Groundwater

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Groundwater protection at the Savannah River Site (SRS) has evolved into a program with the following primary components:

- *Protect groundwater by good practices in managing chemicals and work.*
- *Monitor groundwater to identify areas of contamination.*
- *Remediate contamination as needed.*

SRS operations have contaminated groundwater around certain waste disposal facilities. Extensive monitoring and remediation programs are tracking and cleaning up the contamination. Remediation includes (1) closing waste sites to reduce the migration of contaminants into groundwater and (2) actively treating contaminated water.

No offsite wells have been contaminated by the migration of SRS groundwater.

This chapter describes SRS's groundwater environment and the programs in place for investigating, monitoring, remediating, and using the groundwater.

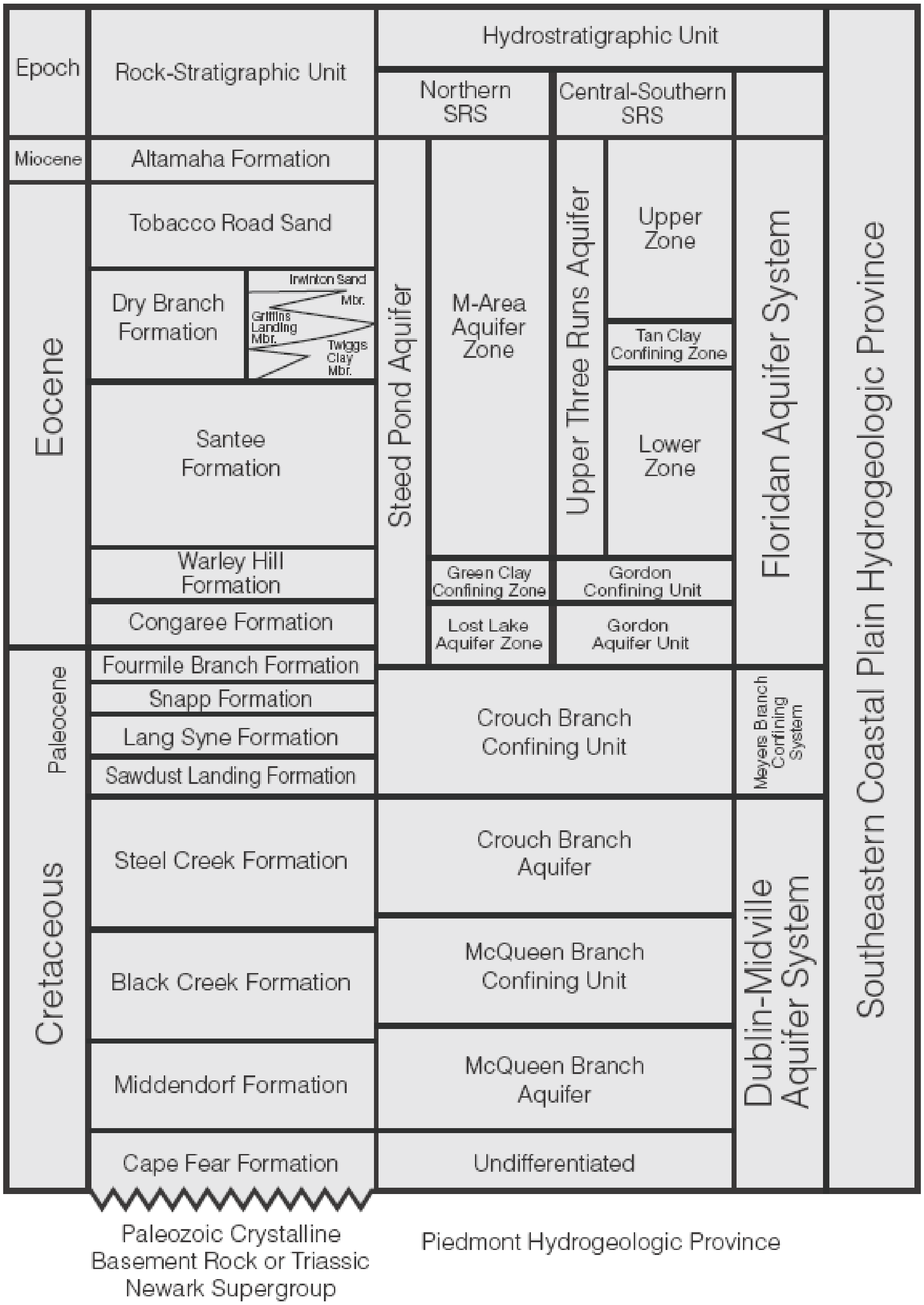
Groundwater at SRS

SRS is underlain by sediment of the Atlantic Coastal Plain. The Atlantic Coastal Plain consists of a southeast-dipping wedge of unconsolidated sediment that extends from its contact with the Piedmont Province at the Fall Line to the edge of the continental shelf. The sediment ranges from Late Cretaceous to Miocene in age and comprises layers of sand, muddy sand, and clay with subordinate calcareous sediments. It rests on crystalline and sedimentary basement rock.

Water flows easily through the sand layers but is retarded by less permeable clay beds, creating a complex system of aquifers. Operations during the life of SRS have resulted in contamination migrating into groundwater at various site locations, predominantly in the central areas of the site. The ongoing movement of water into the ground, through the aquifer system, and then into streams and lakes—or even into deeper aquifers—continues to carry contamination along with it, resulting in spreading plumes.

The hydrostratigraphy of SRS has been subject to several classifications. The hydrostratigraphic classification established in Aadland et al., 1995, and in Smits et al., 1996, is used widely at SRS and is regarded as the current site standard. This system is consistent with the one used by the U.S. Geological Survey (USGS) in regional studies that include the area surrounding SRS [Clarke and West, 1998]. Figure 7–1 is a chart that indicates the relative position of hydrostratigraphic units, and that relates hydrostratigraphic units to corresponding lithologic units at SRS and to the geologic time scale. This chart was modified from Aadland et al., 1995, and Fallaw and Price, 1995.

The hydrostratigraphic units of primary interest beneath SRS are part of the Southeastern Coastal Plain Hydrogeologic Province. Within this sequence of aquifers and confining units are two principal subcategories, the overlying Floridan Aquifer System and the underlying Dublin-Midville Aquifer System. These systems are separated from one another by the Meyers Branch Confining System. In turn, each of the systems is subdivided into two aquifers, which are separated by a confining unit.



Modified from Aadland et al., 1995, and Fallaw and Price, 1995

Figure 7–1 Hydrostratigraphic Units at SRS

In the central to southern portion of SRS, the Floridan Aquifer System is divided into the overlying Upper Three Runs Aquifer and the underlying Gordon Aquifer, which are separated by the Gordon Confining Unit. North of Upper Three Runs Creek, these units are collectively referred to as the Steed Pond Aquifer, in which the Upper Three Runs Aquifer is called the M-Area Aquifer zone, the Gordon Aquifer is referred to as the Lost Lake Aquifer zone, and the aquitard that separates them is referred to as the Green Clay confining zone unit within which the water table usually occurs at SRS; hence, it is referred to informally as the “water table” aquifer. The water table surface can be as deep as 160 feet below ground surface (bgs), but intersects the ground surface in seeps along site streams. The top of the Gordon Aquifer typically is encountered at depths of 150–250 feet bgs. The Dublin-Midville Aquifer System is divided into the overlying Crouch Branch Aquifer and the underlying McQueen Branch Aquifer, which are separated by the McQueen Branch Confining Unit. The Crouch Branch Aquifer and McQueen Branch Aquifer are names that originated at SRS [Aadland et al., 1995]. These units are equivalent to the Dublin Aquifer and the Midville Aquifer, which are names originating with the USGS [Clarke and West, 1998]. The top of the Crouch Branch Aquifer typically is encountered at depths of 350–500 feet bgs. The top of the McQueen’s Branch Aquifer typically is encountered at depths of 650–750 feet bgs.

Figure 7–2 is a three-dimensional block diagram of the hydrogeologic units at SRS and the generalized groundwater flow patterns within those units. These units are from shallowest to deepest: the Upper Three Runs/Steed Pond Aquifer (or water table aquifer), the Gordon/Lost Lake Aquifer, the Crouch Branch Aquifer, and the McQueen Branch Aquifer. Maps of the potentiometric surfaces of these units are presented in figures 18–21 of the “SRS Maps” appendix on the CD accompanying this report.

Groundwater recharge is a result of the infiltration of precipitation at the land surface; the precipitation moves vertically downward through the unsaturated zone to the water table. Upon entering the saturated zone at the water table, water moves predominantly in a horizontal direction toward local discharge zones along the headwaters and midsections of streams, while some of the water moves into successively deeper aquifers. The water lost to successively deeper aquifers also migrates laterally within those units toward the more distant regional discharge zones. These typically are located along major streams, such as Upper Three Runs or Fourmile Branch, or along the Savannah River itself. Groundwater movement within these units is extremely slow when compared to surface water flow rates. Groundwater velocities also are quite different between aquitards and aquifers, ranging at SRS from several inches to several feet per year in aquitards and from tens to hundreds of feet per year in aquifers.

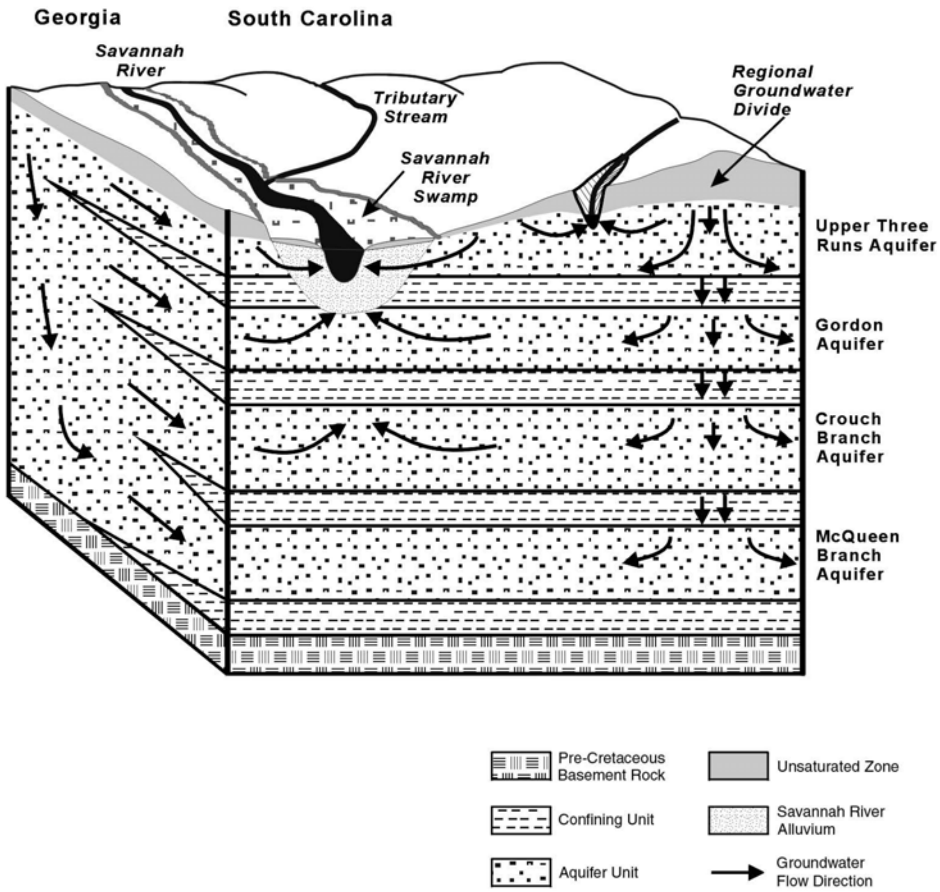
Monitoring wells are used extensively at SRS to assess the effects of site activities on groundwater quality. Most of the wells monitor the upper groundwater zone, although wells in lower zones are present at the sites with the larger groundwater contamination plumes. Groundwater in some areas contains one or more constituents at or above the levels of the drinking water standards of the U.S. Environmental Protection Agency (EPA). These areas can be seen in figure 17 of the “SRS Maps” appendix on the CD accompanying this report.

Groundwater Protection Program at SRS

The SRS groundwater program was audited by both the U.S. Department of Energy (DOE) and Washington (then Westinghouse) Savannah River Company (WSRC) in 2000 and 2001. Findings of these assessments have resulted in an ongoing evaluation of the site groundwater program’s goals and priorities. It has been determined that a groundwater protection program designed to meet federal and state laws/regulations, DOE orders, and site policies/procedures should contain the following elements:

- investigating site groundwater
- using site groundwater
- protecting site groundwater
- remediating contaminated site groundwater
- monitoring site groundwater

SRS identified specific program goals in each of these areas to maintain its commitment to a groundwater program that protects human health and the environment. Groundwater monitoring is a key tool used in each of the first four elements, and monitoring results form the basis for evaluations that are reported to site stakeholders.



Modified from Clarke and West, 1998

Figure 7–2 Groundwater at SRS

The groundwater flow system at SRS consists of four major aquifers separated by confining units. Flow in recharge areas generally migrates downward as well as laterally—eventually either discharging into the Savannah River and its tributaries or migrating into the deeper regional flow system. Additional information concerning hydraulic heads and flow directions may be found in figures 18–21 of the "SRS Maps" appendix on the CD accompanying this report.

Investigating SRS Groundwater

An extensive program is in place at SRS to acquire new data and information on the groundwater system. This multifaceted program is conducted across departmental boundaries at the site because of the different charters and mandates of these organizations. Investigations include both the collection and analysis of data to understand groundwater conditions on regional and local scales at SRS. Research efforts at the site generally are conducted to obtain a better understanding of subsurface processes and mechanisms or to define new approaches to subsurface remediation.

Investigative efforts focus on the collection and analysis of data to characterize the groundwater flow system. Characterization efforts at SRS include the following activities:

- collection of geologic core material and performance of seismic profiles to better delineate subsurface structural features
- installation of wells to allow periodic collection of both water levels and groundwater samples at strategic locations

- development of water table and potentiometric maps to delineate the direction of groundwater movement in the subsurface
- performance of various types of tests to obtain in situ estimates of hydraulic parameters needed to estimate groundwater velocities

Analysis of data on the regional scale is needed to provide a broad understanding of groundwater movement patterns at SRS that can be used as a framework to better understand the migration of contaminants at the local scale near individual waste units.

Surface water flow characteristics also are defined at the site on the regional scale and are significant to risk analyses because perennial streams are the receptors of groundwater discharge—some of which contains contaminants from SRS waste units. Because the site boundary does not represent a groundwater boundary, regional studies are helpful in understanding the movement of groundwater both onto the site from the surrounding area and vice versa.

The collection and analysis of data describing subsurface hydrogeologic conditions at or near individual waste units are needed to design effective remediation systems. Characterization embraces both traditional and innovative technologies to accomplish this goal. The installation of monitoring wells and piezometers is a traditional investigative method to allow the collection of (1) water levels, which are used to define flow directions, and (2) groundwater samples, which are analyzed to monitor contaminant plume migration within the groundwater flow system. Geophysical data acquired during well installation are used to delineate the subsurface hydrostratigraphy. Examples of newer technologies include the use of

- direct-push technology, such as the cone penetrometer, to collect one-time groundwater samples at investigation sites and to help establish hydrostratigraphic contacts
- the “rotosonic” method for bore holes to collect cores and install wells

Models have been used extensively as analytical tools at SRS for both regional and local investigations. Models have been utilized for a variety of reasons, but primarily to (1) define the regional groundwater movement patterns at SRS and the surrounding areas, (2) enhance the understanding of contaminant migration in the subsurface, and (3) support the design of remediation systems. At SRS, major groundwater modeling efforts have focused on A/M-Area, F-Area, H-Area, the Burial Ground Complex, and several of the reactor areas where the most extensive subsurface contamination is known to exist.

Research on groundwater issues is conducted at SRS to obtain a better understanding of subsurface mechanisms, such as (1) the interaction of contaminants with the porous media matrix and (2) the factors that impact the rate of migration of contaminants within the groundwater flow system. Research to address relevant issues often is conducted through cooperative studies with investigators at various public universities and private companies, while other efforts are conducted exclusively by SRS employees.

Using SRS Groundwater

SRS derives its own drinking and process water supply from groundwater. SRS domestic and process water systems are supplied from a network of approximately 40 wells in widely scattered locations across the site, of which eight supply the primary drinking water system for the site (figure 13 in the “SRS Maps” appendix on the CD accompanying this report). In 1983, SRS began reporting its water usage annually to the South Carolina Water Resources Commission—and later to the South Carolina Department of Health and Environmental Control (SCDHEC). Since that time, the amount of groundwater pumped on site has dropped by more than two thirds—from 10.8 million gallons per day during 1983–1986 to 2.7 million gallons per day in 2007. The majority of this decrease is attributable to the consolidation of site domestic water systems, which was completed in 1997. Thirteen separate systems, each with its own high-capacity supply wells, were consolidated into three systems located in A-Area, D-Area, and K-Area. This greatly reduced the amount of excess water being pumped to waste. Site facility shutdowns and reductions in population also were contributing factors.

Treated well water is supplied to the larger site facilities by the A-Area, D-Area, and K-Area domestic water systems. Each system has wells, a treatment plant, elevated storage tanks, and distribution piping. The wells range in capacity from 200 to 1,500 gallons per minute. The A-Area, D-Area, and K-Area systems supply an average of 1 million gallons per day of domestic water to customers in these areas. The domestic water systems supply site drinking fountains, lunchrooms, restrooms, and showering facilities with water meeting state and federal drinking water quality standards. SCDHEC periodically samples the large-and small-system wells for Safe Drinking Water Act contaminants. An unscheduled biannual SCDHEC sanitary survey also is performed.

The process water systems in A-Area, F-Area, H-Area, K-Area, L-Area, S-Area, and TNX-Area meet site demands for boiler feedwater, equipment cooling water, facility washdown water, and makeup water for cooling towers, fire storage tanks, chilled-water-piping loops, and site test facilities. These systems are supplied from dedicated process water wells ranging in capacity from 100 to 1,500 gallons per minute. In K-Area, the process water system is supplied from the domestic water wells. At some locations, the process water wells pump to ground-level storage tanks, where the water is treated for corrosion control. At other locations, the wells directly pressurize the process water distribution piping system without supplemental treatment.

The site groundwater protection program integrates information learned about the properties of SRS aquifers with site demand for drinking and process water. SRS ensures a high level of drinking water supply protection by (1) monitoring above and beyond SCDHEC requirements and (2) periodically evaluating production wells.

Virtually all site process and drinking water is pumped from the Crouch Branch and McQueen's Branch Aquifers. The amount of groundwater pumped at SRS has had only localized effects on water levels in these aquifers, and it is unlikely that water usage at the site ever will cause drawdown problems that could impact surrounding communities.

Protecting SRS Groundwater

SRS is committed to protecting the groundwater resource beneath the site. A variety of activities contribute to this goal, including

- construction, waste management, and monitoring efforts to prevent or control sources of groundwater contamination
- monitoring programs (both groundwater and surface water) to detect contamination
- a strong groundwater cleanup program through the site's Soil and Groundwater Closure Projects (SGCP) Department

Monitoring around known waste disposal sites and operating facilities provides the best means to detect and track groundwater contamination. To detect contamination from as-yet undiscovered sites, SRS depends on a sitewide groundwater monitoring and protection effort—the site Groundwater Surveillance Monitoring Program (GSMP). This program is an upgraded replacement of the site screening program.

Monitoring wells and production wells that no longer are needed should be properly abandoned. A typical abandonment involves placing a smaller diameter pipe ("tremie pipe") near the bottom of the well and pumping cement grout through it until the well is full. This ensures that grout reaches the bottom of the well. SRS abandoned 38 monitoring wells in 2007; additional abandonments are planned for 2008.

One goal of the GSMP is to protect potential offsite receptors from contamination by detecting the contamination in time to apply appropriate corrective actions. SRS is a large site, and most groundwater contamination is located in its central areas. However, the potential for offsite migration exists, and the consequences of such an outcome are serious enough to warrant a comprehensive prevention program.

SRS has evaluated flow in each aquifer and determined where there is potential for flow across the site boundary. This gives a conservative indication of where offsite contamination might be possible, and allows for a focused monitoring effort in those few areas. Another pathway for existing groundwater contamination to flow off site is by discharge into surface streams and subsequent transport into the Savannah River. SRS monitors site streams for contamination, and has installed new wells in recent years along several site streams to (1) detect contamination before it enters the streams and (2) assess the contamination's concentration in groundwater.

The SRS groundwater monitoring program gathers information to determine the effects of site operations on groundwater quality. The program is designed to

- assist the site in complying with environmental regulations and DOE directives
- provide data to identify and monitor constituents in the groundwater
- provide data for evaluating new facility locations to ensure that they are suitable for the intended facilities
- support basic and applied research projects

The groundwater monitoring program at SRS includes two primary components: (1) waste site/remediation groundwater monitoring, overseen by the Geochemical Monitoring group of SGCP, and (2) groundwater surveillance monitoring, conducted by the Environmental Services Section. To assist other departments in meeting their responsibilities, personnel of both organizations provide the services for installing monitoring wells, collecting and analyzing samples, and reporting results.

The *WSRC Environmental Compliance Manual* (WSRC 3Q) provides details about the following aspects of the groundwater monitoring program:

- well siting, construction, maintenance, and abandonment
- sample planning
- sample collection and field measurements
- analysis
- data management
- related publications, files, and databases

Monitoring data are evaluated each year to identify unexpected results in any SRS wells that might indicate new or changing groundwater contamination.

Remediating Contaminated SRS Groundwater

SRS has maintained an environmental remediation effort for many years. SGCP personnel manage the cleanup of contaminated groundwater associated with Resource Conservation and Recovery Act (RCRA) hazardous waste management facilities and other non-RCRA contamination sites specified in SRS's Federal Facility Agreement. Their mission is to aggressively manage the inactive waste site and groundwater cleanup program so that

- schedules for environmental agreements are consistently met

Sample Scheduling and Collection

The Geochemical Monitoring group and the Environmental Services Section schedule groundwater sampling either in response to specific requests from SRS personnel or as part of their ongoing groundwater monitoring program. Approximately 1,100 wells and numerous direct-push holes are sampled each year. Most of the wells are sampled semiannually, but many are sampled only annually. These groundwater samples provide data for reports required by federal and state regulations and for internal reports and research projects. The data are presented in spreadsheets on the attached CD, and fill approximately 170,000 lines.

Constituents that may be analyzed are commonly imposed by permit or work plan approval. These include metals, field parameters, and suites of herbicides, pesticides, volatile organics, and others. Radioactive constituents that may be analyzed by request include gross alpha and beta measurements, gamma emitters, iodine-129, strontium-90, radium isotopes, uranium isotopes, and other alpha and beta emitters.

Groundwater samples are collected from monitoring wells, generally with either pumps or bailers dedicated to each well to prevent cross-contamination among wells. Occasionally, portable sampling equipment is used; this equipment is decontaminated between wells.

Sampling and shipping equipment and procedures are consistent with EPA, SCDHEC, and U.S. Department of Transportation guidelines. EPA-recommended preservatives and sample-handling techniques are used during sample storage and transportation to both onsite and offsite analytical laboratories. Potentially radioactive samples are screened for total activity prior to shipment to determine appropriate packaging and labeling requirements.

Deviations (caused by dry wells, inoperative pumps, etc.) from scheduled sampling and analysis for 2007 were entered into the site's groundwater database and issued in appropriate reports.

- the utilization of financial and technological resources is continually improved
- the overall risk posed by existing contaminated sites is continually reduced

The SGCP strategy revolves around developing an appropriate regulatory framework for each waste site, assessing the degree and extent of contamination, and remediating the contaminated groundwater to its original beneficial use. Remedial technologies being used include pump and treat, in situ pH adjustment, steam injection, phytoremediation, and barrier wall construction. In cases where remediation to background quality is impractical, the intent is to prevent plume migration and exposure and to evaluate alternate methods of risk reduction.

Monitoring SRS Groundwater (Table)

The first priority of the groundwater monitoring program at SRS is to ensure that contamination is not being transported from the site by groundwater flow. Contaminated groundwater at SRS discharges into site streams or the Savannah River. Nowhere have offsite wells been contaminated by groundwater from SRS, and only a few site locations have groundwater with even a remote chance of contaminating such wells.

One of these locations is near A-Area/M-Area, the site of a large chlorinated solvent plume. This area's groundwater monitoring program uses more than 200 wells, and some of the contaminated wells lie within a half-mile of the site's northeastern boundary. While it is believed that the major component of groundwater flow is not directly toward the site boundary, flow in the area is complex and difficult to predict. For this reason, particular attention is paid to data from wells along the site boundary and from those between A-Area/M-Area and the nearest population center, Jackson, South Carolina (figure 22 in the "SRS Maps" appendix on the CD accompanying this report). During 2007, the MSB–84 wells were free of contamination. PW–116 and well clusters JAX–1 and JAX–2 have been moved to a biennial sampling schedule and will be sampled next in 2008. They showed no signs of solvent contamination when last sampled in 2007. These wells monitor deep aquifer zones with very low flow velocities, so a low sampling frequency is appropriate unless the wells show signs of contamination. The deep zones are the ones of interest because the water in them flows toward the site boundary. Water in the upper aquifers flows either downward—as in the case of the M-Area Aquifer Zone—or laterally, toward the center of the site (Lost Lake Aquifer Zone).

Since the early 1990s, considerable effort has been directed at assessing the likelihood of transriver flow from South Carolina to Georgia, and 44 wells have been drilled by the USGS and the Georgia Department of Natural Resources (figure 23 in the "SRS Maps" appendix on the CD accompanying this report). Despite the fact that the USGS groundwater model indicates there is no mechanism by which transriver flow could contaminate Georgia wells [Cherry, 2006], SRS continues to maintain and sample the Georgia monitoring wells annually. In 2007, none of the tritium results exceeded 1,000 pCi/L. Levels this low are consistent with aquifer recharge from rainfall. EPA's maximum contaminant level for tritium is 20,000 pCi/L.

Although contaminated groundwater in most SRS areas does not approach the site boundary, it does have the potential to impact site streams. For this reason—and because of the need to meet the requirements of various environmental regulations—extensive monitoring is conducted around SRS waste sites and operating facilities, regardless of their proximity to the boundary.

Table 7–1 presents a general summary of the most contaminated groundwater conditions at SRS, based on 2006 and 2007 monitoring data. The table shows the 2007 maximum concentrations for major constituents in SRS areas that have contaminated groundwater—and how these concentrations compare to the drinking water standards and the 2006 maximums. As shown in the table, the two major contaminants of concern in groundwater are (1) common degreasers (trichloroethylene and perchloroethylene) and (2) radionuclides (tritium and gross alpha and nonvolatile beta emitters). In most cases, the maximum concentrations did not change significantly between 2006 and 2007.

In some cases, large changes in the maximum concentrations were observed because of differences in sampling technique and sample location. Investigative work using direct-push sampling was conducted in F-Area in 2006, and in P-Area and R-Area in 2007. Some samples from these projects yielded very high results when compared with long-term monitoring results from wells. Direct-push samples are subject to less dilution than well samples, and some of them may have been taken from highly contaminated locations that are not yet monitored by permanent wells.

Table 7–1
Summary of Maximum Groundwater Monitoring Results for Major Areas Within SRS, 2006–2007

Location	Major Contaminants	Units	2006 Maximum (near source)	MCL[a]	2007 Maximum (near source)	Likely Discharge Point After Transport and Attenuation
A-Area/ M-Area	TCE PCE	ppb ppb	33,000 93,300	5 5	34,000 85,500	Tims Branch/Upper Three Runs Creek in Swamp in West
C-Area	TCE Tritium	ppb pCi/L	11,600 1,130,000	5 20,000	4,970 1,190,000	Tributaries of Fourmile Branch
D-Area	TCE Tritium	ppb pCi/L	280 667,000	5 20,000	120 545,000	Savannah River Swamp
E-Area	Tritium TCE	pCi/L PPB	33,600,00 750	20,000 5	30,800,000 370	Upper Three Runs/ Crouch Branch in North; Fourmile Branch in South
F-Area	TCE Tritium Gross alpha Beta[b]	ppb pCi/L pCi/L pCi/L	78.9 91,500 2030 1620	5 20,000 15 4 mrem/yr[a]	52.2 73,000 2120 380	Upper Three Runs/ Crouch Branch in North; Fourmile Branch in South
F-Area Seepage Basin	Tritium Gross alpha Beta[b]	pCi/L pCi/L pCi/L	7,140,000 627 2360	20,000 15 4 mrem/hr[a]	5,710,000 523 1870	Fourmile Branch
H-Area	Tritium Gross alpha Beta[b]	pCi/L pCi/L pCi/L	80,400 98 116	20,000 15 4 mrem/yr[a]	67,200 25.5 55.6	Upper Three Runs/ Crouch Branch in North; Fourmile Branch in South
H-Area Seepage Basins	Tritium Gross alpha Beta[b]	pCi/L pCi/L pCi/L	3,690,000 103 2840	20,000 15 4 mrem/yr[a]	3,020,000 88.4 2970	Fourmile Branch
R-Area	Tritium Gross alpha Beta[b]	pCi/L pCi/L pCi/L	41,900 75.1 29.4	20,000 15 4	1,410,000 427 284	Mill Creek in Northwest; tributaries of PAR Pond elsewhere
K-Area	Tritium TCE	pCi/L ppb	615,000 15.9	20,000 5	179,000 23.5	Indian Graves Branch
L-Area	Tritium	pCi/L	1,250,000	20,000	1,070,000	L Lake
P-Area	Tritium TCE	pCi/L ppb	1,950,000 14,448	20,000 5	1,410,000 21,420	Steel Creek in North; Meyer's Branch in South
Sanitary Landfill	TCE Vinyl Chloride	ppb ppb	17 121	5 2	14 150	Upper Three Runs Creek
TNX	TCE	ppb	520	5	735	Savannah River Swamp
CMP Pits	TCE	ppb	1300	5	851	Pen Branch

[a] MCL = maximum contaminant level
[b] The activity (pCi/L) equivalent to 4 mrem/yr varies according to which specific beta emitters are present in the sample.

Table 7–1 also shows where the contaminated water most likely will outcrop. By the time the groundwater reaches a stream, it generally is much less contaminated because of natural attenuation processes like dilution and biodegradation. As indicated above, results in the table are maximum values generally associated with wells very close to contaminant source areas, where little attenuation has taken place.

All groundwater monitoring data for 2007 are included in the “Data for 2007” appendix on the CD accompanying this report. It would be impractical to provide maps of all wells; however, Universal Transverse Mercator (UTM) coordinates are provided. These coordinates can be used in conjunction with figure 24 in the “SRS Maps” appendix on the CD to find the approximate locations of the wells.

Contaminant plumes of particular interest are depicted in a series of maps in the “SRS Maps” appendix on the CD. Figures 25–30 depict the trichloroethylene plumes in aquifers beneath A and M Areas. Figures 31–33 depict the tritium plumes in aquifers beneath E, F, and H Areas. Figure 34 depicts the trichloroethylene plume beneath TNX Area. For details about monitoring and conditions at individual sites, one should refer to site-specific documents, such as RCRA corrective action reports or RCRA/Comprehensive Environmental Response, Compensation, and Liability Act and RCRA facility investigation/remedial investigation reports.