium	66.5	54.4	52.6	69.9	73.1	73.1	55	46.2
Magnesium	14.5	16.8	11.7	11.2	12	11.9	12.6	11.7
Potassium	2.07	4.2	5.65	2.52	2.59	2.58	2.3	1.95
Sodium	7.22	4.28	5.65	10.8	13	13	13	10.6
Alkalinity-HCO3	228	200	204	180	188	202	160	120
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	6.99	8.77	8.19	21.6	29.4	27.3	15.1	13.8
Fluoride	<	0.105	<	0.225	0.222	0.206	0.27	0.38
Nitrate-N	<	<	<	<	<	<	1.9	4.4
Sulfate	11.1	11	1.26	36.3	40.1	40.7	31.3	34
Ion Charge Balance (RPD)	-1.1	-1.0	-4.3	-0.3	-1.6	-3.7	1.3	-0.7
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	<	0.0729	0.135
Arsenic (PMS)	<	0.00574	<	<	<	<	.	.
Arsenic	.	.	.	.	.	.	<	<
Barium	0.266	0.125	0.385	0.21	0.227	0.226	0.0493	0.0423
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	0.0534	0.0374
Cadmium (PMS)	<	<	<	<	<	<	.	.
Cadmium	.	.	.	.	.	.	<	<
Chromium (PMS)	<	.	<	.	<	<	.	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.597	23.2	15.2	0.714	1.19	1.19	0.169	0.213
Lead (PMS)	<	0.000601	<	<	<	<	.	.
Lead	.	.	.	.	.	.	<	<
Lithium	0.0126	<	<	<	<	<	0.0186	0.0109
Manganese	0.0199	0.783	0.976	0.817	0.797	0.79	0.0214	0.0262
Mercury (CVAA)	<	<	<	<	<	<	.	.
Nickel (PMS)	<	.	<	.	<	<	.	.
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	<	<	<	<	<	.	.
Selenium	.	.	.	.	.	.	<	<
Silver	<	<	<	<	<	<	<	<
Strontium	0.384	0.0836	0.108	0.272	0.267	0.266	0.117	0.111
Thallium (PMS)	<	<	<	<	0.000662	0.000579	.	.
Thallium	.	.	.	.	.	.	<	<
Uranium (PMS)	<	<	<	<	<	<	.	.
Uranium (KPA)	.	.	.	.	.	.	0.00538	0.00452
Zinc	<	<	<	<	<	<	0.0111	0.012
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	LRSPW			NPR07.0SW				NPR10.0SW
Location	EXP-SW			EXP-NPR				EXP-NPR
Date Sampled	04/18/00		12/19/00	04/19/00		11/09/00		05/24/00
Monitoring Program	GWPP		GWPP	GWPP		GWPP		GWPP
Type		DUP						
	TOT	TOT	TOT	TOT	DIS	TOT	DIS	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	16	.	11.7	12	.	15.8	.	16.9
pH (standard units)	7.1	.	7.24	7.51	.	7.19	.	6.42
Conductivity (umho/cm)	807	.	616	430	.	231	.	144
Dissolved Oxygen (ppm)	5.32	.	2.58	7.02	.	5.44	.	6.52
Oxidation/Reduction (mV)	177	.	204	196	.	180	.	173
Turbidity (NTU)	.	.	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	7.3	7.23	7.52	7.44	.	7.33	.	6.16
Conductivity (umho/cm)	447	437	439	99.4	.	176.5	.	39.4
Dissolved Solids (mg/L)	239	245	256	58	.	109	.	53
Suspended Solids (mg/L)	2	<	1	<	.	1	.	3
Turbidity (NTU)	3.61	3.21	1.09	1.53	.	5.68	.	8.45
MAJOR IONS (mg/L)								
Calcium	63.9	65.9	55	7.65	7.35	12.8	12.8	2.18
Magnesium	10.2	10.3	11.8	4.7	4.49	7.34	7.31	1.26
Potassium	2.14	2.28	2.09	3.1	2.93	5.71	5.71	2.79
Sodium	9.72	7.84	14.8	2.43	2.34	3.07	3.19	0.822
Alkalinity-HCO3	180	168	159	35.8	.	56	.	3.34
Alkalinity-CO3	<	<	<	<	.	<	.	<
Chloride	11.2	11.1	24.4	1.07	.	1.6	.	1.19
Fluoride	0.261	0.225	0.234	<	.	<	.	<
Nitrate-N	1.56	1.5	1.5	<	.	<	.	<
Sulfate	25.4	22.7	26.6	11.1	.	14.6	.	9.27
Ion Charge Balance (RPD)	-0.7	3.1	-1.4	-1.2	.	1.8	.	4.3
TRACE METALS (mg/L)								
Aluminum	<	<	<	<	<	0.215	<	0.471
Arsenic (PMS)	<	<	<	<	<	<	<	<
Arsenic	.	.	.	.	.	.	.	.
Barium	0.0526	0.0529	0.0544	0.0491	0.0463	0.0722	0.0702	0.0362
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	<	<
Cadmium (PMS)	<	<	<	<	<	<	<	<
Cadmium	.	.	.	.	.	.	.	.
Chromium (PMS)	.	.	<	.	.	<	<	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	<
Iron	0.136	0.0564	0.0649	0.0551	<	0.57	0.186	0.359
Lead (PMS)	DUP OUT	DUP OUT	0.000633	<	<	<	0.000662	<
Lead	.	.	.	.	.	.	.	.
Lithium	0.0158	0.0111	0.0112	<	<	<	<	<
Manganese	0.0108	<	0.00732	0.0115	0.0114	0.0645	0.0488	0.00913
Mercury (CVAA)	<	<	<	<	<	<	<	<
Nickel (PMS)	.	.	<	.	.	<	<	.
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	<	<	<	<	<	<	<
Selenium	.	.	.	.	.	.	.	.
Silver	<	<	<	<	<	<	<	<
Strontium	0.123	0.127	0.134	0.0431	0.0412	0.0735	0.0733	0.0132
Thallium (PMS)	<	<	<	<	<	<	<	<
Thallium	.	.	.	.	.	.	.	.
Uranium (PMS)	0.00906	0.0081	0.00908	<	<	<	<	<
Uranium (KPA)	.	.	.	.	.	.	.	.
Zinc	<	<	<	<	<	<	<	<
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	NPR10.0SW	NPR12.0SW						OF 51
Location	EXP-NPR	EXP-NPR						EXP-SW
Date Sampled	05/24/00	04/19/00		11/09/00				04/10/00
Monitoring Program	GWPP	GWPP		GWPP				WRRP
Type						DUP		
	DIS	TOT	DIS	TOT	DIS	TOT	DIS	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	.	12	.	15.8	.	.	.	14.52
pH (standard units)	.	7.44	.	7.1	.	.	.	6.78
Conductivity (umho/cm)	.	103	.	149	.	.	.	482
Dissolved Oxygen (ppm)	.	7.26	.	5.05	.	.	.	6.67
Oxidation/Reduction (mV)	.	120	.	191	.	.	.	165
Turbidity (NTU)	.	.	.	.	.	.	.	.
MISCELLANEOUS ANALYTES								
pH (standard units)	.	7.54	.	7.28	.	7.36	.	.
Conductivity (umho/cm)	.	98.5	.	157.8	.	160	.	.
Dissolved Solids (mg/L)	.	63	.	106	.	97	.	270
Suspended Solids (mg/L)	.	5	.	33	.	36	.	5.6
Turbidity (NTU)	.	2.36	.	17.6	.	17.8	.	.
MAJOR IONS (mg/L)								
Calcium	2.13	7.77	7.73	12.5	14.1	13.3	13.9	52.8
Magnesium	1.2	4.05	4.01	6.46	6.38	6.85	6.32	25.1
Potassium	2.62	2.9	2.77	5.48	5.45	5.94	5.17	1.42
Sodium	0.796	2.65	2.63	3.35	3.34	3.38	3.2	4.02
Alkalinity-HCO3	.	35.6	.	62.4	.	59	.	214
Alkalinity-CO3	.	<	.	<	.	<	.	<
Chloride	.	0.92	.	1.42	.	1.47	.	6.3
Fluoride	.	<	.	<	.	<	.	<
Nitrate-N	.	<	.	<	.	<	.	5
Sulfate	.	8.93	.	10.6	.	10.6	.	11.8
Ion Charge Balance (RPD)	.	-0.7	.	-2.3	.	2.9	.	2.2
TRACE METALS (mg/L)								
Aluminum	0.22	<	<	0.67	<	1.77	<	0.0653
Arsenic (PMS)	<	<	<	<	<	<	<	.
Arsenic	.	.	.	.	.	.	.	<
Barium	0.0326	0.049	0.046	0.0867	0.0691	0.118	0.068	0.0819
Beryllium	<	<	<	<	<	<	<	<
Boron	<	<	<	<	<	<	<	0.0179
Cadmium (PMS)	<	<	<	<	<	<	<	.
Cadmium	.	.	.	.	.	.	.	<
Chromium (PMS)	.	.	.	<	<	<	<	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	<	<	<	<	<	<	<	0.0269
Iron	0.187	0.191	<	1.24	0.217	3.83	0.215	0.0847
Lead (PMS)	<	<	<	0.000641	<	0.00162	<	.
Lead	.	.	.	.	.	.	.	<
Lithium	<	<	<	<	<	<	<	<
Manganese	0.00719	0.00988	0.00529	0.22	0.0855	0.435	0.0742	0.0181
Mercury (CVAA)	<	<	<	<	<	<	<	0.0012
Nickel (PMS)	.	.	.	<	<	0.00628	<	.
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	<	<	<	<	<	<	<	.
Selenium	.	.	.	.	.	.	.	<
Silver	<	<	<	<	<	<	<	<
Strontium	0.0125	0.0372	0.0371	0.0623	0.0621	0.0661	0.0612	0.0714
Thallium (PMS)	<	<	<	<	<	<	<	.
Thallium	.	.	.	.	.	.	.	<
Uranium (PMS)	<	<	<	<	<	0.000517	<	.
Uranium (KPA)	.	.	.	.	.	.	.	0.0068
Zinc	<	<	<	<	<	<	<	<
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	OF 51	OF 200						OF 221
Location	EXP-SW	EXP-SW						EXP-SW
Date Sampled	09/19/00	03/20/00		04/10/00		09/19/00		03/20/00
Monitoring Program	WRRP	WRRP		WRRP		WRRP		WRRP
Type			DUP		DUP		DUP	
	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	22.8	15.7	.	18.3	.	17.2	.	15.3
pH (standard units)	8.27	6.65	.	7.58	.	8	.	6.55
Conductivity (umho/cm)	178	162000	.	398	.	56	.	306
Dissolved Oxygen (ppm)	7.5	8.61	.	8.39	.	8.83	.	.
Oxidation/Reduction (mV)	144	.	.	130	.	86	.	.
Turbidity (NTU)	3	0	.	.	.	12	.	0
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	270	220	240	250	200	240	220	480
Suspended Solids (mg/L)	<	<	<	<	<	<	11	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	48.1	56.5	57.6	49.3	49.5	44.1	44.7	108
Magnesium	17.6	9.98	10.1	9.36	9.47	11.4	11.5	16.3
Potassium	1.5	2.46	2.47	2.48	2.41	2.23	2.41	3.71
Sodium	6.82	10	10.1	7.79	7.76	9.29	9.46	19.1
Alkalinity-HCO3	162	122	118	102	116	130	140	195
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	8.7	14.9	15	16.6	16.9	15.8	15.5	34.2
Fluoride	0.21	0.76	0.73	0.78	0.83	1.2	1.2	0.72
Nitrate-N	4.9	8.7	8.7	6	6	3.6	3.5	.
Sulfate	24.7	28.6	28.7	27.1	27	32.3	32.5	35.6
Ion Charge Balance (RPD)	-2.1	0.3	2.0	7.7	3.5	-5.7	-7.3	15.2
TRACE METALS (mg/L)								
Aluminum	<	0.177	0.176	<	<	0.0548	0.0605	<
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	<	<	<	<	<
Barium	0.0644	0.0581	0.0585	0.0528	0.0531	0.0449	0.0457	0.0962
Beryllium	<	<	<	<	<	<	<	<
Boron	0.0344	0.486	0.494	0.72	0.722	0.83	0.836	6.9
Cadmium (PMS)	.	.	.	.	.	.	.	.
Cadmium	<	0.0011	0.0011	0.0012	0.0012	<	<	0.0013
Chromium (PMS)	.	.	.	.	.	.	.	.
Chromium	<	<	<	<	<	<	<	<
Cobalt	<	<	<	<	<	<	<	<
Copper	0.0109	0.0066	0.0063	0.0067	0.0067	<	<	<
Iron	0.0466	0.27	0.262	0.149	0.147	0.0317	0.0386	0.0856
Lead (PMS)	.	.	.	.	.	.	.	.
Lead	<	<	<	<	<	<	<	<
Lithium	0.0125	0.133	0.137	0.2	0.201	0.233	0.236	1.82
Manganese	0.0124	0.0975	0.0999	0.0934	0.0934	0.0237	0.0246	0.146
Mercury (CVAA)	.	0.001	0.00099	0.00069	0.0007	.	.	<
Nickel (PMS)	.	.	.	.	.	.	.	.
Nickel	<	<	<	<	<	<	<	<
Selenium (PMS)	.	.	.	.	.	.	.	.
Selenium	<	<	<	<	<	<	<	<
Silver	<	<	<	<	<	<	<	<
Strontium	0.113	0.138	0.14	0.119	0.119	0.13	0.132	0.288
Thallium (PMS)	.	.	.	.	.	.	.	.
Thallium	<	<	<	<	<	<	<	0.0023
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	0.011	0.17	0.18	0.0589	0.0571	0.0102	0.00967	0.112
Zinc	<	0.0761	0.0765	0.0385	0.0391	0.0735	0.0987	0.0432
ICP Dilution Factor	1	1	1	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	OF 221	OF 225		SCR7.1			SCR7.18SP	
Location	EXP-SW	EXP-SW		EXP-UV			EXP-UV	
Date Sampled	09/19/00	03/20/00	09/19/00	01/19/00	05/30/00	09/06/00	01/19/00	05/30/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	20.4	15.3	20.9	6.7	15.4	16.3	7.7	17
pH (standard units)	9.12	6.5	8.78	6.89	8.56	9.22	6.5	8.46
Conductivity (umho/cm)	1230	318	1340	160	234	225	198	344
Dissolved Oxygen (ppm)	9.03	.	8.81	16.72	11.12	11.96	15.73	10.03
Oxidation/Reduction (mV)	61	.	39	.	.	160	.	.
Turbidity (NTU)	0	84	1	27	2	200	35	20
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	1500	500	1200	140	240	290	170	360
Suspended Solids (mg/L)	5	<	<	<	<	17	<	5
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	198	98.1	289	.	.	.	.	.
Magnesium	31.1	16.2	42	.	.	.	.	.
Potassium	3.57	4.91	3.24	.	.	.	.	.
Sodium	20.2	27.5	21	.	.	.	.	.
Alkalinity-HCO3	205	220	209	117	200	197	114	220
Alkalinity-CO3	<	<	<	<	<	<	<	<
Chloride	33	54.2	33.3	4.6	5.6	4.6	19.6	32.1
Fluoride	0.59	1.1	0.67	0.11	<	0.48	<	<
Nitrate-N	.	.	.	0.41	0.56	0.39	0.36	0.17
Sulfate	53.6	39.1	54.9	35.6	22	16.6	53.1	48.1
Ion Charge Balance (RPD)	.	5.2	.	.	.	.	.	.
TRACE METALS (mg/L)								
Aluminum	0.869	<	1.26	.	.	.	.	.
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	<	<	<	.	.	.	.	.
Barium	0.193	0.0859	0.284	.	.	.	.	.
Beryllium	<	<	<	.	.	.	.	.
Boron	3.63	12.7	1.91	.	.	.	.	.
Cadmium (PMS)	.	.	.	.	.	.	.	.
Cadmium	0.0038	<	0.0106	.	.	.	.	.
Chromium (PMS)	.	.	.	.	.	.	.	.
Chromium	<	<	<	.	.	.	.	.
Cobalt	<	<	0.0051	.	.	.	.	.
Copper	0.0058	<	0.02	.	.	.	.	.
Iron	0.299	0.0575	1.51	.	.	.	.	.
Lead (PMS)	.	.	.	.	.	.	.	.
Lead	<	<	0.0055	.	.	.	.	.
Lithium	1.18	3.24	0.714	.	.	.	.	.
Manganese	0.609	0.0565	2.24	.	.	.	.	.
Mercury (CVAA)	<	<	0.0002	.	.	.	.	.
Nickel (PMS)	.	.	.	.	.	.	.	.
Nickel	0.0199	<	0.0519	.	.	.	.	.
Selenium (PMS)	.	.	.	.	.	.	.	.
Selenium	<	<	<	.	.	.	.	.
Silver	<	<	<	.	.	.	.	.
Strontium	0.57	0.274	0.639	.	.	.	.	.
Thallium (PMS)	.	.	.	.	.	.	.	.
Thallium	0.0026	0.0033	0.0022	.	.	.	.	.
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	0.0439	0.06	0.0349	.	.	.	.	.
Zinc	0.235	0.0632	0.412	.	.	.	.	.
ICP Dilution Factor	1	1	1	.	.	.	.	.

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	SCR7.8SP			SP-17		STATION 17		
Location	EXP-UV			EXP-SW		EXP-SW		
Date Sampled	01/19/00	05/30/00	09/06/00	04/10/00	09/19/00	03/20/00	04/10/00	09/19/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type	TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
FIELD MEASUREMENTS								
Measuring Pt. Elev. (ft)	.	.	.	.	.	.	.	.
Depth to Water (ft)	.	.	.	.	.	.	.	.
Water-Level Elev. (ft)	.	.	.	.	.	.	.	.
Water Temp. (degrees C)	7.8	15.1	17.8	13.71	19.3	13.8	14.48	.
pH (standard units)	6.13	9.19	8.54	6.81	8.28	5.98	7.64	8.81
Conductivity (umho/cm)	154	187	201	528	152	136000	306	164
Dissolved Oxygen (ppm)	15.7	11.35	11.31	4.51	8.88	9.6	10.64	8.62
Oxidation/Reduction (mV)	.	.	112	171	88	.	156	63
Turbidity (NTU)	45	10	15	.	26	13	.	15
MISCELLANEOUS ANALYTES								
pH (standard units)	.	.	.	.	.	.	.	.
Conductivity (umho/cm)	.	.	.	.	.	.	.	.
Dissolved Solids (mg/L)	170	170	260	260	200	160	180	190
Suspended Solids (mg/L)	<	<	9	<	6	<	10	<
Turbidity (NTU)	.	.	.	.	.	.	.	.
MAJOR IONS (mg/L)								
Calcium	.	.	.	47.6	27.2	45.1	36.8	34.7
Magnesium	.	.	.	28.1	13.5	9.41	8.63	11
Potassium	.	.	.	0.959	1.16	2.15	2.21	1.75
Sodium	.	.	.	2.65	4.23	8.12	6.9	9.73
Alkalinity-HCO3	124	164	191	214	110	104	97	116
Alkalinity-CO3	<	<	<	<	<	<	<	7.9
Chloride	6.1	5.6	6.2	6	6.9	11.3	11.8	11.4
Fluoride	<	<	0.31	<	0.15	0.42	0.28	0.35
Nitrate-N	0.59	0.76	1.4	8.2	1.9	3	<	1.3
Sulfate	19.6	7.4	6.6	4.4	20.3	21.8	21.9	31
Ion Charge Balance (RPD)	.	.	.	3.1	-5.0	5.3	2.8	-6.9
TRACE METALS (mg/L)								
Aluminum	.	.	.	<	0.216	0.344	0.714	0.169
Arsenic (PMS)	.	.	.	.	.	.	.	.
Arsenic	.	.	.	<	<	<	<	<
Barium	.	.	.	0.112	0.0661	0.0469	0.0457	0.041
Beryllium	.	.	.	<	<	<	<	<
Boron	.	.	.	<	0.0131	0.0257	0.0197	0.0188
Cadmium (PMS)	.	.	.	.	.	.	.	.
Cadmium	.	.	.	<	<	<	<	<
Chromium (PMS)	.	.	.	.	.	.	.	.
Chromium	.	.	.	<	<	<	<	<
Cobalt	.	.	.	<	<	<	<	<
Copper	.	.	.	<	<	<	0.0051	<
Iron	.	.	.	0.0209	0.252	0.421	0.929	0.206
Lead (PMS)	.	.	.	.	.	.	.	.
Lead	.	.	.	<	<	<	<	<
Lithium	.	.	.	<	<	<	<	<
Manganese	.	.	.	0.0275	0.0179	0.0645	0.0665	0.0615
Mercury (CVAA)	.	.	.	<	.	0.00049	0.00039	.
Nickel (PMS)	.	.	.	.	.	.	.	.
Nickel	.	.	.	<	<	<	<	<
Selenium (PMS)	.	.	.	.	.	.	.	.
Selenium	.	.	.	<	<	<	<	<
Silver	.	.	.	<	<	<	<	<
Strontium	.	.	.	0.0318	0.0377	0.101	0.0835	0.113
Thallium (PMS)	.	.	.	.	.	.	.	.
Thallium	.	.	.	<	<	<	<	<
Uranium (PMS)	.	.	.	.	.	.	.	.
Uranium (KPA)	.	.	.	<	<	0.04	0.0145	<
Zinc	.	.	.	<	<	0.0322	0.0199	0.0216
ICP Dilution Factor	.	.	.	1	1	1	1	1

(Continued)

APPENDIX F.1: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Field Measurements, Miscellaneous Analytes, Major Ions, and Trace Metals

Sampling Point	STATION 8		
Location	EXP-SW		
Date Sampled	03/20/00	04/10/00	09/19/00
Monitoring Program	WRRP	WRRP	WRRP
Type	TOT	TOT	TOT
FIELD MEASUREMENTS			
Measuring Pt. Elev. (ft)	.	.	.
Depth to Water (ft)	.	.	.
Water-Level Elev. (ft)	.	.	.
Water Temp. (degrees C)	14.3	15.62	15.2
pH (standard units)	6.72	7.59	8.37
Conductivity (umho/cm)	134000	275	142
Dissolved Oxygen (ppm)	9.47	9.68	11.79
Oxidation/Reduction (mV)	.	137	64
Turbidity (NTU)	17	.	272
MISCELLANEOUS ANALYTES			
pH (standard units)	.	.	.
Conductivity (umho/cm)	.	.	.
Dissolved Solids (mg/L)	190	190	190
Suspended Solids (mg/L)	<	7.9	<
Turbidity (NTU)	.	.	.
MAJOR IONS (mg/L)			
Calcium	46.5	33.9	35
Magnesium	9.62	7.21	9.57
Potassium	2.35	2.25	1.55
Sodium	8.1	5.39	7.6
Alkalinity-HCO3	121	96	128
Alkalinity-CO3	<	<	<
Chloride	11.2	9.8	9.4
Fluoride	0.37	0.27	0.4
Nitrate-N	3.4	2	1.4
Sulfate	23.2	20.8	29.2
Ion Charge Balance (RPD)	0.6	-1.3	-10.1
TRACE METALS (mg/L)			
Aluminum	0.449	0.681	0.151
Arsenic (PMS)	.	.	.
Arsenic	<	<	<
Barium	0.0425	0.0406	0.0351
Beryllium	<	<	<
Boron	0.047	0.218	0.16
Cadmium (PMS)	.	.	.
Cadmium	<	<	<
Chromium (PMS)	.	.	.
Chromium	<	<	<
Cobalt	<	<	<
Copper	<	<	<
Iron	0.556	0.826	0.184
Lead (PMS)	.	.	.
Lead	<	<	<
Lithium	0.0135	0.0555	0.0437
Manganese	0.102	0.0838	0.0847
Mercury (CVAA)	0.0005	0.0004	.
Nickel (PMS)	.	.	.
Nickel	<	<	<
Selenium (PMS)	.	.	.
Selenium	<	<	<
Silver	<	<	<
Strontium	0.105	0.0808	0.102
Thallium (PMS)	.	.	.
Thallium	<	<	<
Uranium (PMS)	.	.	.
Uranium (KPA)	0.05	0.0171	<
Zinc	0.0359	0.018	0.0202
ICP Dilution Factor	1	1	1

APPENDIX F.2

VOLATILE ORGANIC COMPOUNDS

APPENDIX F.2: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	55-2C		56-2C		9212-W-2-BSTM	9215-STACK11	GHK2.51ESW	
Location	Y12		Y12		B9212	B9215	EXP-NPR	
Date Sampled	05/22/00	10/17/00	05/22/00	10/17/00	03/08/00	11/30/00	04/19/00	11/09/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP
Type								
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	3	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	54	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	7	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	<	<	<	<	<	<	<	<
Dichlorodifluoromethane	15	13	<	<	<	<	<	<
1,1-Dichloroethane	28	30	<	<	<	<	<	<
1,1-Dichloroethene	35	38	15	14	<	<	<	<
cis-1,2-Dichloroethene	1600	1600	760	730	<	3	<	<
trans-1,2-Dichloroethene	16	17	10	9	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	580	530	2600	1900	<	3	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	7	6	<	<	<	<	<	<
Trichloroethene	310	310	1100	900	<	<	<	<
Trichlorofluoromethane	6	<	<	<	<	<	<	<
Vinyl chloride	33	33	20	17	<	<	<	<

(Continued)

Sampling Point	GHK2.51WSW			GW-108		GW-109		GW-151
Location	EXP-NPR			S3		S3		NHP
Date Sampled	04/19/00		11/09/00	01/11/00	07/18/00	06/08/00	10/19/00	05/16/00
Monitoring Program	GWPP		GWPP	WRRP	WRRP	GWPP	GWPP	WRRP
Type		DUP						
Acetone	<	<	<	<	<	90	38	<
Acrylonitrile	<	<	<	.	.	<	<	.
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	3	3	<	<	<
Bromomethane	<	<	<	4	170	<	<	<
2-Butanone	<	<	<	<	<	6	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	<	<	<	<	<	1400
Chloroform	<	<	<	28	37	14	12	46
Chloromethane	<	<	<	<	79	<	<	<
1,4-Dichlorobenzene	<	<	<	.	.	<	<	.
Dichlorodifluoromethane	<	<	<	.	.	<	<	.
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	8
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	53	63	20	19	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	2	170	140	120
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	2	4	5	4	24
Trichlorofluoromethane	<	<	<	.	.	<	<	.
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

APPENDIX F.2: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-151	GW-153		GW-154		GW-169		
Location	NHP	NHP		NHP		EXP-UV		
Date Sampled	08/17/00	05/11/00	10/12/00	05/17/00	08/22/00	01/25/00	05/18/00	08/09/00
Monitoring Program	WRRP	GWPP	GWPP	WRRP	WRRP	WRRP	WRRP	WRRP
Type								
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	.	<	<	.	.	.	.	.
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	3	<	<	<	<	<	<	<
Carbon tetrachloride	1500	270	280	<	<	<	<	<
Chloroform	52	12	12	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	.	<	<	.	.	.	.	.
Dichlorodifluoromethane	.	<	<	.	.	.	.	.
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	10	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	140	7	7	<	<	<	2	2
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	5	<	<	<	<	<	<	<
Trichloroethene	29	<	<	<	<	<	<	<
Trichlorofluoromethane	.	<	<	.	.	.	.	.
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-170							
Location	EXP-UV							
Date Sampled	01/24/00		05/22/00		08/08/00		11/01/00	
Monitoring Program	WRRP		WRRP		WRRP		WRRP	
Type		DUP		DUP		DUP		DUP
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	.	.	.	.	.	.	.	.
Benzene	3	3	4	4	3	3	4	4
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	3	3	2	2	2	2	4	4
Chloroform	13	12	13	13	10	9	11	11
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	.	.	.	.	.	.	.	.
Dichlorodifluoromethane	.	.	.	.	.	.	.	.
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	2	2	4	3	2	2	2	2
Toluene	<	<	1	1	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	2	2	3	3	2	1	2	2
Trichlorofluoromethane	.	.	.	.	.	.	.	.
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

APPENDIX F.2: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-171			GW-172			GW-192	
Location	EXP-UV			EXP-UV			B4	
Date Sampled	01/19/00	05/17/00	08/08/00	01/19/00	05/17/00	08/08/00	05/09/00	
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	GWPP	
Type								DUP
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	.	.	.	.	.	.	<	<
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	.	.	.	.	.	.	<	<
Dichlorodifluoromethane	.	.	.	.	.	.	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	28	27
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	5	5
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	7	7
Trichlorofluoromethane	.	.	.	.	.	.	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-192	GW-193		GW-204		GW-207		GW-208
Location	B4	T2331		T0134		EXP-SR		EXP-SR
Date Sampled	10/09/00	01/12/00	07/18/00	06/07/00	10/24/00	04/05/00	11/07/00	04/05/00
Monitoring Program	GWPP	WRRP	WRRP	GWPP	GWPP	GWPP	GWPP	GWPP
Type								
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	<	.	.	<	<	<	<	<
Benzene	<	20	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	<	.	.	<	<	<	<	<
Dichlorodifluoromethane	<	.	.	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	12	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	3	<	<	<	<	<	<	<
Trichlorofluoromethane	<	.	.	<	<	<	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

APPENDIX F.2: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-208	GW-218		GW-219			GW-220	
Location	EXP-SR	UOV		UOV			NHP	
Date Sampled	11/07/00	05/31/00	10/30/00	06/06/00		10/30/00	05/15/00	08/22/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP		GWPP	GWPP	WRRP
Type					DUP			
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	<	<	<	<	<	<	<	.
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	2
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	<	<	<	<	700	1000
Chloroform	<	<	<	<	<	<	35	44
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	<	<	<	<	<	<	<	.
Dichlorodifluoromethane	<	<	<	<	<	<	<	.
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	5	6
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	69	95
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	14	20
Trichlorofluoromethane	<	<	<	<	<	<	<	.
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-220		GW-222		GW-223		GW-230	
Location	NHP		NHP		NHP		EXP-UV	
Date Sampled	10/12/00		06/13/00	10/26/00	06/12/00	10/31/00	01/20/00	05/17/00
Monitoring Program	GWPP		GWPP	GWPP	GWPP	GWPP	WRRP	WRRP
Type		DUP						
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	<	<	<	<	<	<	.	.
Benzene	<	<	<	<	<	<	1	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	850	1000	28	<	<	<	<	<
Chloroform	53	52	5	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	<	<	<	<	<	<	.	.
Dichlorodifluoromethane	<	<	<	<	<	<	.	.
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	6	6	45	15	38	95	13	15
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	86	89	110	6	110	25	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	20	20	29	3	31	13	<	<
Trichlorofluoromethane	<	<	<	<	<	<	.	.
Vinyl chloride	<	<	<	1	<	3	4	4

(Continued)

APPENDIX F.2: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-230	GW-232				GW-240		GW-251
Location	EXP-UV	EXP-UV				NHP		S2
Date Sampled	08/08/00	01/25/00	05/18/00	08/09/00	11/01/00	05/17/00	10/11/00	05/09/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	GWPP	GWPP	GWPP
Type								
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	.	.	.	.	.	<	<	<
Benzene	1	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	<	<	<	5	6	6
Chloroform	<	<	<	<	<	<	3	10
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	.	.	.	.	.	<	<	<
Dichlorodifluoromethane	.	.	.	.	.	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	13	<	<	<	<	<	<	10
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	1	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	300
Toluene	1	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	150
Trichlorofluoromethane	.	.	.	.	.	<	<	<
Vinyl chloride	4	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-251	GW-253		GW-274		GW-275		GW-337
Location	S2	S2		SY		SY		WC
Date Sampled	10/09/00	05/23/00	11/02/00	05/30/00	10/18/00	05/30/00	10/18/00	05/23/00
Monitoring Program	GWPP	WRRP	WRRP	GWPP	GWPP	GWPP	GWPP	GWPP
Type								
Acetone	<	<	<	<	<	<	<	20
Acrylonitrile	<	.	.	<	<	<	<	<
Benzene	<	1	<	35	50	<	<	<
Bromodichloromethane	<	1	1	<	<	<	<	<
Bromoform	<	<	<	6	6	<	<	<
Bromomethane	<	50	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	1	<	<	<	<	<	<
Carbon tetrachloride	<	38	43	<	<	<	<	<
Chloroform	5	54	50	25	28	<	<	<
Chloromethane	<	46	3	<	<	<	<	<
1,4-Dichlorobenzene	<	.	.	<	<	<	<	<
Dichlorodifluoromethane	<	.	.	<	<	<	<	11
1,1-Dichloroethane	<	<	<	<	<	<	<	96
1,1-Dichloroethene	<	3	2	<	<	<	<	110
cis-1,2-Dichloroethene	<	230	190	5	7	<	<	3700
trans-1,2-Dichloroethene	<	1	<	<	<	<	<	40
Dimethylbenzene	<	1	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	49	57	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	71	660	690	500	650	9	<	590
Toluene	<	2	2	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	140
Trichloroethene	28	580	660	10	12	<	<	720
Trichlorofluoromethane	<	.	.	<	<	<	<	8
Vinyl chloride	<	71	35	<	<	<	<	46

(Continued)

APPENDIX F.2: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-337	GW-381		GW-382		GW-383		
Location	WC	NHP		NHP		NHP		
Date Sampled	10/19/00	05/17/00	10/16/00	05/18/00	09/11/00	05/15/00	08/17/00	10/16/00
Monitoring Program	GWPP	GWPP	GWPP	WRRP	WRRP	GWPP	WRRP	GWPP
Type								
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	<	<	<	.	.	<	.	<
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	7	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	33	1000	130	1400	1300	<	<	<
Chloroform	<	280	63	540	610	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	<	<	<	.	.	<	.	<
Dichlorodifluoromethane	10	<	<	.	.	<	.	<
1,1-Dichloroethane	140	<	<	<	<	<	<	<
1,1-Dichloroethene	160	<	<	<	<	<	3	<
cis-1,2-Dichloroethene	4900	4	4	<	3	110	140	150
trans-1,2-Dichloroethene	59	<	<	<	<	<	1	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	860	5	7	17	13	470	610	520
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	190	<	<	<	<	<	5	<
Trichloroethene	940	<	<	<	2	150	200	200
Trichlorofluoromethane	9	<	<	.	.	<	.	<
Vinyl chloride	63	<	<	<	<	<	<	2

(Continued)

Sampling Point	GW-605				GW-606		GW-618	
Location	EXP-I				EXP-I		EXP-E	
Date Sampled	01/12/00		07/17/00		01/12/00	07/17/00	05/23/00	11/08/00
Monitoring Program	WRRP		WRRP		WRRP	WRRP	WRRP	WRRP
Type		DUP		DUP				
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	.	.	.	.	.	.	.	.
Benzene	<	<	<	<	2	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	11	11	62	59	50	75	<	<
Chloroform	7	7	10	10	310	430	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	.	.	.	.	.	.	.	.
Dichlorodifluoromethane	.	.	.	.	.	.	.	.
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	27	27	100	110	<	<	26	29
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	15	15	54	49	5	7	5	3
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	16	15	57	65	<	<	7	5
Trichlorofluoromethane	.	.	.	.	.	.	.	.
Vinyl chloride	<	<	<	<	<	<	<	4

(Continued)

APPENDIX F.2: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-620		GW-633		GW-656		GW-690	
Location	FTF		RG		T0134		CPT	
Date Sampled	05/10/00	10/10/00	06/08/00	10/24/00	06/12/00	10/25/00	06/19/00	10/25/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP
Type								
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	<	<	<	<	<	<	<	<
Benzene	<	<	650	560	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	4	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	<	<	<	<	<	<
Chloroform	<	<	26	24	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	<	<	<	<	<	<	<	<
Dichlorodifluoromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	25	33	<	<
1,1-Dichloroethene	<	<	<	<	420	600	<	<
cis-1,2-Dichloroethene	20	3	7	11	150	160	12	71
trans-1,2-Dichloroethene	<	<	<	<	32	32	<	<
Dimethylbenzene	<	<	250	190	<	<	<	<
Ethylbenzene	<	<	34	26	<	<	<	<
Methylene chloride	<	<	35	38	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	23	8	200	170	61	70	66	180
Toluene	<	<	150	55	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	2	2	<	<
Trichloroethene	9	<	9	8	4500	4300	6	34
Trichlorofluoromethane	<	<	<	<	<	<	<	<
Vinyl chloride	<	<	<	<	9	9	<	<

(Continued)

Sampling Point	GW-700		GW-722-06				GW-722-10	
Location	B8110		EXP-J				EXP-J	
Date Sampled	06/19/00	10/25/00	03/14/00	07/17/00	09/12/00	11/30/00	03/20/00	07/20/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	WRRP	WRRP	GWPP	GWPP
Type								
Acetone	<	<	<	<	<	530	<	<
Acrylonitrile	<	<	<	<	.	.	<	<
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	2	<	<
Carbon tetrachloride	<	<	<	<	<	<	45	41
Chloroform	<	<	<	<	<	<	19	21
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	<	<	<	<	.	.	<	<
Dichlorodifluoromethane	<	<	<	<	.	.	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	66	63	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	150	190	<	<	2	<	6	6
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	11	20	<	<	<	<	<	<
Trichlorofluoromethane	<	<	<	<	.	.	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

APPENDIX F.2: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-722-10		GW-722-14				GW-722-17	
Location	EXP-J		EXP-J				EXP-J	
Date Sampled	09/12/00	11/30/00	03/21/00	07/26/00	09/13/00	11/30/00	03/21/00	07/26/00
Monitoring Program	WRRP	WRRP	GWPP	GWPP	WRRP	WRRP	GWPP	GWPP
Type								
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	.	.	<	<	.	.	<	<
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	460	750	260	240	620	890
Chloroform	<	<	45	61	32	28	50	73
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	.	.	<	<	.	.	<	<
Dichlorodifluoromethane	.	.	<	<	.	.	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	4	6	3	2	4	7
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	26	44	20	22	31	61
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	2
Trichloroethene	<	<	4	7	3	3	5	8
Trichlorofluoromethane	.	.	<	5	.	.	5	7
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-722-17		GW-722-20				GW-722-22	
Location	EXP-J		EXP-J				EXP-J	
Date Sampled	09/13/00	11/30/00	03/21/00	07/25/00	09/13/00	12/04/00	03/21/00	07/25/00
Monitoring Program	WRRP	WRRP	GWPP	GWPP	WRRP	WRRP	GWPP	GWPP
Type								
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	.	.	<	<	.	.	<	<
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	250	430	270	500	150	690	240	400
Chloroform	98	45	50	58	45	67	28	39
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	.	.	<	<	.	.	<	<
Dichlorodifluoromethane	.	.	<	<	.	.	<	<
1,1-Dichloroethane	<	<	<	<	<	1	<	<
1,1-Dichloroethene	<	<	<	<	<	2	<	<
cis-1,2-Dichloroethene	4	4	3	4	2	6	<	4
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	31	32	29	44	17	63	17	35
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	1	1	<	<	<	2	<	<
Trichloroethene	4	4	4	6	3	6	3	5
Trichlorofluoromethane	.	.	4	6	.	.	<	4
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

APPENDIX F.2: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-722-22			GW-722-26				
Location	EXP-J			EXP-J				
Date Sampled	07/25/00	09/13/00	12/04/00	03/15/00		07/18/00	09/14/00	
Monitoring Program	GWPP	WRRP	WRRP	GWPP		GWPP	WRRP	
Type	DUP				DUP			DUP
Acetone	<	<	<	<	<	27	<	<
Acrylonitrile	<	.	.	23	18	<	.	.
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	9	<	3
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	410	260	540	<	<	<	5	4
Chloroform	35	27	55	<	<	<	1	1
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	<	.	.	<	<	<	.	.
Dichlorodifluoromethane	<	.	.	<	<	<	.	.
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	1	<	<	<	<	<
cis-1,2-Dichloroethene	3	2	5	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	28	15	49	<	<	<	<	<
Toluene	<	<	<	<	<	3	1	1
1,1,1-Trichloroethane	<	<	2	<	<	<	<	<
Trichloroethene	4	2	6	<	<	<	<	<
Trichlorofluoromethane	<	.	.	<	<	<	.	.
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-722-26		GW-722-30				GW-722-32	
Location	EXP-J		EXP-J				EXP-J	
Date Sampled	12/04/00		03/15/00	07/18/00	09/14/00	12/06/00	03/20/00	07/18/00
Monitoring Program	WRRP		GWPP	GWPP	WRRP	WRRP	GWPP	GWPP
Type		DUP						
Acetone	23	22	<	<	<	<	<	<
Acrylonitrile	.	.	<	<	.	.	<	<
Benzene	2	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	2	2	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	.	.	<	<	.	.	<	<
Dichlorodifluoromethane	.	.	<	<	.	.	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	2	2	<	<	<	<	<	<
Ethylbenzene	4	4	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	4	3	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	4	4	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	.	.	<	<	.	.	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

APPENDIX F.2: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-722-32		GW-722-33				GW-733	
Location	EXP-J		EXP-J				EXP-J	
Date Sampled	09/14/00	12/05/00	03/20/00	07/18/00	09/18/00	12/05/00	01/13/00	07/17/00
Monitoring Program	WRRP	WRRP	GWPP	GWPP	WRRP	WRRP	WRRP	WRRP
Type								
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	.	.	<	<	.	.	.	.
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	<	<	<	<	3	11
Chloroform	<	<	<	<	1	3	2	2
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	.	.	<	<	.	.	.	.
Dichlorodifluoromethane	.	.	<	<	.	.	.	.
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	.	.	<	<	.	.	.	.
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	GW-735				GW-744			GW-747
Location	EXP-J				GRIDK1			GRIDK2
Date Sampled	04/25/00	05/15/00	08/21/00	11/02/00	04/17/00	11/01/00		04/24/00
Monitoring Program	GWPP	WRRP	WRRP	GWPP	GWPP	GWPP		GWPP
Type							DUP	
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	<	.	.	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	<	.	.	<	<	<	<	<
Dichlorodifluoromethane	<	.	.	<	<	<	<	<
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	<	.	.	<	<	<	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

APPENDIX F.2: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-747	GW-750		GW-762				GW-763
Location	GRIDK2	EXP-J		GRIDJ3				GRIDJ3
Date Sampled	11/01/00	04/25/00	11/02/00	05/16/00		08/21/00		05/10/00
Monitoring Program	GWPP	GWPP	GWPP	WRRP		WRRP		GWPP
Type					DUP		DUP	
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	<	<	<	.	.	.	.	<
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	<	<	<	.	.	.	.	<
Dichlorodifluoromethane	<	<	<	.	.	.	.	<
1,1-Dichloroethane	<	<	<	10	10	10	10	<
1,1-Dichloroethene	<	<	<	51	51	43	45	<
cis-1,2-Dichloroethene	<	<	<	66	66	64	66	<
trans-1,2-Dichloroethene	<	<	<	3	3	3	2	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	2200	2100	2400	2500	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	6	6	5	5	<
Trichloroethene	<	<	<	150	150	140	150	<
Trichlorofluoromethane	<	<	<	.	.	.	.	<
Vinyl chloride	<	<	<	6	6	5	6	<

(Continued)

Sampling Point	GW-763			GW-769		GW-770		
Location	GRIDJ3			GRIDG3		GRIDG3		
Date Sampled	05/11/00	10/10/00	10/11/00	04/27/00	10/03/00	04/26/00	10/02/00	
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	GWPP	
Type								DUP
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	12	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	<	25	75	<	4	4
Chloroform	<	<	<	3	3	4	7	7
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	<	<	<	<	<	<	<	<
Dichlorodifluoromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	2	<	<	<	<	<	<	<
1,1-Dichloroethene	5	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	150	98	90	<	3	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	62	28	20	8	12	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	14	7	7	<	3	<	<	<
Trichlorofluoromethane	<	<	<	<	<	<	<	<
Vinyl chloride	13	5	8	<	<	<	<	<

(Continued)

APPENDIX F.2: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-782		GW-789			GW-791		
Location	GRIDE3		GRIDF3			GRIDD2		
Date Sampled	05/01/00	10/03/00	04/26/00		10/02/00	05/02/00	05/03/00	10/03/00
Monitoring Program	GWPP	GWPP	GWPP		GWPP	GWPP	GWPP	GWPP
Type				DUP				
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	<	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	<	<	<	<	<	<
Chloroform	<	<	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	<	<	<	<	<	<	<	<
Dichlorodifluoromethane	<	<	<	<	<	<	<	<
1,1-Dichloroethane	92	150	<	<	<	<	<	<
1,1-Dichloroethene	24	33	<	<	<	<	<	<
cis-1,2-Dichloroethene	12	14	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	220	160	<	<	<	40	1200	21
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	8	<	<	<	<	<	<
Trichloroethene	63	49	<	<	<	<	3	<
Trichlorofluoromethane	<	<	<	<	<	<	<	<
Vinyl chloride	<	2	<	<	<	<	<	<

(Continued)

Sampling Point	GW-791	GW-816		GW-820			GW-832	
Location	GRIDD2	EXP-SR		B9201-2			NHP	
Date Sampled	10/04/00	04/10/00	11/08/00	06/13/00	10/26/00		05/17/00	08/23/00
Monitoring Program	GWPP	GWPP	GWPP	GWPP	GWPP		WRRP	WRRP
Type						DUP		
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	<	<	<	<	<	<	.	.
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	<	<	<	<	31	10
Chloroform	<	<	<	<	<	<	<	4
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	<	<	<	5	5	5	.	.
Dichlorodifluoromethane	<	<	<	4	<	<	.	.
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	4	6	6	<	<
cis-1,2-Dichloroethene	<	<	<	1000	1200	1200	<	<
trans-1,2-Dichloroethene	<	<	<	5	8	8	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	730	<	<	3500	2600	2500	5	4
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	560	480	490	<	<
Trichlorofluoromethane	<	<	<	<	<	<	.	.
Vinyl chloride	<	<	<	89	110	110	<	<

(Continued)

APPENDIX F.2: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	GW-845	LRSPW			NPR07.0SW		NPR10.0SW	NPR12.0SW
Location	NHP	EXP-SW			EXP-NPR		EXP-NPR	EXP-NPR
Date Sampled	03/15/00	04/18/00		12/19/00	04/19/00	11/09/00	05/24/00	04/19/00
Monitoring Program	WRRP	GWPP		GWPP	GWPP	GWPP	GWPP	GWPP
Type			DUP					
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	.	<	<	<	<	<	<	<
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	2100	35	35	11	<	<	<	<
Chloroform	83	6	6	3	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	.	<	<	<	<	<	<	<
Dichlorodifluoromethane	.	<	<	<	<	<	<	<
1,1-Dichloroethane	2	<	<	<	<	<	<	<
1,1-Dichloroethene	3	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	9	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	100	6	6	5	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	5	<	<	<	<	<	<	<
Trichloroethene	12	<	<	<	<	<	<	<
Trichlorofluoromethane	.	<	<	<	<	<	<	<
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	NPR12.0SW		OF 51		OF 200			
Location	EXP-NPR		EXP-SW		EXP-SW			
Date Sampled	11/09/00		04/10/00	09/19/00	03/20/00		04/10/00	
Monitoring Program	GWPP		WRRP	WRRP	WRRP		WRRP	
Type		DUP				DUP		DUP
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	<	<	.	.	.	.	.	.
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	1	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	1	1	<	<	<	<
Chloroform	<	<	3	<	5	6	10	12
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	<	<	.	.	.	.	.	.
Dichlorodifluoromethane	<	<	.	.	.	.	.	.
1,1-Dichloroethane	<	<	2	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	2	8	2	2	1	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	.	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	9	18	7	8	4	3
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	2	<	<	<	<	<
Trichloroethene	<	<	3	7	2	2	<	<
Trichlorofluoromethane	<	<	.	.	.	.	.	.
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

APPENDIX F.2: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	OF 200		SCR7.1			SCR7.18SP		SCR7.8SP
Location	EXP-SW		EXP-UV			EXP-UV		EXP-UV
Date Sampled	09/19/00		01/19/00	05/30/00	09/06/00	01/19/00	05/30/00	01/19/00
Monitoring Program	WRRP		WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type		DUP						
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	.	.	.	.	.	.	.	.
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	1	2	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	<	1	1	<	<	<
Chloroform	5	5	<	<	<	<	<	<
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	.	.	.	.	.	.	.	.
Dichlorodifluoromethane	.	.	.	.	.	.	.	.
1,1-Dichloroethane	<	<	<	<	<	<	2	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	1	<	<	<	<	<	<
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	1	<
Trichloroethene	<	<	<	<	1	<	1	<
Trichlorofluoromethane	.	.	.	.	.	.	.	.
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

Sampling Point	SCR7.8SP		SP-17		STATION 17			STATION 8
Location	EXP-UV		EXP-SW		EXP-SW			EXP-SW
Date Sampled	05/30/00	09/06/00	04/10/00	09/19/00	03/20/00	04/10/00	09/19/00	03/20/00
Monitoring Program	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP	WRRP
Type								
Acetone	<	<	<	<	<	<	<	<
Acrylonitrile	.	.	.	.	.	.	.	.
Benzene	<	<	<	<	<	<	<	<
Bromodichloromethane	<	<	<	<	<	<	<	<
Bromoform	<	<	<	<	<	<	<	<
Bromomethane	<	<	<	<	<	<	<	<
2-Butanone	<	<	<	<	<	<	<	<
Carbon disulfide	<	<	<	<	<	<	<	<
Carbon tetrachloride	<	<	<	<	<	1	<	<
Chloroform	<	<	<	3	4	5	3	7
Chloromethane	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	.	.	.	.	.	.	.	.
Dichlorodifluoromethane	.	.	.	.	.	.	.	.
1,1-Dichloroethane	<	<	<	<	<	<	<	<
1,1-Dichloroethene	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethene	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethene	<	<	<	<	<	<	<	<
Dimethylbenzene	<	<	<	<	<	<	<	<
Ethylbenzene	<	<	<	<	<	<	<	<
Methylene chloride	<	<	<	<	<	<	<	<
Styrene	<	<	<	<	<	<	<	<
Tetrachloroethene	<	<	<	<	2	<	<	2
Toluene	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	<	<	<	<	<	<	<	<
Trichloroethene	<	<	<	<	<	<	<	<
Trichlorofluoromethane	.	.	.	.	.	.	.	.
Vinyl chloride	<	<	<	<	<	<	<	<

(Continued)

APPENDIX F.2: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Volatile Organic Compounds (ug/L)

Sampling Point	STATION 8	
Location	EXP-SW	
Date Sampled	04/10/00	09/19/00
Monitoring Program	WRRP	WRRP
Type		
Acetone	<	<
Acrylonitrile	.	.
Benzene	<	<
Bromodichloromethane	1	1
Bromoform	<	<
Bromomethane	<	<
2-Butanone	<	<
Carbon disulfide	<	<
Carbon tetrachloride	<	<
Chloroform	11	4
Chloromethane	<	<
1,4-Dichlorobenzene	.	.
Dichlorodifluoromethane	.	.
1,1-Dichloroethane	<	<
1,1-Dichloroethene	<	<
cis-1,2-Dichloroethene	<	<
trans-1,2-Dichloroethene	<	<
Dimethylbenzene	<	<
Ethylbenzene	<	<
Methylene chloride	<	<
Styrene	<	<
Tetrachloroethene	1	<
Toluene	<	<
1,1,1-Trichloroethane	<	<
Trichloroethene	<	<
Trichlorofluoromethane	.	.
Vinyl chloride	<	<

APPENDIX F.3

RADIOLOGICAL ANALYTES

APPENDIX F.3 UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Gross Alpha and Gross Beta Activity

Sampling Point	Location	Date Sampled	Program	Gross Alpha (pCi/L)			Gross Beta (pCi/L)		
				MDA	Result	Error	MDA	Result	Error
55-2C	Y12	05/22/00	GWPP	5.9	<MDA	.	8	8.2	5.2
55-2C	Y12	10/17/00	GWPP	7.2	<MDA	.	7.9	12	5.5
56-2C	Y12	05/22/00	GWPP	3.3	<MDA	.	8.4	<MDA	.
56-2C	Y12	10/17/00	GWPP	2.8	<MDA	.	10	<MDA	.
9212-W-2-BSTM	B9212	03/08/00	GWPP	2.1	8.9	3.2	6.7	<MDA	.
9215-STACK11	B9215	11/30/00	GWPP	2.8	5100	86	6.5	2800	45
GHK2.51ESW	EXP-NPR	04/19/00	GWPP	0.75	< CE	0.96	7.9	<MDA	.
GHK2.51ESW	EXP-NPR	11/09/00	GWPP	2.1	<MDA	.	7.3	<MDA	.
GHK2.51WSW	EXP-NPR	04/19/00	GWPP	2.3	<MDA	.	6.8	<MDA	.
GHK2.51WSW DUP	EXP-NPR	04/19/00	GWPP	2	<MDA	.	6.6	<MDA	.
GHK2.51WSW	EXP-NPR	11/09/00	GWPP	0.73	<MDA	.	8.3	<MDA	.
GW-108	S3	01/11/00	WRRP	143.99	333.3	156.16	90.42	8642.12	198.95
GW-108	S3	07/18/00	WRRP	193.69	<MDA	.	164.99	9025.39	307.06
GW-109	S3	05/25/00	GWPP	100	< CE	130	610	7300	800
GW-109	S3	10/19/00	GWPP	240	<MDA	.	830	7400	910
GW-151	NHP	05/16/00	WRRP	1.46	<MDA	.	2.16	3.47	1.65
GW-151	NHP	08/17/00	WRRP	1.44	<MDA	.	1.68	3.92	1.26
GW-153	NHP	05/11/00	GWPP	2.6	3.2	2.2	8.1	<MDA	.
GW-153	NHP	10/12/00	GWPP	3.4	<MDA	.	7.6	<MDA	.
GW-154	NHP	05/17/00	WRRP	2.29	496	14.74	2.62	97.23	4.03
GW-154	NHP	08/22/00	WRRP	1.54	572.43	12.1	1.48	171.56	3.49
GW-169	EXP-UV	01/25/00	WRRP	2.56	3.78	2.28	6.27	<MDA	.
GW-169	EXP-UV	05/18/00	WRRP	1.37	2.42	1.19	2.06	3.6	1.48
GW-169	EXP-UV	08/09/00	WRRP	1.07	1.32	0.86	1.59	3.92	1.21
GW-170	EXP-UV	01/24/00	WRRP	0.66	1.42	0.73	1.45	7.72	1.6
GW-170 DUP	EXP-UV	01/24/00	WRRP	1.02	2.19	1.04	1.66	8.18	1.45
GW-170	EXP-UV	08/08/00	WRRP	1.89	<MDA	.	1.79	9.01	1.59
GW-170 DUP	EXP-UV	08/08/00	WRRP	1.74	<MDA	.	1.76	10.44	1.64
GW-170	EXP-UV	11/01/00	WRRP	1.58	<MDA	.	1.41	9.73	1.39
GW-170 DUP	EXP-UV	11/01/00	WRRP	1.15	<MDA	.	1.68	10.2	1.55
GW-171	EXP-UV	01/19/00	WRRP	2.24	7.14	2.41	1.88	12.9	1.74
GW-171	EXP-UV	05/17/00	WRRP	1.53	2.45	1.31	1.85	8.1	1.59
GW-171	EXP-UV	08/08/00	WRRP	2.15	2.4	1.84	2.41	8.84	2.24
GW-172	EXP-UV	01/19/00	WRRP	0.86	1.77	0.94	1.19	4.45	1.29
GW-172	EXP-UV	05/17/00	WRRP	1.75	<MDA	.	2.29	3.02	1.95
GW-172	EXP-UV	08/08/00	WRRP	2.62	<MDA	.	2.5	3	2.12
GW-192	B4	05/09/00	GWPP	3.3	<MDA	.	7.6	<MDA	.
GW-192 DUP	B4	05/09/00	GWPP	2.5	<MDA	.	7.1	<MDA	.
GW-192	B4	10/09/00	GWPP	3.3	<MDA	.	8.3	<MDA	.
GW-193	T2331	01/12/00	WRRP	1.51	3.86	1.66	0.93	8.88	1.1
GW-193	T2331	07/18/00	WRRP	0.71	3.16	0.93	0.81	6.04	0.95
GW-204	T0134	06/07/00	GWPP	2.3	28	5.8	10	11	6.7
GW-204	T0134	10/24/00	GWPP	2.8	71	10	7.4	34	6.7
GW-207	EXP-SR	04/05/00	GWPP	0.83	2.1	1.6	6.4	<MDA	.
GW-207	EXP-SR	11/07/00	GWPP	1.4	2.5	2.3	8.6	<MDA	.
GW-208	EXP-SR	04/05/00	GWPP	3.7	<MDA	.	8.2	<MDA	.
GW-208	EXP-SR	11/07/00	GWPP	6.1	<MDA	.	8.4	<MDA	.
GW-218	UOV	05/31/00	GWPP	2.7	<MDA	.	8.5	15	5.9
GW-218	UOV	10/30/00	GWPP	2.5	3.2	2.2	7.1	7.1	4.7
GW-219	UOV	06/06/00	GWPP	2.4	100	11	8	89	9.5
GW-219 DUP	UOV	06/06/00	GWPP	2.3	100	11	7.4	72	8.6
GW-219	UOV	10/30/00	GWPP	3.5	26	6.1	8.5	24	6.6

APPENDIX F.3 UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Gross Alpha and Gross Beta Activity

Sampling Point	Location	Date Sampled	Program	Gross Alpha (pCi/L)			Gross Beta (pCi/L)		
				MDA	Result	Error	MDA	Result	Error
GW-220	NHP	05/15/00	GWPP	2.3	<MDA	.	7.1	<MDA	.
GW-220	NHP	08/22/00	WRRP	1.06	<MDA	.	0.81	5.08	0.92
GW-220	NHP	10/12/00	GWPP	2.3	<MDA	.	8.3	<MDA	.
GW-220 DUP	NHP	10/12/00	GWPP	2.5	<MDA	.	6.8	<MDA	.
GW-222	NHP	06/13/00	GWPP	3.5	35	7	5.9	21	5
GW-222	NHP	10/26/00	GWPP	2.4	100	11	7.2	74	8.7
GW-223	NHP	06/12/00	GWPP	4.4	8.1	4.1	6	<MDA	.
GW-223	NHP	10/31/00	GWPP	2.8	13	4.3	7.7	8.3	5
GW-230	EXP-UV	01/20/00	WRRP	2.09	<MDA	.	1.47	4.07	1.55
GW-230	EXP-UV	05/17/00	WRRP	1.94	<MDA	.	2.9	3.28	2.46
GW-230	EXP-UV	08/08/00	WRRP	3.42	<MDA	.	2.07	4.4	1.82
GW-232	EXP-UV	01/25/00	WRRP	2.52	4.23	2.68	4.77	5.2	4.88
GW-232	EXP-UV	05/18/00	WRRP	2.77	<MDA	.	3.63	<MDA	.
GW-232	EXP-UV	08/09/00	WRRP	2.96	<MDA	.	2.88	5.88	2.77
GW-232	EXP-UV	11/01/00	WRRP	1.99	<MDA	.	2.51	<MDA	.
GW-240	NHP	05/17/00	GWPP	2.5	<MDA	.	8.8	<MDA	.
GW-240	NHP	10/11/00	GWPP	2.4	3	2.1	9.8	<MDA	.
GW-251	S2	05/09/00	GWPP	0.93	10	3.7	8.9	15	6.3
GW-251	S2	10/09/00	GWPP	3.8	6	3.5	8.5	<MDA	.
GW-253	S2	05/23/00	WRRP	5.9	86.59	10.61	4.65	34.13	5.33
GW-253	S2	11/02/00	WRRP	25.82	73.63	24.27	19.1	36.6	14.1
GW-274	SY	05/30/00	GWPP	260	<MDA	.	750	7800	870
GW-274	SY	10/18/00	GWPP	157	<MDA	.	394	12200	1000
GW-275	SY	05/30/00	GWPP	230	<MDA	.	770	<MDA	.
GW-275	SY	10/18/00	GWPP	350	<MDA	.	760	<MDA	.
GW-337	WC	05/23/00	GWPP	3.2	<MDA	.	6.2	<MDA	.
GW-337	WC	10/19/00	GWPP	2.6	<MDA	.	6.8	<MDA	.
GW-381	NHP	05/17/00	GWPP	3.8	<MDA	.	7.9	<MDA	.
GW-381	NHP	10/16/00	GWPP	2.8	<MDA	.	7.7	<MDA	.
GW-382	NHP	05/18/00	WRRP	1.62	2.59	1.48	2.09	5.44	1.86
GW-382	NHP	09/11/00	WRRP	0.96	4.72	1.26	1.49	6.6	1.63
GW-383	NHP	05/15/00	GWPP	2.8	<MDA	.	8.6	<MDA	.
GW-383	NHP	08/17/00	WRRP	1.29	<MDA	.	2.1	<MDA	.
GW-383	NHP	10/16/00	GWPP	3.4	<MDA	.	7.3	<MDA	.
GW-605	EXP-I	01/12/00	WRRP	2.12	48.06	4.22	2.79	14.87	3.08
GW-605 DUP	EXP-I	01/12/00	WRRP	1.24	50.95	3.41	1.72	18.66	2.11
GW-605	EXP-I	07/17/00	WRRP	1.74	49.38	3.74	1.99	11.64	1.93
GW-605 DUP	EXP-I	07/17/00	WRRP	1.84	53.94	4.02	1.9	13.14	1.89
GW-606	EXP-I	01/12/00	WRRP	0.12	5.93	1.01	1.38	4.9	1.49
GW-606	EXP-I	07/17/00	WRRP	2.36	4.58	1.98	2.14	3.97	1.55
GW-618	EXP-E	05/23/00	WRRP	1.11	2.23	1.19	0.8	5.1	0.91
GW-618	EXP-E	11/08/00	WRRP	2.58	<MDA	.	2.24	4.89	1.69
GW-620	FTF	05/10/00	GWPP	0.8	<MDA	.	7.9	<MDA	.
GW-620	FTF	10/10/00	GWPP	2.3	<MDA	.	7.5	17	5.6
GW-633	RG	06/08/00	GWPP	17	<MDA	.	150	6100	340
GW-633	RG	10/24/00	GWPP	26	34	25	79	4100	200
GW-656	T0134	06/12/00	GWPP	3.1	<MDA	.	6.7	<MDA	.
GW-656	T0134	10/25/00	GWPP	3.9	<MDA	.	8.7	<MDA	.
GW-690	CPT	06/19/00	GWPP	6.1	6.3	4.7	8.5	<MDA	.
GW-690	CPT	10/25/00	GWPP	8.2	<MDA	.	8.1	<MDA	.
GW-700	B8110	06/19/00	GWPP	3	<MDA	.	8.1	<MDA	.
GW-700	B8110	10/25/00	GWPP	4	<MDA	.	8.5	<MDA	.

APPENDIX F.3 UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Gross Alpha and Gross Beta Activity

Sampling Point	Location	Date Sampled	Program	Gross Alpha (pCi/L)			Gross Beta (pCi/L)		
				MDA	Result	Error	MDA	Result	Error
GW-722-06	EXP-J	03/14/00	GWPP	5.2	<MDA	.	8.3	<MDA	.
GW-722-06	EXP-J	07/17/00	GWPP	4.5	<MDA	.	6.3	<MDA	.
GW-722-06	EXP-J	09/12/00	WRRP	2.83	6.13	3.06	3.11	6.64	3.26
GW-722-06	EXP-J	11/30/00	WRRP	4.15	<MDA	.	3.45	< CE	3.53
GW-722-10	EXP-J	03/20/00	GWPP	3.3	<MDA	.	8.6	<MDA	.
GW-722-10	EXP-J	07/20/00	GWPP	1.2	3.1	2.3	7.3	<MDA	.
GW-722-10	EXP-J	09/12/00	WRRP	3.46	<MDA	.	2.38	4.62	2.48
GW-722-10	EXP-J	11/30/00	WRRP	2.69	<MDA	.	2.9	4.55	3
GW-722-14	EXP-J	03/21/00	GWPP	2.6	<MDA	.	5.9	<MDA	.
GW-722-14	EXP-J	07/26/00	GWPP	2.4	<MDA	.	8.1	<MDA	.
GW-722-14	EXP-J	09/13/00	WRRP	1.11	8.39	1.65	2.28	<MDA	.
GW-722-14	EXP-J	11/30/00	WRRP	1.37	<MDA	.	3.05	5.08	3.16
GW-722-17	EXP-J	03/21/00	GWPP	2.5	<MDA	.	6.4	<MDA	.
GW-722-17	EXP-J	07/26/00	GWPP	1.8	<MDA	.	6.7	<MDA	.
GW-722-17	EXP-J	09/13/00	WRRP	1.68	<MDA	.	2.45	<MDA	.
GW-722-17	EXP-J	11/30/00	WRRP	1.55	<MDA	.	3.7	<MDA	.
GW-722-20	EXP-J	03/21/00	GWPP	2.2	<MDA	.	5.3	<MDA	.
GW-722-20	EXP-J	07/25/00	GWPP	3.5	<MDA	.	6.3	<MDA	.
GW-722-20	EXP-J	09/13/00	WRRP	1.08	2.6	1.21	2.54	<MDA	.
GW-722-20	EXP-J	12/04/00	WRRP	1.01	1.08	.	3.33	<MDA	.
GW-722-22	EXP-J	03/21/00	GWPP	2.7	<MDA	.	5.2	<MDA	.
GW-722-22	EXP-J	07/25/00	GWPP	3.5	<MDA	.	8.8	<MDA	.
GW-722-22 DUP	EXP-J	07/25/00	GWPP	2.6	<MDA	.	6.2	<MDA	.
GW-722-22	EXP-J	09/13/00	WRRP	1.53	<MDA	.	2.25	<MDA	.
GW-722-22	EXP-J	12/04/00	WRRP	1.31	<MDA	.	1.95	3.65	.
GW-722-26	EXP-J	03/15/00	GWPP	1.5	2.2	2.2	17	<MDA	.
GW-722-26 DUP	EXP-J	03/15/00	GWPP	3.7	<MDA	.	9.6	<MDA	.
GW-722-26	EXP-J	07/18/00	GWPP	0.8	3.5	2	8	<MDA	.
GW-722-26	EXP-J	09/14/00	WRRP	0.99	3.33	1.28	2.78	3.97	2.86
GW-722-26 DUP	EXP-J	09/14/00	WRRP	1.22	1.92	1.27	2.16	3.96	2.24
GW-722-26	EXP-J	12/04/00	WRRP	1.49	<MDA	.	2.29	<MDA	.
GW-722-26 DUP	EXP-J	12/04/00	WRRP	1.09	<MDA	.	1.95	<MDA	.
GW-722-30	EXP-J	03/15/00	GWPP	4	<MDA	.	16	<MDA	.
GW-722-30	EXP-J	07/18/00	GWPP	0.72	1.9	1.4	6.2	<MDA	.
GW-722-30	EXP-J	09/14/00	WRRP	1.17	1.57	1.2	1.89	4.81	2
GW-722-30	EXP-J	12/06/00	WRRP	4.74	<MDA	.	7.01	<MDA	.
GW-722-32	EXP-J	03/20/00	GWPP	2.3	2.6	2	9.7	<MDA	.
GW-722-32	EXP-J	07/18/00	GWPP	3.5	<MDA	.	8.3	<MDA	.
GW-722-32	EXP-J	09/14/00	WRRP	1.22	5.31	1.52	2.3	8.41	2.46
GW-722-32	EXP-J	12/05/00	WRRP	1.79	<MDA	.	3.46	<MDA	.
GW-722-33	EXP-J	03/20/00	GWPP	2.1	<MDA	.	7.6	<MDA	.
GW-722-33	EXP-J	07/18/00	GWPP	2.2	2.2	1.8	6.1	<MDA	.
GW-722-33	EXP-J	09/18/00	WRRP	1.89	2.92	1.97	2.81	6.68	2.95
GW-722-33	EXP-J	12/05/00	WRRP	1.77	<MDA	.	3.45	<MDA	.
GW-733	EXP-J	01/13/00	WRRP	0.86	<MDA	.	0.97	3.05	1.03
GW-733	EXP-J	07/17/00	WRRP	1.6	<MDA	.	2.02	2.74	1.42
GW-735	EXP-J	04/25/00	GWPP	3.9	<MDA	.	7.8	<MDA	.
GW-735	EXP-J	05/15/00	WRRP	3.07	<MDA	.	2.28	2.4	1.45
GW-735	EXP-J	08/21/00	WRRP	1.16	<MDA	.	2.51	3.57	2.59
GW-735	EXP-J	11/02/00	GWPP	2.9	<MDA	.	7.8	<MDA	.

APPENDIX F.3 UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Gross Alpha and Gross Beta Activity

Sampling Point	Location	Date Sampled	Program	Gross Alpha (pCi/L)			Gross Beta (pCi/L)		
				MDA	Result	Error	MDA	Result	Error
GW-744	GRIDK1	04/17/00	GWPP	3.7	<MDA	.	7.4	<MDA	.
GW-744	GRIDK1	11/01/00	GWPP	3.7	<MDA	.	7	<MDA	.
GW-744 DUP	GRIDK1	11/01/00	GWPP	0.85	2.5	1.8	7.4	10	5.1
GW-747	GRIDK2	04/24/00	GWPP	3.8	<MDA	.	6.9	<MDA	.
GW-747	GRIDK2	11/01/00	GWPP	2.3	<MDA	.	6.9	<MDA	.
GW-750	EXP-J	04/25/00	GWPP	2.7	<MDA	.	8.6	<MDA	.
GW-750	EXP-J	11/02/00	GWPP	2.4	<MDA	.	7	7.5	4.6
GW-762	GRIDJ3	05/16/00	WRRP	1.76	<MDA	.	2.49	3.27	1.87
GW-762 DUP	GRIDJ3	05/16/00	WRRP	1.61	<MDA	.	2.09	<MDA	.
GW-762	GRIDJ3	08/21/00	WRRP	1.29	<MDA	.	2.46	3.64	2.53
GW-762 DUP	GRIDJ3	08/21/00	WRRP	1.42	<MDA	.	1.98	4.69	2.08
GW-763	GRIDJ3	05/10/00	GWPP	2.9	<MDA	.	8	<MDA	.
GW-763	GRIDJ3	05/11/00	GWPP	3.4	<MDA	.	7.8	<MDA	.
GW-763	GRIDJ3	10/10/00	GWPP	5.4	<MDA	.	6.4	<MDA	.
GW-763	GRIDJ3	10/11/00	GWPP	3.6	<MDA	.	7.4	<MDA	.
GW-769	GRIDG3	04/27/00	GWPP	2.7	<MDA	.	8.1	<MDA	.
GW-769	GRIDG3	10/03/00	GWPP	4.6	<MDA	.	6.9	<MDA	.
GW-770	GRIDG3	04/26/00	GWPP	0.84	2.2	1.6	8.7	<MDA	.
GW-770	GRIDG3	10/02/00	GWPP	3	<MDA	.	8.2	<MDA	.
GW-770 DUP	GRIDG3	10/02/00	GWPP	4.7	<MDA	.	6.2	6.3	4.1
GW-782	GRIDE3	05/01/00	GWPP	3.2	62	8.7	7.7	10	5.2
GW-782	GRIDE3	10/03/00	GWPP	5.6	54	10	7	7.5	4.6
GW-789	GRIDF3	04/26/00	GWPP	0.81	1.2	1.2	7.9	<MDA	.
GW-789 DUP	GRIDF3	04/26/00	GWPP	2.5	<MDA	.	7.8	<MDA	.
GW-789	GRIDF3	10/02/00	GWPP	3.4	<MDA	.	8.4	<MDA	.
GW-791	GRIDD2	05/02/00	GWPP	2.6	<MDA	.	8.5	<MDA	.
GW-791	GRIDD2	05/03/00	GWPP	0.79	2	1.5	6.9	13	5
GW-791	GRIDD2	10/03/00	GWPP	3.1	<MDA	.	6.5	8.6	4.4
GW-791	GRIDD2	10/04/00	GWPP	3.7	<MDA	.	7.5	<MDA	.
GW-816	EXP-SR	04/10/00	GWPP	2.5	<MDA	.	7.1	10	4.9
GW-816	EXP-SR	11/08/00	GWPP	3.3	3.4	2.6	8.1	<MDA	.
GW-820	B9201-2	06/13/00	GWPP	0.89	2	1.6	5.7	8.2	4
GW-820	B9201-2	10/26/00	GWPP	3.2	<MDA	.	8	<MDA	.
GW-820 DUP	B9201-2	10/26/00	GWPP	1.9	<MDA	.	7.5	<MDA	.
GW-832	NHP	05/17/00	WRRP	1.46	2.76	1.31	1.84	4.07	1.44
GW-832	NHP	08/23/00	WRRP	1.89	3.82	1.7	2.08	5.66	1.59
LRSPW	EXP-SW	04/18/00	GWPP	2.5	4.9	2.6	7.4	<MDA	.
LRSPW DUP	EXP-SW	04/18/00	GWPP	0.8	4.1	2.2	8.5	8.5	5.6
LRSPW	EXP-SW	12/19/00	GWPP	0.79	7.6	3	7.3	<MDA	.
NPR07.0SW	EXP-NPR	04/19/00	GWPP	2.1	<MDA	.	8.4	<MDA	.
NPR07.0SW	EXP-NPR	11/09/00	GWPP	4	<MDA	.	13	<MDA	.
NPR10.0SW	EXP-NPR	05/24/00	GWPP	2.8	<MDA	.	5.9	<MDA	.
NPR12.0SW	EXP-NPR	04/19/00	GWPP	2.8	<MDA	.	8.3	<MDA	.
NPR12.0SW	EXP-NPR	11/09/00	GWPP	2.1	<MDA	.	7.3	<MDA	.
NPR12.0SW DUP	EXP-NPR	11/09/00	GWPP	3	14	4.2	9.1	16	6.4

APPENDIX F.3 UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Gross Alpha and Gross Beta Activity

Sampling Point	Location	Date Sampled	Program	Gross Alpha (pCi/L)			Gross Beta (pCi/L)		
				MDA	Result	Error	MDA	Result	Error
OF 51	EXP-SW	04/10/00	WRRP	1.34	2.79	1.43	1.33	2.03	1.38
OF 51	EXP-SW	09/19/00	WRRP	2.48	3.4	1.9	2.13	3.52	1.52
OF 221	EXP-SW	03/20/00	WRRP	2.45	65.72	5.14	2.05	70.9	3.31
OF 221	EXP-SW	09/19/00	WRRP	2.45	15.29	3.08	2.48	125.52	4.2
OF 225	EXP-SW	03/20/00	WRRP	2.86	30.16	4.12	2.37	38.95	2.98
OF 225	EXP-SW	09/19/00	WRRP	3.19	22.89	4.13	2.85	186.9	5.27
SCR7.1	EXP-UV	01/19/00	WRRP	0.97	<MDA	.	1.16	3.93	1.25
SCR7.1	EXP-UV	05/30/00	WRRP	1.94	<MDA	.	2.06	<MDA	.
SCR7.1	EXP-UV	09/06/00	WRRP	1.53	<MDA	.	1.72	<MDA	.
SCR7.18SP	EXP-UV	01/19/00	WRRP	0.31	1.57	0.82	1.52	6	1.3
SCR7.18SP	EXP-UV	05/30/00	WRRP	2.22	<MDA	.	1.97	5.89	1.79
SCR7.8SP	EXP-UV	01/19/00	WRRP	1.64	<MDA	.	1.61	3	1.18
SCR7.8SP	EXP-UV	05/30/00	WRRP	2.06	<MDA	.	1.98	2.62	1.4
SCR7.8SP	EXP-UV	09/06/00	WRRP	2.68	<MDA	.	1.75	1.92	1.21
SP-17	EXP-SW	04/10/00	WRRP	1.33	1.37	1.34	1.4	<MDA	.
SP-17	EXP-SW	09/19/00	WRRP	1.88	<MDA	.	2.04	2.47	1.42
STATION 8	EXP-SW	03/20/00	WRRP	1.31	15.91	1.99	1.3	10.96	1.38
STATION 8	EXP-SW	04/10/00	WRRP	1.03	7.23	1.35	1.2	5.86	1.33
STATION 8	EXP-SW	09/19/00	WRRP	1.89	<MDA	.	2.23	3.85	1.71

Radiological Analytes: Isotope Activity (pCi/L)

Sampling Point	9215-STACK11			GW-108					
Location	B9215			S3					
Date Sampled	11/30/00			01/11/00			07/18/00		
Monitoring Program	GWPP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	5100	86	2.8	333.3	156.16	143.99	<MDA	.	193.69
Gross Beta	2800	45	6.5	8642.12	198.95	90.42	9025.39	307.06	164.99
Technetium-99	<MDA	.	26	18117.58	74.75	10.7	19241.93	96.75	16.61
Uranium-234	870	160	10	18.47	7.73	2.98	.	.	.
Uranium-235	80	24	3.4	<MDA	.	3.13	.	.	.
Uranium-236	.	.	.	<MDA	.	3.3	.	.	.
Uranium-238	5800	1000	9.3	5.19	3.68	3.3	.	.	.

(Continued)

Sampling Point	GW-109						GW-151		
Location	S3						NHP		
Date Sampled	05/25/00			10/19/00			05/16/00		
Monitoring Program	GWPP			GWPP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	< CE	130	100	<MDA	.	240	<MDA	.	1.46
Gross Beta	7300	800	610	7400	910	830	3.47	1.65	2.16
Technetium-99	21000	120	28	20000	85	13	.	.	.
Uranium-234	.	.	.	.	.	.	0.76	0.46	0.48
Uranium-235	.	.	.	.	.	.	<MDA	.	0.45
Uranium-236	.	.	.	.	.	.	<MDA	.	0.38
Uranium-238	.	.	.	.	.	.	<MDA	.	0.47

(Continued)

Sampling Point	GW-151			GW-153			GW-154		
Location	NHP			NHP			NHP		
Date Sampled	08/17/00			10/12/00			05/17/00		
Monitoring Program	WRRP			GWPP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	<MDA	.	1.44	<MDA	.	3.4	496	14.74	2.29
Gross Beta	3.92	1.26	1.68	<MDA	.	7.6	97.23	4.03	2.62
Technetium-99	.	.	.	<MDA	.	13	.	.	.
Uranium-234	<MDA	.	0.44	.	.	.	454.5	143	1.59
Uranium-235	<MDA	.	0.32	.	.	.	21.34	8.17	1.22
Uranium-236	<MDA	.	0.28	.	.	.	14.46	5.83	0.64
Uranium-238	<MDA	.	0.62	.	.	.	312.1	98.59	2.05

(Continued)

Radiological Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-154			GW-193					
Location	NHP			T2331					
Date Sampled	08/22/00			01/12/00			07/18/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	572.43	12.1	1.54	3.86	1.66	1.51	3.16	0.93	0.71
Gross Beta	171.56	3.49	1.48	8.88	1.1	0.93	6.04	0.95	0.81
Technetium-99	.	.	.	<MDA	.	14.06	<MDA	.	21.54
Uranium-234	438.4	85.62	0.61	.	.	.	.	.	.
Uranium-235	13.52	3.56	0.29	.	.	.	.	.	.
Uranium-236	7.46	2.23	0.45	.	.	.	.	.	.
Uranium-238	184.9	36.62	0.65	.	.	.	.	.	.

(Continued)

Sampling Point	GW-207			GW-208			GW-218		
Location	EXP-SR			EXP-SR			UOV		
Date Sampled	11/07/00			11/07/00			05/31/00		
Monitoring Program	GWPP			GWPP			GWPP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	2.5	2.3	1.4	<MDA	.	6.1	<MDA	.	2.7
Gross Beta	<MDA	.	8.6	<MDA	.	8.4	15	5.9	8.5
Technetium-99	<MDA	.	13	<MDA	.	13	.	.	.
Uranium-234	.	.	.	.	.	.	15	1.9	0.18
Uranium-235	.	.	.	.	.	.	0.4	0.26	0.31
Uranium-236	.	.	.	.	.	.	.	.	.
Uranium-238	.	.	.	.	.	.	1.6	0.45	0.22

(Continued)

Sampling Point	GW-218			GW-219					
Location	UOV			UOV					
Date Sampled	10/30/00			06/06/00					
Monitoring Program	GWPP			GWPP					
Type							DUP		
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	3.2	2.2	2.5	100	11	2.4	100	11	2.3
Gross Beta	7.1	4.7	7.1	89	9.5	8	72	8.6	7.4
Technetium-99	.	.	.	.	.	.	.	.	.
Uranium-234	1.7	0.51	0.27	36	5.3	0.34	33	5	0.34
Uranium-235	<MDA	.	0.11	3.3	1	0.17	2.9	0.94	0.18
Uranium-236	.	.	.	.	.	.	.	.	.
Uranium-238	2.5	0.64	0.31	170	22	0.42	180	24	0.43

(Continued)

APPENDIX F.3: UPPER EAST FORK POPLAR CREEK HYDROGEOLOGIC REGIME, 2000
Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-219			GW-220			GW-253		
Location	UOV			NHP			S2		
Date Sampled	10/30/00			08/22/00			05/23/00		
Monitoring Program	GWPP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	26	6.1	3.5	<MDA	.	1.06	86.59	10.61	5.9
Gross Beta	24	6.6	8.5	5.08	0.92	0.81	34.13	5.33	4.65
Technetium-99	.	.	.	.	.	.	.	.	.
Uranium-234	20	2.8	0.24	1.14	0.53	0.14	10.93	3.08	0.71
Uranium-235	1.6	0.6	0.43	<MDA	.	0.33	<MDA	.	0.8
Uranium-236	.	.	.	<MDA	.	0.26	<MDA	.	0.65
Uranium-238	140	16	0.3	0.69	0.4	0.13	2.54	1.19	0.87

(Continued)

Sampling Point	GW-253			GW-274					
Location	S2			SY					
Date Sampled	11/02/00			05/30/00			10/18/00		
Monitoring Program	WRRP			GWPP			GWPP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	73.63	24.27	25.82	<MDA	.	260	<MDA	.	157
Gross Beta	36.6	14.1	19.1	7800	870	750	12200	1000	394
Technetium-99	.	.	.	15000	70	13	15000	70	13
Uranium-234	7.76	1.82	0.23	.	.	.	.	.	.
Uranium-235	0.21	0.21	0.14	.	.	.	.	.	.
Uranium-236	<MDA	.	0.28	.	.	.	.	.	.
Uranium-238	1.86	0.66	0.28	.	.	.	.	.	.

(Continued)

Sampling Point	GW-275						GW-381		
Location	SY						NHP		
Date Sampled	05/30/00			10/18/00			10/16/00		
Monitoring Program	GWPP			GWPP			GWPP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	<MDA	.	230	<MDA	.	350	<MDA	.	2.8
Gross Beta	<MDA	.	770	<MDA	.	760	<MDA	.	7.7
Technetium-99	14	8.8	13	<MDA	.	13	<MDA	.	13
Uranium-234	.	.	.	.	.	.	.	.	.
Uranium-235	.	.	.	.	.	.	.	.	.
Uranium-236	.	.	.	.	.	.	.	.	.
Uranium-238	.	.	.	.	.	.	.	.	.

(Continued)

Radiogical Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-605								
Location	EXP-I								
Date Sampled	01/12/00						07/17/00		
Monitoring Program	WRRP						WRRP		
Type				DUP					
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	48.06	4.22	2.12	50.95	3.41	1.24	49.38	3.74	1.74
Gross Beta	14.87	3.08	2.79	18.66	2.11	1.72	11.64	1.93	1.99
Technetium-99	<MDA	.	25.82	<MDA	.	13.78	<MDA	.	18.09
Uranium-234	.	.	.	.	.	.	.	.	.
Uranium-235	.	.	.	.	.	.	.	.	.
Uranium-236	.	.	.	.	.	.	.	.	.
Uranium-238	.	.	.	.	.	.	.	.	.

(Continued)

Sampling Point	GW-605			GW-606					
Location	EXP-I			EXP-I					
Date Sampled	07/17/00			01/12/00			07/17/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type	DUP								
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	53.94	4.02	1.84	5.93	1.01	0.12	4.58	1.98	2.36
Gross Beta	13.14	1.89	1.9	4.9	1.49	1.38	3.97	1.55	2.14
Technetium-99	<MDA	.	18.04	<MDA	.	14.13	<MDA	.	18.18
Uranium-234	.	.	.	.	.	.	.	.	.
Uranium-235	.	.	.	.	.	.	.	.	.
Uranium-236	.	.	.	.	.	.	.	.	.
Uranium-238	.	.	.	.	.	.	.	.	.

(Continued)

Sampling Point	GW-618						GW-633		
Location	EXP-E						RG		
Date Sampled	05/23/00			11/08/00			06/08/00		
Monitoring Program	WRRP			WRRP			GWPP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	2.23	1.19	1.11	<MDA	.	2.58	<MDA	.	17
Gross Beta	5.1	0.91	0.8	4.89	1.69	2.24	6100	340	150
Technetium-99	.	.	.	.	.	.	6600	46	13
Uranium-234	<MDA	.	0.64	<MDA	.	0.63	.	.	.
Uranium-235	<MDA	.	0.68	<MDA	.	0.53	.	.	.
Uranium-236	<MDA	.	0.47	<MDA	.	0.46	.	.	.
Uranium-238	0.83	0.63	0.83	<MDA	.	0.5	.	.	.

(Continued)

Radiological Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-633			GW-690					
Location	RG			CPT					
Date Sampled	10/24/00			06/19/00			10/25/00		
Monitoring Program	GWPP			GWPP			GWPP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	34	25	26	6.3	4.7	6.1	<MDA	.	8.2
Gross Beta	4100	200	79	<MDA	.	8.5	<MDA	.	8.1
Technetium-99	7500	55	13	<MDA	.	13	<MDA	.	13
Uranium-234	.	.	.	.	.	.	.	.	.
Uranium-235	.	.	.	.	.	.	.	.	.
Uranium-236	.	.	.	.	.	.	.	.	.
Uranium-238	.	.	.	.	.	.	.	.	.

(Continued)

Sampling Point	GW-733						GW-735		
Location	EXP-J						EXP-J		
Date Sampled	01/13/00			07/17/00			05/15/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	<MDA	.	0.86	<MDA	.	1.6	<MDA	.	3.07
Gross Beta	3.05	1.03	0.97	2.74	1.42	2.02	2.4	1.45	2.28
Technetium-99	<MDA	.	13.48	<MDA	.	17.89	.	.	.
Uranium-234	.	.	.	.	.	.	2.51	1.85	2.07
Uranium-235	.	.	.	.	.	.	<MDA	.	1.59
Uranium-236	.	.	.	.	.	.	<MDA	.	0.84
Uranium-238	.	.	.	.	.	.	<MDA	.	2.67

(Continued)

Sampling Point	GW-735			GW-816			GW-832		
Location	EXP-J			EXP-SR			NHP		
Date Sampled	08/21/00			11/08/00			05/17/00		
Monitoring Program	WRRP			GWPP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	<MDA	.	1.16	3.4	2.6	3.3	2.76	1.31	1.46
Gross Beta	3.57	2.59	2.51	<MDA	.	8.1	4.07	1.44	1.84
Technetium-99	.	.	.	<MDA	.	13	.	.	.
Uranium-234	0.38	0.3	0.15	.	.	.	1.78	0.73	0.47
Uranium-235	<MDA	.	0.31	.	.	.	<MDA	.	0.36
Uranium-236	<MDA	.	0.16	.	.	.	<MDA	.	0.16
Uranium-238	<MDA	.	0.25	.	.	.	2.41	0.87	0.37

(Continued)

Radiological Analytes: Isotope Activity (pCi/L)

Sampling Point	GW-832			LRSPW			OF 51		
Location	NHP			EXP-SW			EXP-SW		
Date Sampled	08/23/00			12/19/00			04/10/00		
Monitoring Program	WRRP			GWPP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	3.82	1.7	1.89	7.6	3	0.79	2.79	1.43	1.34
Gross Beta	5.66	1.59	2.08	<MDA	.	7.3	2.03	1.38	1.33
Technetium-99	.	.	.	<MDA	.	13	.	.	.
Uranium-234	3.64	1.46	0.95	.	.	.	1.76	0.94	0.88
Uranium-235	<MDA	.	0.74	.	.	.	< CE	0.42	0.32
Uranium-236	<MDA	.	0.51	.	.	.	<MDA	.	0.65
Uranium-238	2.61	1.18	0.83	.	.	.	2.55	1.13	0.58

(Continued)

Sampling Point	OF 51			OF 221					
Location	EXP-SW			EXP-SW					
Date Sampled	09/19/00			03/20/00			09/19/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	3.4	1.9	2.48	65.72	5.14	2.45	15.29	3.08	2.45
Gross Beta	3.52	1.52	2.13	70.9	3.31	2.05	125.52	4.2	2.48
Technetium-99	.	.	.	.	.	.	.	.	.
Uranium-234	2.42	0.77	0.25	25.11	5.36	0.38	17.78	3.56	0.24
Uranium-235	<MDA	.	0.26	2.61	0.98	0.41	1.17	0.51	0.28
Uranium-236	<MDA	.	0.23	1.94	0.78	0.28	0.82	0.4	0.19
Uranium-238	3.09	0.91	0.27	34.95	7.25	0.38	15.86	3.21	0.2

(Continued)

Sampling Point	OF 225						SP-17		
Location	EXP-SW						EXP-SW		
Date Sampled	03/20/00			09/19/00			04/10/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	30.16	4.12	2.86	22.89	4.13	3.19	1.37	1.34	1.33
Gross Beta	38.95	2.98	2.37	186.9	5.27	2.85	<MDA	.	1.4
Technetium-99	.	.	.	.	.	.	.	.	.
Uranium-234	15.79	3.61	0.4	13.16	2.99	0.42	1.96	1.02	0.6
Uranium-235	1.25	0.65	0.39	0.82	0.49	0.37	<MDA	.	0.37
Uranium-236	0.57	0.4	0.17	0.81	0.45	0.25	<MDA	.	0.57
Uranium-238	22.12	4.86	0.45	11.71	2.7	0.32	0.76	0.61	0.51

(Continued)

Radiological Analytes: Isotope Activity (pCi/L)

Sampling Point	SP-17			STATION 8					
Location	EXP-SW			EXP-SW					
Date Sampled	09/19/00			03/20/00			04/10/00		
Monitoring Program	WRRP			WRRP			WRRP		
Type									
	ACT	ERR	MDA	ACT	ERR	MDA	ACT	ERR	MDA
Gross Alpha	<MDA	.	1.88	15.91	1.99	1.31	7.23	1.35	1.03
Gross Beta	2.47	1.42	2.04	10.96	1.38	1.3	5.86	1.33	1.2
Technetium-99	.	.	.	.	.	.	.	.	.
Uranium-234	<MDA	.	0.49	<MDA	.	3.81	1.77	0.97	0.61
Uranium-235	<MDA	.	0.34	<MDA	.	3.01	<MDA	.	0.76
Uranium-236	<MDA	.	0.31	<MDA	.	1.35	<MDA	.	0.58
Uranium-238	<MDA	.	0.34	15.07	7.21	3.64	6.4	2.14	0.52

(Continued)

Sampling Point	STATION 8		
Location	EXP-SW		
Date Sampled	09/19/00		
Monitoring Program	WRRP		
Type			
	ACT	ERR	MDA
Gross Alpha	<MDA	.	1.89
Gross Beta	3.85	1.71	2.23
Technetium-99	.	.	.
Uranium-234	1.8	0.65	0.32
Uranium-235	0.92	0.46	0.13
Uranium-236	0.33	0.26	0.24
Uranium-238	1.49	0.57	0.29

APPENDIX G

CY 2000 QUALITY ASSURANCE/QUALITY CONTROL DATA

EXPLANATION

SAMPLING POINT:

BCK	-	Bear Creek Kilometer
GHK	-	Gum Hollow Branch Kilometer (surface water sampling location)
GW	-	Monitoring Well (also 1090)
LRSPW	-	Lake Reality Emergency Spillway (surface water station)
NPR	-	North of Pine Ridge near the Scarboro Community (surface water sampling location)
NT	-	Northern Tributary to Bear Creek
SCR	-	South Chestnut Ridge (tributary prefix for spring sampling location)
SS	-	Spring (Bear Creek Regime)
D	-	Field Duplicate Sample

NOTES:

No volatile organic compounds were detected in any of the QA/QC samples (see Section 2.4). Therefore, data summaries showing detected results are not presented for CY 2000. This appendix shows the method (laboratory) blank and trip blank samples associated with each groundwater and surface water sample collected by the GWPP. Groundwater and surface water samples that were not analyzed for organic compounds (e.g., filtered samples collected for dissolved metals analyses) do not have associated blank samples. Field blank samples were collected in the Bear Creek Regime at well GW-226 (March 1 and September 11) and in the East Fork Regime at wells GW-722-17 (March 21) and GW-381 (October 16). Two equipment rinsate samples were collected at well GW-722 in the East Fork Regime during CY 2000. The rinsate samples were analyzed for the standard suite of analytes (see Section 2.3), but only the constituents shown below were detected.

Well	Date Sampled	pH	Conductivity (µmho/cm)	Bicarbonate (mg/L)	Turbidity (NTU)
GW-722-17	03/22/00	7.37	0.7	<1	0.06
GW-722-17	07/27/00	6.24	0.7	3.36	0.113

APPENDIX G: QUALITY ASSURANCE/QUALITY CONTROL DATA
Correlation with Associated Groundwater and Surface Water Samples
Bear Creek Hydrogeologic Regime, 2000

Sampling Point	Date Sampled	Sample Number	Trip Blank Sample Number	Method Blank Sample Number
BCK-00.63	02/09/00	A000400237	A000400236	Q000620001
BCK-00.63	08/01/00	A002140024	A002140023	Q002310010
BCK-04.55	02/09/00	A000400238	A000400236	Q000620000
BCK-04.55	08/01/00	A002140025	A002140023	Q002310010
BCK-07.87	02/09/00	A000400243	A000400236	Q000620001
BCK-07.87	08/01/00	A002140027	A002140023	Q002310010
BCK-09.40	02/10/00	A000410046	A000410045	Q000620042
BCK-09.40	08/02/00	A002150021	A002150020	Q002310007
BCK-11.97	02/10/00	A000410050	A000410045	Q000620042
BCK-11.97	08/02/00	A002150026	A002150020	Q002310007
GW-053	02/21/00	A000520008	A000520007	Q000620288
GW-053	08/22/00	A002350059	A002350058	Q002430103
GW-056	01/12/00	A000120086	A000120085	Q000310123
GW-056 D	01/12/00	A000120087	A000120085	Q000310123
GW-056	07/11/00	A001930035	A001930034	Q001990026
GW-079	02/22/00	A000530033	.	.
GW-079	08/15/00	A002270011	.	.
GW-080	02/21/00	A000520075	.	.
GW-080	08/14/00	A002270013	.	.
GW-085	02/29/00	A000600038	A000600036	Q000740192
GW-085	09/08/00	A002520073	A002510100	Q002590024
GW-115	02/15/00	A000460076	.	.
GW-226	03/01/00	A000610056	A000610054	Q000770000
GW-226	09/11/00	A002550010	A002550008	Q002590023
GW-287	02/17/00	A000480047	A000480046	Q000620288
GW-287 D	02/17/00	A000480048	A000480046	Q000620288
GW-287	08/21/00	A002340050	A002340049	Q002430103
GW-311	02/28/00	A000590039	A000590037	Q000740192
GW-311	09/06/00	A002500079	A002500078	Q002590024
GW-315	02/28/00	A000590038	A000590037	Q000740192
GW-315	09/05/00	A002490078	A002490077	Q002590024
GW-537	03/01/00	A000610055	A000610054	Q000770000
GW-537	09/11/00	A002550011	A002550008	Q002590023
GW-537 D	09/11/00	A002550012	A002550008	Q002590023
GW-621	01/19/00	A000180226	A000180225	Q000310169
GW-621	07/13/00	A001950106	A001950105	Q002090053
GW-627	02/21/00	A000520009	A000520007	Q000620288
GW-627	02/23/00	A000530012	A000530011	Q000770005
GW-627	08/22/00	A002350060	A002350058	Q002430103
GW-627	08/23/00	A002350420	A002350419	Q002430103
GW-653	02/17/00	A000480049	A000480046	Q000620288
GW-653	08/21/00	A002340051	A002340049	Q002430103
GW-683	01/18/00	A000180057	A000180056	Q000310169
GW-683	07/12/00	A001940030	A001940029	Q001990026
GW-684	01/13/00	A000120099	A000120098	Q000310123
GW-684	07/12/00	A001940031	A001940029	Q001990026

APPENDIX G: QUALITY ASSURANCE/QUALITY CONTROL DATA
Correlation with Associated Groundwater and Surface Water Samples
Bear Creek Hydrogeologic Regime, 2000

Sampling Point	Date Sampled	Sample Number	Trip Blank Sample Number	Method Blank Sample Number
GW-685	01/13/00	A000120100	A000120098	Q000310123
GW-685	07/11/00	A001930036	A001930034	Q001990026
GW-695	01/24/00	A000240073	A000240072	Q000480014
GW-695	07/13/00	A001950107	A001950105	Q002090053
GW-703	01/24/00	A000240074	A000240072	Q000480014
GW-703	07/24/00	A002060077	A002060076	Q002170005
GW-704	01/25/00	A000250009	A000250008	Q000480014
GW-704	07/24/00	A002060078	A002060076	Q002170005
GW-706	01/31/00	A000310015	A000310014	Q000480017
GW-706	02/01/00	A000320152	A000320151	Q000480017
GW-706	07/25/00	A002070108	A002070107	Q002170005
GW-706	07/26/00	A002080106	A002080105	Q002170008
GW-714	02/16/00	A000460077	-	-
GW-714	08/14/00	A002270083	-	-
GW-715	02/16/00	A000460078	-	-
GW-715	08/14/00	A002270085	-	-
GW-724	02/03/00	A000340032	A000340030	Q000520212
GW-724	07/31/00	A002130012	A002130011	Q002170066
GW-724 D	07/31/00	A002130013	A002130011	Q002170066
GW-725	02/07/00	A000380106	A000380105	Q000520212
GW-725	02/08/00	A000380110	A000380109	Q000620000
GW-725	08/08/00	A002210025	A002210024	Q002310014
GW-725	08/09/00	A002210174	A002210173	Q002310014
GW-738	02/03/00	A000340031	A000340030	Q000520212
GW-738	07/31/00	A002130014	A002130011	Q002170066
GW-740	02/02/00	A000330023	A000330022	Q000480017
GW-740	07/27/00	A002090175	A002090174	Q002170066
GW-829	02/29/00	A000600037	A000600036	Q000740192
GW-829	09/08/00	A002510101	A002510100	Q002590024
NT-01	02/10/00	A000410049	A000410045	Q000620042
NT-01	08/02/00	A002150025	A002150020	Q002310007
SS-1	02/10/00	A000410048	A000410045	Q000620042
SS-1	08/02/00	A002150024	A002150020	Q002310007
SS-4	02/09/00	A000400239	A000400236	Q000620001
SS-4	08/01/00	A002140029	A002140023	Q002310010
SS-5	02/09/00	A000400240	A000400236	Q000620001
SS-5	08/01/00	A002140028	A002140023	Q002310010
SS-6	02/09/00	A000400241	A000400236	Q000620001
SS-6 D	02/09/00	A000400242	A000400236	Q000620001
SS-6	08/01/00	A002140026	A002140023	Q002310010

APPENDIX G: QUALITY ASSURANCE/QUALITY CONTROL DATA
Correlation with Associated Groundwater and Surface Water Samples
Chestnut Ridge Hydrogeologic Regime, 2000

Sampling Point	Date Sampled	Sample Number	Trip Blank Sample Number	Method Blank Sample Number
GW-203	02/23/00	A000540132	.	.
GW-203	08/15/00	A002280100	.	.
GW-302	02/23/00	A000540156	.	.
GW-302	08/14/00	A002270485	.	.
GW-305	02/07/00	A000380120	.	.
GW-339	02/23/00	A000540133	.	.
GW-339	08/14/00	A002270087	.	.
GW-521	01/31/00	A000310086	.	.
SCR2.1SP	03/06/00	A000660009	A000660008	Q000770000
SCR2.1SP	03/06/00	A000660010	.	.
SCR2.1SP	08/17/00	A002300024	A002300023	Q002430106
SCR2.1SP	08/17/00	A002300030	.	.
SCR2.2SP	03/06/00	A000660011	A000660008	Q000770000
SCR2.2SP	03/06/00	A000660012	.	.
SCR2.2SP	08/17/00	A002300025	A002300023	Q002430106
SCR2.2SP	08/17/00	A002300031	.	.
SCR3.4SP	03/06/00	A000660013	A000660008	Q000770000
SCR3.4SP	03/06/00	A000660014	.	.
SCR3.4SP	08/17/00	A002300026	A002300023	Q002430106
SCR3.4SP	08/17/00	A002300032	.	.
SCR5.1SP	03/06/00	A000660022	A000660008	Q000800128
SCR5.1SP	03/06/00	A000660023	.	.
SCR5.1SP D	03/06/00	A000660024	A000660008	Q000800128
SCR5.1SP D	03/06/00	A000660025	.	.
SCR5.1SP	08/17/00	A002300027	A002300023	Q002430106
SCR5.1SP	08/17/00	A002300033	.	.
SCR5.4SP	03/06/00	A000660026	A000660008	Q000800128
SCR5.4SP	03/06/00	A000660027	.	.
SCR5.4SP	08/17/00	A002300028	A002300023	Q002430106
SCR5.4SP	08/17/00	A002300034	.	.
SCR5.4SP D	08/17/00	A002300029	A002300023	Q002430106
SCR5.4SP D	08/17/00	A002300035	.	.

APPENDIX G: QUALITY ASSURANCE/QUALITY CONTROL DATA
Correlation with Associated Groundwater and Surface Water Samples
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Sampling Point	Date Sampled	Sample Number	Trip Blank Sample Number	Method Blank Sample Number
55-2C	05/22/00	A001430006	A001430005	Q001590008
55-2C	10/17/00	A002910037	A002910036	Q003000254
56-2C	05/22/00	A001430007	A001430005	Q001590008
56-2C	10/17/00	A002910038	A002910036	Q003050248
9212-W-2-BSTM	03/08/00	A000680198	A000680201	Q000800128
9215-STACK11	11/30/00	A003350033	A003350032	Q003560061
GHK2.51ESW	04/19/00	A001090048	A001090044	Q001230024
GHK2.51ESW	04/19/00	A001090054	.	.
GHK2.51ESW	11/09/00	A003140014	A003140000	Q003210217
GHK2.51ESW	11/09/00	A003140013	.	.
GHK2.51WSW	04/19/00	A001090049	A001090044	Q001230024
GHK2.51WSW	04/19/00	A001090055	.	.
GHK2.51WSW D	04/19/00	A001090050	A001090044	Q001230026
GHK2.51WSW D	04/19/00	A001090056	.	.
GHK2.51WSW	11/09/00	A003140016	A003140000	Q003210217
GHK2.51WSW	11/09/00	A003140015	.	.
GW-109	05/25/00	A001440073	.	.
GW-109	06/08/00	A001600023	A001600021	Q001650174
GW-109	10/19/00	A002930157	A002930156	Q003050249
GW-153	05/11/00	A001320051	A001320050	Q001520041
GW-153	10/12/00	A002860138	A002860131	Q002970053
GW-192	05/09/00	A001300004	A001300003	Q001510000
GW-192 D	05/09/00	A001300005	A001300003	Q001510000
GW-192	10/09/00	A002830007	A002830006	Q002970046
GW-204	06/07/00	A001590108	A001590107	Q001650174
GW-204	10/24/00	A002980001	A002980000	Q003120117
GW-207	04/05/00	A000960037	A000960035	Q001110004
GW-207	11/07/00	A003120010	A003120009	Q003210215
GW-208	04/05/00	A000960036	A000960035	Q001110004
GW-208	11/07/00	A003120011	A003120009	Q003210215
GW-218	05/31/00	A001520254	A001520253	Q001600039
GW-218	10/30/00	A003040043	A003040040	Q003120123
GW-218	11/06/00	A003110135	.	.
GW-219	06/06/00	A001580104	A001580103	Q001650174
GW-219 D	06/06/00	A001580105	A001580103	Q001650174
GW-219	10/30/00	A003040044	A003040040	Q003120123
GW-220	05/15/00	A001360011	A001360009	Q001520041
GW-220 D	05/15/00	A001360012	.	.
GW-220	10/12/00	A002860140	A002860131	Q002970053
GW-220 D	10/12/00	A002860146	A002860131	Q002970053
GW-222	06/13/00	A001650007	A001650005	Q001730036
GW-222	10/26/00	A003000044	A003000043	Q003120120
GW-223	06/12/00	A001640007	A001640006	Q001730036
GW-223	10/31/00	A003050072	A003050073	Q003120123
GW-240	05/17/00	A001380018	A001380016	Q001520035
GW-240	10/11/00	A002850021	A002850019	Q002970053
GW-251	05/09/00	A001300006	A001300003	Q001510000
GW-251	10/09/00	A002830008	A002830006	Q002970047

APPENDIX G: QUALITY ASSURANCE/QUALITY CONTROL DATA
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Sampling Point	Date Sampled	Sample Number	Trip Blank Sample Number	Method Blank Sample Number
GW-274	05/30/00	A001510066	A001510055	Q001540106
GW-274	10/18/00	A002920070	A002920069	Q003050248
GW-275	05/30/00	A001510056	A001510055	Q001540106
GW-275	10/18/00	A002920071	A002920069	Q003050248
GW-337	05/23/00	A001440074	A001440072	Q001590008
GW-337	10/19/00	A002930158	A002930156	Q003050249
GW-380	05/16/00	A001370022	.	.
GW-380 D	05/16/00	A001370023	.	.
GW-381	05/17/00	A001380019	A001380016	Q001520035
GW-381 D	05/17/00	A001380020	.	.
GW-381	10/16/00	A002900025	A002900023	Q003000254
GW-383	05/15/00	A001360010	A001360009	Q001520041
GW-383	10/16/00	A002900026	A002900023	Q003000254
GW-620	05/10/00	A001310004	A001310003	Q001510000
GW-620	10/10/00	A002840078	A002840077	Q002970047
GW-633	06/08/00	A001600022	A001600021	Q001650174
GW-633	10/24/00	A002980002	A002980000	Q003120117
GW-656	06/12/00	A001640008	A001640006	Q001730036
GW-656 D	06/12/00	A001640009	.	.
GW-656	10/25/00	A002990049	A002990048	Q003120117
GW-690	06/19/00	A001710019	A001710017	Q001730037
GW-690	10/25/00	A002990051	A002990048	Q003120117
GW-700	06/19/00	A001710018	A001710017	Q001730037
GW-700	10/25/00	A002990050	A002990048	Q003120117
GW-722-06	03/14/00	A000750161	A000750160	Q000870053
GW-722-06	03/14/00	A000750162	.	.
GW-722-06	07/17/00	A002000023	A002000022	Q002090053
GW-722-06	07/17/00	A002000024	.	.
GW-722-06	09/12/00	A002570153	.	.
GW-722-06	09/12/00	A002570155	.	.
GW-722-10	03/20/00	A000800106	A000800105	Q000900165
GW-722-10	03/20/00	A000800107	.	.
GW-722-10	07/20/00	A002020452	A002020451	Q002090059
GW-722-10	07/20/00	A002020453	.	.
GW-722-10	09/12/00	A002570154	.	.
GW-722-10	09/12/00	A002570156	.	.
GW-722-14	03/21/00	A000820012	A000820011	Q000900166
GW-722-14	03/21/00	A000820014	.	.
GW-722-14	07/26/00	A002090206	A002090204	Q002170065
GW-722-14	07/26/00	A002090209	.	.
GW-722-17	03/21/00	A000820013	A000820011	Q000900166
GW-722-17	03/21/00	A000820015	.	.
GW-722-17	07/26/00	A002090207	A002090204	Q002170065
GW-722-17	07/26/00	A002090210	.	.
GW-722-20	03/21/00	A000810039	A000810037	Q000900166
GW-722-20	03/21/00	A000810041	.	.
GW-722-20	07/25/00	A002080011	A002080008	Q002170008
GW-722-20	07/25/00	A002080014	.	.

APPENDIX G: QUALITY ASSURANCE/QUALITY CONTROL DATA
Correlation with Associated Groundwater and Surface Water Samples
Upper East Fork Poplar Creek Hydrogeologic Regime, 2000

Sampling Point	Date Sampled	Sample Number	Trip Blank Sample Number	Method Blank Sample Number
GW-722-22	03/21/00	A000810038	A000810037	Q000900166
GW-722-22	03/21/00	A000810040	.	.
GW-722-22	07/25/00	A002080009	A002080008	Q002170008
GW-722-22	07/25/00	A002080012	.	.
GW-722-22 D	07/25/00	A002080010	A002080008	Q002170008
GW-722-22 D	07/25/00	A002080013	.	.
GW-722-26	03/15/00	A000760055	A000760053	Q000870053
GW-722-26	03/15/00	A000760065	.	.
GW-722-26 D	03/15/00	A000760056	A000760053	Q000870053
GW-722-26 D	03/15/00	A000760066	.	.
GW-722-26	07/18/00	A002000183	A002000182	Q002090053
GW-722-26	07/18/00	A002000185	.	.
GW-722-30	03/15/00	A000760054	A000760053	Q000870053
GW-722-30	03/15/00	A000760064	.	.
GW-722-30	07/18/00	A002000184	A002000182	Q002090053
GW-722-30	07/18/00	A002000186	.	.
GW-722-32	03/20/00	A000800015	A000800012	Q000900165
GW-722-32	03/20/00	A000800016	.	.
GW-722-32	07/18/00	A002000198	A002000197	Q002090053
GW-722-32	07/18/00	A002000199	.	.
GW-722-32	09/14/00	A002590297	.	.
GW-722-32	09/14/00	A002590298	.	.
GW-722-33	03/20/00	A000800013	A000800012	Q000900165
GW-722-33	03/20/00	A000800014	.	.
GW-722-33	07/18/00	A002000200	A002000197	Q002090053
GW-722-33	07/18/00	A002000201	.	.
GW-735	04/25/00	A001160140	A001160138	Q001230028
GW-735	11/02/00	A003070008	A003070007	Q003210211
GW-744	04/17/00	A001080026	A001080025	Q001230025
GW-744	11/01/00	A003060001	A003060000	Q003120123
GW-744 D	11/01/00	A003060002	A003060000	Q003120123
GW-747	04/24/00	A001150002	A001150001	Q001230026
GW-747	11/01/00	A003060003	A003060000	Q003120123
GW-750	04/25/00	A001160139	A001160138	Q001230028
GW-750	11/02/00	A003070009	A003070007	Q003210211
GW-763	05/10/00	A001310005	A001310003	Q001510000
GW-763	05/11/00	A001320052	A001320050	Q001520041
GW-763	10/10/00	A002840076	A002840077	Q002970047
GW-763	10/11/00	A002850020	A002850019	Q002970053
GW-769	04/27/00	A001180001	A001180000	Q001370134
GW-769	10/03/00	A002770049	A002770048	Q002840075
GW-770	04/26/00	A001170001	A001170000	Q001370134
GW-770	10/02/00	A002760015	A002760013	Q002840075
GW-770 D	10/02/00	A002760016	A002760013	Q002840075
GW-782	05/01/00	A001220053	A001220052	Q001370133
GW-782 D	05/01/00	A001220054	.	.
GW-782	10/03/00	A002770050	A002770048	Q002840075
GW-783	05/01/00	A001220056	.	.
GW-783 D	05/01/00	A001220055	.	.

APPENDIX G: QUALITY ASSURANCE/QUALITY CONTROL DATA
Correlation with Associated Groundwater and Surface Water Samples
Upper East Fork Poplar Creek Hydrogeologic Regime, 2000

Sampling Point	Date Sampled	Sample Number	Trip Blank Sample Number	Method Blank Sample Number
GW-789	04/26/00	A001170002	A001170000	Q001370134
GW-789 D	04/26/00	A001170003	A001170000	Q001370134
GW-789	10/02/00	A002760014	A002760013	Q002840075
GW-791	05/02/00	A001230057	A001230056	Q001370133
GW-791 D	05/02/00	A001230058	.	.
GW-791	05/03/00	A001240045	A001240044	Q001370135
GW-791	10/03/00	A002770051	A002770048	Q002840075
GW-791	10/04/00	A002780175	A002780176	Q002970046
GW-816	04/10/00	A000970054	A000970053	Q001090030
GW-816	11/08/00	A003130058	A003130057	Q003210215
GW-820	06/13/00	A001650006	A001650005	Q001730036
GW-820	10/26/00	A003000045	A003000043	Q003120120
GW-820 D	10/26/00	A003000046	A003000043	Q003120120
LRSPW	04/18/00	A000970055	A001080024	Q001230025
LRSPW D	04/18/00	A000970056	A001080024	Q001230025
LRSPW	12/19/00	A003180007	A003540088	Q010050000
NPR07.0SW	04/19/00	A001090045	A001090044	Q001230024
NPR07.0SW	04/19/00	A001090051	.	.
NPR07.0SW	11/09/00	A003140002	A003140000	Q003210217
NPR07.0SW	11/09/00	A003140001	.	.
NPR10.0SW	05/24/00	A001450071	A001450070	Q001570000
NPR10.0SW	05/24/00	A001450072	.	.
NPR12.0SW	04/19/00	A001090047	A001090044	Q001230024
NPR12.0SW	04/19/00	A001090053	.	.
NPR12.0SW	11/09/00	A003140010	A003140000	Q003210217
NPR12.0SW	11/09/00	A003140005	.	.
NPR12.0SW D	11/09/00	A003140012	A003140000	Q003210217
NPR12.0SW D	11/09/00	A003140011	.	.

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