ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE QUARTERLY ENVIRONMENTAL MONITORING REPORT JULY – SEPTEMBER 2003

US Department of Energy, Rocky Flats Field Office
10808 Highway 93, Unit A
Golden, CO 80403-8200

NOVEMBER 2003

Points of Contact:

R. McCallister, (303) 966-9692
Air, Meteorology, Climatology, and Groundwater Programs
Department of Energy, Rocky Flats Field Office

C. Franklin, (303) 966-5919
Surface Water Programs
Department of Energy, Rocky Flats Field Office

R. Nininger, (303) 966-4663
Environmental Systems & Stewardship
Kaiser-Hill Company, L.L.C.

Contributors:

R. Rueter, URS Group, Atmospheric Monitoring
L. Dunstan, Stoller, Sample Support Services
P. Haines, URS Group, Atmospheric Monitoring
R. Henry, URS Group, Water Programs
T. Moser, IE, Water Operations
G. Squibb, URS Group, Water Programs

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PREPARED BY URS GROUP, INC

THE DATA IN THIS DOCUMENT MAY BE PRELIMINARY AND COULD CHANGE AFTER THE DATA HAVE BEEN VERIFIED OR VALIDATED.

NOVEMBER 2003

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HIGHLIGHTS FOR JULY - SEPTEMBER 2003

This report is produced and distributed quarterly as part of the Agencies' ongoing Agreement in Principle and as a forum for the Rocky Flats Cleanup Agreement (RFCA) quarterly monitoring requirement. As discussed at a previous Exchange of Information Meetings, the Site is consolidating its reporting for selected media. In an effort to provide a more meaningful interpretation of the data presented and to provide some natural resource efficiency, the Site will be providing analytical data in the following formats.

Airborne effluent data are represented by a single graph providing cumulative plutonium emissions for 1999, 2000, 2001, 2002, and 2003. Ambient air data are represented by two graphs – a summary of estimated off-site dose as compared to a 10 millirem per year standard, and air concentrations at perimeter sample locations expressed as a percentage of EPA's air concentration-based dose limit for members of the public. Meteorological data are represented by one windrose and a climatic summary for each month in the reporting period.

Surface water data are presented for several purposes. Compliance data are presented in support of the Site National Pollutant Discharge Elimination System (NPDES) permit are presented for the reporting period. Surface water data are also collected in support of RFCA. Stations GS01, GS03, GS08, GS10, GS11, GS31, SW022, SW027, and SW093 are routinely monitored. These data include a hydrograph, mean daily flow and available water quality measurements for each location during the reporting period. Performance monitoring and source detection stations may be reported as locations are added or removed from the program. These additional surface water stations are presented in the same manner as the routine stations. Some locations, like GS32, have no flow monitoring capabilities and only analytical data are provided. A quarterly summary of the incidental waters program is also provided.

Airborne Effluent

Isotopic analytical data through August 2003 are included in this report. Consistent with all other uses of these data, only positive values are included in the total release calculation (the negative values are treated as zeros). The uncertainty calculation reflects data variability associated with all results.

Ambient Air

Isotopic analytical data for the period June through August 2003 for coarse (>10 micrometer aerodynamic equivalent diameter [AED]) and fine (≤ 10 micrometer AED) ambient air samples are included in this report.

Demolition and Remediation Project Monitoring

Effective the first quarter 2003, this report includes a Demolition and Remediation Project Monitoring section. Two projects started during the 4th quarter 2002: the 903 Pad Remediation Project, which began the week of

November 14, 2002 and is ongoing; and the Solar Pond Remediation Project, which began November 12, 2002 and was completed December 12, 2002. This report includes a graph of representative 3rd quarter 2003 alpha results from the radionuclide Project Monitoring network. No results above action levels have been observed during these projects.

Beryllium Project Monitoring, as documented in the Site's Integrated Monitoring Plan for select project activities, was initiated July 21, 2003 at Building 865 and will continue until approximately one week after demolition and removal activities cease. A graph, containing data through November 5, 2003, is presented in this report. No results above action levels have been observed during this project.

Meteorology and Climatology

Meteorological data are routinely measured from instruments on a 61-meter tower located in the west buffer zone at an elevation of 1,870 meters (6140 feet) above sea level. Historically, meteorological data were collected on a real-time basis and transmitted as 15-minute averaged values to AlphaTRAC for use in the Computer Assisted Protective Action Recommendations System (CAPARS) model for emergency response purposes. The same data were logged at the tower and downloaded for air quality and surface water modeling purposes. As part of Site closure plans, the 61-meter tower will be decommissioned as early as the end of November 2003. AlphaTRAC is already collecting representative meteorological data from the National Renewable Energy Laboratory (NREL), CDPHE stations, and other sources for use in the CAPARS model. AlphaTRAC is also developing software to re-format meteorological data from the NREL location (approximately 1 mile north of the 61-meter tower) for upload to the Site meteorological database and for subsequent use in air quality and surface water modeling. The transition to NREL data is expected to start in mid-November; full conversion should be completed by November 30, 2003.

Climatic summaries and wind roses for July, August, September, and October 2003 are included in this report.

As a result of meteorological data validation protocols, each 15-minute averaged observation is validated, rather than the entire observation record for the same time period (which might contain 70 different observations – e.g., temperature, wind speed, etc.). Missing data are reported with respect to the wind speed and wind direction values, rather than recording all observations missing for the same 15-minute period.

Surface Water

Surface water analytical data collected during the reporting period for NPDES permit compliance are presented in this report. During the reporting period all NPDES data were within permit limitations. Analytical data for Carbonaceous Biochemical Oxygen Demand samples for July 7, July 8, and July 10, 2003 are not included in the data set for this reporting period. The incubator used by the contract laboratory for this analysis failed and all the samples were frozen. The incubator was repaired and subsequent samples were completed successfully. The laboratory provided documentation describing the equipment failure and corrective actions taken to prevent reoccurrence and the laboratory confirmed that the corrective actions were completed as described.

Also included in this report are water quality data from two surface water locations that monitor the Mound Site area. These locations are SW061 and SW132 and are sampled quarterly for isotopic Pu/Am, selected total and dissolved metals, and EPA VOA Method 8260.

Hydrologic Monitoring and Rocky Flats Cleanup Agreement (RFCA) Monitoring

All available analytical data collected during the reporting period from samples supporting RFCA and Hydrologic Monitoring programs are included in this report. During the fourth quarter of FY03, 57 automated surface-water monitoring composite samples were collected and submitted for analysis.

Gaging station GS60 was installed on 8/13/03 as a Performance monitoring location in support of D&D activities for Building 3271/374. GS60 is located at state plane 2083015, 751226 in a ditch NE of B371/374 along the former PA perimeter road. The GS60 drainage area is approximately 9.7 acres. This station collects samples for Pu, Am, uranium isotopes, CLP metals, and TSS using continuous flow-paced composite sampling.

The 30-day moving average values for all Point of Evaluation (POE) and Point of Compliance (POC) monitoring locations were below the RFCA action levels and standards for all monitored analytes.

Incidental Water Monitoring

A summary of Incidental Waters dispositioned during the reporting period are presented in this report.

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1.0 AIR DATA

1.1 EFFLUENT AIR DATA

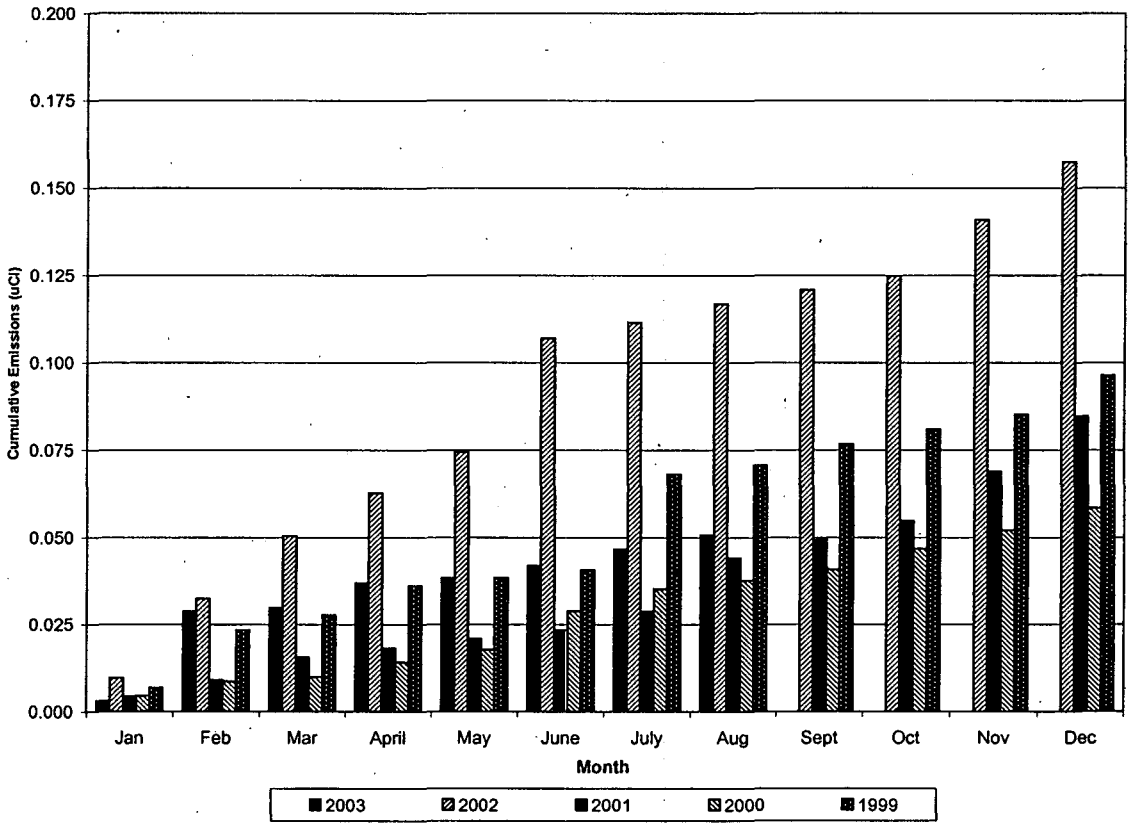
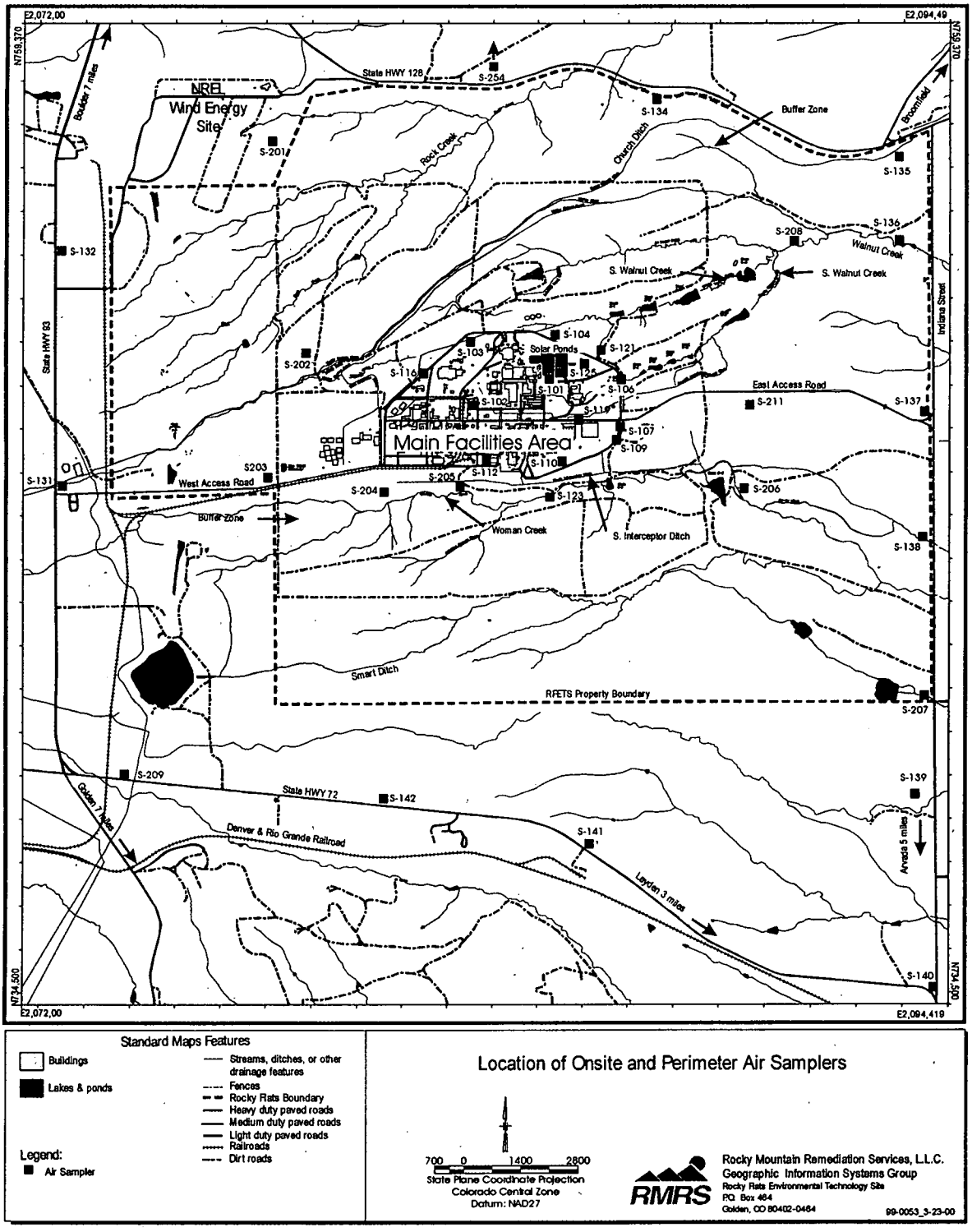


Figure 1-1. Cumulative Plutonium Airborne Effluent Emissions

The graph above shows the cumulative airborne effluent emissions of plutonium from the monitored building stacks. Isotopic results from the most recently analyzed effluent stack samples (May through August 2003) are consistent with the previous three years' measured concentrations, with a cumulative 2003 year-to-date plutonium emission of 0.051 micro-Curies (μCi).

Figure 1-2. Location of Onsite and Perimeter Air Samplers.



1.2 AMBIENT AIR DATA

1.2.1 Perimeter Sampler Locations

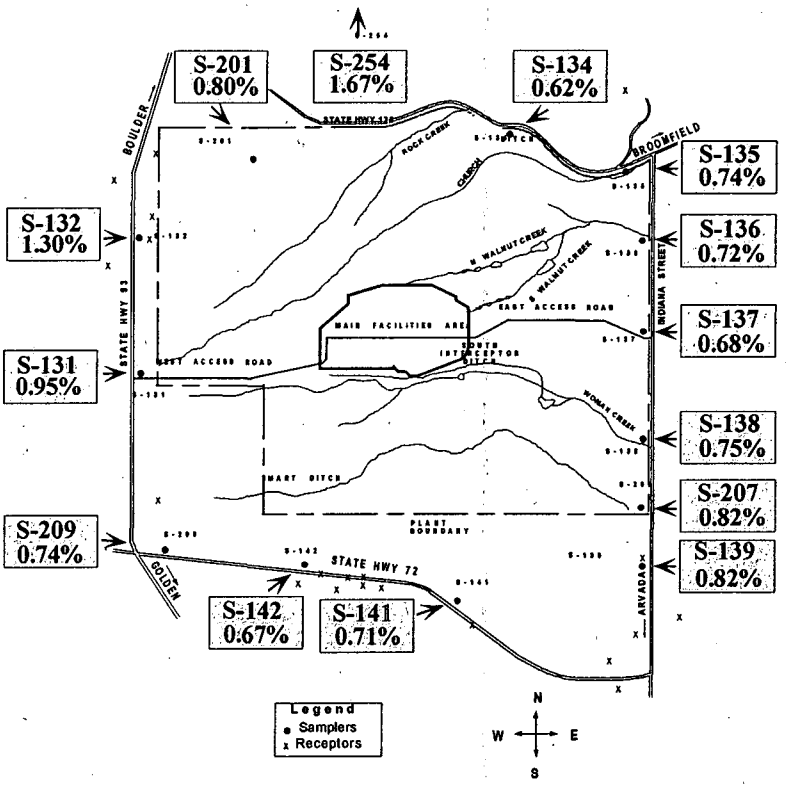


Figure 1-3. Perimeter Samplers Dose Map.

The map above illustrates the perimeter Radioactive Ambient Air Monitoring Program (RAAMP) sampler locations and the 12-month rolling average maximum potential dose through August 2003. Dose values are expressed as a percentage of EPA's air concentration-based dose limit for members of the public. The percentage values are based on the measured air concentrations, averaged over the trailing 12-month period and converted to a percent of the Rad NESHAP concentration limits.

The percentages include naturally-occurring uranium isotopes as well as the isotopes with potential contributions from the Site. The highest effective dose equivalents (EDEs) in the period June through August 2003 occurred at location S-254. The 12-month rolling average percentages of the Rad NESHAP concentration limit for perimeter samplers, covering the period September 2002 through August 2003, range from 0.62% at S-134 to 1.67% at S-254. These percentages are consistent with previously reported data.

1.2.2 Perimeter Sampler Locations – Dose Rate Graphs

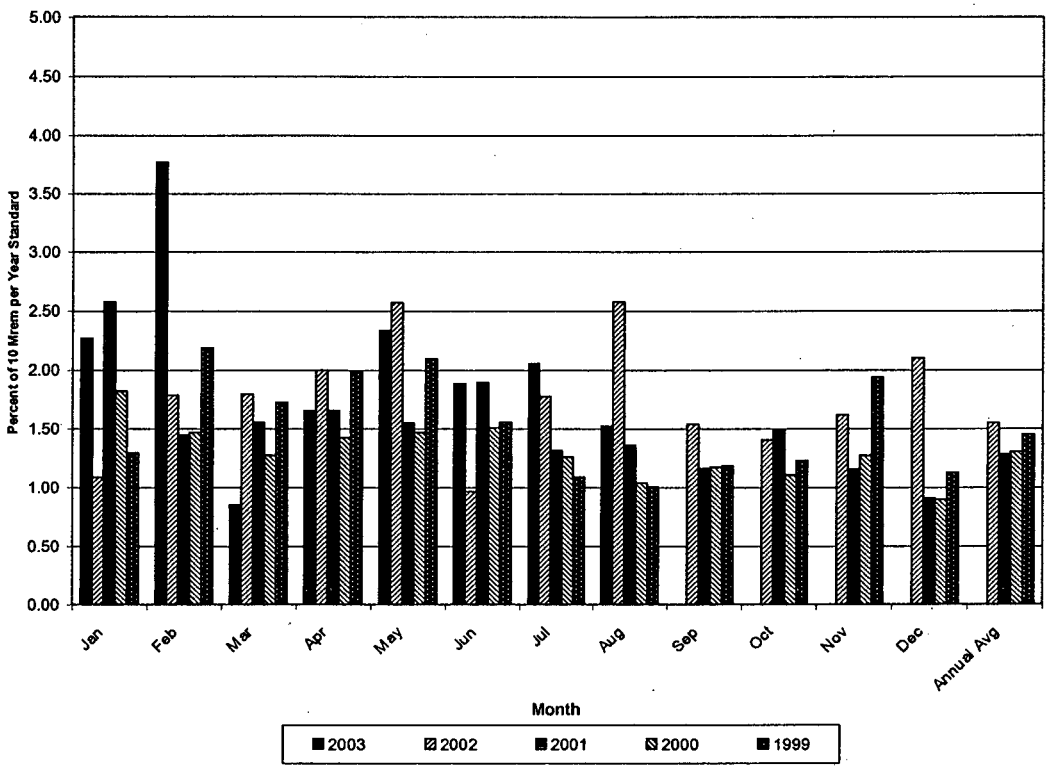


Figure 1-4. Offsite Dose Rate Summary.

The graph illustrates the monthly estimated maximum potential dose rates at the perimeter sampler showing the highest total radionuclide dose rate, including contributions from naturally-occurring uranium isotopes. The highest potential dose rates for June through August 2003 occurred at location S-254.

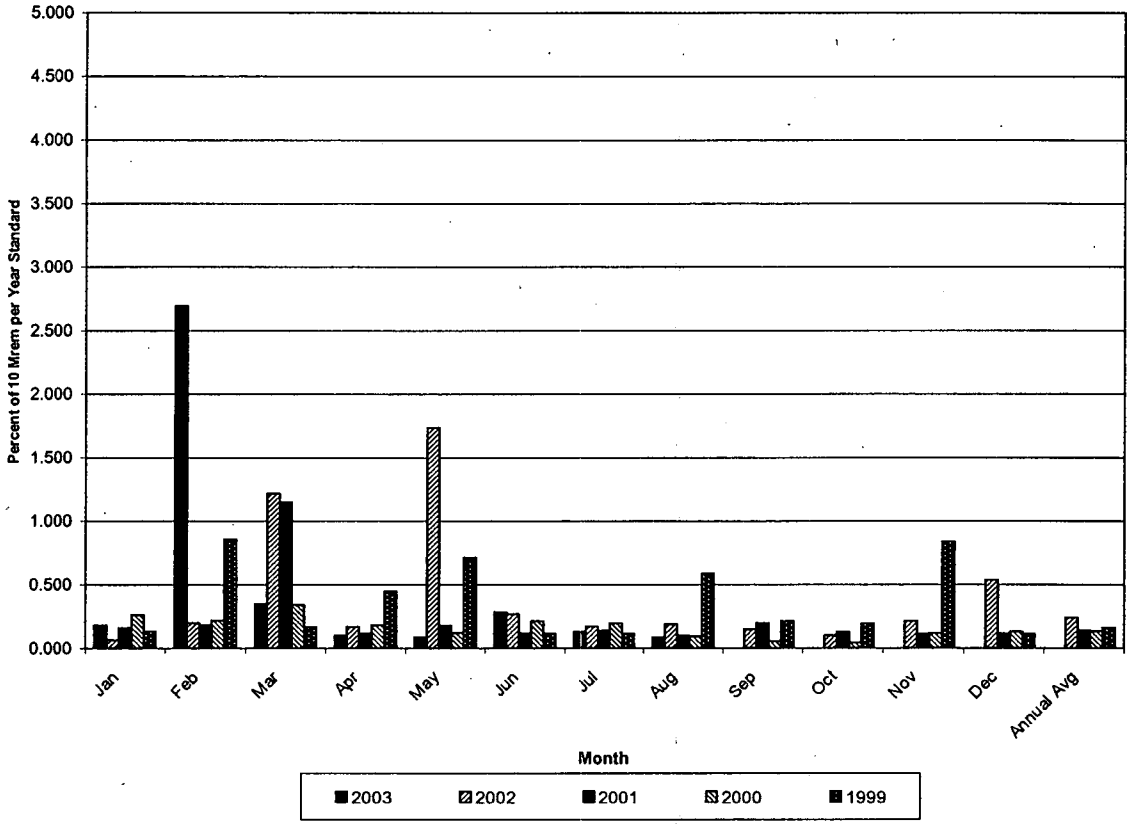


Figure 1-5. Offsite Dose Rate Summary Without U-234 and U-238.

Since the majority of the observed uranium appears to be due to natural soil contributions, omitting the dose contributions from uranium-234 and -238, may better reflect the contribution from Site operations at the same sampling locations. This view shows the maximum potential off-site dose rate, excluding uranium-234 and -238, to be less than 0.26% of the 10 mrem standard. The highest potential dose rates for June through August 2003 occurred at locations S-132 (June), S-138 (July), and S-254 (August).

Ambient concentrations and dose rates for 2003 are generally consistent with data from 1999 through 2002.

1.2.3 Demolition and Remediation Performance Air Monitoring

In February 2002, the Air Quality Monitoring (AQM) Program began reporting project monitoring data from ongoing demolition and remediation projects. Project Monitoring for Radionuclides (PM-Rad) for the 903 Pad Remediation project began the week of November 14, 2002 and continues to the present. Past PM-Rad projects include Building 886 demolition and the Solar Pond Remediation project. This graph displays monitoring results for the 903 Pad Remediation project during a representative two-week period in the 3rd quarter of 2003.

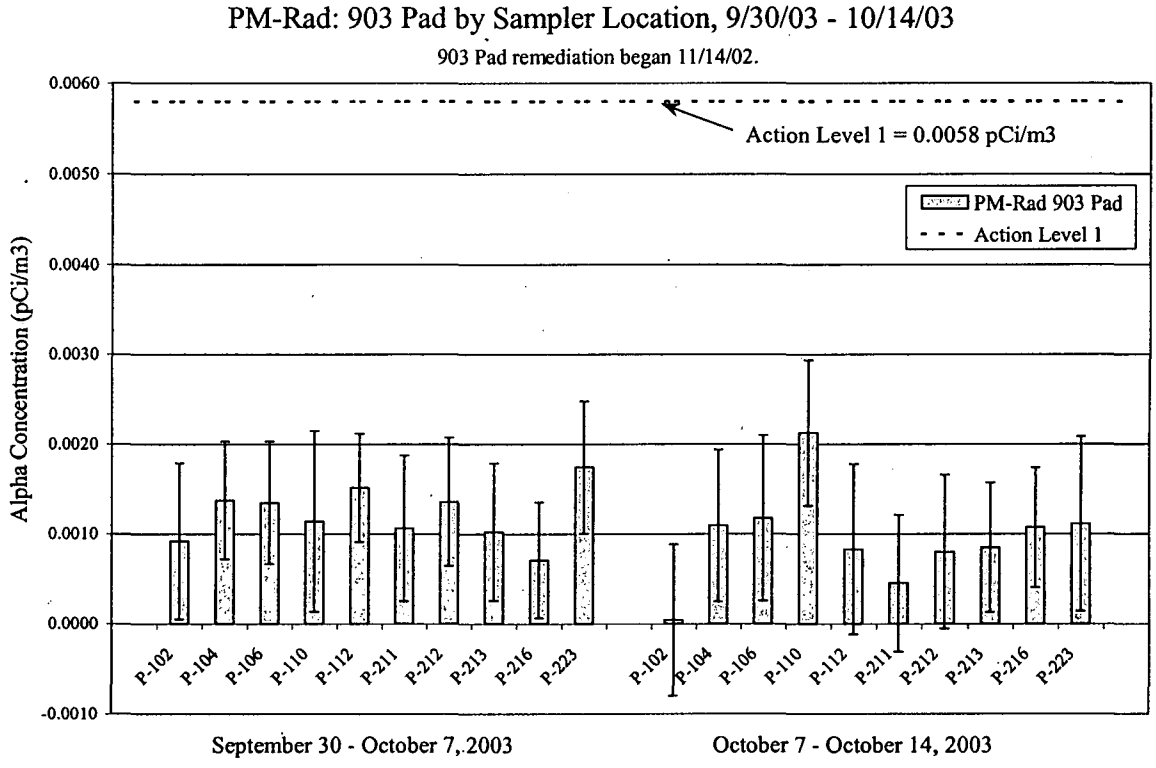


Figure 1-6. 903 Pad Performance Monitoring for Radionuclides.

For reference, a map illustrating the sampling locations used for PM-Rad of Industrial Area and 903 Pad demolition and remediation activities is included as Figure 1-7.

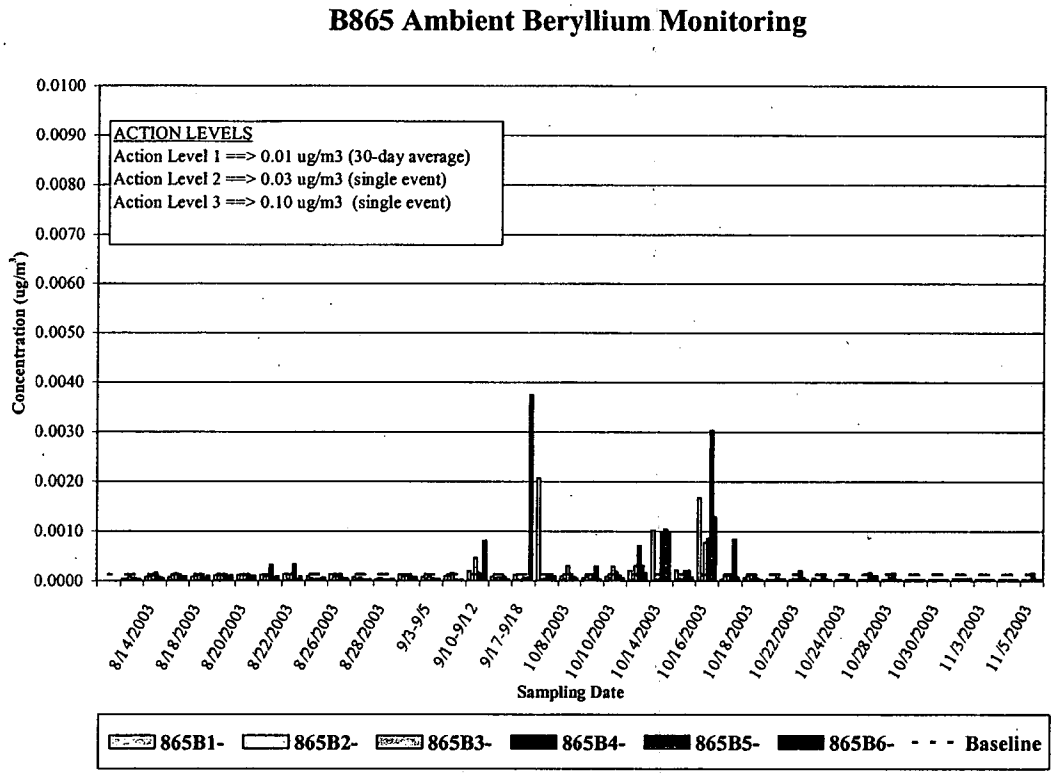


Figure 1-7. Building 865 Project Monitoring for Beryllium (PM-Be).

Project Monitoring for beryllium (PM-Be) began July 21, 2003 at Building 865 and is expected to continue through late November/early December 2003. This graph presents beryllium data from project start through November 5, 2003.

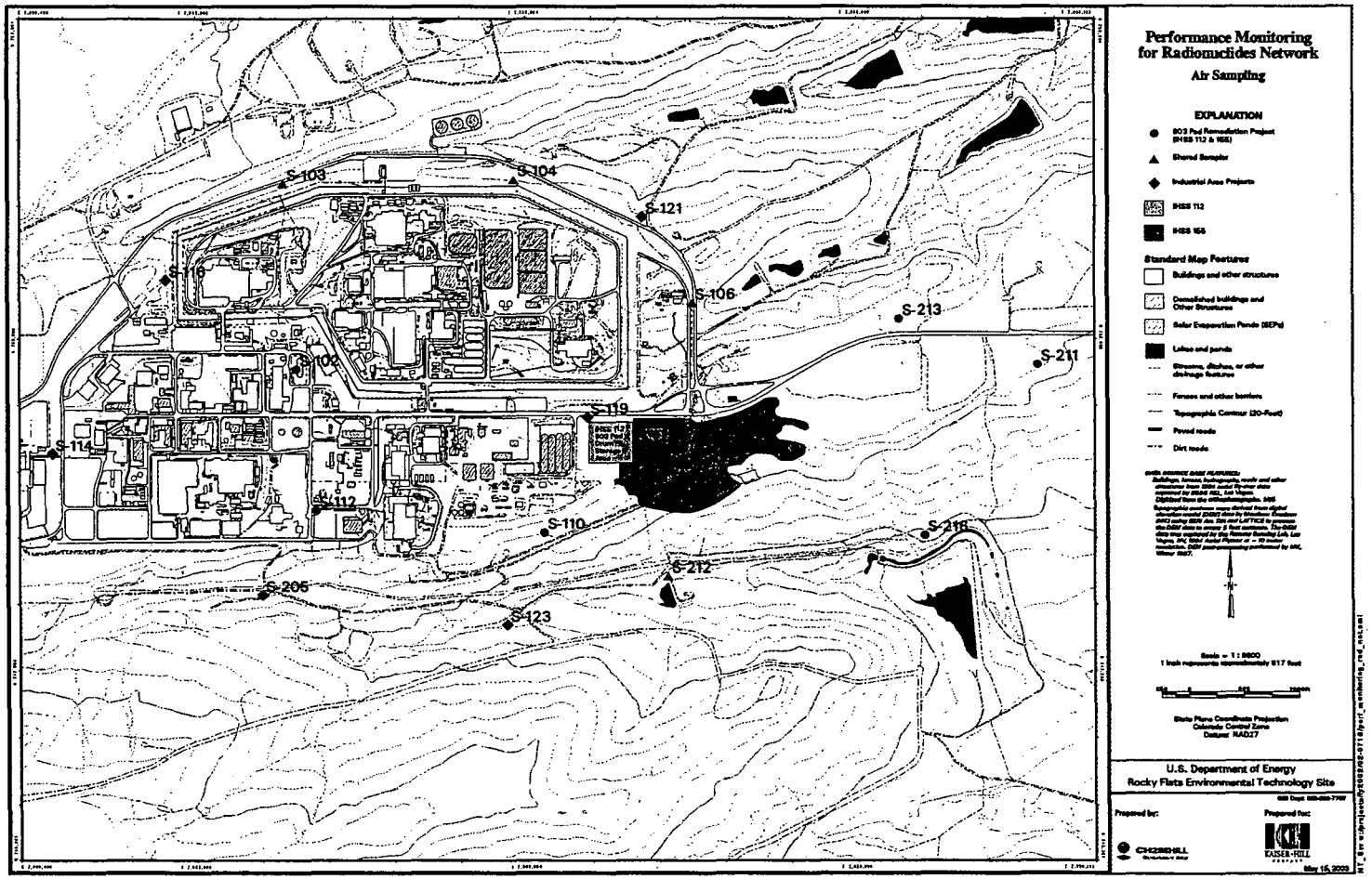
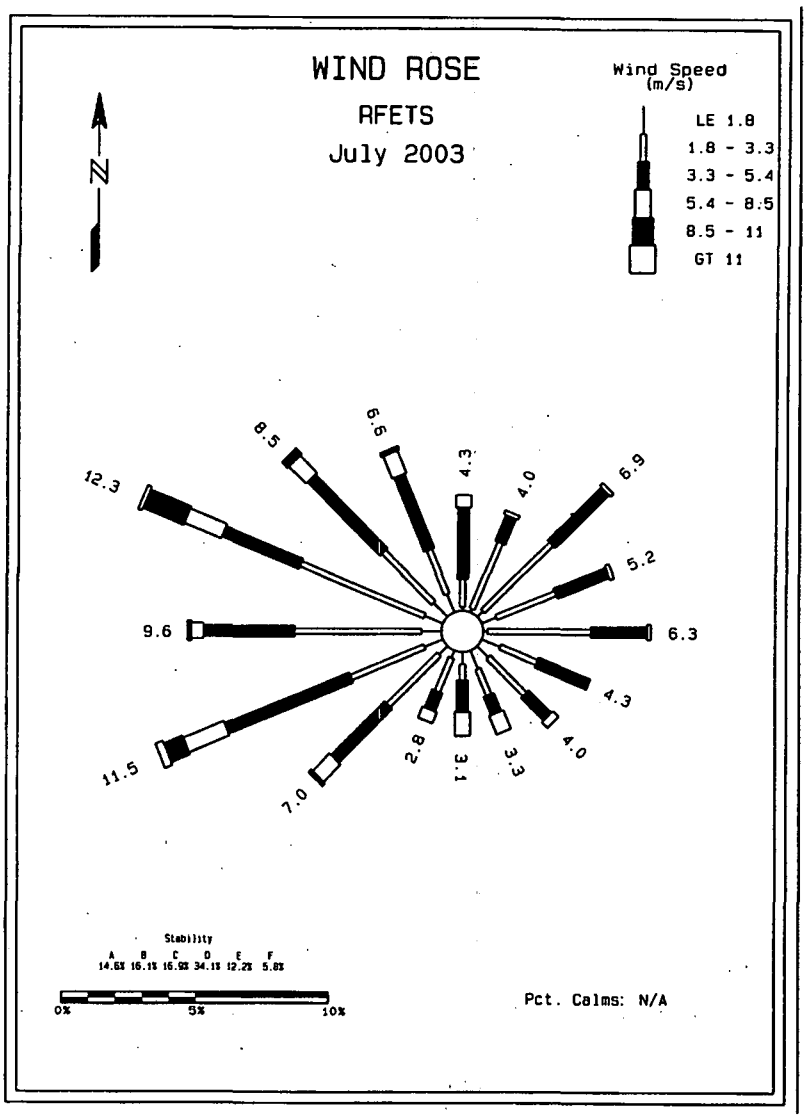


Figure 1-8. Industrial Area and 903 Pad Performance Monitoring for Radionuclides Network.

2.0 METEOROLOGY AND CLIMATOLOGY

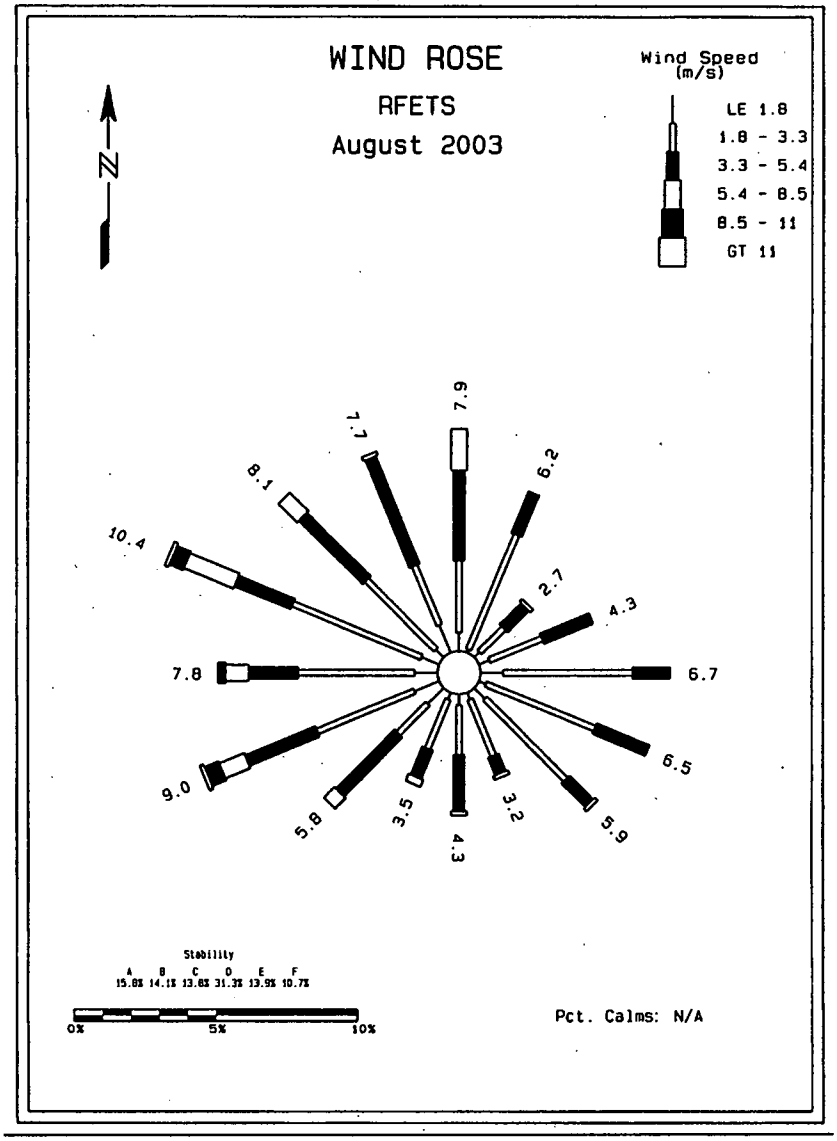
2.1 WIND ROSES FOR JULY, AUGUST, AND SEPTEMBER 2003



Monthly Climatic Summary

Month	Temperature (°F)			Mean Dew Point (°F)	Mean Relative Humidity (%)	Wind Speed (mph)		Pressure Mean (mb)	Solar Total (kW-h/m²)	Precipitation (in)	
	Mean Daily High	Mean Daily Low	Daily Mean			Mean	Max			Total	Max
Jul-03	86.79	65.12	76.63	50.06	43.74	8.47	50.87	818.05	181.21	0.61	0.23

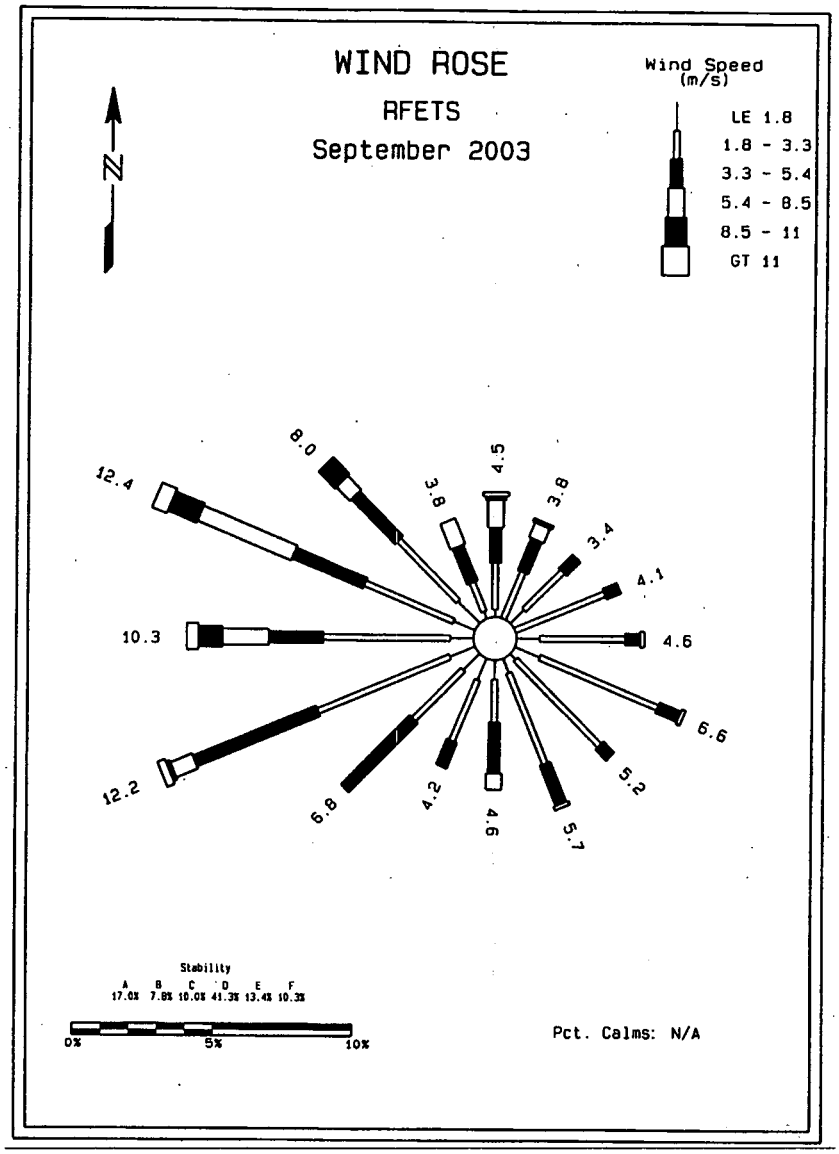
Figure 2-1. Wind Rose for Rocky Flats Environmental Technology Site for July 2003.



Monthly Climate Summary

Month	Temperature (°F)			Mean Dew Point (°F)	Mean Relative Humidity (%)	Wind Speed (mph)		Pressure Mean (mb)	Solar Total (kW-h/m^2)	Precipitation (in)	
	Mean Daily High	Mean Daily Low	Daily Mean			Mean	Max			Total	Max
Aug-03	83.62	61.15	71.55	53.3	55.97	7.55	48.45	818.99	177.29	1.58	0.12

Figure 2-2. Wind Rose for Rocky Flats Environmental Technology Site for August 2003



Monthly Climatic Summary

Month	Temperature (°F)			Mean Dew Point (°F)	Mean Relative Humidity (%)	Wind Speed (mph)		Pressure Mean (mb)	Solar Total (kW-h/m²)	Precipitation (in)	
	Mean Daily High	Mean Daily Low	Daily Mean			Mean	Max			Total	Max
Sep-03	72.43	46.58	59.62	42.79	60.07	8.27	71.36	816.59	154.76	0.35	0.08

Figure 2-3. Wind Rose for Rocky Flats Environmental Technology Site for September 2003

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3.0 SURFACE WATER DATA

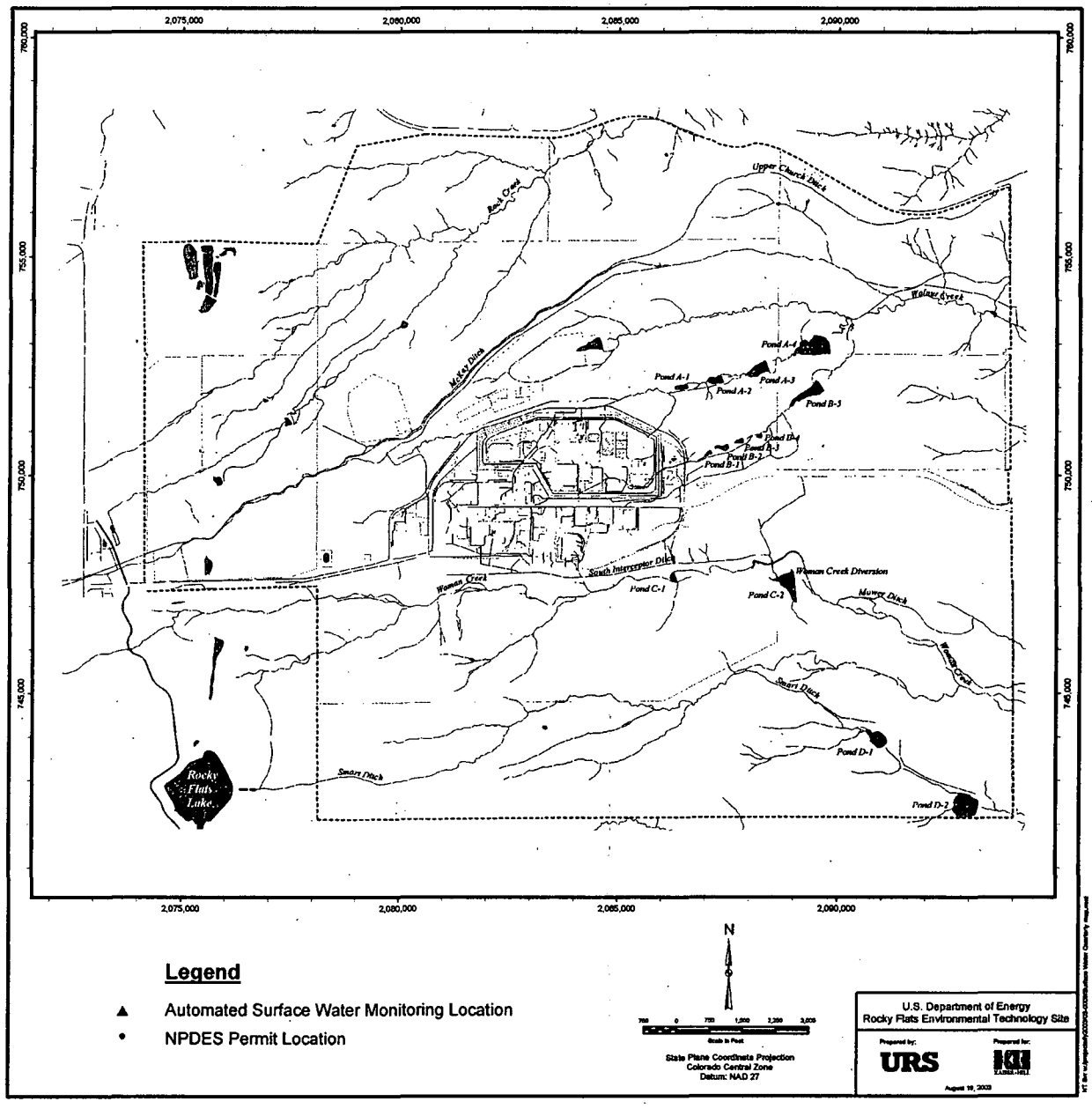

Figure 3-1. Holding Ponds and Liquid Effluent Water Courses

3.1 NPDES SUMMARY DATA

Table 3-1. Sewage Treatment Plant (Outfall STP1), Dates of discharge: 07/01/03 - 09/30/03.

Parameter & Units	Measured 30-day Average	Limit 30-Day Average	Measured 7-Day Average	Limit 7-Day Average	Measured Daily Minimum	Limit Daily Minimum	Measured Daily Maximum	Limit Daily Maximum	Measured Result	% Removal (calc.)	% Removal Minimum
pH, SU	N/A	N/A	N/A	N/A	6.6 – 6.8	6.5	7.8 – 8.3	9.0	N/A	N/A	N/A
TSS, mg/l	< 4	15	N/A	N/A	N/A	N/A	< 4	25	N/A	N/A	N/A
TSS (Influent), mg/l	99 - 218	a	N/A	N/A	N/A	N/A	220 - 1000	a	N/A	N/A	N/A
TSS, % removal	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	96% - 98%	85%
Total Phos., mg/l	2 - 3	8	N/A	N/A	N/A	N/A	4 - 7	12	N/A	N/A	N/A
Total Cr., ug/l	N/A	N/A	N/A	N/A	N/A	N/A	< 2	50	N/A	N/A	N/A
Potentially Dissolved Ag, ug/l	< 0.3	0.6	N/A	N/A	N/A	N/A	< 0.3	3.8	N/A	N/A	N/A
F. Coliform, #/100ml	< 2 - < 3	200b	< 2 - 4	400b	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CBOD5, mg/l	< 3 - < 4	8	N/A	N/A	N/A	N/A	4 - 14	20	N/A	N/A	N/A
CBOD5 (Influent), mg/l	58 - 98	a	N/A	N/A	N/A	N/A	94 - 370	a	N/A	N/A	N/A
CBOD5, % removal	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	95% - 98%	85%
Oil & Grease	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	c	N/A	N/A
NO3/NO2 as N, mg/l	N/A	N/A	N/A	N/A	N/A	N/A	2	a	N/A	N/A	N/A
NO2 as N, mg/l	N/A	N/A	N/A	N/A	N/A	N/A	1.4 – 1.6	4.5	N/A	N/A	N/A
Ammonia as N, mg/l	N/A	N/A	N/A	N/A	N/A	N/A	1 - 4	a	N/A	N/A	N/A
Alkalinity, mg/l	N/A	N/A	N/A	N/A	N/A	N/A	100 - 130	a	N/A	N/A	N/A

a Report Only
b Geometric Mean
c No Sheen Observed
N/A Not Applicable
CBOD5 Carbonaceous Biochemical Oxygen Demand, 5-Day Test
TSS Total Suspended Solids
SU Standard Units
Note: Results are the range of value(s) measured during the reporting period.

Table 3-1. Sewage Treatment Plant, Outfall STP1 (continued).

Parameter & Units	Measured 30-day Average	Limit 30-Day Average	Measured 7-Day Average	Limit 7-Day Average	Measured Daily Minimum	Limit Daily Minimum	Measured Daily Maximum	Limit Daily Maximum	Measured Result	% Removal (calc)	% Removal Minimum
Gross alpha, pCi/l	< 1 - 1	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gross beta, pCi/l	6 - 7	19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ceriodaphnia Acute test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	PASS	N/A	N/A
Fathead Minnows Acute test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	PASS	N/A	N/A
Ceriodaphnia Chronic test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	PASS	N/A	N/A
Fathead Minnows Chronic test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	PASS	N/A	N/A
Carbon Tetrachloride, ug/l	< 1	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2 Dichloro-ethane, ug/l	< 1	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzene, ug/l	< 1	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1 Dichloro-ethylene, ug/l	< 1	7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1,1 Trichloro-ethane, ug/l	< 1	200	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2 Dichloro-ethylene (transl), ug/l	< 1	70	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trichloro-Ethylene, ug/l	< 1	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tetrachloro -ethylene, ug/l	< 1	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A Not Applicable
NS Not Sampled

3.2 MOUND PLUME SUMMARY DATA

Table 3-2. Mound Plume Locations SW061 and SW132.

Analyte	SW061 09/18/03	SW132 09/18/03
Pu 239/240, pCi/l	0.142 +/- 0.047	0.009 +/- 0.010
Am 241, pCi/l	0.121 +/- 0.044	0.006 +/- 0.012
Silver, dissolved, ug/l	< 0.20	< 0.20
Aluminum, total, ug/l	14900	642
Arsenic, total, ug/l	4.7	< 1.0
Barium, total, ug/l	292	173
Beryllium, total, ug/l	0.72	0.15
Cadmium, dissolved, ug/l	< 0.10	< 0.10
Copper, dissolved, ug/l	3.6	2.9
Iron, total, ug/l	10500	885
Mercury, total, ug/l	< 0.10	< 0.10
Manganese, total, ug/l	243	93.9
Nickel, dissolved, ug/l	1.6	1.3
Lead, dissolved, ug/l	0.71	< 0.48
Antimony, total, ug/l	1.4	9.4
Selenium, dissolved, ug/l	< 0.72	2.4
Zinc, dissolved, ug/l	32.5	29.7
EPA VOA Method 8260, compounds found >RFCA Seg 5 Action Level	Not Detected	Not Detected

4.0 HYDROLOGIC AND ROCKY FLATS CLEAN-UP AGREEMENT (RFCA) DATA

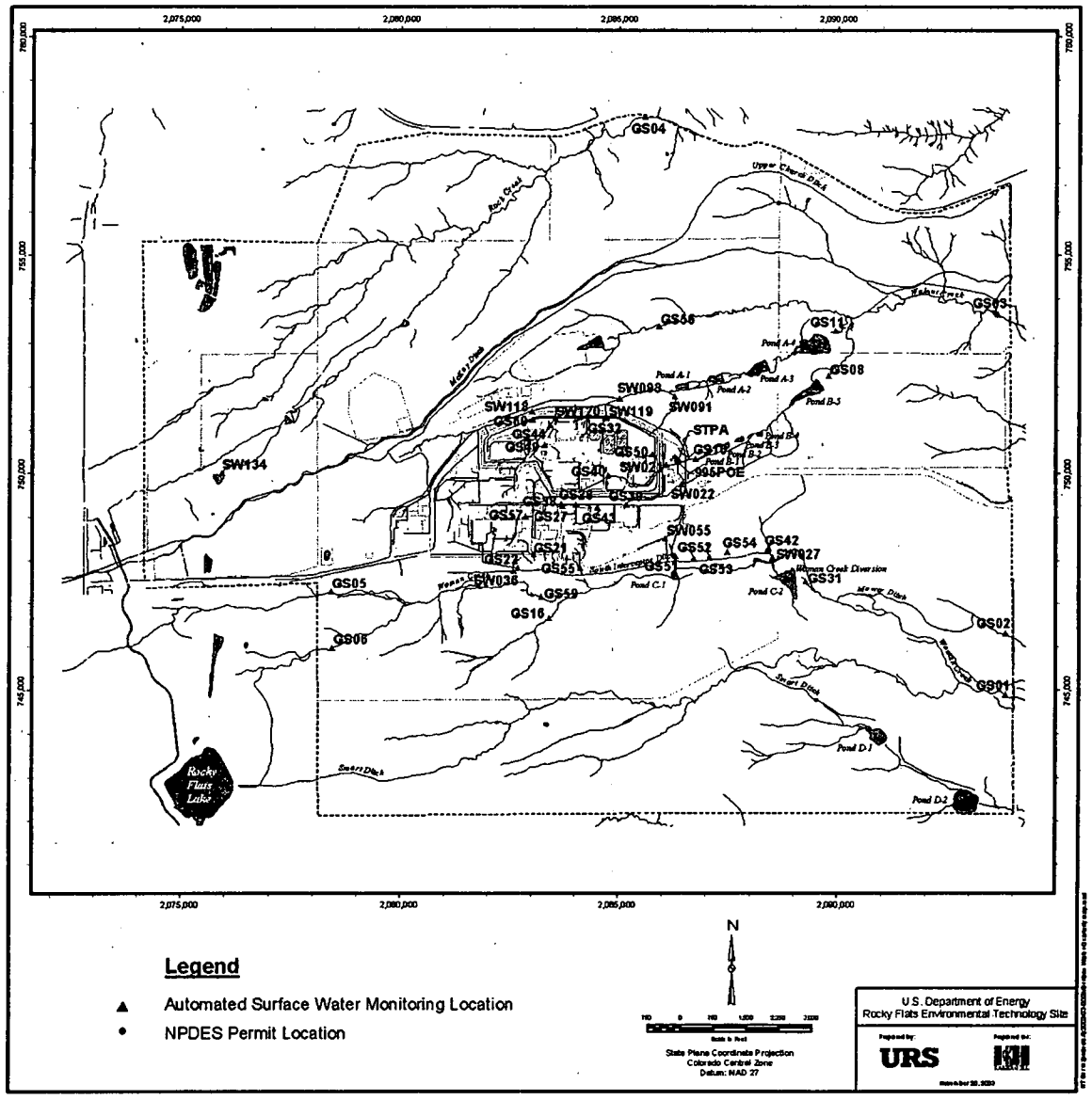

Figure 4-1. Gaging Station Locations

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4.1 FLOW MONITORING

Table 4-1. Gaging Station GS01: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	0	0	0
Gallons	0	0	0
Acre-Feet	0.00	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS01 is located at 39° 52' 40"N, 105° 09' 55"W, at Woman Creek and Indiana Street (See Section 4 Map). This station is a RFCA Point of Compliance, a Buffer Zone Monitoring Location and a monitoring point for water leaving the Site and flowing to Woman Creek Reservoir. This station collects samples for selected radionuclides using continuous flow-paced sampling and storm event sampling for selected water quality parameters, metals, and major ions.

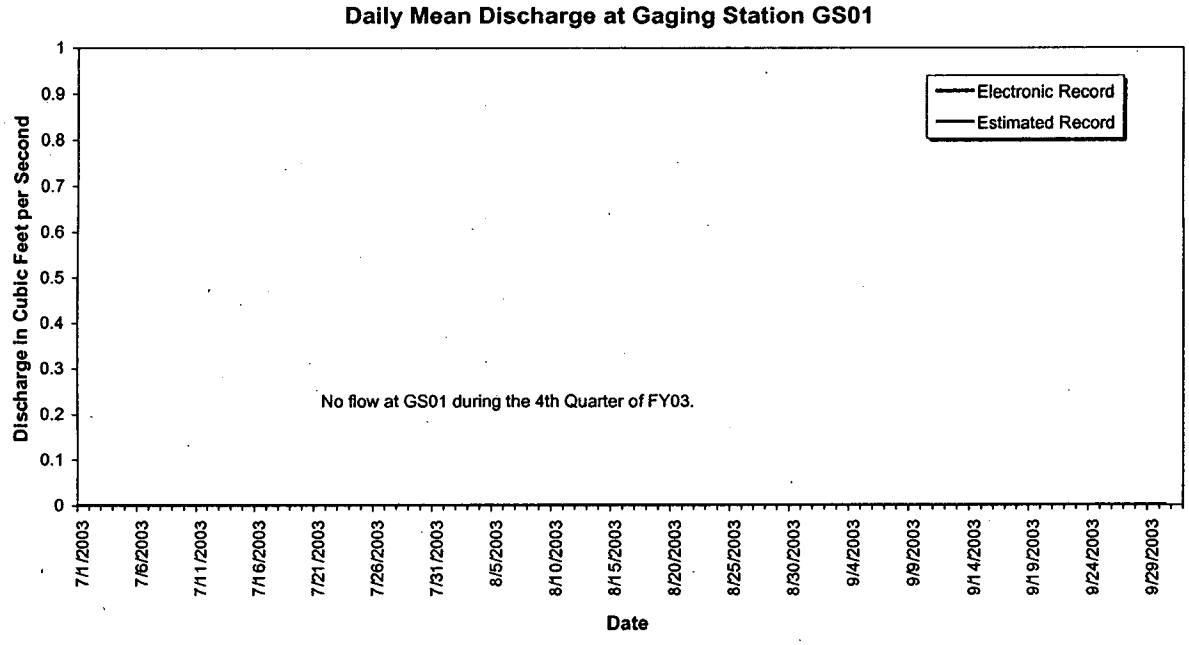

Figure 4-2. Mean Daily Discharge at GS01, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-2. Gaging Station GS02: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	0	0	0
Gallons	0	0	0
Acre-Feet	0.00	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

BD = Bad data due to equipment failures.

Buffer Zone Hydrologic monitoring location GS02 is located at state plane 2093817, 746302 on Mower Ditch 200 feet west of Indiana Street. This station monitors runoff from an area north of Mower Ditch between Pond C-2 and Indiana Street. The GS02 drainage area is approximately 157.7 acres. This station collects samples for sediment/sand, Ca, Mg, Na, K, Cl, F, SO4, HCO3, and TSS using storm-event, rising-limb, flow-paced composite sampling.

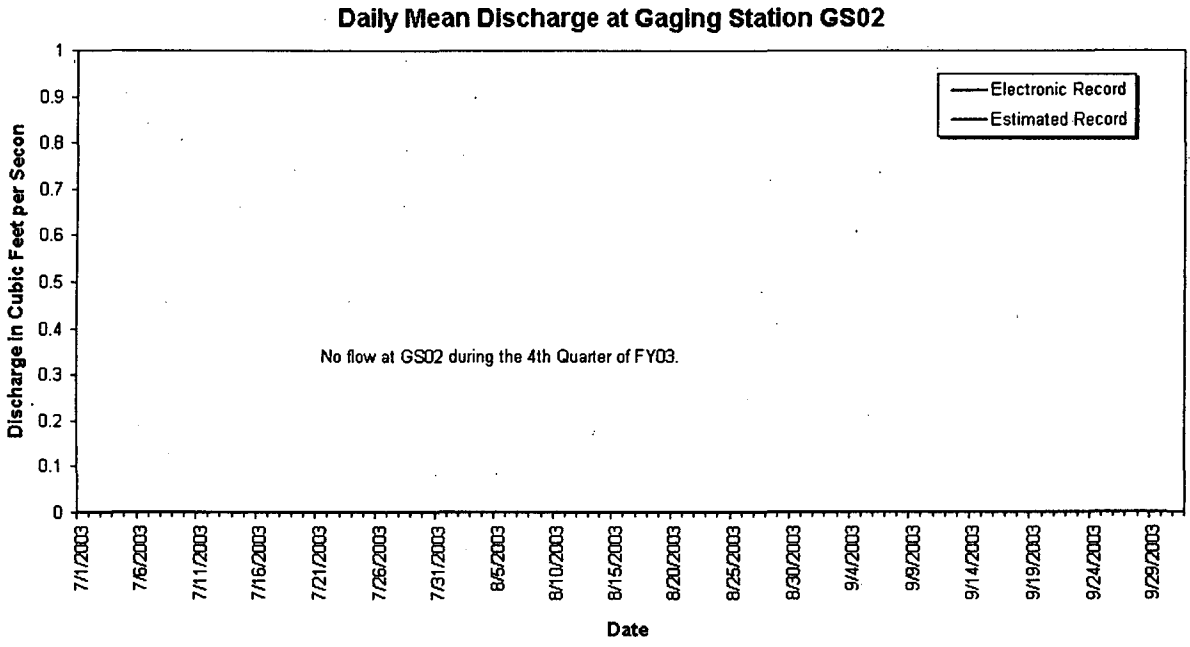

Figure 4-3. Mean Daily Discharge at GS02, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-3. Gaging Station GS03: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.122	0.000	0.000
2	0.120	0.000	0.000
3	0.118	0.000	0.000
4	0.126	0.000	0.000
5	0.121	0.000	0.002
6	0.118	0.000	0.757
7	0.772	0.000	0.942
8	1.692	0.000	1.241
9	1.702	0.000	1.366
10	1.404	0.000	1.328
11	1.283	0.000	1.481
12	1.131	0.000	0.882
13	0.928	0.000	0.513
14	0.823	0.000	0.508
15	0.878	0.000	0.813
16	1.010	0.000	1.196
17	0.655	0.000	0.325
18	0.027	0.000	0.016
19	0.027	0.000	0.009
20	0.014	0.000	0.005
21	0.013	0.000	0.004
22	0.013	0.000	0.004
23	0.013	0.000	0.002
24	0.010	0.000	0.000
25	0.009	0.000	0.000
26	0.012	0.000	0.000
27	0.011	0.000	0.000
28	0.012	0.000	0.001
29	0.011	0.000	0.001
30	0.002	0.000	0.001
31	0.000	0.000	NA
Monthly Average (cfs)	0.425	0.000	0.380

Monthly Discharge

Cubic Feet	1138599	0	984815
Gallons	8517316	0	7366926
Acre-Feet	26.13	0.00	22.60

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS03 is located at 39° 54' 7"N, 105° 9' 59"W, at Walnut Creek and Indiana Street (See Section 4 Map). This station is a RFCA Point of Compliance, a Buffer Zone Monitoring Location and a monitoring point for water leaving the Site and flowing to the Broomfield Diversion Ditch. This station collects samples for selected radionuclides using continuous flow-paced sampling and storm event sampling for selected water quality parameters, metals, and major ions.

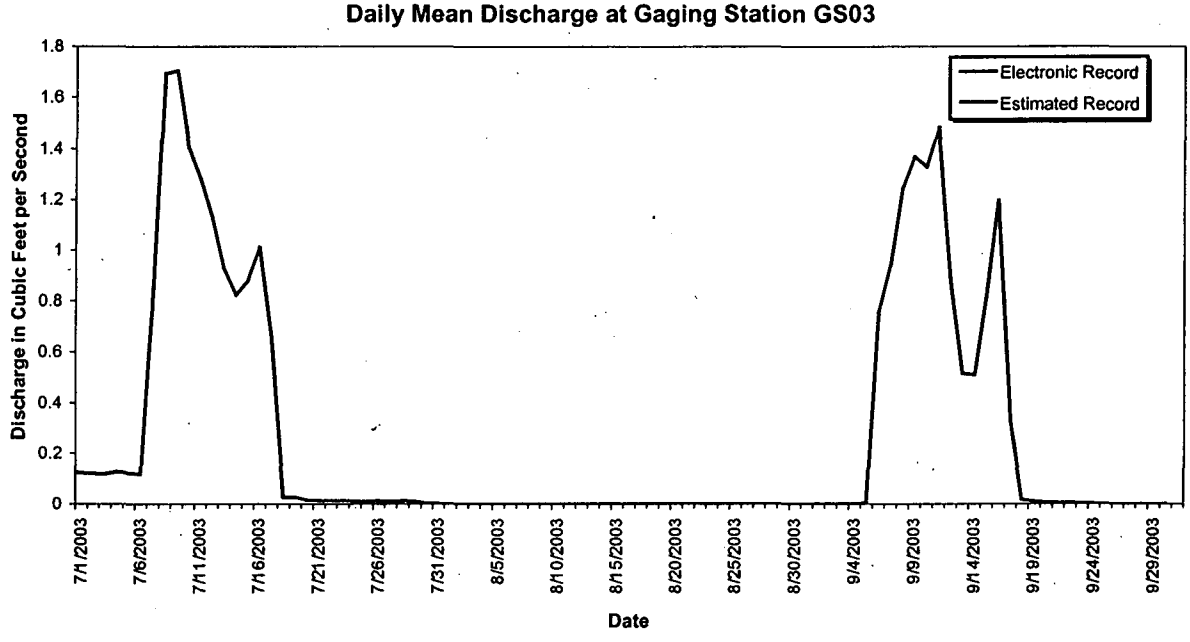

Figure 4-4. Mean Daily Discharge at GS03, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-4. Gaging Station GS04: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.005	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	405	0	0
Gallons	3033	0	0
Acre-Feet	0.01	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Buffer Zone Hydrologic monitoring location GS04 is located at state plane 2085568, 758145 on Rock Creek 300 feet upstream of the box culvert under Hwy. 128. This station monitors runoff from the Rock Creek drainage in the northwest Buffer Zone. The GS04 drainage area is approximately 1500 acres. This station collects samples for sediment/sand, Ca, Mg, Na, K, Cl, F, SO4, HCO3, and TSS using storm-event, rising-limb, flow-paced composite sampling.

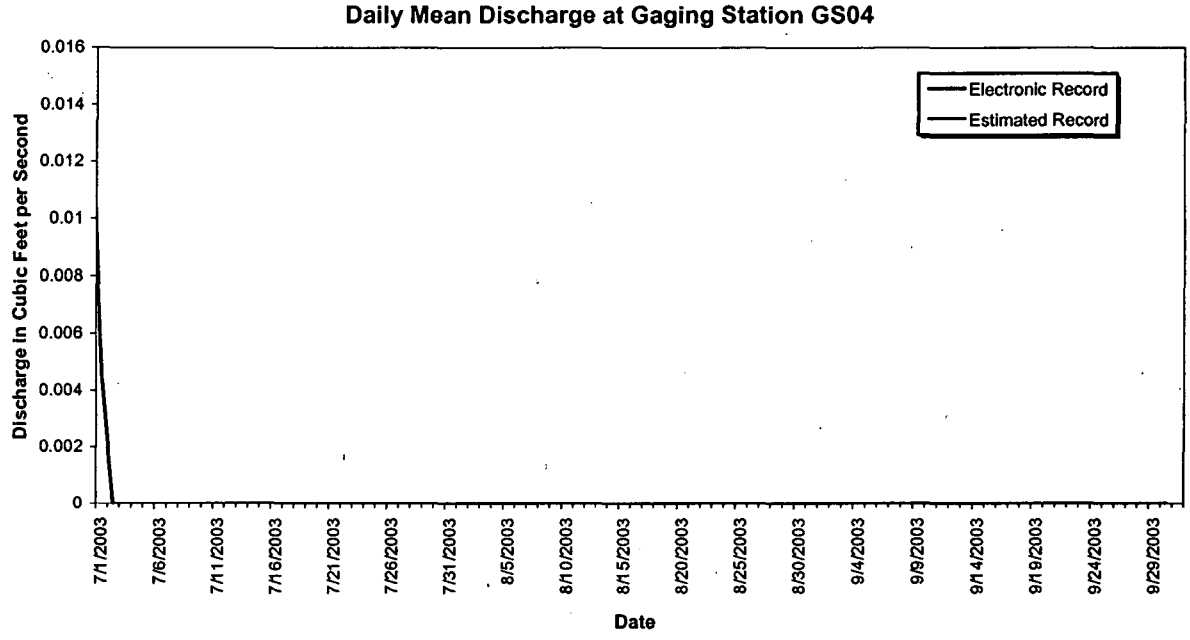

Figure 4-5. Mean Daily Discharge at GS04, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-5. Gaging Station GS05: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	*0.001*	0.000	0.000
2	*0.000*	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	BD
17	0.000	0.000	BD
18	0.000	0.000	BD
19	0.000	0.000	BD
20	0.000	0.000	BD
21	0.000	0.000	BD
22	0.000	0.000	BD
23	0.000	0.000	BD
24	0.000	0.000	BD
25	0.000	0.000	BD
26	0.000	0.000	BD
27	0.000	0.000	BD
28	0.000	0.000	BD
29	0.000	0.000	BD
30	0.000	0.000	BD
31	0.000	0.000	NA
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	53	0	0
Gallons	395	0	0
Acre-Feet	0.00	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

BD = Bad data due to equipment failures.

WR = No data or unacceptable data due to winter icing conditions.

Buffer Zone Hydrologic monitoring location GS05 is located at state plane 2078428, 747260 on Woman Creek 320 feet east of the west Buffer Zone fence. This station monitors runoff from the Woman Creek drainage southwest of the Site including areas west of Hwy. 93. This station collects samples for sediment/sand, Ca, Mg, Na, K, Cl, F, SO4, HCO3, and TSS using storm-event, rising-limb, flow-paced composite sampling.

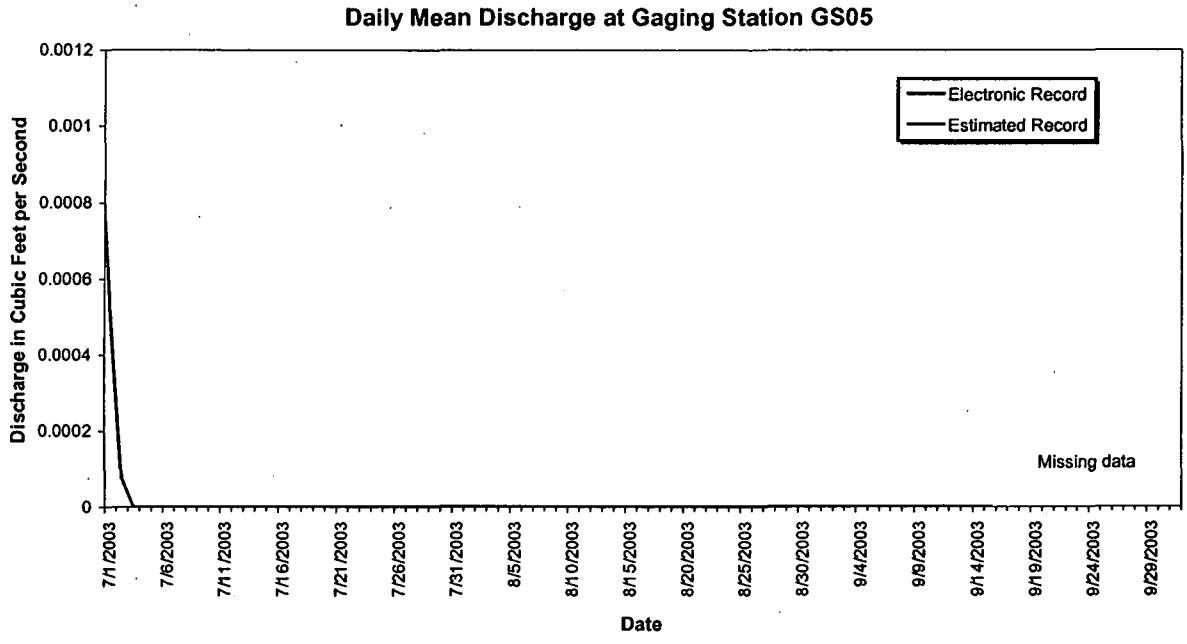

Figure 4-6. Mean Daily Discharge at GS05, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-6. Gaging Station GS06: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.0008	0.0096	0.0018
2	0.0005	0.0108	0.0007
3	0.0000	0.0464	0.0008
4	0.0000	0.0476	0.0006
5	0.0000	0.0505	0.0006
6	0.0000	0.0573	0.0003
7	0.0000	0.0634	0.0006
8	0.0000	0.0829	0.0008
9	0.0000	0.0673	0.0012
10	0.0000	0.0320	0.0033
11	0.0000	0.0307	0.0004
12	0.0000	0.0171	0.0003
13	0.0000	0.1278	0.0008
14	0.0000	0.0496	0.0005
15	0.0000	0.0233	0.0002
16	0.0000	0.0217	0.0001
17	0.0000	0.0124	0.0004
18	0.0000	0.0086	0.0021
19	0.0000	0.0077	0.0011
20	0.0000	0.0013	0.0004
21	0.0000	0.0004	0.0000
22	0.0000	0.0003	0.0000
23	0.0000	0.0002	0.0000
24	0.0118	0.0001	0.0000
25	0.0390	0.0001	0.0000
26	0.0358	0.0001	0.0000
27	0.0317	0.0000	0.0000
28	0.0365	0.0000	0.0004
29	0.0269	0.0002	0.0009
30	0.0144	0.0312	0.0013
31	0.0130	0.0078	NA
Monthly Average (cfs)	0.0068	0.0261	0.0007

Monthly Discharge

Cubic Feet	18177	69869	1697
Gallons	135975	522653	12695
Acre-Feet	0.42	1.60	0.04

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Buffer Zone Hydrologic monitoring location GS06 is located at state plane 2078449, 745968 on the Owl Branch to Woman Creek 330 feet east of the west Buffer Zone fence. This station monitors runoff from the area northeast of Rocky Flats Lake. This station collects samples for sediment/sand, Ca, Mg, Na, K, Cl, F, SO4, HCO3, and TSS using storm-event, rising-limb, flow-paced composite sampling.

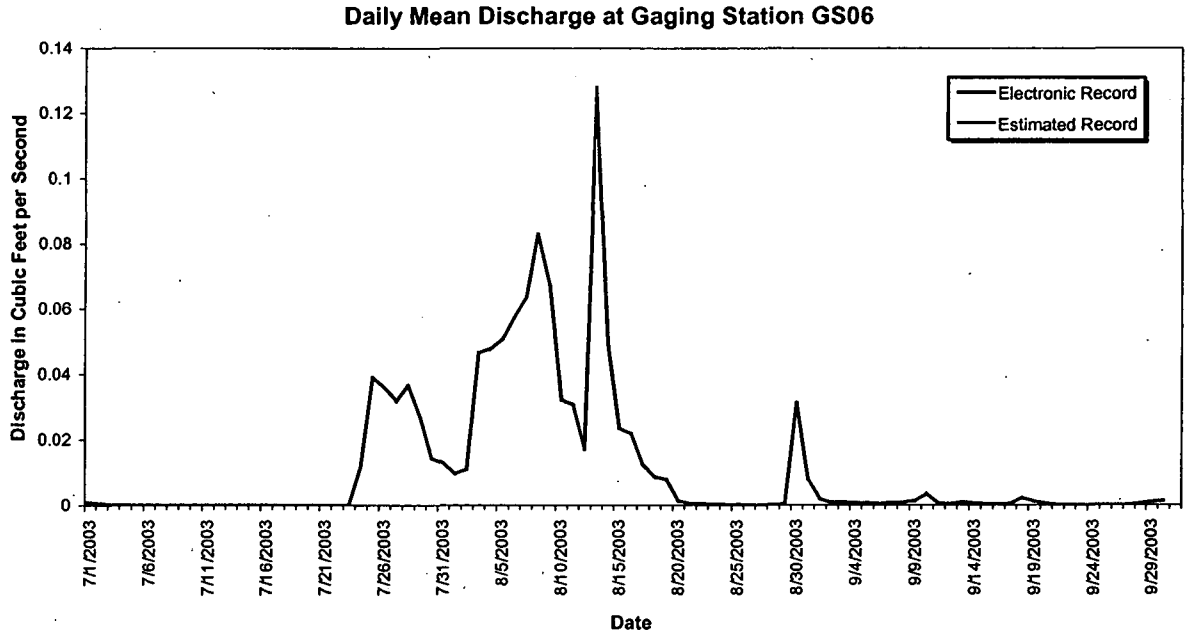

Figure 4-7. Mean Daily Discharge at GS06, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-7. Gaging Station GS08: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	1.032
6	0.000	0.000	1.243
7	1.319	0.000	1.203
8	2.005	0.000	1.498
9	1.943	0.000	1.542
10	1.541	0.000	1.550
11	1.433	0.000	1.641
12	1.246	0.000	0.969
13	1.096	0.000	0.667
14	1.104	0.000	0.627
15	1.102	0.000	1.110
16	1.304	0.000	1.287
17	0.577	0.000	0.222
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.473	0.000	0.486

Monthly Discharge

Cubic Feet	1267502	0	1260788
Gallons	9481575	0	9431349
Acre-Feet	29.09	0.00	28.94

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS08 is located 39° 53' 54"N, 105° 10' 48"W, at the Pond B-5 Outfall on South Walnut Creek (See Section 4 Map). This station is a RFCA Point of Compliance and monitors water discharged from Pond B-5 to South Walnut Creek. This station collects samples for selected radionuclides using continuous flow-paced sampling.

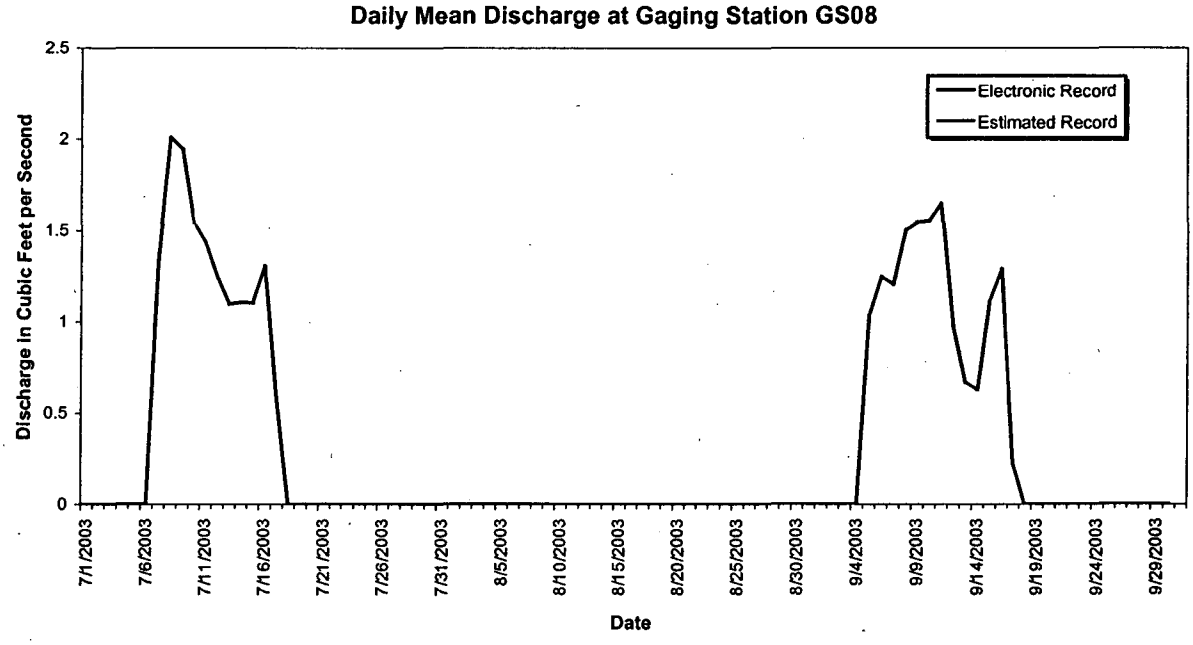

Figure 4-8. Mean Daily Discharge at GS08, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-8. Gaging Station GS10: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.044	0.035	0.029
2	0.047	0.035	0.056
3	0.051	0.036	0.034
4	0.053	0.045	0.029
5	0.058	0.048	0.028
6	0.064	0.050	0.028
7	0.066	0.055	0.038
8	0.068	0.103	0.031
9	0.076	0.057	0.030
10	0.082	0.055	0.029
11	0.090	0.058	0.027
12	0.099	0.052	0.025
13	0.113	0.045	0.023
14	0.125	0.037	0.021
15	0.128	0.028	0.020
16	0.136	0.027	0.099
17	0.140	0.031	0.086
18	*0.768*	0.163	0.050
19	0.202	0.031	0.029
20	0.095	0.028	0.027
21	0.098	0.039	0.026
22	0.093	0.034	0.025
23	0.089	0.047	0.025
24	0.085	0.033	0.024
25	0.083	0.034	0.023
26	0.079	0.033	0.023
27	0.076	0.032	0.022
28	0.072	0.033	0.021
29	0.072	0.084	0.021
30	0.044	1.135	0.020
31	0.035	0.036	NA
Monthly Average (cfs)	0.107	0.083	0.032

Monthly Discharge

Cubic Feet	287690	221101	83869
Gallons	2152074	1653949	627386
Acre-Feet	6.60	5.08	1.93

Note: mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS10 is located 39° 53' 35"N, 105° 11' 27"W on South Walnut Creek above the Pond B-1 Bypass (See Section 4 Map). This station is a RFCA Action Level Framework and a New Source Detection Location and monitors water leaving the Site Industrial Area and entering the B-Series Ponds and South Walnut Creek. This station collects samples for selected radionuclides, metals, and water quality parameters using continuous flow-paced sampling.

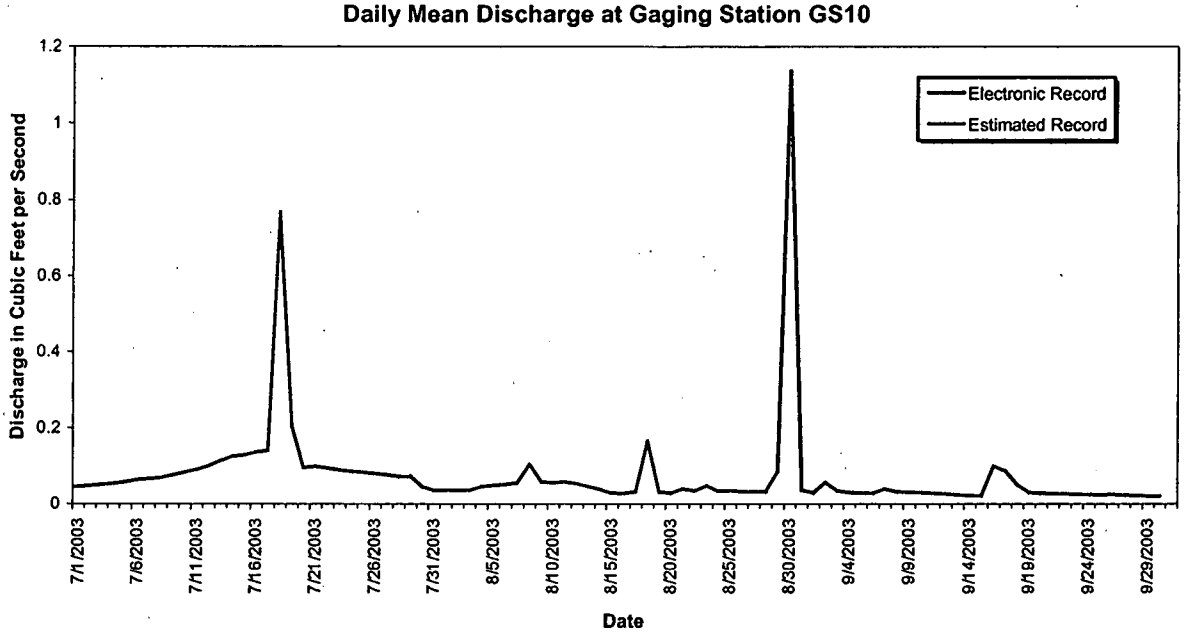

Figure 4-9. Mean Daily Discharge at GS10, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-9. Gaging Station GS11: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	0	0	0
Gallons	0	0	0
Acre-Feet	0.00	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS11 is located 39° 54' 3"N, 105° 10' 47"W, at the Pond A-4 Outfall on North Walnut Creek (See Section 4 Map). This station is a RFCA Point of Compliance and monitors water discharged from Pond A-4 to North Walnut Creek. This station collects samples for selected radionuclides using continuous flow-paced sampling.

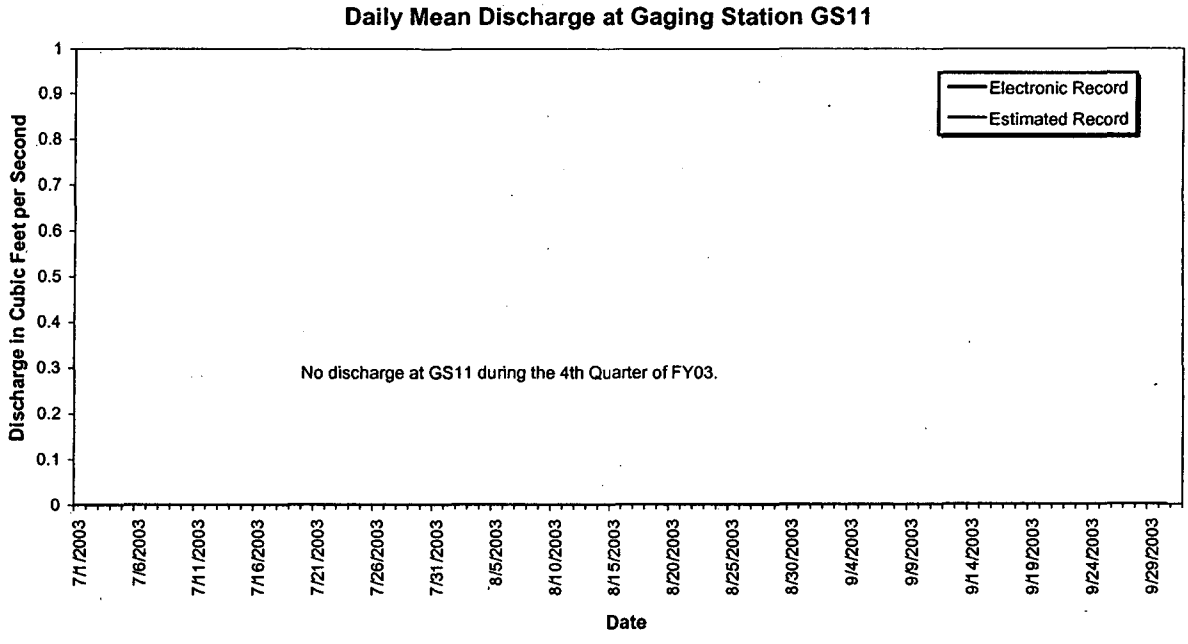

Figure 4-10. Mean Daily Discharge at GS11 Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-10. Gaging Station GS16: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.032	0.019	0.020
2	0.027	0.018	0.021
3	0.023	0.018	0.023
4	0.023	0.016	0.021
5	0.022	0.015	0.019
6	0.023	0.016	0.021
7	0.024	0.017	0.026
8	0.022	0.019	0.022
9	0.022	0.017	0.021
10	0.021	0.016	0.019
11	0.022	0.017	0.020
12	0.024	0.017	0.018
13	0.024	0.016	0.024
14	0.020	0.016	0.023
15	0.025	0.016	0.020
16	0.023	0.016	0.020
17	0.024	0.015	0.022
18	0.041	0.027	0.025
19	0.032	0.022	0.024
20	0.028	0.018	0.022
21	0.024	0.019	0.021
22	0.024	0.019	0.023
23	0.026	0.019	0.020
24	0.018	0.018	0.022
25	0.024	0.020	0.023
26	0.022	0.017	0.023
27	0.022	0.018	0.027
28	0.025	0.018	0.029
29	0.026	0.019	0.032
30	0.022	0.048	0.034
31	0.019	0.024	NA
Monthly Average (cfs)	0.024	0.019	0.023

Monthly Discharge

Cubic Feet	65234	50747	59131
Gallons	487988	379613	442327
Acre-Feet	1.50	1.16	1.36

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.
WR = No data or unacceptable data due to winter icing conditions.

Buffer Zone Hydrologic monitoring location GS16 is located at state plane 2083406, 746659 on Antelope Springs Creek 970 feet upstream of Woman Creek. This station monitors discharge from Antelope Springs and runoff from the surrounding area. The GS16 drainage area is approximately 105 acres. This station collects flow data only.

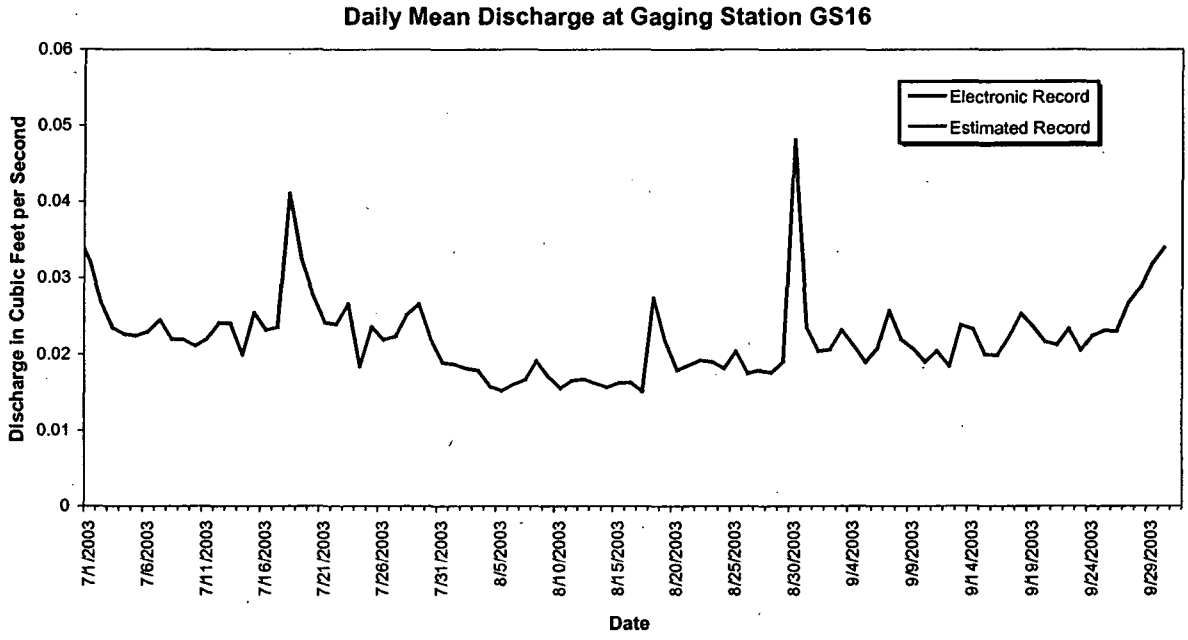

Figure 4-11. Mean Daily Discharge at GS16, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-11. Gaging Station GS21: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	*0.000*
2	0.000	0.000	*0.001*
3	0.000	0.000	*0.000*
4	0.000	0.000	*0.000*
5	0.000	0.000	*0.000*
6	0.000	0.000	*0.000*
7	0.000	0.000	*0.000*
8	0.000	0.000	*0.000*
9	0.000	0.000	*0.000*
10	0.000	0.000	*0.000*
11	0.000	0.000	*0.000*
12	0.000	0.000	*0.000*
13	0.000	0.000	*0.000*
14	0.000	0.000	*0.000*
15	0.000	0.000	*0.000*
16	0.000	0.000	*0.000*
17	0.000	0.000	*0.002*
18	0.015	0.004	*0.000*
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	*0.003*	0.000
30	0.000	*0.023*	0.000
31	0.000	*0.000*	NA
Monthly Average (cfs)	0.0005	0.0010	0.0001

Monthly Discharge

Cubic Feet	1352	2575	249
Gallons	10111	19266	1863
Acre-Feet	0.03	0.06	0.01

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging station GS21 was installed on 12/10/02 as a Performance Monitoring location in support of D&D for the 400 and 600 Areas. GS21 is located at state plane 2083049, 748139 in a ditch SE of B664. The GS21 drainage area is approximately 3.2 acres. This station will collect samples for Pu, Am, uranium isotopes, CLP metals, and TSS using continuous flow-paced composite sampling.

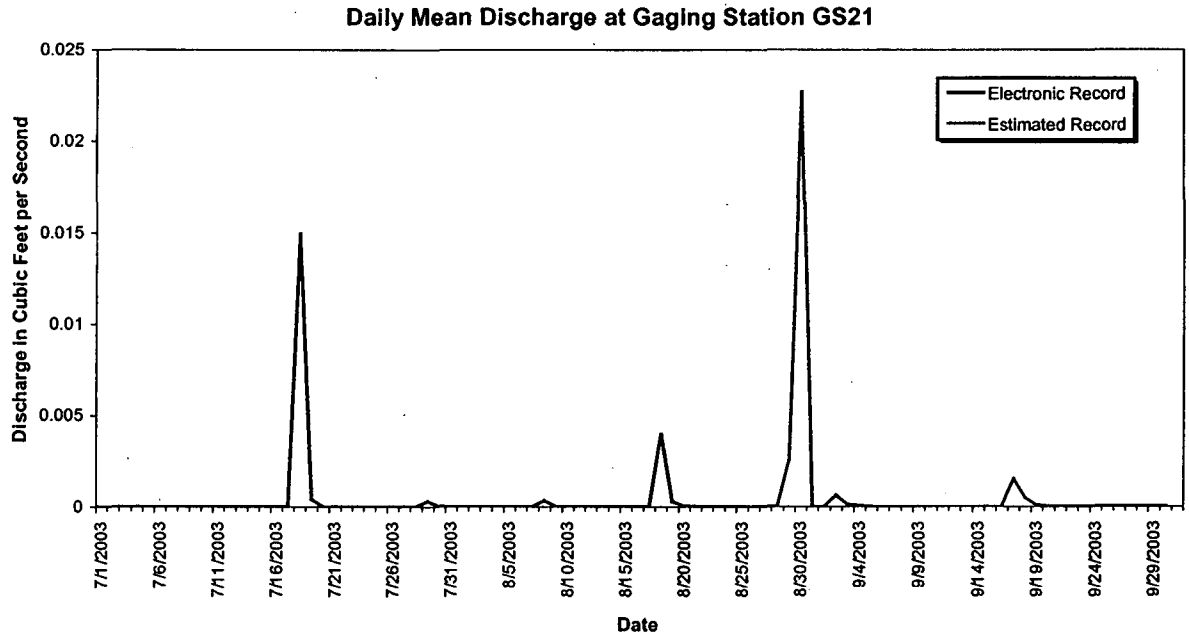

Figure 4-12. Mean Daily Discharge at GS21, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-12. Gaging Station GS22: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.008	0.005	0.004
2	0.007	0.008	0.045
3	0.007	0.009	0.010
4	0.007	0.007	0.007
5	0.007	0.006	0.017
6	0.006	0.006	0.009
7	0.006	0.005	0.023
8	0.006	0.086	0.006
9	0.011	0.003	0.005
10	0.009	0.003	0.006
11	0.008	0.003	0.004
12	0.008	0.004	0.004
13	0.007	0.003	0.004
14	0.006	0.003	0.003
15	0.005	0.003	0.003
16	0.005	0.003	0.003
17	0.005	0.003	0.083
18	*0.235*	0.133	0.009
19	0.015	0.003	0.010
20	0.008	0.013	0.005
21	0.008	0.003	0.004
22	0.008	0.003	0.003
23	0.008	0.008	0.003
24	0.007	0.003	0.004
25	0.009	0.003	0.003
26	0.006	0.003	0.004
27	0.006	0.005	0.003
28	0.035	0.006	0.003
29	0.035	0.116	0.002
30	0.009	*0.365*	0.002
31	0.007	0.006	NA
Monthly Average (cfs)	0.017	0.027	0.010

Monthly Discharge

Cubic Feet	44300	71639	25376
Gallons	331386	535899	189827
Acre-Feet	1.02	1.64	0.58

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging station GS22 was upgraded as a Performance monitoring location in support of D&D activities for the 400 Area. GS22 is located at state plane 2082678, 747820 on the outlet of a culvert draining a portion of the 400 Area immediately upstream from the SID south of B664. The GS22 drainage area is approximately 17.2 acres. This station collects samples for Pu, Am, uranium isotopes, CLP metals, and TSS using continuous flow-paced composite sampling.

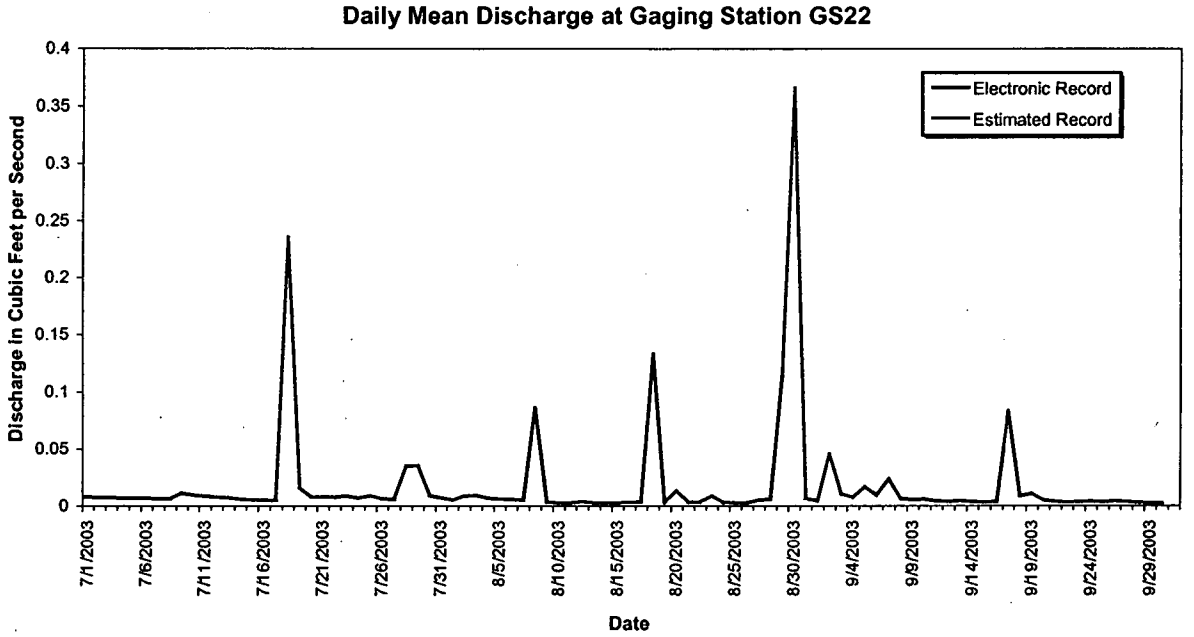

Figure 4-13. Mean Daily Discharge at GS22, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-13. Gaging Station GS27: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000
9	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
11	0.0000	0.0000	0.0000
12	0.0000	0.0000	0.0000
13	0.0000	0.0000	0.0000
14	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000
17	0.0000	0.0000	0.0000
18	0.0002	0.0000	0.0000
19	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
21	0.0000	0.0000	0.0000
22	0.0000	0.0000	0.0000
23	0.0000	0.0000	0.0000
24	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
26	0.0000	0.0000	0.0000
27	0.0000	0.0000	0.0000
28	0.0000	0.0000	0.0000
29	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000
31	0.0000	0.0000	NA
Monthly Average (cfs)	0.0000	0.0000	0.0000

Monthly Discharge

Cubic Feet	13	1	0
Gallons	97	11	0
Acre-Feet	0.00	0.00	0.00

Note: mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS27 is located at State Plane 2080529; 751216, at the small drainage ditch NW of Building 884 (see Section 4 Map). This location is a Performance and Best Management Practices Monitoring Location and monitors water draining from the Building 889 area. This station collects samples for selected radionuclides using continuous, flow-paced sampling.

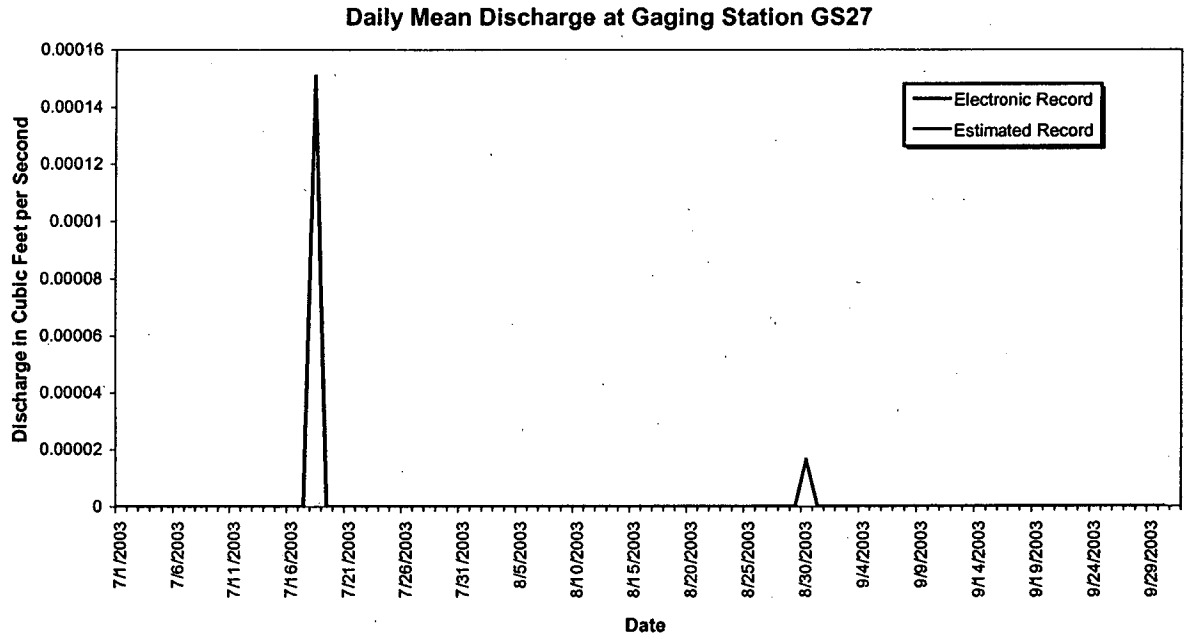

Figure 4-14. Mean Daily Discharge at GS27 Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-14. Gaging Station GS28: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000
9	0.0000	0.0000	0.0001
10	0.0000	0.0000	0.0000
11	0.0000	0.0000	0.0000
12	0.0000	0.0000	0.0000
13	0.0000	0.0000	0.0000
14	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000
17	0.0000	0.0000	0.0000
18	0.0052	0.0000	0.0000
19	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
21	0.0000	0.0000	0.0000
22	0.0000	0.0007	0.0000
23	0.0000	0.0104	0.0000
24	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
26	0.0000	0.0000	0.0000
27	0.0000	0.0000	0.0000
28	0.0000	0.0000	0.0000
29	0.0000	0.0000	0.0000
30	0.0000	0.0024	0.0000
31	0.0000	0.0000	NA
Monthly Average (cfs)	0.0002	0.0004	0.0000

Monthly Discharge

Cubic Feet	448	1159	11
Gallons	3354	8673	79
Acre-Feet	0.01	0.03	0.00

Note: mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging station GS28 was re-installed as a Performance monitoring location in support of D&D activities for the 800 Area. GS28 is located at state plane 2084008, 749279 on a ditch NW of B865. The GS28 drainage area is approximately 3 acres. This station collects samples for Pu, Am, uranium isotopes, CLP metals, and TSS using continuous flow-paced composite sampling.

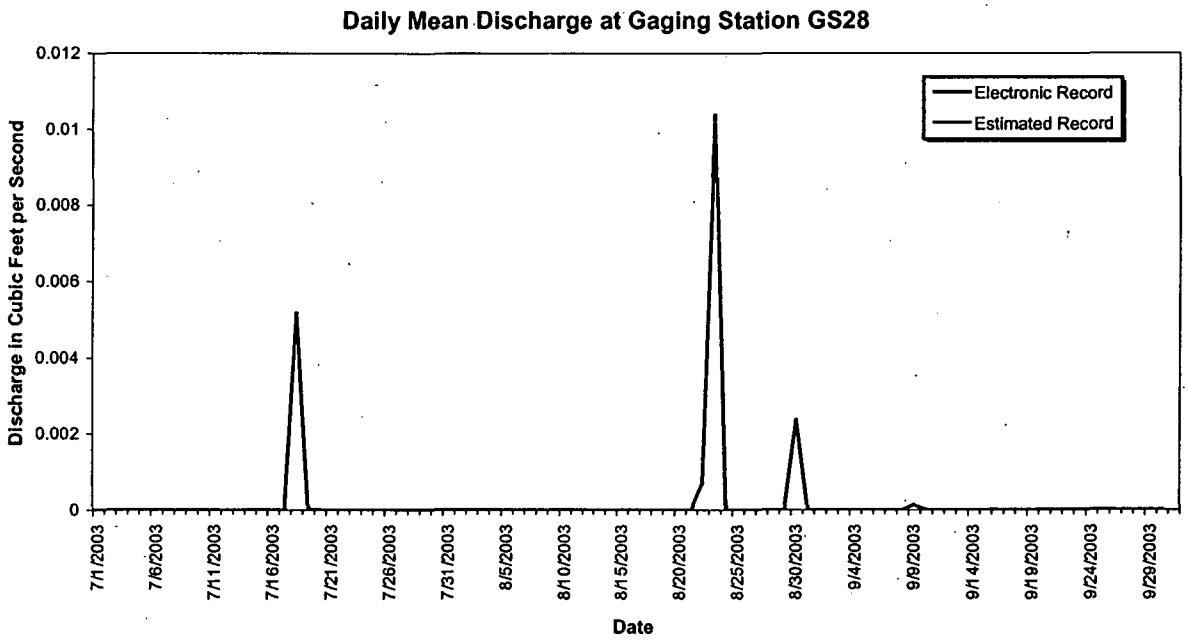

Figure 4-15. Mean Daily Discharge at GS28 Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-15. Gaging Station GS31: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	0	0	0
Gallons	0	0	0
Acre-Feet	0.00	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS31 is located at State Plane 2089268: 747506, at the Pond C-2 Outfall (See Section 4 Map). This station is a RFCA Point of Compliance and monitors water discharged from Pond C-2. This station collects samples for selected radionuclides using continuous flow-paced sampling.

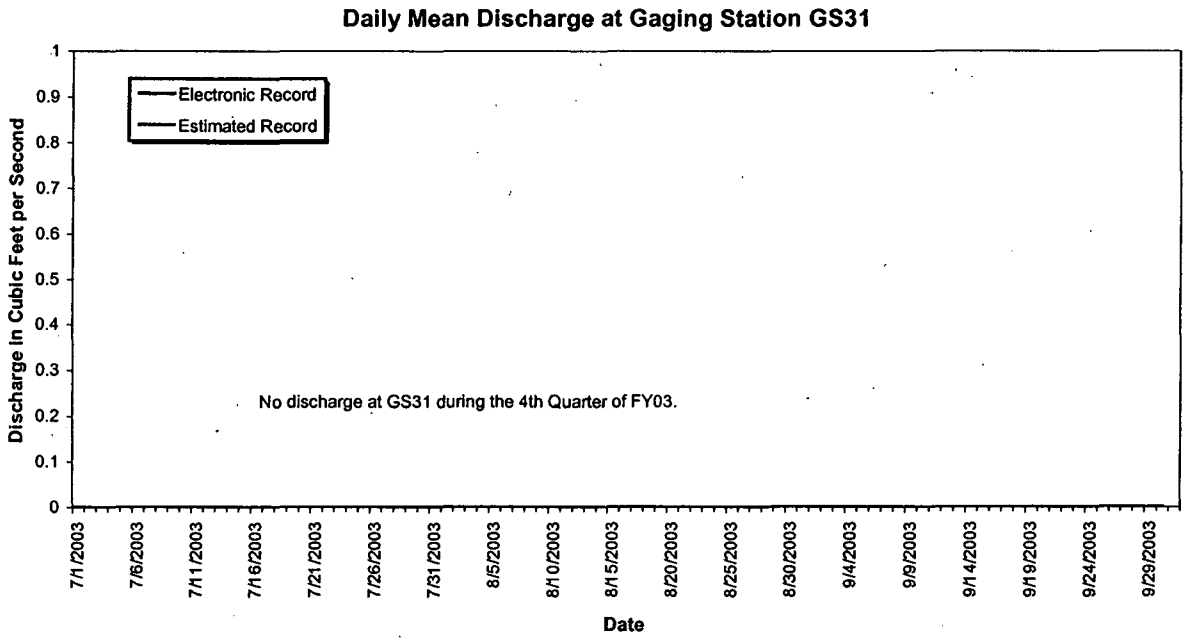

Figure 4-16. Mean Daily Discharge at GS31 Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-16. Gaging Station GS38: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.003
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.005	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.009
18	*0.212*	0.047	0.001
19	0.006	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.006	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.016	0.000
30	0.000	0.383	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.007	0.015	0.000

Monthly Discharge

Cubic Feet	18871	39540	1065
Gallons	141161	295778	7970
Acre-Feet	0.43	0.91	0.02

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging station GS38 was upgraded on 5/16/03 as a Performance monitoring location in support of closure activities in the 100, 300, 400, and 600 Areas. GS38 is located at state plane 2083684, 749289 on the Central Ave. Ditch just east of 8th Street. The GS38 drainage area is approximately 40.7 acres. This station now collects samples for Pu, Am, uranium isotopes, CLP metals, and TSS using continuous flow-paced composite sampling.

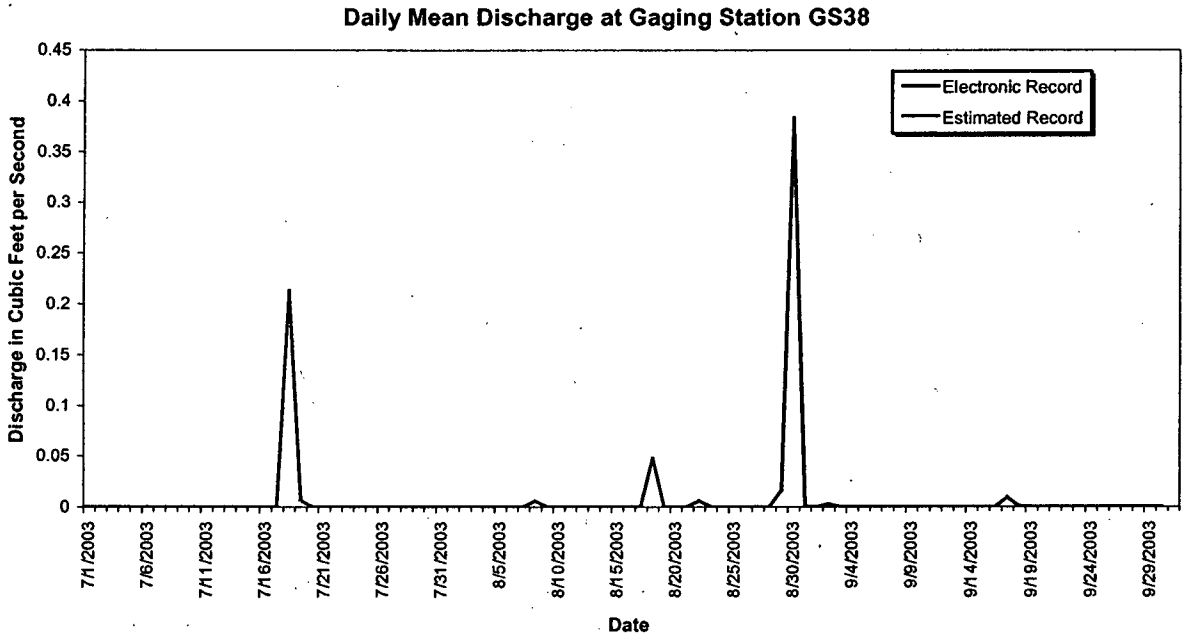

Figure 4-17. Mean Daily Discharge at GS38 Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-17. Gaging Station GS39: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.001
18	0.012	0.000	0.002
19	0.001	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.018	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.0004	0.0006	0.0001

Monthly Discharge

Cubic Feet	1118	1574	252
Gallons	8361	11776	1882
Acre-Feet	0.03	0.04	0.01

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS39 is located in the drainage ditch northwest of the 904 Pad. This location is a RFCA Source Location station monitoring water flowing from the area of the 903 Pad as well as part of the 904 Pad and contractor yard to South Walnut Creek. This station collects samples for selected radionuclides using continuous, flow-paced sampling.

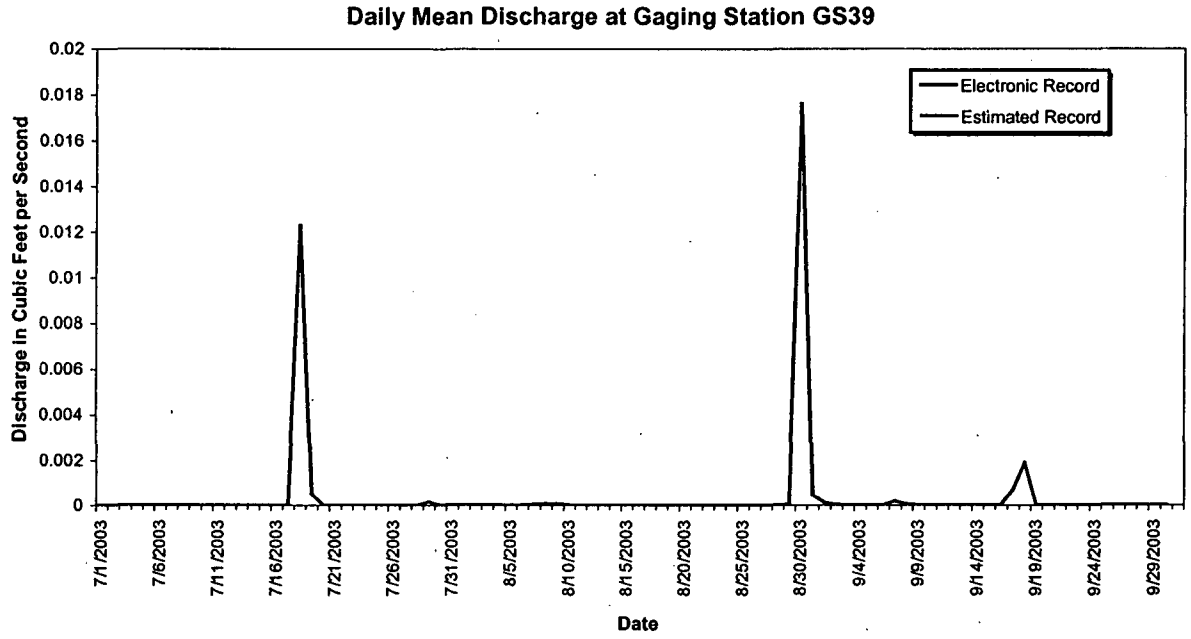

Figure 4-18. Mean Daily Discharge at GS39 Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-18. Gaging Station GS40: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	*0.024*	*0.016*	0.009
2	*0.024*	*0.016*	0.037
3	*0.028*	*0.016*	0.006
4	*0.027*	*0.020*	0.010
5	*0.027*	*0.019*	0.015
6	*0.024*	*0.020*	0.019
7	*0.021*	0.021	0.031
8	*0.021*	0.068	0.020
9	*0.019*	0.018	0.024
10	*0.014*	0.020	0.027
11	*0.014*	0.020	0.031
12	0.017	*0.016*	0.029
13	0.018	*0.013*	0.028
14	0.020	*0.010*	0.025
15	0.021	*0.006*	0.022
16	0.021	*0.005*	0.025
17	0.021	*0.007*	0.086
18	0.281	*0.108*	0.033
19	*0.044*	0.009	0.014
20	0.032	0.009	0.014
21	*0.035*	0.011	0.014
22	0.040	0.013	0.016
23	0.038	0.027	0.021
24	*0.039*	0.009	0.017
25	*0.038*	0.013	0.010
26	*0.036*	0.014	0.009
27	*0.034*	0.015	0.015
28	*0.033*	0.013	0.016
29	*0.032*	0.092	0.015
30	*0.020*	0.335	0.017
31	*0.016*	0.010	NA
Monthly Average (cfs)	0.035	0.032	0.022

Monthly Discharge

Cubic Feet	93267	85635	56696
Gallons	697686	640597	424116
Acre-Feet	2.14	1.97	1.30

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS40 is located on the concrete spillway east of Tenth Street, south of Building 997. This location is a RFCA Performance Monitoring Location monitoring water flowing from the 700 area to South Walnut Creek. This station samples for selected radionuclides using continuous, flow-paced sampling.

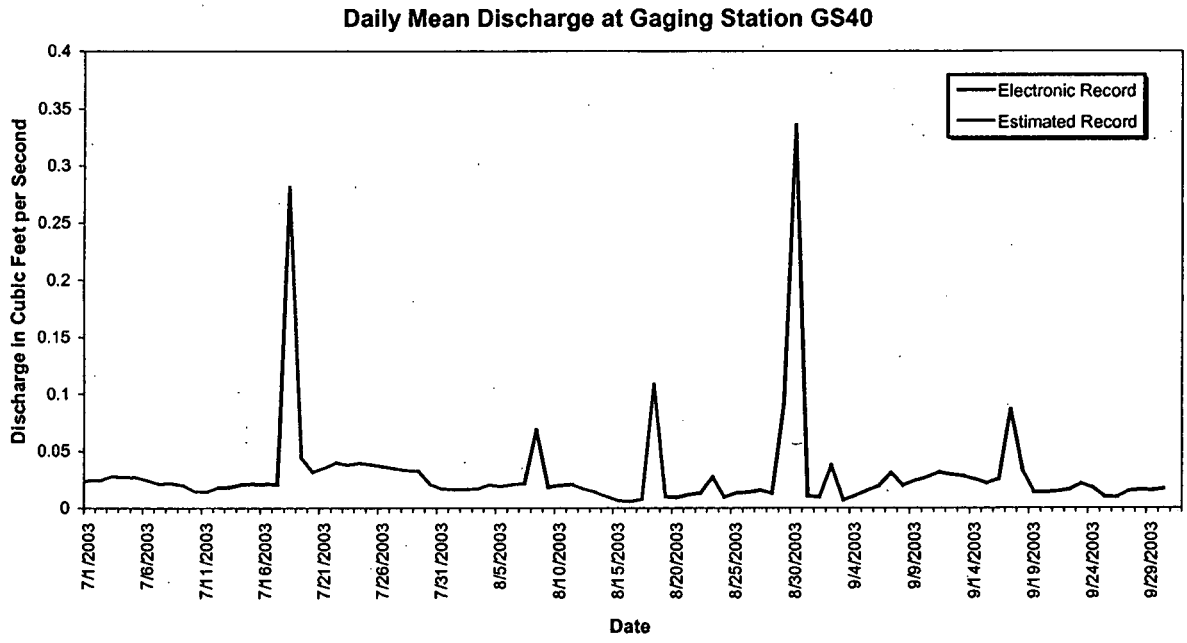

Figure 4-19. Mean Daily discharge at GS40 Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-19. Gaging Station GS42: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	0	0	0
Gallons	0	0	0
Acre-Feet	0.00	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging station GS42 was upgraded as a Performance monitoring location in support of characterization activities for the 903 Pad and Lip Area. GS42 is located at state plane 2088476, 748236 on a drainage swale immediately upstream from the SID north of Pond C-2. The GS42 drainage area is approximately 45.2 acres. This station collects samples for Pu, Am, uranium isotopes, and TSS using continuous flow-paced composite sampling.

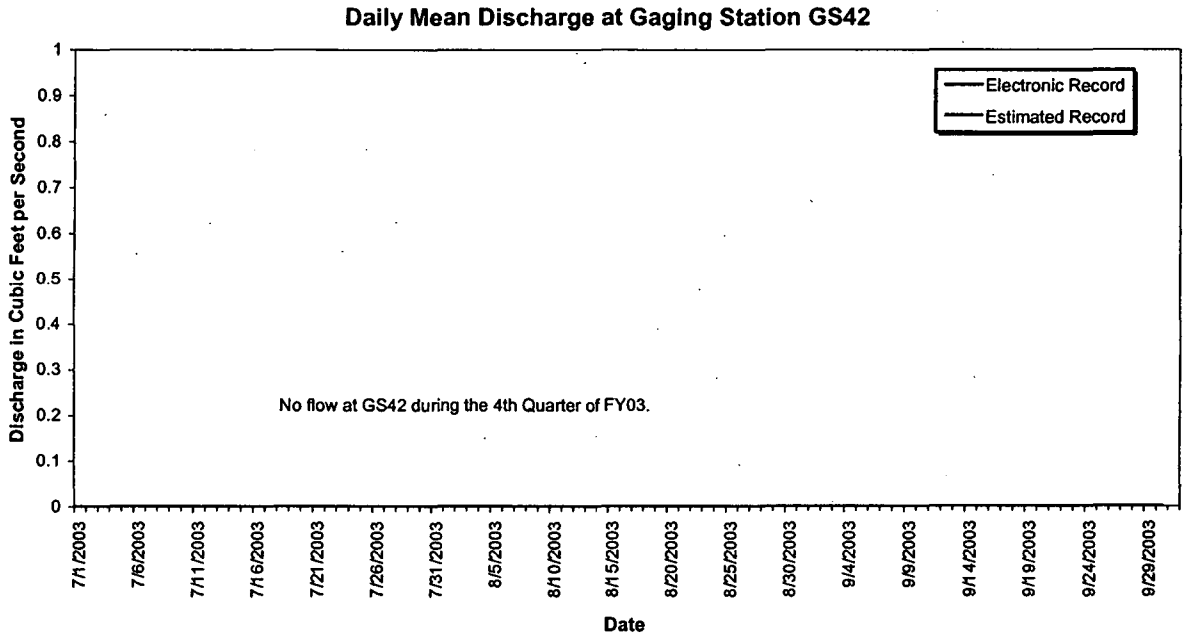

Figure 4-20. Mean Daily Discharge at GS42, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-20. Gaging Station GS43: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.001	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.014	0.002	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.001	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.012	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.000	0.001	0.000

Monthly Discharge

Cubic Feet	1210	1343	0
Gallons	9051	10048	0
Acre-Feet	0.03	0.03	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging station GS43 is located in the ditch at the northeast corner of T886A. This location is a RFCA Performance Monitoring Location monitoring runoff from the eastern portion of the 800 area including Building 875, T886A, and the eastern half of Building 886. Water passing this monitoring location continues to South Walnut Creek. This station samples for selected radionuclides and metals using continuous, flow-paced sampling.

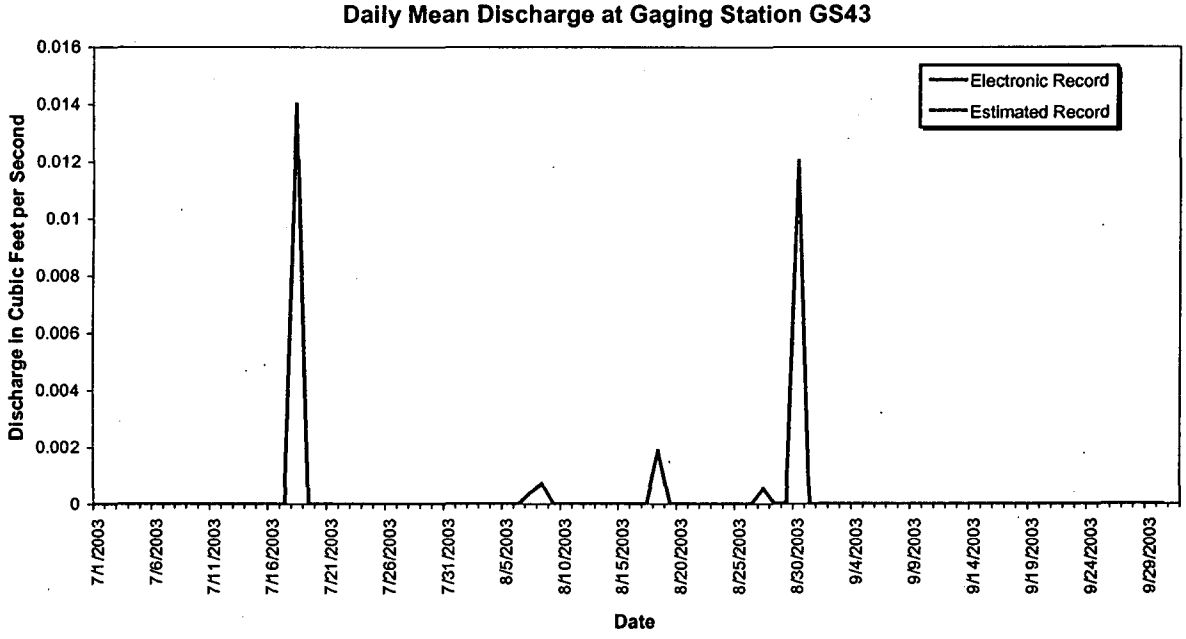

Figure 4-21. Mean Daily Discharge at GS43, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-21. Gaging Station GS44 Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.001	0.001
2	0.000	0.001	0.001
3	0.000	0.001	0.000
4	0.001	0.002	0.000
5	0.001	0.001	0.000
6	0.001	0.002	0.001
7	0.001	0.002	0.001
8	0.001	0.004	0.001
9	0.001	0.002	0.002
10	0.002	0.002	0.002
11	0.002	0.002	0.002
12	0.002	0.002	0.002
13	0.002	0.001	0.002
14	0.002	0.001	0.002
15	0.002	0.001	0.001
16	0.002	0.001	0.001
17	0.001	0.001	0.004
18	0.019	0.004	0.002
19	0.002	0.001	0.002
20	0.002	0.001	0.001
21	0.002	0.001	0.002
22	0.002	0.001	0.002
23	0.001	0.000	0.001
24	0.001	0.000	0.002
25	0.002	0.000	0.002
26	0.001	0.000	0.002
27	0.001	0.001	0.002
28	0.001	0.001	0.002
29	0.002	0.004	0.002
30	0.000	0.030	0.002
31	0.000	0.002	NA
Monthly Average (cfs)	0.0018	0.0023	0.0015

Monthly Discharge

Cubic Feet	4927	6154	3946
Gallons	36860	46037	29518
Acre-Feet	0.11	0.14	0.09

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging station GS44 is located at state plane 2083411, 751100 on a drainage ditch between T771F and T771L. This station is a Performance Monitoring Location and monitors runoff from the west side of B771 and includes B771 footing drain water. This station collects samples for selected radionuclides and water quality parameters using continuous flow-paced composite sampling.

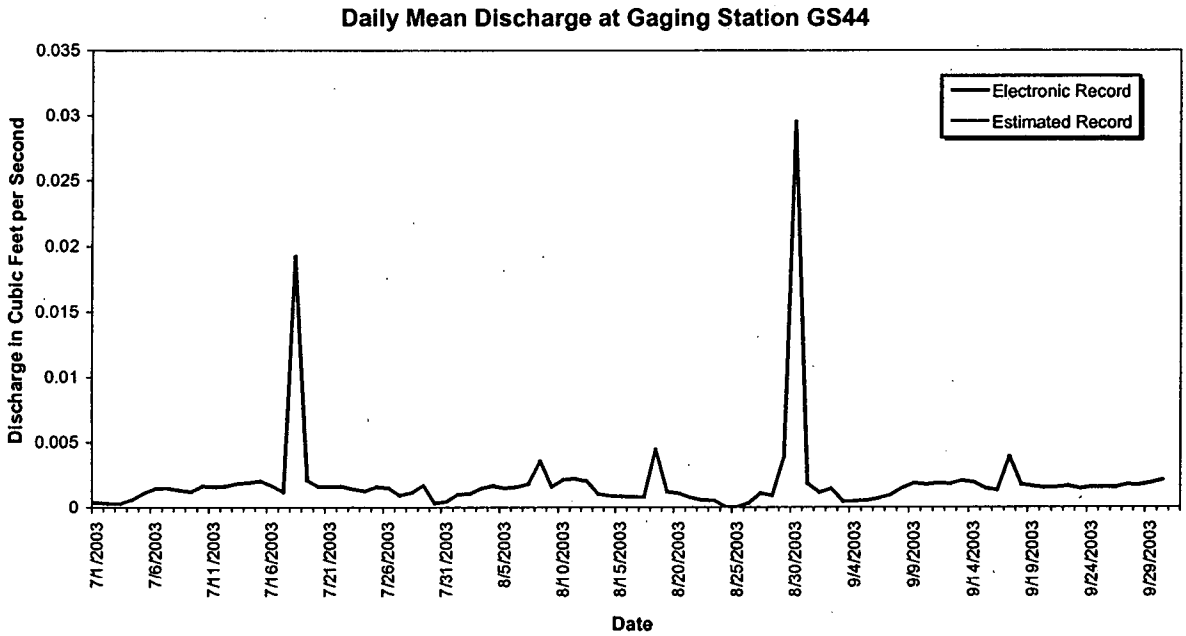

Figure 4-22. Mean Daily Discharge at GS44 Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-22. Gaging Station GS49 Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0009
3	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0002
8	0.0000	0.0009	0.0000
9	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
11	0.0000	0.0000	0.0000
12	0.0000	0.0000	0.0000
13	0.0000	0.0000	0.0000
14	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000
17	0.0000	0.0000	0.0021
18	0.0104	0.0025	0.0001
19	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
21	0.0000	0.0000	0.0000
22	0.0000	0.0000	0.0000
23	0.0000	0.0004	0.0000
24	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
26	0.0000	0.0000	0.0000
27	0.0000	0.0000	0.0000
28	0.0000	0.0000	0.0000
29	0.0004	0.0033	0.0000
30	0.0000	0.0165	0.0000
31	0.0000	0.0000	NA
Monthly Average (cfs)	0.0004	0.0008	0.0001

Monthly Discharge

Cubic Feet	938	2048	291
Gallons	7019	15322	2174
Acre-Feet	0.02	0.05	0.01

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.
WR = No data or unacceptable data due to winter icing conditions.

Gaging station GS49 is located at state plane 2083292, 750652 on a drainage ditch northwest of B566. This station is a Performance Monitoring location and has been installed in support of D&D activities for Building 776/777. This station monitors runoff from the west side of the B776/777 complex. The GS49 drainage area is approximately 3.3 acres. This station collects samples for selected isotopes, metals, tritium, and TSS using continuous flow-paced composite sampling.

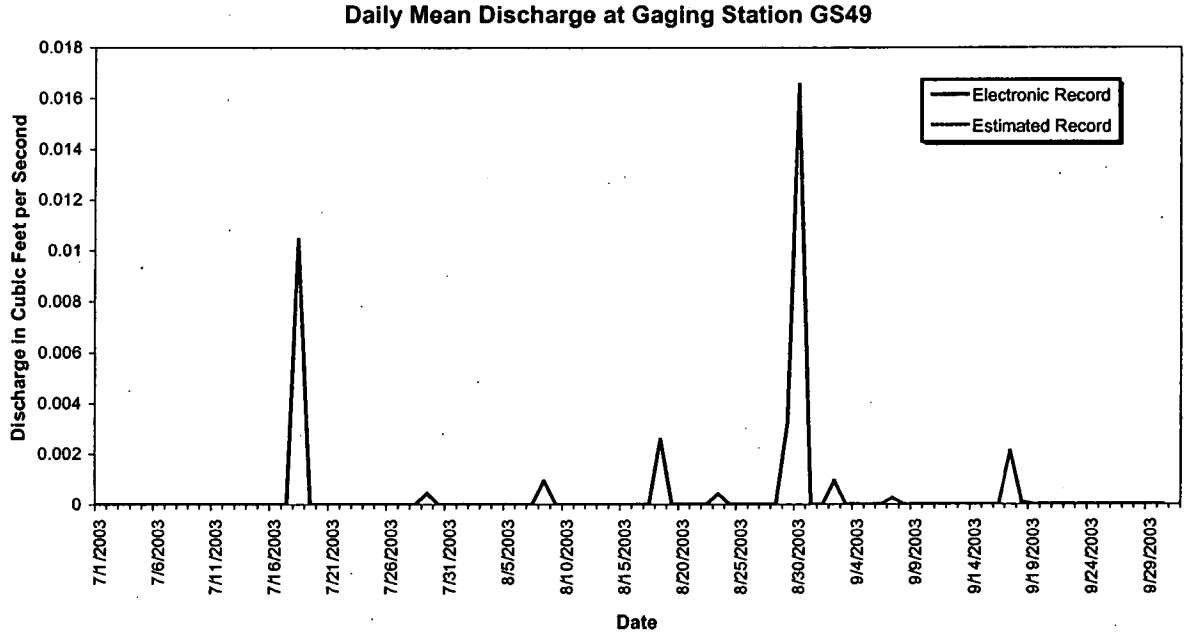

Figure 4-23. Mean Daily Discharge at GS49 Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-23. Gaging Station GS50 Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.0000	0.0000	0.0000

Cubic Feet	0	14	0
Gallons	0	106	0
Acre-Feet	0.00	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging station GS50 is located at state plane 2085760, 750441 on a drainage ditch northeast of B990. This station is a performance monitoring location that was installed in support of remediation activities for the Solar Ponds and the ongoing GS10 Source Evaluation effort.. This station monitors runoff from the south side of the Solar Ponds and Triangle Area. The GS50 drainage area is approximately 4.1 acres. This station collects samples for Pu, Am, uranium isotopes, CLP metals, and TSS using continuous flow-paced composite sampling.

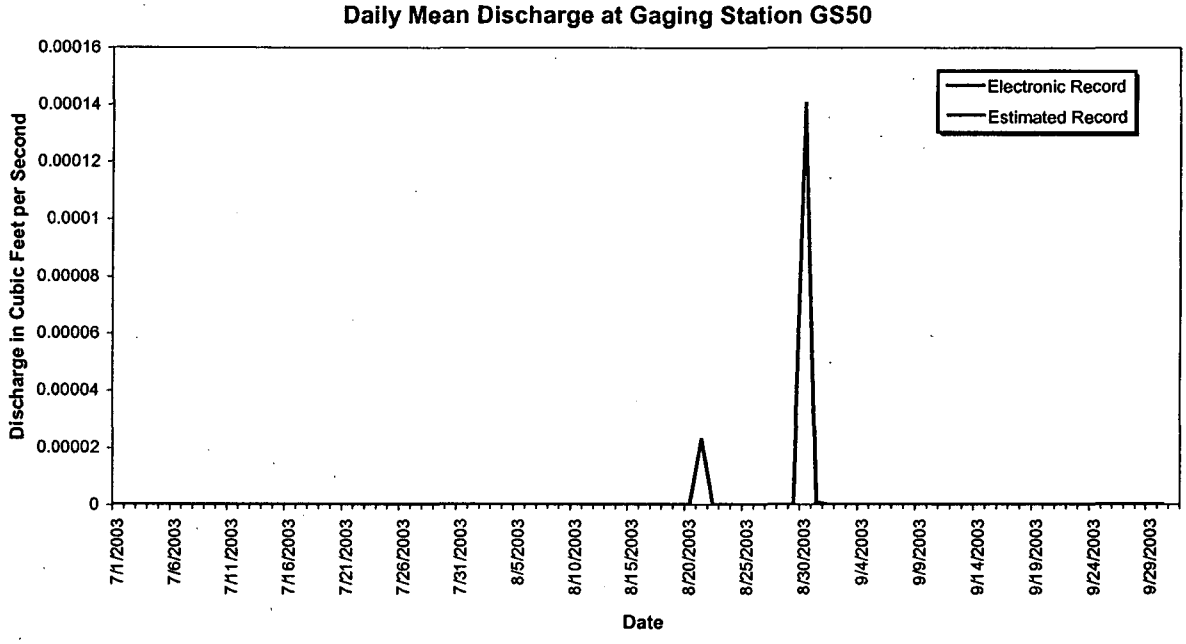

Figure 4-24. Mean Daily Discharge at GS50 Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-24. Gaging Station GS51: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.0000	0.0000	0.0000

Monthly Discharge

Cubic Feet	0	13	0
Gallons	0	96	0
Acre-Feet	0.00	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

A new Performance monitoring location was installed in support of characterization activities for the 903 Pad and Lip Area. Gaging station GS51 is located at state plane 2086295, 748107 on a drainage ditch southeast of the 903 Pad immediately upstream from the SID. The GS51 drainage area is approximately 3.9 acres. This station collects samples for Pu, Am, uranium isotopes, and TSS using continuous flow-paced composite sampling.

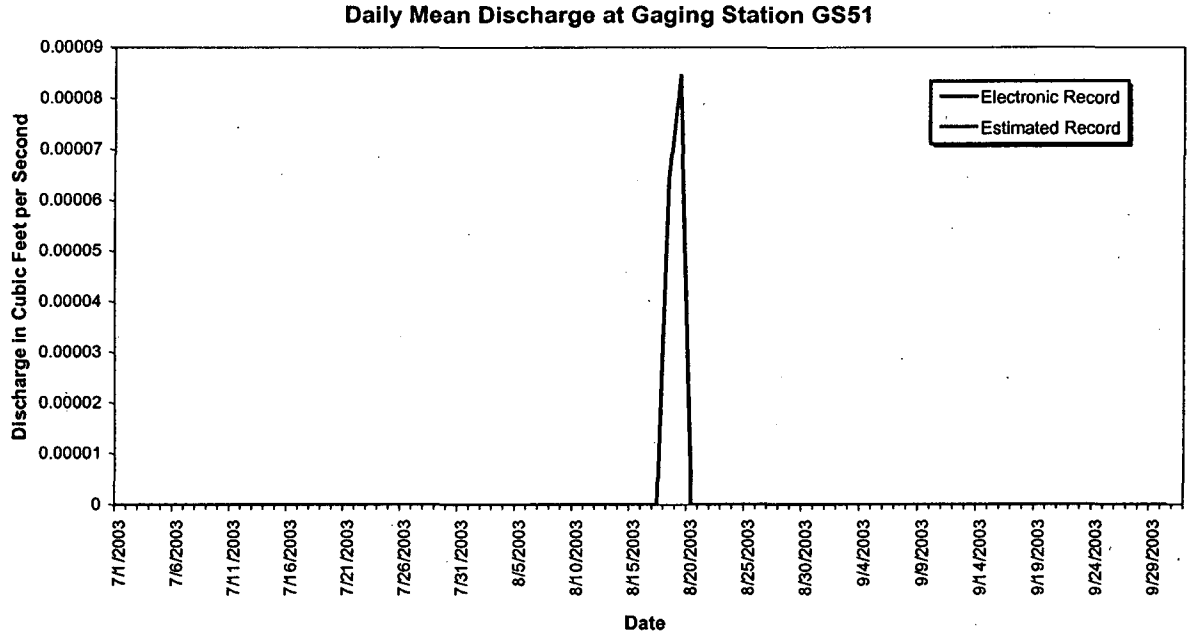

Figure 4-25. Mean Daily Discharge at GS51, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-25. Gaging Station GS52: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000
9	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
11	0.0000	0.0000	0.0000
12	0.0000	0.0000	0.0000
13	0.0000	0.0000	0.0000
14	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000
17	0.0000	0.0000	0.0000
18	0.0000	0.0000	0.0000
19	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
21	0.0000	0.0000	0.0000
22	0.0000	0.0000	0.0000
23	0.0000	0.0000	0.0000
24	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
26	0.0000	0.0000	0.0000
27	0.0000	0.0000	0.0000
28	0.0000	0.0000	0.0000
29	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000
31	0.0000	0.0000	NA
Monthly Average (cfs)	0.0000	0.0000	0.0000

Monthly Discharge

Cubic Feet	0	0	0
Gallons	0	0	0
Acre-Feet	0.00	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

A new Performance monitoring location was installed in support of characterization activities for the 903 Pad and Lip Area. Gaging station GS52 is located at state plane 2086715, 748043 on a gully southeast of the 903 Pad immediately upstream from the SID. The GS52 drainage area is approximately 4.3 acres. This station collects samples for Pu, Am, uranium isotopes, and TSS using continuous flow-paced composite sampling.

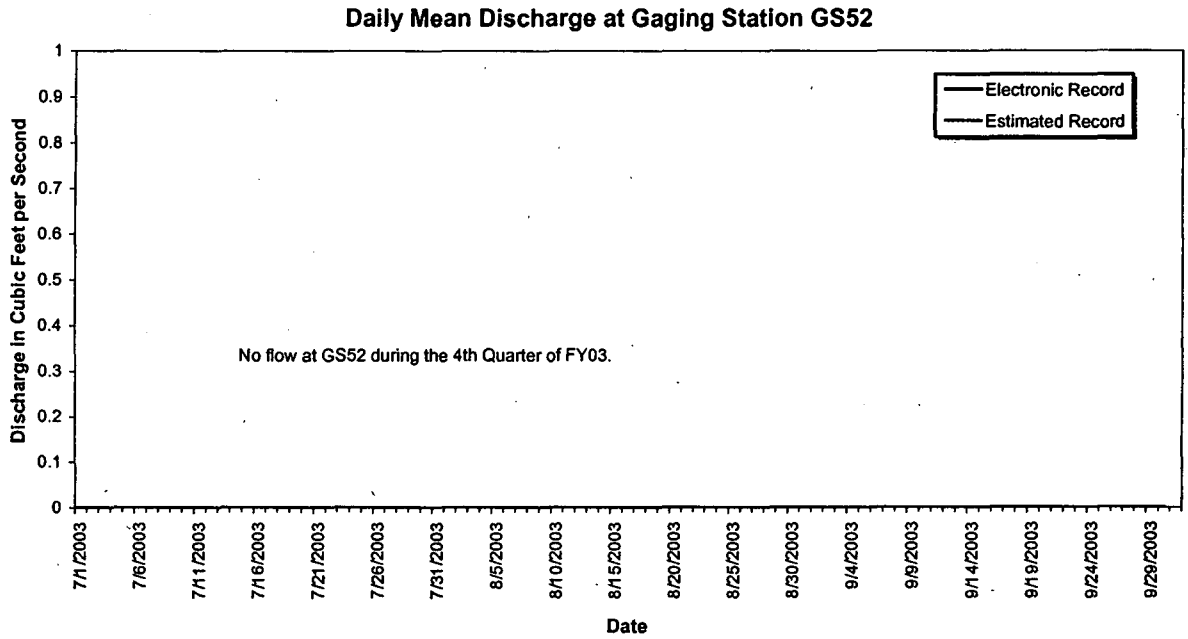

Figure 4-26. Mean Daily Discharge at GS52, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-26. Gaging Station GS53: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.0000	0.0000	0.0000

Monthly Discharge

Cubic Feet	0	0	0
Gallons	0	0	0
Acre-Feet	0.00	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

A new Performance monitoring location was installed in support of characterization activities for the 903 Pad and Lip Area. Gaging station GS53 is located at state plane 2087071, 748074 on a gully east-southeast of the 903 Pad immediately upstream from the SID. The GS53 drainage area is approximately 10.1 acres. This station collects samples for Pu, Am, uranium isotopes, and TSS using continuous flow-paced composite sampling.

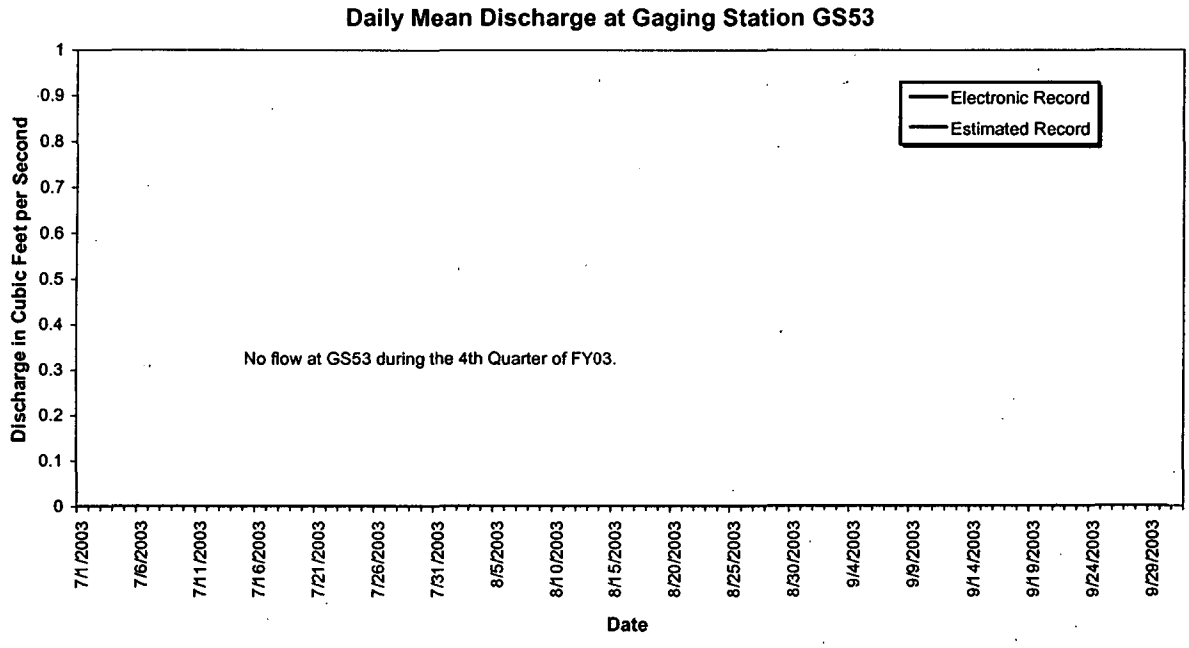

Figure 4-27. Mean Daily Discharge at GS53, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-27. Gaging Station GS54: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.0000	0.0000	0.0000

Monthly Discharge

Cubic Feet	0	0	0
Gallons	0	0	0
Acre-Feet	0.00	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

A new Performance monitoring location was installed in support of characterization activities for the 903 Pad and Lip Area. Gaging station GS54 is located at state plane 2087476, 748188 on a gully east-southeast of the 903 Pad immediately upstream from the SID. The GS54 drainage area is approximately 9.5 acres. This station collects samples for Pu, Am, uranium isotopes, and TSS using continuous flow-paced composite sampling.

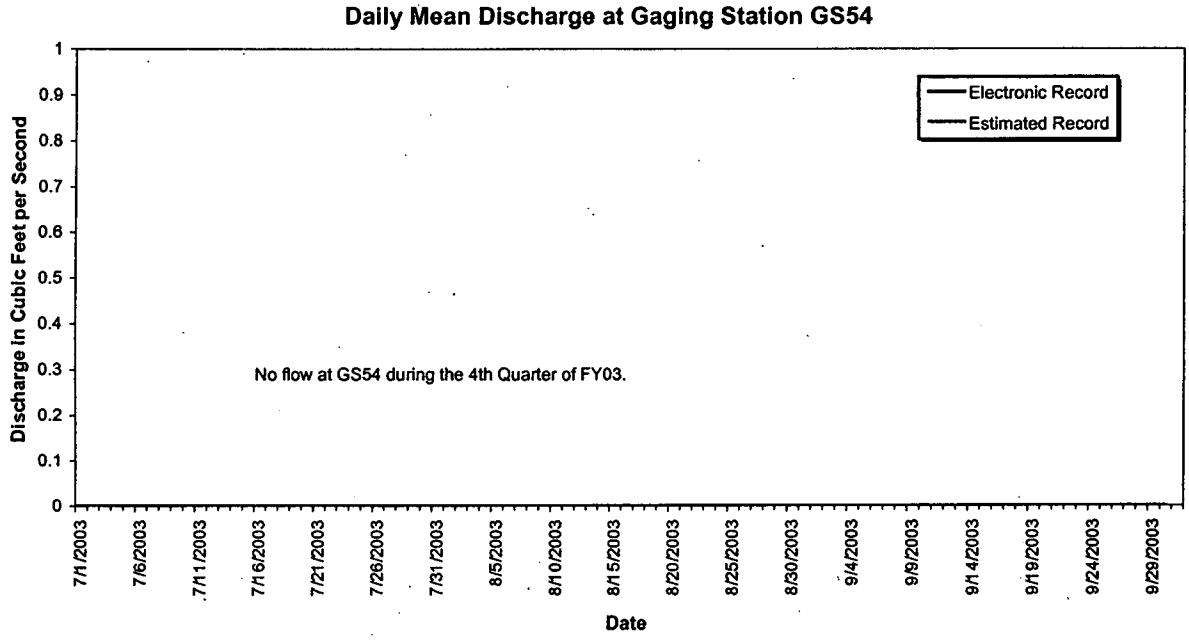

Figure 4-28. Mean Daily Discharge at GS54, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-28. Gaging Station GS55: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.008	0.006	0.011
2	0.006	0.009	0.011
3	0.006	0.017	0.018
4	0.006	0.018	0.010
5	0.006	0.018	0.010
6	0.007	0.018	0.013
7	0.009	0.020	0.016
8	0.007	0.010	0.014
9	0.010	0.009	0.009
10	0.014	0.006	0.007
11	0.014	0.006	0.008
12	0.015	0.008	0.007
13	0.014	0.010	0.009
14	0.012	0.011	0.008
15	0.014	0.008	0.007
16	0.010	0.004	0.006
17	0.006	0.005	0.011
18	0.065	0.017	0.013
19	0.024	0.008	0.009
20	0.011	0.008	0.008
21	0.008	0.007	0.008
22	0.006	0.007	0.008
23	0.006	0.007	0.007
24	0.004	0.005	0.008
25	0.006	0.006	0.008
26	0.007	0.007	0.006
27	0.007	0.005	0.007
28	0.008	0.005	0.007
29	0.010	0.005	0.008
30	0.009	0.111	0.008
31	0.007	0.014	NA
Monthly Average (cfs)	0.0111	0.0128	0.0093

Monthly Discharge

Cubic Feet	29628	34304	24128
Gallons	221637	256615	180488
Acre-Feet	0.68	0.79	0.55

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging station GS55 was installed as a Performance monitoring location in support of D&D activities for the B881 Area. GS55 is located at state plane 2084112, 747824 on the outlet of a small wetland area draining the B881 Area upstream from the SID south of B881. The GS55 drainage area is approximately 13.7 acres. This station collects samples for Pu, Am, uranium isotopes, CLP metals, and TSS using continuous flow-paced composite sampling.

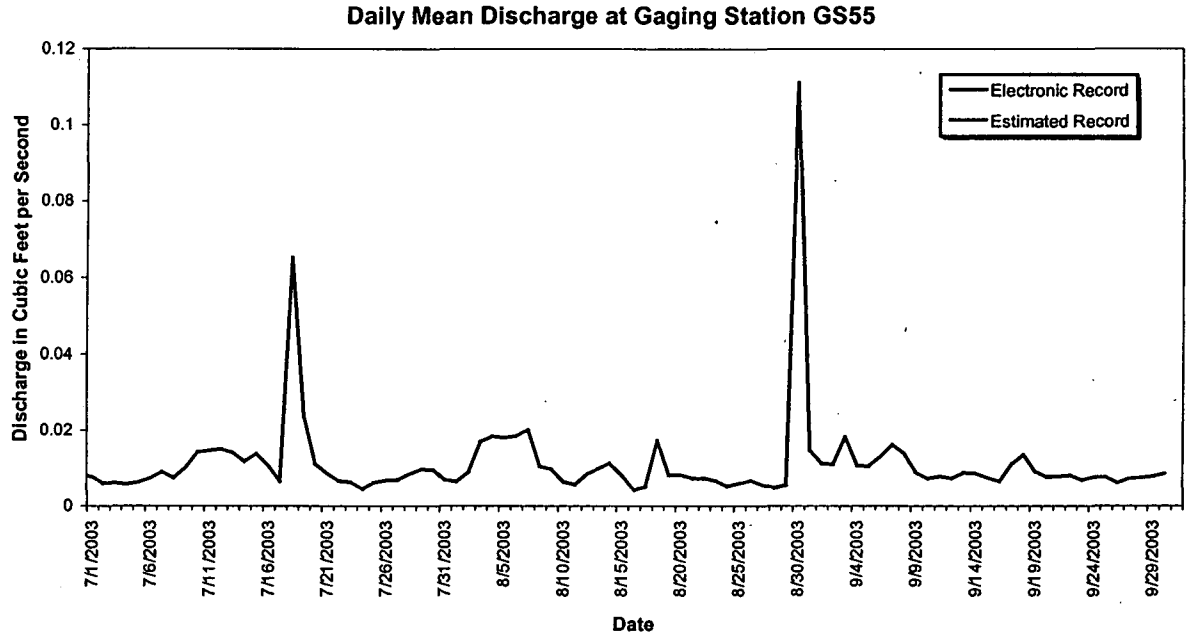

Figure 4-29. Mean Daily Discharge at GS55, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-29. Gaging Station GS56: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.0000	0.0000	0.0000

Monthly Discharge

Cubic Feet	0	0	0
Gallons	0	0	0
Acre-Feet	0.00	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging station GS56 was installed on 9/26/02 as a performance monitoring location in support of accelerated actions for the Present Landfill in No Name Gulch. GS56 is located at state plane 2085908, 753385 in No Name Gulch 1350 feet downstream of the Landfill Pond. The GS56 drainage area is approximately 130 acres. This station collects samples for Pu, Am, uranium isotopes, CLP metals, and TSS using continuous flow-paced composite sampling.

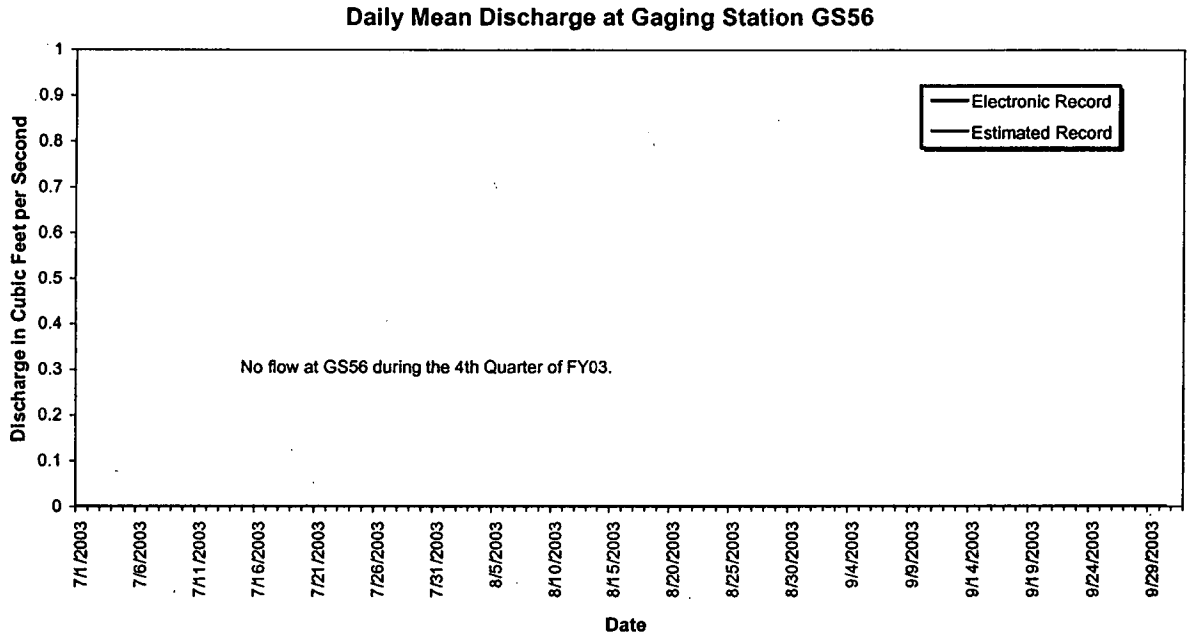

Figure 4-30. Mean Daily Discharge at GS56, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-30. Gaging Station GS57: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.001
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.058	0.010	0.001
19	0.004	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.001	0.000
30	0.000	0.135	0.000
31	0.000	0.002	NA
Monthly Average (cfs)	0.0020	0.0048	0.0001

Monthly Discharge

Cubic Feet	5423	12735	201
Gallons	40566	95262	1504
Acre-Feet	0.12	0.29	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.
WR = No data or unacceptable data due to winter icing conditions.

Gaging station GS57 was installed as a Performance monitoring location in support of D&D activities for the 400 Area. GS57 is located at state plane 2082847, 749006 on a ditch NE of B444. The GS57 drainage area is approximately 8.6 acres. This station collects samples for Pu, Am, uranium isotopes, CLP metals, and TSS using continuous flow-paced composite sampling.

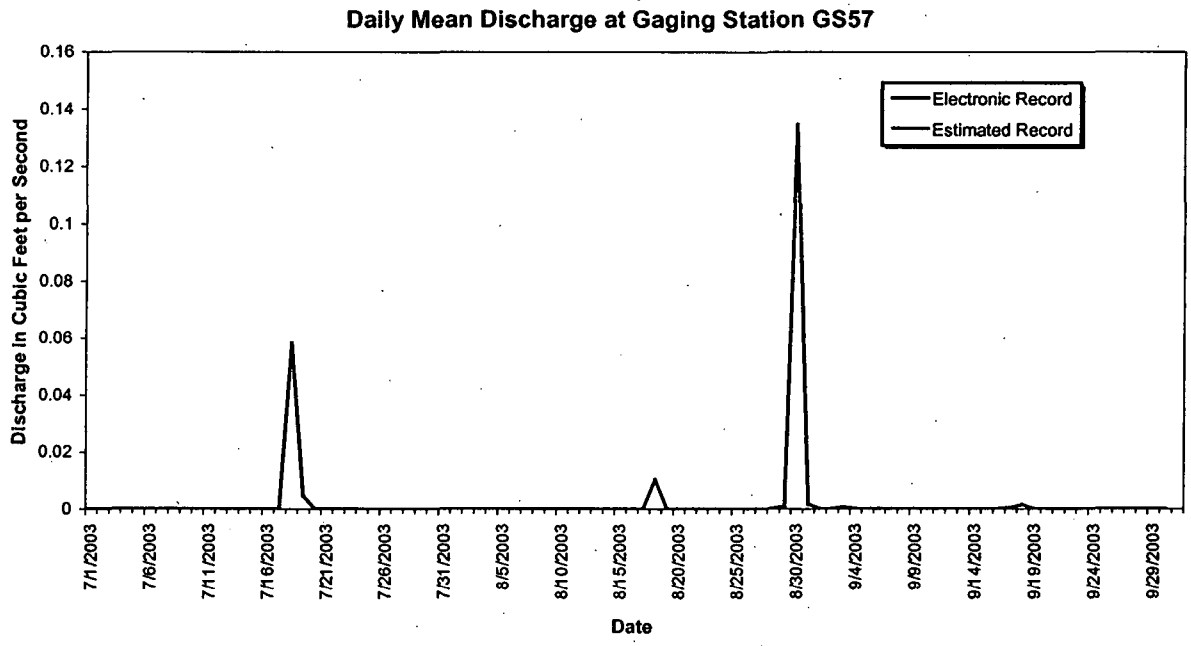

Figure 4-31. Mean Daily Discharge at GS57 Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-31. Gaging Station GS59: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.003	0.000	0.000
2	0.003	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.0002	0.0000	0.0000

Monthly Discharge

Cubic Feet	485	0	0
Gallons	3630	0	0
Acre-Feet	0.01	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.
WR = No data or unacceptable data due to winter icing conditions.

Gaging station GS59 was installed on 11/19/02 as a Performance monitoring location in support of accelerated actions for the Original Landfill in Woman Creek. GS59 is located at state plane 2083231, 747137 in Woman Creek south of former B850. The GS59 drainage area includes undetermined areas west of Highway 93 and the total area is unknown. This station collects samples for Pu, Am, uranium isotopes, CLP metals, and TSS using continuous flow-paced composite sampling.

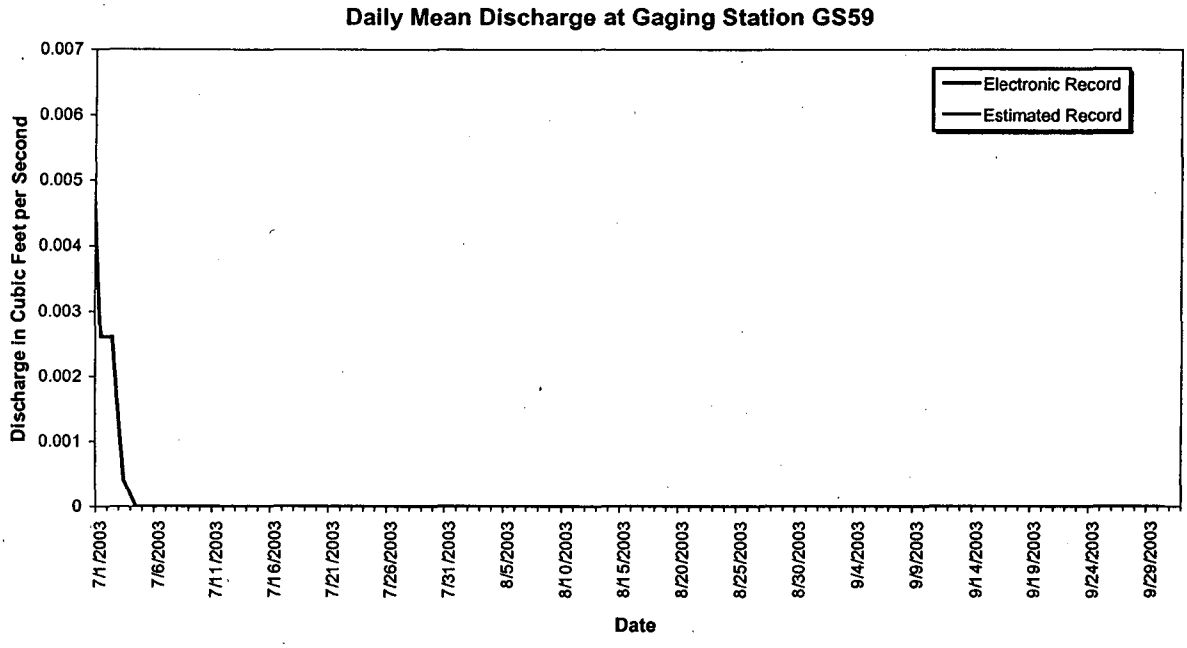

Figure 4-32. Mean Daily Discharge at GS59 Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-32 Gaging Station GS60: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	No Data	No Data	0.000
2	No Data	No Data	0.000
3	No Data	No Data	0.000
4	No Data	No Data	0.000
5	No Data	No Data	0.000
6	No Data	No Data	0.000
7	No Data	No Data	0.000
8	No Data	No Data	0.000
9	No Data	No Data	0.000
10	No Data	No Data	0.000
11	No Data	No Data	0.000
12	No Data	No Data	0.000
13	No Data	No Data	0.000
14	No Data	0.000	0.000
15	No Data	0.000	0.000
16	No Data	0.000	0.000
17	No Data	0.000	0.000
18	No Data	0.000	0.000
19	No Data	0.000	0.000
20	No Data	0.000	0.000
21	No Data	0.000	0.000
22	No Data	0.000	0.000
23	No Data	0.000	0.000
24	No Data	0.000	0.000
25	No Data	0.000	0.000
26	No Data	0.000	0.000
27	No Data	0.000	0.000
28	No Data	0.000	0.000
29	No Data	0.000	0.000
30	No Data	0.016	0.000
31	No Data	0.000	NA
Monthly Average (cfs)		0.0009	0.0000

Monthly Discharge

Cubic Feet		1398	0
Gallons		10459	0
Acre-Feet		0.03	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.
WR = No data or unacceptable data due to winter icing conditions.

Gaging station GS60 was installed on 8/13/03 as a Performance monitoring location in support of D&D activities for Building 3271/374. GS60 is located at state plane 2083015, 751226 in a ditch NE of B371/374 along the former PA perimeter road. The GS60 drainage area is approximately 9.7 acres. This station collects samples for Pu, Am, uranium isotopes, CLP metals, and TSS using continuous flow-paced composite sampling.

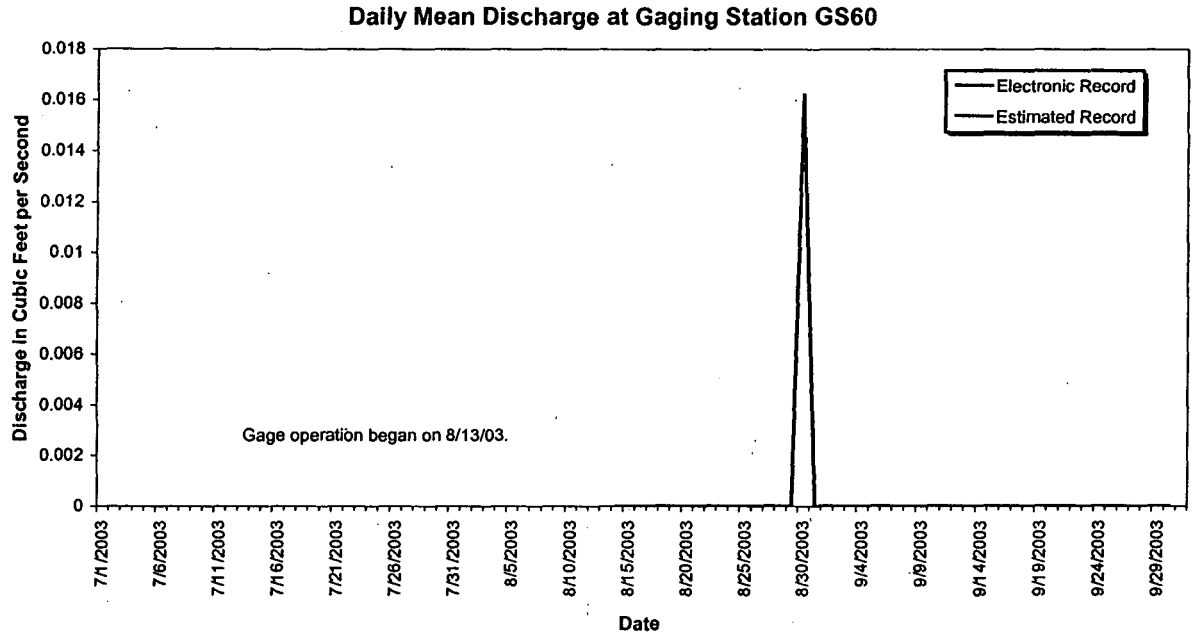

Figure 4-33 Mean Daily Discharge at GS60 Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-33. Gaging Station 995 POE Mean Daily Discharge (cubic feet per second).[a]

Day	July-03	August-03	September-03
1	0.139	0.142	0.193
2	0.244	0.136	0.225
3	0.242	0.156	0.226
4	0.128	0.186	0.175
5	0.147	0.220	0.174
6	0.167	0.179	0.142
7	0.146	0.155	0.155
8	0.140	0.141	0.138
9	0.162	0.141	0.139
10	0.212	0.144	0.170
11	0.145	0.140	0.202
12	0.136	0.179	0.236
13	0.143	0.187	0.139
14	0.139	0.182	0.141
15	0.110	0.098	0.136
16	0.140	0.135	0.101
17	0.180	0.107	0.170
18	0.155	0.129	0.107
19	0.183	0.104	0.096
20	0.175	0.158	0.106
21	0.135	0.151	0.199
22	0.135	0.153	0.145
23	0.138	0.101	0.122
24	0.105	0.125	0.147
25	0.108	0.162	0.154
26	0.214	0.124	0.184
27	0.127	0.102	0.146
28	0.137	0.137	0.147
29	0.184	0.156	0.180
30	0.239	0.151	0.111
31	0.248		0.099
Monthly Average (cfs)	0.162	0.146	0.155

Monthly Discharge

Cubic Feet	406268.5	370482.3	361539
Gallons	3039100	2771400	2704500
Acre-Feet	9.326643	8.505103	8.299794

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
a – Flow data provided above for this location is measured using the totalizier at B995.

Gaging station 995POE is located on the Building 995 (WWTP) effluent flow stream at the V-notch weir immediately below the UV disinfection equipment. This station is a RFCA Action Level Framework Point of Evaluation and monitors effluent from the Site wastewater treatment plant. This station collects samples for selected radionuclides using continuous flow-paced composite sampling.

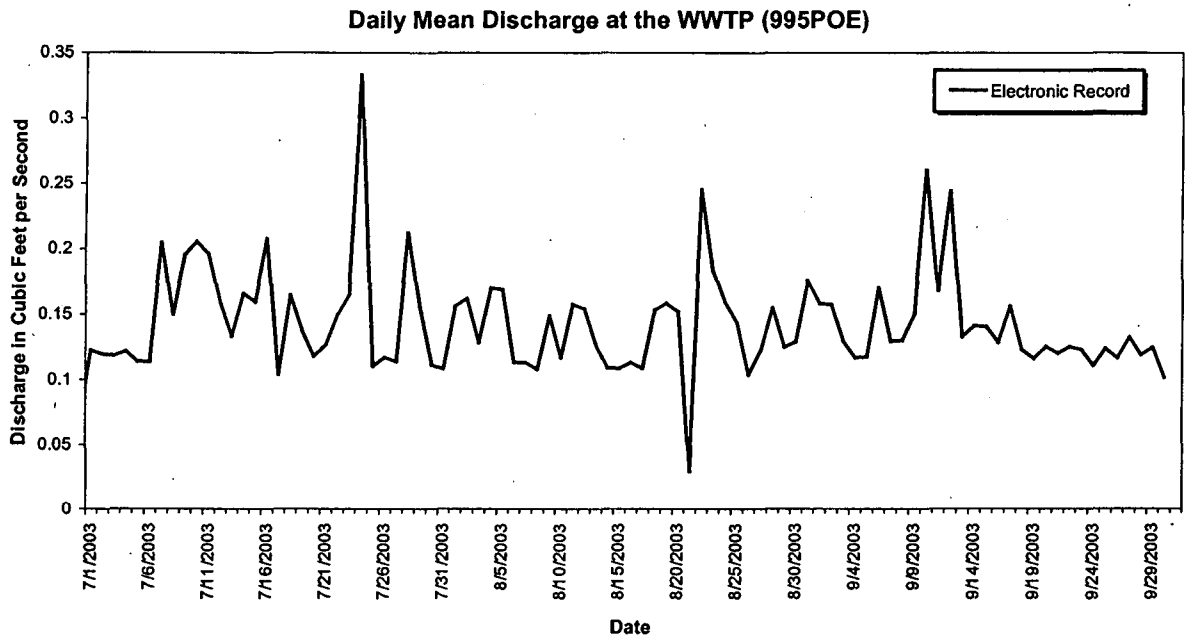

Figure 4-34. Mean Daily Discharge at 995 POE Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-34. Gaging Station SW021: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.001	0.000	0.000
2	0.001	0.000	0.000
3	0.001	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	*0.000*
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.001	0.000	0.001
19	0.001	0.001	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.013	0.000
31	0.000	0.001	NA
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	463	1311	303
Gallons	3461	9805	2270
Acre-Feet	0.01	0.03	0.01

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging station SW021 was upgraded on 5/6/03 as a Performance monitoring location in support of closure activities for B991. SW021 is located at state plane 2086077, 750187 on a culvert east of B991 tributary to S. Walnut Cr. The SW021 drainage area is approximately 25 acres. This station collects samples for Pu, Am, uranium isotopes, CLP metals, and TSS using continuous flow-paced composite sampling.

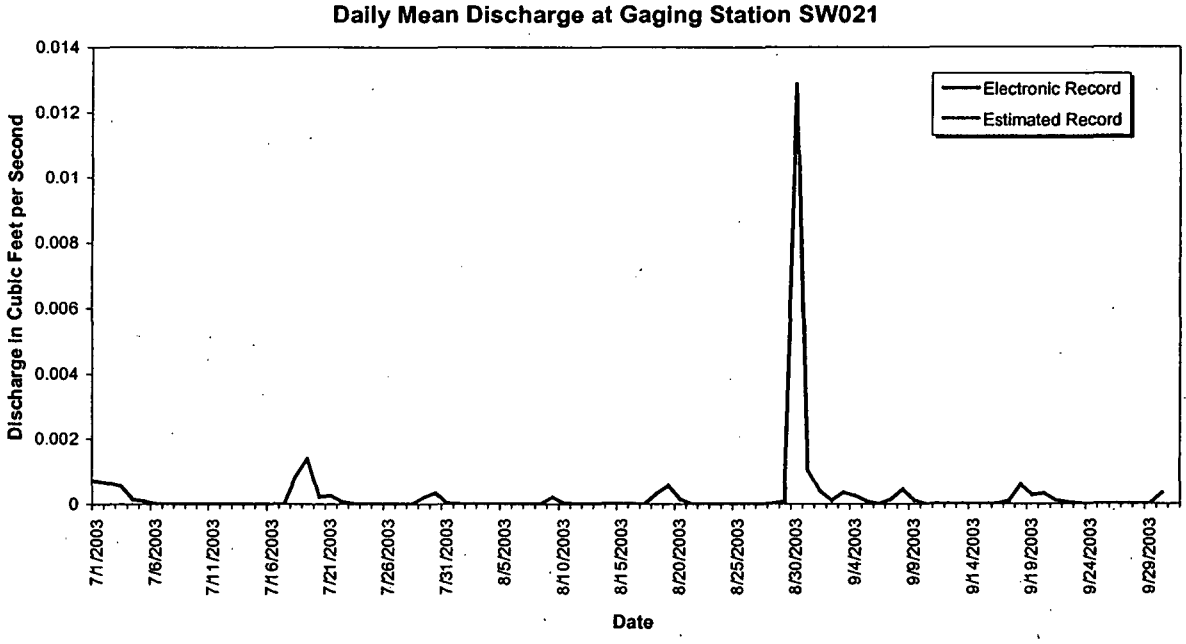

Figure 4-35. Mean Daily Discharge at SW021, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-35. Gaging Station SW022: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	*0.225*	0.028	0.000
19	0.038	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.492	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.009	0.017	0.000

Monthly Discharge

Cubic Feet	22771	44959	0
Gallons	170336	336320	0
Acre-Feet	0.52	1.03	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station SW022 is located 39° 53' 30"N, 105° 11' 30"W, at the Central Avenue Ditch at the Inner East Gate (See Section 4 Map). This location is a RFCA New Source Detection Location and monitors water in the Central Avenue Ditch entering the B-Series Ponds and South Walnut Creek. Storm event samples are collected for selected radionuclides.

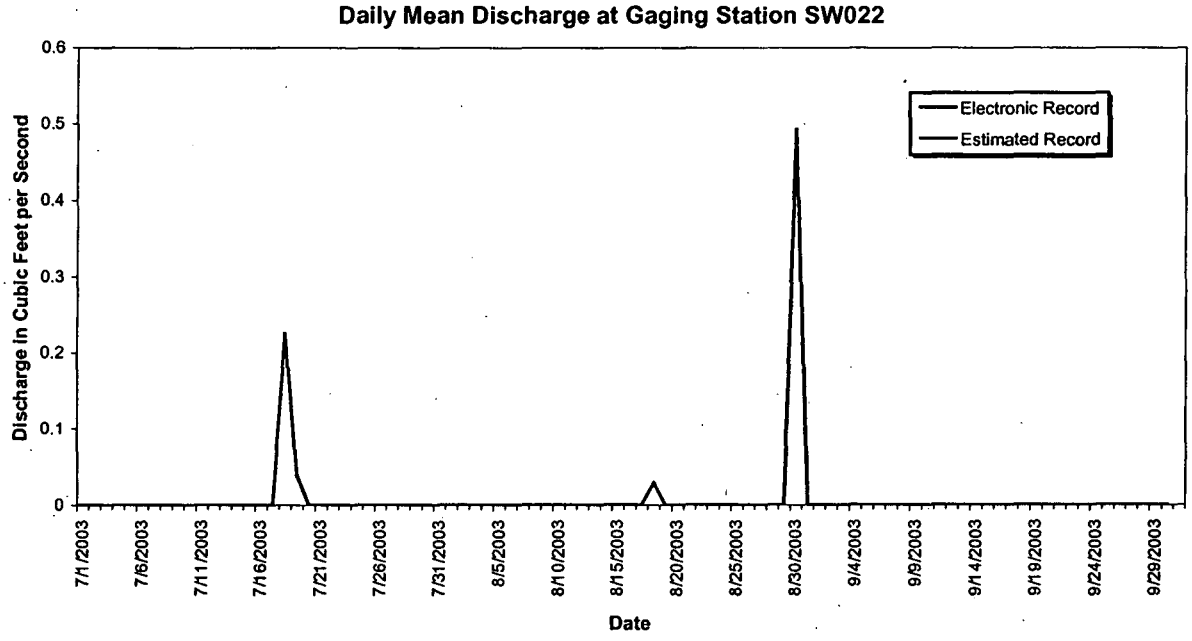

Figure 4-36. Mean Daily Discharge at SW022, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-36. Gaging Station SW027: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	0.000	0.013	NA
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	0	1151	19
Gallons	0	8606	142
Acre-Feet	0.00	0.03	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station SW027 is located 39° 53' 12" N, 105° 11' 4"W, at the South Interceptor Ditch above Pond C-2 (See Section 4 Map). This station is a RFCA Action Level Framework and a New Source Detection Location and monitors water in the South Interceptor Ditch entering Pond C-2. This station collects samples for selected radionuclides, metals, and water quality parameters using continuous flow-paced sampling.

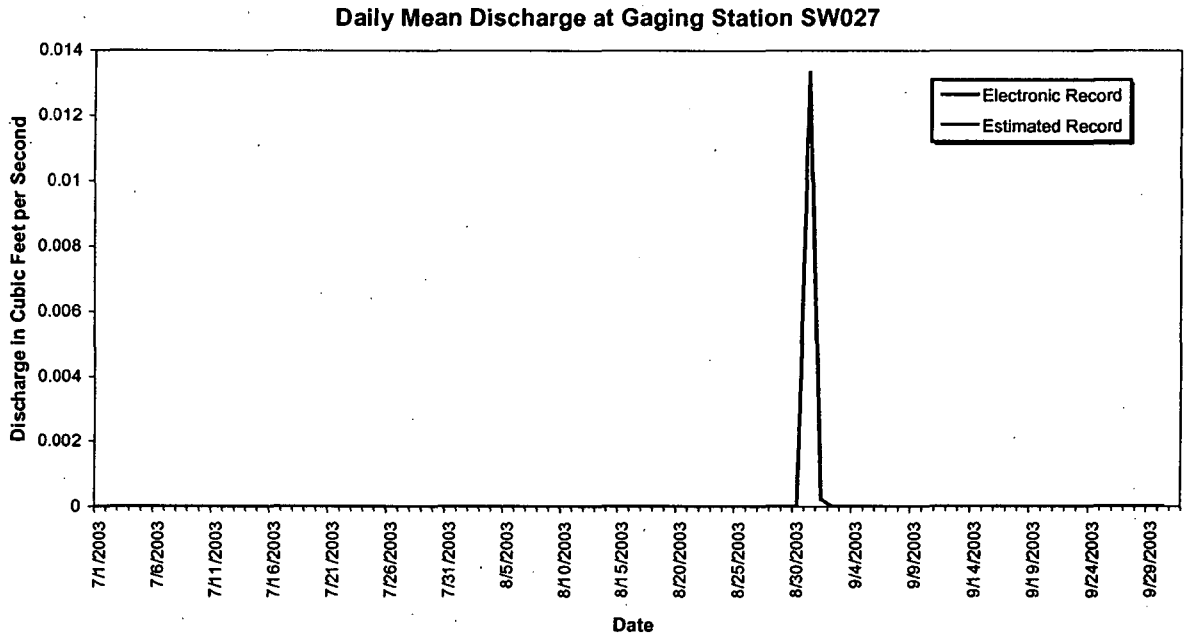

Figure 4-37. Mean Daily Discharge at SW027, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-37. Gaging Station SW036: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.004	0.000	0.000
8	0.000	0.000	0.000
9	*0.000*	0.000	0.000
10	*0.000*	0.000	0.000
11	*0.000*	0.000	0.000
12	*0.000*	0.000	0.000
13	*0.000*	0.000	0.000
14	*0.000*	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.001	0.000
19	0.000	0.008	0.000
20	0.000	0.005	0.000
21	0.000	0.003	0.000
22	0.000	0.001	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.001
25	0.000	0.000	0.001
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	NA	0.000	0.000
Monthly Average (cfs)	0.0001	0.0006	0.0001

Monthly Discharge

Cubic Feet	358	1539	181
Gallons	2681	11512	1358
Acre-Feet	0.01	0.04	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging station SW036 was installed as a Performance monitoring location in support of closure activities for the Old Lanfill adjacent to Woman Creek. SW036 is located at state plane 2082579, 747762 on the SID south of B664. The SW036 drainage area is approximately 16.4 acres. This station collects samples for Pu, Am, uranium isotopes, CLP metals, and TSS using continuous flow-paced composite sampling.

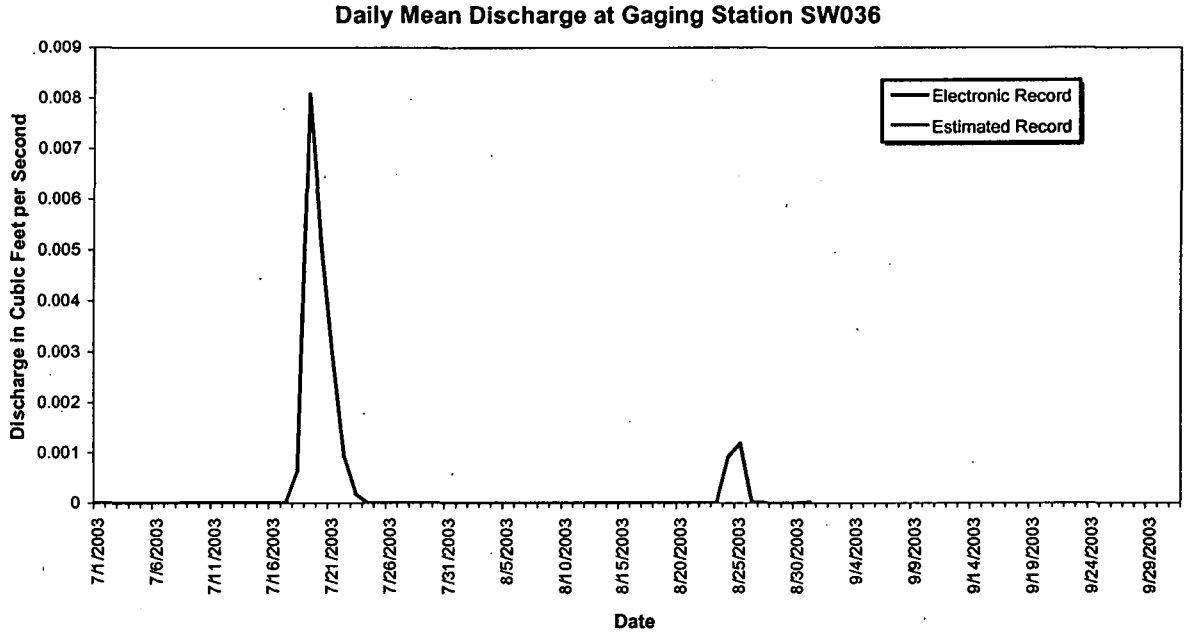

Figure 4-38. Mean Daily Discharge at SW036, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-38. Gaging Station SW055: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.0002	0.0000	0.0000
2	0.0000	0.0000	0.0004
3	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000
9	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
11	0.0000	0.0000	0.0000
12	0.0000	0.0000	0.0000
13	0.0000	0.0000	0.0000
14	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000
17	0.0000	0.0000	0.0004
18	0.0000	0.0000	0.0002
19	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
21	0.0000	0.0000	0.0000
22	0.0000	0.0000	0.0000
23	0.0000	0.0000	0.0000
24	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
26	0.0000	0.0000	0.0000
27	0.0000	0.0000	0.0000
28	0.0000	0.0000	0.0000
29	0.0000	0.0000	0.0000
30	0.0000	0.0001	0.0000
31	0.0000	0.0000	NA
Monthly Average (cfs)	0.0000	0.0000	0.0000

Monthly Discharge

Cubic Feet	20	5	88
Gallons	150	38	660
Acre-Feet	0.000	0.000	0.002

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

A new Performance monitoring location was installed in support of remediation activities for the 903 Pad and Lip Area. Gaging station SW055 is located at state plane 2086059, 748501 on a drainage ditch southeast of the 903 Pad just inside of the inner security fence. This station monitors runoff from the southeast side of the 903 Pad area. The SW055 drainage area is approximately 17.3 acres. This station collects samples for Pu, Am, and TSS using continuous flow-paced composite sampling.

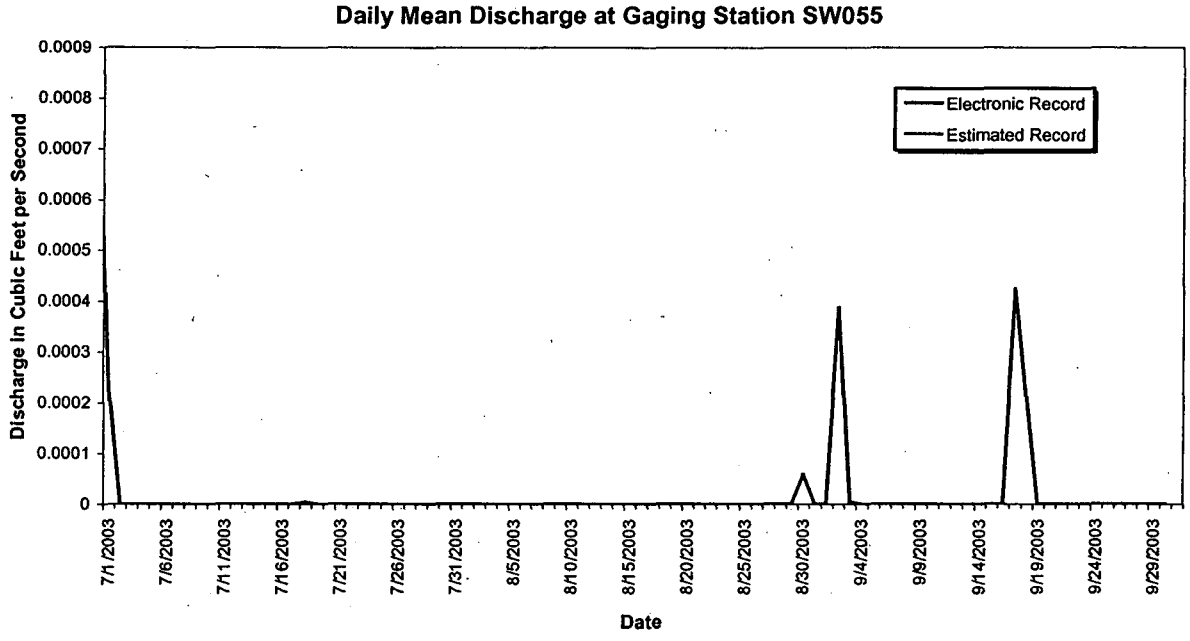

Figure 4-39. Mean Daily Discharge at SW055, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-39. Gaging Station SW091: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.000	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.000
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.000	0.000
31	0.000	0.000	NA
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	0	0	0
Gallons	0	0	0
Acre-Feet	0.000	0.000	0.000

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

WR = No data or unacceptable data due to winter icing conditions.

Gaging Station SW091 is located at State Plane 2086064; 751322, along the drainage NE of the Solar Ponds draining to the A-Series Ponds (See Section 4 Map). This location is a RFCA New Source Detection Location and monitors water draining from the area NE of the Solar Ponds. Storm event samples are collected for selected radionuclides.

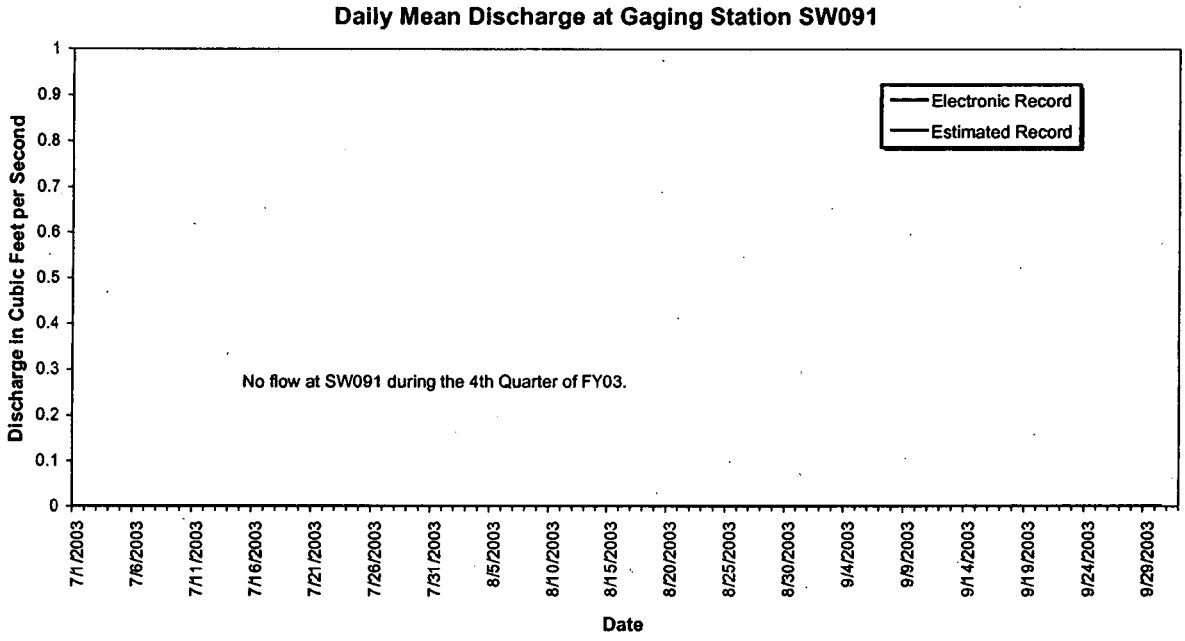

Figure 4-40. Mean Daily Discharge at SW091, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-40. Gaging Station SW093: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.155	0.020	0.025
2	0.135	0.021	0.051
3	0.128	0.012	0.049
4	0.125	0.010	0.031
5	0.120	0.009	0.032
6	0.126	0.011	0.028
7	0.134	0.011	0.037
8	0.121	0.085	0.028
9	0.119	0.022	0.032
10	0.115	0.014	0.027
11	0.118	0.016	0.031
12	0.117	0.017	0.023
13	0.059	0.017	0.026
14	0.034	0.015	0.023
15	0.030	0.016	0.024
16	0.025	0.017	0.032
17	0.022	0.017	*0.098*
18	0.412	0.197	*0.055*
19	0.164	0.033	*0.023*
20	0.031	0.023	*0.019*
21	0.026	0.023	*0.015*
22	0.023	0.024	*0.011*
23	0.025	0.052	0.010
24	0.021	0.027	0.011
25	0.020	0.023	0.010
26	0.019	0.021	0.014
27	0.020	0.019	0.013
28	0.022	0.018	0.012
29	0.039	0.065	0.012
30	0.034	1.097	0.012
31	0.042	0.045	NA
Monthly Average (cfs)	0.083	0.064	0.027

Monthly Discharge

Cubic Feet	222637	172516	70544
Gallons	1665440	1290508	527706
Acre-Feet	5.11	3.96	1.62

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station SW093 is located 39° 53' 51"N, 105° 11' 48"W, along North Walnut Creek at the 72" culvert 1000 feet above the Pond A-1 Bypass (See Section 4 Map). This station is a RFCA Action Level Framework and a New Source Detection Location and monitors water leaving the Site Industrial Area and entering the A-Series Ponds and North Walnut Creek. This station collects samples for selected radionuclides, metals, and water quality parameters using continuous flow-paced sampling.

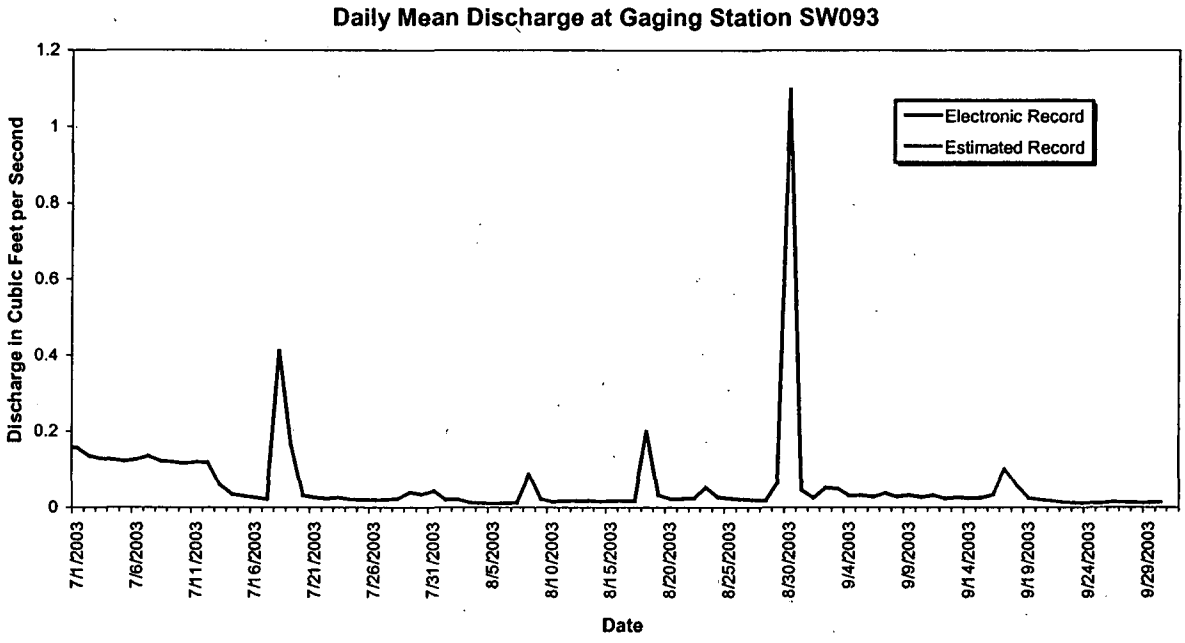

Figure 4-41. Mean Daily Discharge at SW093, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-41. Gaging Station SW118: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.067		
2	0.049		
3	0.045		
4	0.035		
5	0.020		
6	0.033		
7	0.046		
8	0.034		
9	0.041		
10	0.039		
11	0.065		
12	0.053		
13	0.018		
14	0.007		
15	0.008		
16	0.004		
17	0.000		
18	0.010		
19	0.025		
20	0.001		
21	0.000		
22	0.000		
23	0.000		
24	0.000		
25	0.000		
26	0.000		
27	0.000		
28	0.000		
29	0.000		
30	0.000		
31	0.000		NA
Monthly Average (cfs)	0.019		

Monthly Discharge

Cubic Feet	51873	0	0
Gallons	388037	0	0
Acre-Feet	1.19	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.
WR = No data or unacceptable data due to winter icing conditions.

Buffer Zone Hydrologic monitoring location SW118 is located at state plane 2082961, 751417 on North Walnut Creek northeast of B371 along the IA Perimeter Road. This station monitors runoff from the area northwest of the former PA. The SW118 drainage area is approximately 50 acres. This station collects flow data only.

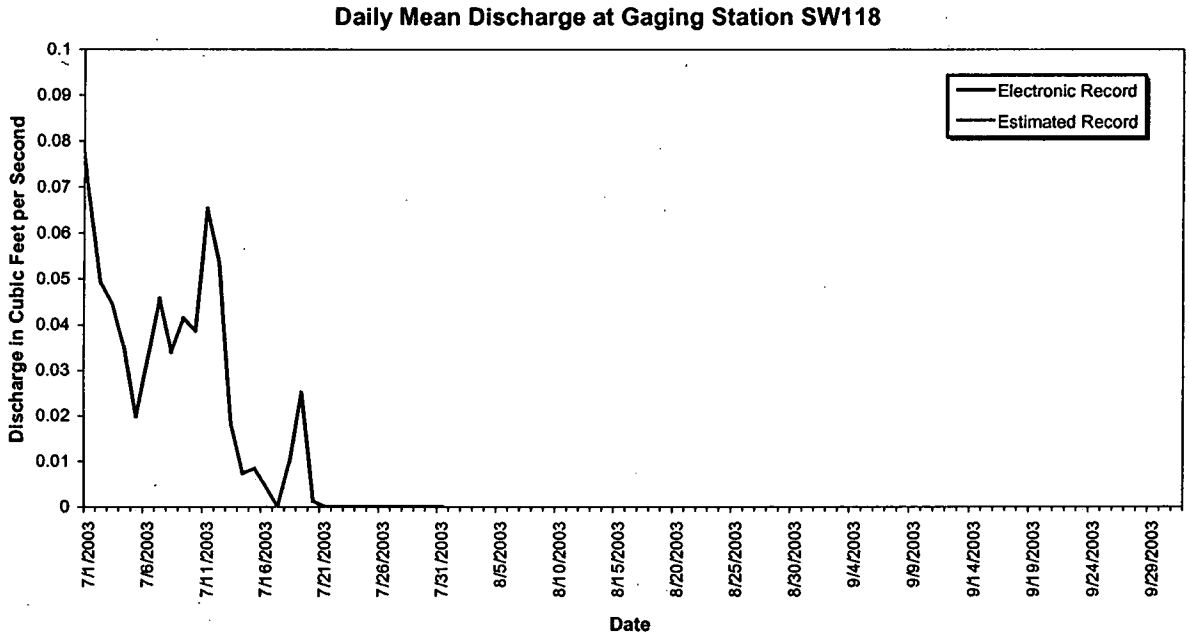

Figure 4-42. Mean Daily Discharge at SW118, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-42. Gaging Station SW119: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000
9	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
11	0.0000	0.0000	0.0000
12	0.0000	0.0000	0.0000
13	0.0000	0.0000	0.0000
14	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000
17	0.0000	0.0000	0.0000
18	0.0000	0.0000	0.0000
19	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
21	0.0000	0.0000	0.0000
22	0.0000	0.0000	0.0000
23	0.0000	0.0000	0.0000
24	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
26	0.0000	0.0000	0.0000
27	0.0000	0.0000	0.0000
28	0.0000	0.0000	0.0000
29	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000
31	0.0000	0.0000	NA
Monthly Average (cfs)	0.0000	0.0000	0.0000

Monthly Discharge

Cubic Feet	0	0	0
Gallons	0	0	0
Acre-Feet	0.00	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging station SW119 is located at state plane 2084723, 751268 on a drainage ditch north of Solar Pond 207A along the PA perimeter road and was installed in support of remediation activities for the Solar Ponds. This performance monitoring station monitors runoff from the east and north sides of the Solar Ponds and Triangle Area. The SW119 drainage area is approximately 7.6 acres. This station collects samples for Pu, Am, uranium isotopes, CLP metals, and TSS using continuous flow-paced composite sampling.

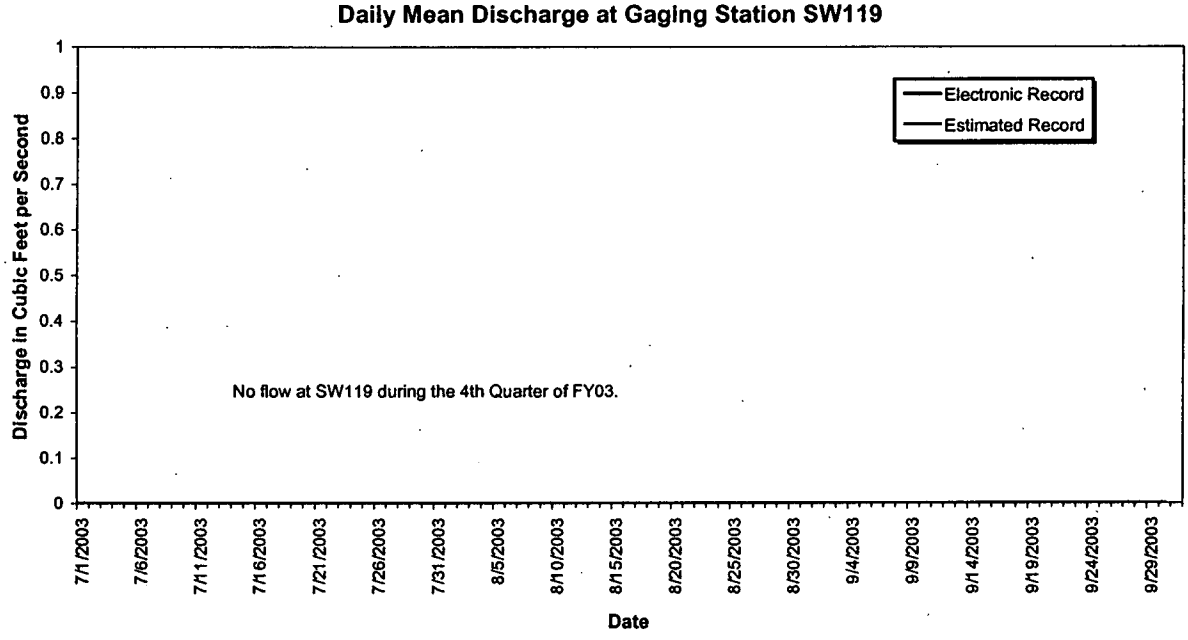

Figure 4-43. Mean Daily Discharge at SW119, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-43. Gaging Station SW120: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000
9	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
11	0.0000	0.0000	0.0000
12	0.0000	0.0000	0.0000
13	0.0000	0.0000	0.0000
14	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000
17	0.0000	0.0000	0.0000
18	0.0000	0.0000	0.0000
19	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
21	0.0000	0.0000	0.0000
22	0.0000	0.0000	0.0000
23	0.0000	0.0000	0.0000
24	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
26	0.0000	0.0000	0.0000
27	0.0000	0.0000	0.0000
28	0.0000	0.0000	0.0000
29	0.0000	0.0000	0.0000
30	0.0000	0.0087	0.0000
31	0.0000	0.0014	NA
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	0	873	0
Gallons	1	6528	0
Acre-Feet	0.00	0.02	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.
[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station SW120 is located at state plane 2084681.6 E 751269 N, in the drainage ditch north of the Solar Ponds along the south side of the PA Perimeter Road. This location is a Performance monitoring location in support of D&D activities for the B771/774 area. SW120 also serves as a Source Location monitoring point in support of Source Evaluation efforts for POE SW093. This location collects continuous flow-paced samples that are analyzed for Pu, U, Am, CLP metals, and TSS.

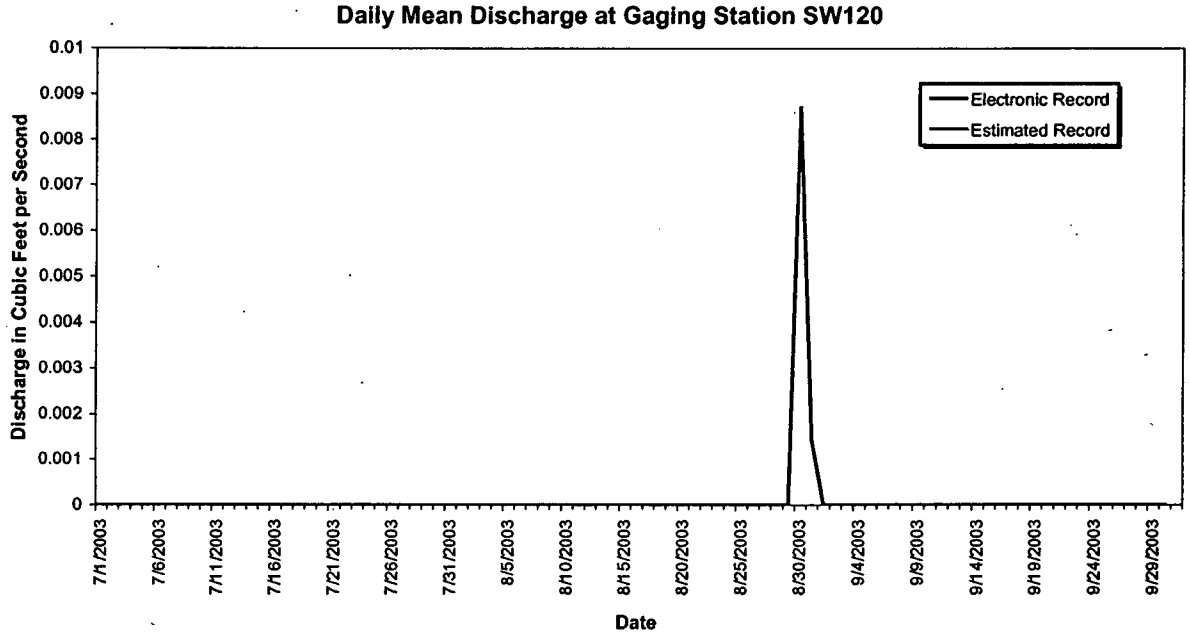

Figure 4-44. Mean Daily Discharge at SW120, Water Year 2003 (Jul, Aug, Sep 2003).

Table 4-44. Gaging Station SW134: Mean Daily Discharge (cubic feet per second).

Day	July-03	August-03	September-03
1	0.000	0.000	0.000
2	0.019	0.000	0.000
3	0.000	0.000	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.000
6	0.000	0.000	0.021
7	0.000	0.000	0.000
8	0.000	0.000	0.000
9	0.000	0.000	0.000
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.010	0.000	0.000
15	0.000	0.000	0.023
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.021
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	0.000	0.000
30	0.000	0.001	0.000
31	0.000	0.071	NA
Monthly Average (cfs)	0.001	0.002	0.002

Monthly Discharge

Cubic Feet	2510	6244	5678
Gallons	18774	46710	42474
Acre-Feet	0.06	0.14	0.13

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

[a] Contains data estimated from field observations and electronic record at adjacent or comparable gages.
WR = No data or unacceptable data due to winter icing conditions.

Buffer Zone Hydrologic monitoring location SW134 is located at state plane 2075942, 750049 on a tributary to Rock Creek at the northeast corner of the gravel pits north of the West Access Road. This station monitors runoff and pumped discharges from the gravel pits. This station collects samples for sediment/sand, Ca, Mg, Na, K, Cl, F, SO4, HCO3, and TSS using rising-limb, flow-paced composite sampling.

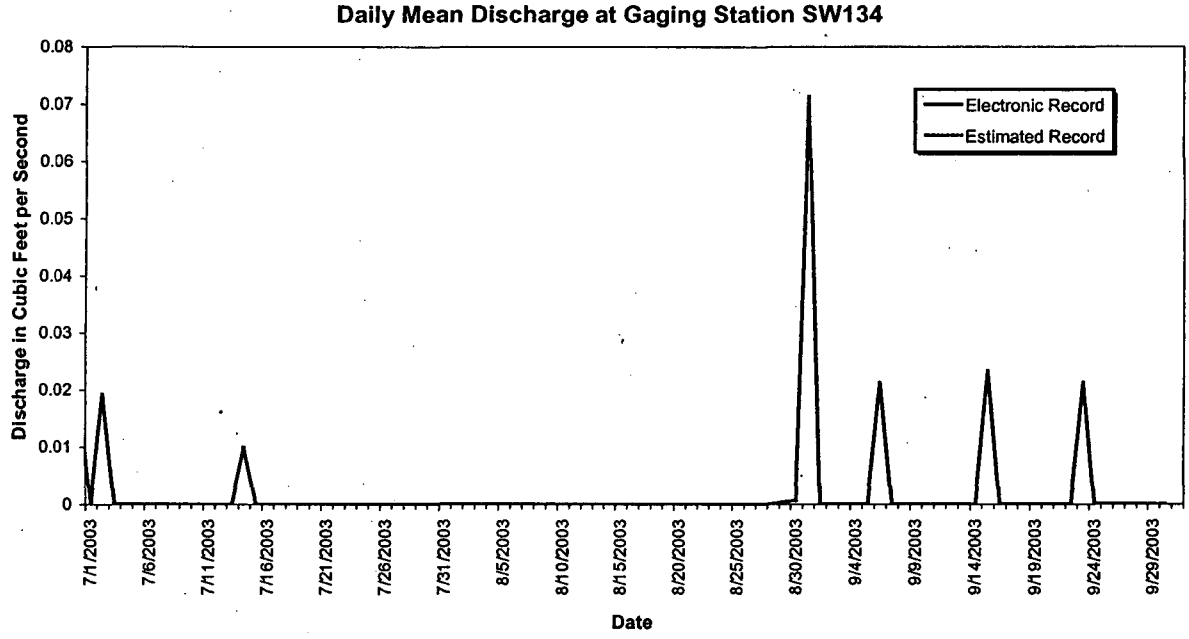

Figure 4-45. Mean Daily Discharge at SW134, Water Year 2003 (Jul, Aug, Sep 2003).

4.2 WATER QUALITY DATA

Table 4-45. Radionuclides, Water Year 2003 (Jul, Aug, and Sep 2003).

Location	Sample Dates	Pu-239 -240 (pCi/L)	Am-241 (pCi/L)	Total Uranium (pCi/L)	Tritium (pCi/L)
GS01	6/19/2003 -	E	E	E	E
GS03	7/7 7/11/2003	0.003	0.001	1.572	-68
GS03	7/11 - 7/17/2003	0.001	0.001	1.244	400
GS03	7/17 - 7/22/2003	0.001	0.001	1.215	-39
GS03	7/22 - 9/5/2003	0.001	0.004	1.286	-55
GS03	9/5 - 9/10/2003	0.006	0.008	0.827	170
GS03	9/10 - 9/18/2003	0.003	0.004	0.761	97
GS03	9/18/2003 -				
GS08	7/7 - 7/11/2003	-0.002	0.004	1.437	A
GS08	7/11 - 7/17/2003	0.394	0.022	1.255	A
GS08	9/5 - 9/10/2003	0.002	0.000	0.717	A
GS08	9/10 - 9/17/2003	0.004	0.010	0.633	A
GS10	7/7 - 7/16/2003	0.040	0.048	5.029	A
GS10	7/16 - 7/21/2003	0.157	0.131	1.951	A
GS10	7/21 - 7/30/2003	0.009	0.013	4.125	A
GS10	7/30 - 8/18/2003	0.031	0.039	3.244	A
GS10	8/18 - 8/30/2003	0.014	0.003	1.286	A
GS10	8/30 - 9/16/2003	0.076	0.059	2.192	A

Table 4-45. Radionuclides, Water Year 2003 [Jul, Aug, and Sep 2003] (continued).

Location	Sample Dates	Pu-239, -240 (pCi/L)	Am-241 (pCi/L)	Total Uranium (pCi/L)	Tritium (pCi/L)
GS10	9/16 - 10/13/2003	0.018	0.024	3.386	A
GS21	5/20 - 8/8/2003	0.011	0.006	0.663	A
GS21	8/8 - 9/17/2003	0.012	0.019	0.393	A
GS21	9/17 - 11/3/2003	C	C	C	A
GS22	6/25 - 8/19/2003	0.005	-0.001	3.835	A
GS22	8/19 - 9/16/2003	0.005	0.019	7.315	A
GS22	9/16/2003 -	E	E	E	A
GS28	5/15/2003 - *	0.065	0.035	0.902	A
GS32	7/18/2003	2.370	1.880	2.943	514
GS32	8/8/2003	1.850	0.727	2.032	119
GS32	8/18/2003	0.688	0.464	1.464	209
GS32	8/29/2003	0.278	0.177	1.165	-216
GS32	9/17/2003	0.263	0.248	1.049	251
GS38	6/17 - 8/8/2003	0.287	0.087	1.016	A
GS38	8/8 - 9/17/2003	0.109	0.020	0.297	A
GS38	9/17/2003 -	E	E	E	A
GS39	5/10 - 8/30/2003	0.541	0.237	1.241	A
GS39	8/30/2003 -	E	E	E	A

Table 4-45. Radionuclides, Water Year 2003 [Jul, Aug, and Sep 2003] (continued).

Location	Sample Dates	Pu-239, -240 (pCi/L)	Am-241 (pCi/L)	Total Uranium (pCi/L)	Tritium (pCi/L)
GS40	6/19 - 7/15/2003	0.249	0.497	3.290	24
GS40	7/15 - 8/27/2003	0.257	0.447	3.328	92
GS40	8/27 - 9/16/2003	0.082	0.188	1.336	76
GS40	9/16 - 10/1/2003	0.016	0.072	2.673	56
GS42	4/24/2003 - *	0.811	0.093	0.195	A
GS43	6/6 - 8/7/2003	0.076	0.045	1.268	A
GS43	8/7/2003 - *	0.037	0.025	1.170	A
GS44	6/25 - 7/21/2003	0.055	0.013	4.449	522
GS44	7/21 - 8/21/2003	0.010	0.021	5.240	59
GS44	8/21 - 9/9/2003	0.013	0.006	2.623	36
GS44	9/9 - 11/5/2003	C	C	C	C
GS49	6/20 - 9/2/2003	0.003	0.008	0.189	-97
GS49	9/2/2003 -	E	E	E	E
GS50	4/24 - 8/21/2003	0.080	0.114	0.334	A
GS50	8/21/2003 -	E	E	E	A
GS51	6/17/2003 -	E	E	E	A
GS52	4/24/2003 - *	0.303	0.040	0.665	A
GS53	6/20/2003 -	E	E	E	A

Table 4-45. Radionuclides, Water Year 2003 [Jul, Aug, and Sep 2003] (continued).

Location	Sample Dates	Pu-239, -240 (pCi/L)	Am-241 (pCi/L)	Total Uranium (pCi/L)	Tritium (pCi/L)
GS54	6/17/2003 -	E	E	E	A
GS55	6/5 - 7/15/2003	0.041	0.003	3.193	A
GS55	7/15 - 8/28/2003	0.009	0.003	2.739	A
GS55	8/28 - 10/1/2003	0.019	0.005	2.480	A
GS56	5/11/2003 - *	0.001	0.004	3.702	A
GS57	5/15 - 8/29/2003	0.009	0.015	0.730	A
GS57	8/29/2003 - *	C	C	C	A
GS59	5/28/2003 -	E	E	E	A
GS60	8/30/2003 - *	0.006	0.007	0.625	A
SW021	6/9 - 11/5/2003	C	C	C	A
SW022	6/17 - 8/18/2003	0.167	0.048	0.753	A
SW022	8/18/2003 - *	0.040	0.012	0.327	A
SW027	5/11/2003 - *	C	C	C	A
SW036	7/18/2003 -	E	E	E	A
SW055	6/5/2003 -	E	E	E	A
SW093	7/11 - 7/22/2003	0.068	0.028	1.961	A
SW093	7/22 - 8/19/2003	0.021	0.022	3.070	A
SW093	8/19 - 8/30/2003	0.034	0.059	1.181	A

Table 4-45. Radionuclides, Water Year 2003 [Jul, Aug, and Sep 2003] (continued).

Location	Sample Dates	Pu-239 +240 (pCi/L)	Am-241 (pCi/L)	Total Uranium (pCi/L)	Tritium (pCi/L)
SW093	8/30 - 9/4/2003	0.026	0.024	1.280	A
SW093	9/4 - 10/21/2003	C	C	C	A
SW119	5/15/2003 -	E	E	E	A
SW120	6/6/2003 -	E	E	E	E
995POE	6/26 - 7/22/2003	0.006	0.004	0.424	149
995POE	7/22 - 8/13/2003	0.001	0.007	0.253	110
995POE	8/13 - 9/8/2003	0.002	0.014	0.276	47
995POE	9/8 - 10/1/2003	0.003	0.002	0.252	85

Table Notes: ND = not detected; R = rejected; A = not applicable; B = not collected; C = incomplete analysis; D = insufficient quantity; E = composite sample in progress; * = sampler waiting to trigger on next flow period

Table 4-46. POE Metals, Water Year 2003 (Jul, Aug, and Sep 2003).

Location	Sample Dates	Be ug/L	Dissolved Cd ug/L	Cr ug/L	Dissolved Ag ug/L
GS10	7/7 - 7/16/2003	0.31	ND	36.60	ND
GS10	7/16 - 7/21/2003	0.36	ND	9.20	ND
GS10	7/21 - 7/30/2003	ND	ND	0.51	ND
GS10	7/30 - 8/18/2003	0.12	ND	3.70	ND
GS10	8/18 - 8/30/2003	ND	ND	4.40	ND
GS10	8/30 - 9/16/2003	0.24	ND	4.30	ND
GS10	9/16 - 10/13/2003	ND	ND	1.70	ND
SW027	5/11/2003 -	C	C	C	C
SW093	7/11 - 7/22/2003	0.46	ND	10.40	ND
SW093	7/22 - 8/19/2003	ND	ND	1.70	ND
SW093	8/19 - 8/30/2003	ND	0.11	2.50	ND
SW093	8/30 - 9/4/2003	ND	ND	5.00	ND
SW093	9/4 - 10/21/2003	C	C	C	C

Table Notes: ND = not detected; R = rejected; A = not applicable; B = not collected; C = incomplete analysis; D = insufficient quantity; E = composite sample in progress; * = sampler waiting to trigger on next flow period

Table 4-47. Other Metals, Water Year 2003 (Jul, Aug, Sep 2003).

Analyte (ug/L)	GS22	GS22	GS22	GS28	GS32
	6/25 - 8/19/2003	8/19 - 9/16/2003	9/16/2003	5/15/2003 *	37820
ALUMINUM	3080	1820	E	5630	28200
ANTIMONY	ND	ND	E	1.2	16.5
ARSENIC	ND	2.1	E	2.1	10.7
BARIUM	168	82.7	E	69.5	266
BERYLLIUM	0.15	0.2	E	0.11	1.5
CADMIUM	0.47	0.65	E	0.13	2.2
CALCIUM	76600	34500	E	25700	54300
CHROMIUM	7.5	6.5	E	6.3	84
COBALT	1.5	1.1	E	1.6	10.8
COPPER	22	63	E	13.8	75.1
IRON	4390	2260	E	4490	30900
LEAD	14.3	19.5	E	6.5	43.4
LITHIUM	9.8	4.4	E	7.4	37.3
MAGNESIUM	12800	4880	E	2520	8630
MANGANESE	80	51.4	E	75.8	595
MERCURY	ND	0.49	E	ND	0.11
MOLYBDENUM	1.3	0.58	E	1.2	3.9
NICKEL	3.9	3.6	E	4.9	52.7
POTASSIUM	2870	2050	E	5330	12500
SELENIUM	1.2	ND	E	ND	1.7
SILVER	0.82	1.1	E	ND	ND
SODIUM	45500	21900	E	6610	60100
STRONTIUM	399	152	E	83.3	206
THALLIUM	ND	ND	E	ND	ND
TIN	ND	ND	E	ND	ND
VANADIUM	8.9	5	E	13.2	68.8
ZINC	327	623	E	146	1300

Table Notes: ND = not detected; R = rejected; A = not applicable; B = not collected; C = incomplete analysis; D = insufficient quantity; E = composite sample in progress; * = sampler waiting to trigger on next flow period

Table 4-47. Other Metals, Water Year 2003 [Jul, Aug, and Sep 2003] (continued).

Analyte (ug/L)	GS32 37841	GS32 37851	GS32 37862	GS32 37881	GS38 6/17 - 8/8/2003
ALUMINUM	19600	13400	4700	7830	16000
ANTIMONY	18.7	17.35	14.6	16.7	1.4
ARSENIC	6.8	4.75	2.5	3.5	6.7
BARIUM	192	139	78.6	98.4	129
BERYLLIUM	1.2	0.8	0.15	0.46	0.8
CADMIUM	1.2	0.89	0.29	0.44	0.64
CALCIUM	41400	31600	28000	27100	15000
CHROMIUM	37.9	23.8	7.7	12.5	23.4
COBALT	7.3	5.2	2	3	5.3
COPPER	59.3	43.25	23.2	27.6	37.7
IRON	21500	14550	5710	9180	15700
LEAD	28	20.4	6.8	13.2	24.7
LITHIUM	29.3	19.75	13.8	15.9	17.7
MAGNESIUM	6600	4870	3440	3710	5110
MANGANESE	425	333.5	174	212	281
MERCURY	0.11	ND	ND	0.12	ND
MOLYBDENUM	3.7	2.75	2.1	1.8	2.1
NICKEL	26.1	15.6	7.2	9.9	15.6
POTASSIUM	14200	11250	10500	9010	6100
SELENIUM	1.8	1.35	1.1	1.3	1.6
SILVER	ND	ND	ND	ND	0.46
SODIUM	94200	78700	96300	66000	19800
STRONTIUM	197	159.5	146	131	71.3
THALLIUM	1.6	ND	ND	ND	ND
TIN	1.8	ND	ND	ND	ND
VANADIUM	47.7	33.5	13.3	19.8	34.5
ZINC	1120	1060	820	889	277

Table Notes: ND = not detected; R = rejected; A = not applicable; B = not collected; C = incomplete analysis; D = insufficient quantity; E = composite sample in progress; * = sampler waiting to trigger on next flow period

Table 4-47. Other Metals, Water Year 2003 [Jul, Aug, and Sep 2003] (continued).

Analyte (ug/L)	GS38 8/8 - 9/17/2003	GS38 9/17/2003 -	GS40 6/19 - 7/15/2003	GS40 7/15 - 8/27/2003	GS40 8/27 - 9/16/2003
ALUMINUM	2030	E	6795	25100	3810
ANTIMONY	ND	E	36.75	92.5	28.2
ARSENIC	2.8	E	9.6	30.2	7.4
BARIUM	22.7	E	569.5	908	485
BERYLLIUM	ND	E	0.525	0.99	0.24
CADMIUM	ND	E	2.7	11.5	2.6
CALCIUM	7350	E	155500	208000	119000
CHROMIUM	3.3	E	10.7	33.9	6.4
COBALT	0.48	E	4.1	10.5	3.3
COPPER	10.3	E	33.8	102	21.3
IRON	1450	E	25450	85700	28700
LEAD	2	E	17	58.8	11.2
LITHIUM	4.3	E	24.35	39.3	14
MAGNESIUM	1160	E	45450	43600	35700
MANGANESE	20.9	E	1200	4300	2550
MERCURY	ND	E	ND	0.15	ND
MOLYBDENUM	0.97	E	2.2	2.7	1.3
NICKEL	2.9	E	8.65	23.8	5.2
POTASSIUM	2820	E	7725	10500	4890
SELENIUM	ND	E	ND	0.83	ND
SILVER	ND	E	ND	ND	ND
SODIUM	17600	E	286000	273000	213000
STRONTIUM	32.8	E	1385	1270	1010
THALLIUM	ND	E	ND	ND	ND
TIN	ND	E	ND	1.4	ND
VANADIUM	5.1	E	20.1	69.6	12.6
ZINC	72.5	E	669	2810	656

Table Notes: ND = not detected; R = rejected; A = not applicable; B = not collected; C = incomplete analysis; D = insufficient quantity; E = composite sample in progress; * = sampler waiting to trigger on next flow period

Table 4-47. Other Metals, Water Year 2003 [Jul, Aug, and Sep 2003] (continued).

Analyte (ug/L)	GS40	GS43	GS43	GS44	GS44
	9/16 - 10/1/2003	6/6 - 8/7/2003	8/7/2003 - *	5/28 - 6/25/2003	6/25 - 7/21/2003
ALUMINUM	1660	18400	11500	14600	13400
ANTIMONY	13.1	3.1	4.3	2.3	1.4
ARSENIC	6.3	6.3	5.2	4.4	3.7
BARIUM	572	148	104	204	219
BERYLLIUM	ND	0.84	0.33	0.72	0.63
CADMIUM	1.5	0.68	0.41	0.24	0.25
CALCIUM	198000	37900	37900	75500	74000
CHROMIUM	3.2	20.3	15.9	14.1	15.5
COBALT	2.1	5.5	2.7	4.2	3.5
COPPER	11.4	27.5	20.3	22.8	19.1
IRON	25800	16000	8830	12600	11100
LEAD	5.8	21	10.5	10.9	10
LITHIUM	11.8	18.8	12.5	35	68.6
MAGNESIUM	57800	5140	3970	16600	17500
MANGANESE	1870	244	114	187	149
MERCURY	ND	ND	ND	0.3	ND
MOLYBDENUM	1.4	1.4	2.9	3	2.2
NICKEL	3	15.1	9.3	12.6	11
POTASSIUM	8210	9420	11500	9040	12000
SELENIUM	ND	1.1	ND	3.3	4.4
SILVER	0.31	ND	ND	ND	ND
SODIUM	312000	12000	21200	69400	51500
STRONTIUM	1570	132	158	454	503
THALLIUM	ND	ND	ND	ND	ND
TIN	ND	ND	ND	ND	ND
VANADIUM	6.8	40.8	25.3	32.9	31.1
ZINC	398	289	208	292	365

Table Notes: ND = not detected; R = rejected; A = not applicable; B = not collected; C = incomplete analysis; D = insufficient quantity; E = composite sample in progress; * = sampler waiting to trigger on next flow period

Table 4-47. Other Metals, Water Year 2003 [Jul, Aug, and Sep 2003] (continued).

Analyte (ug/L)	GS44 7/21-8/21/2003	GS44 8/21-9/9/2003	GS44 9/9-11/5/2003	GS49 6/20-9/2/2003	GS49 9/2/2003 -
ALUMINUM	7440	5745	C	6170	E
ANTIMONY	1.1	0.835	C	0.73	E
ARSENIC	1.9	1.3	C	1.7	E
BARIUM	231	120	C	39.9	E
BERYLLIUM	0.38	ND	C	0.14	E
CADMIUM	0.28	ND	C	ND	E
CALCIUM	102000	60300	C	5110	E
CHROMIUM	9.5	5.85	C	8.1	E
COBALT	2.3	1.4	C	1.3	E
COPPER	13.7	9.9	C	34	E
IRON	7500	4815	C	4360	E
LEAD	6	3.6	C	4.9	E
LITHIUM	84.8	42.75	C	4.4	E
MAGNESIUM	21300	10400	C	1390	E
MANGANESE	102	61.35	C	55.2	E
MERCURY	ND	ND	C	ND	E
MOLYBDENUM	2.5	1.85	C	ND	E
NICKEL	6.8	5.1	C	4.9	E
POTASSIUM	12400	7450	C	3780	E
SELENIUM	2.1	1.125	C	ND	E
SILVER	ND	ND	C	ND	E
SODIUM	60300	29900	C	9160	E
STRONTIUM	659	312.5	C	24.5	E
THALLIUM	ND	ND	C	ND	E
TIN	ND	ND	C	ND	E
VANADIUM	19.1	13.75	C	11.6	E
ZINC	388	176	C	102	E

Table Notes: ND = not detected; R = rejected; A = not applicable; B = not collected; C = incomplete analysis; D = insufficient quantity; E = composite sample in progress; * = sampler waiting to trigger on next flow period

Table 4-47. Other Metals, Water Year 2003 [Jul, Aug, and Sep 2003] (continued).

Analyte (ug/L)	GS50 4/24 - 8/21/2003	GS50 8/21/2003	GS55 6/5 - 7/15/2003	GS55 7/15 - 8/28/2003	GS55 8/28 - 10/1/2003
ALUMINUM	3380	E	1630	2740	3550
ANTIMONY	1.1	E	0.81	ND	0.9
ARSENIC	2.7	E	1.3	1.4	1.2
BARIUM	40.3	E	203	207	157
BERYLLIUM	0.4	E	0.33	ND	0.1
CADMIUM	0.26	E	ND	0.11	0.33
CALCIUM	13400	E	90400	88000	71700
CHROMIUM	4.1	E	2.1	3	4
COBALT	0.77	E	0.88	1.4	0.92
COPPER	6.5	E	4	6.8	8.4
IRON	2340	E	2210	3440	3590
LEAD	4.5	E	2.4	2.1	3.2
LITHIUM	6.4	E	15	14.4	11.2
MAGNESIUM	1560	E	21100	20400	16900
MANGANESE	32.7	E	262	406	243
MERCURY	ND	E	ND	ND	ND
MOLYBDENUM	1.4	E	1.2	1.1	1.1
NICKEL	2.8	E	2	2.7	2.7
POTASSIUM	4260	E	2320	2780	3300
SELENIUM	ND	E	ND	ND	0.92
SILVER	ND	E	ND	ND	ND
SODIUM	11700	E	55100	44500	41400
STRONTIUM	48.5	E	684	611	509
THALLIUM	ND	E	ND	ND	ND
TIN	ND	E	ND	ND	ND
VANADIUM	7	E	3.5	6	7.8
ZINC	26.1	E	29	45.5	61.8

Table Notes: ND = not detected; R = rejected; A = not applicable; B = not collected; C = incomplete analysis; D = insufficient quantity; E = composite sample in progress; * = sampler waiting to trigger on next flow period

Table 4-47. Other Metals, Water Year 2003 [Jul, Aug, and Sep 2003] (continued).

Analyte (ug/L)	GS56 5/11/2003 - *	GS57 5/15 - 8/29/2003	GS57 8/29/2003 - *	GS59 5/28/2003 - *	GS60 8/30/2003 - *
ALUMINUM	589	10100	C	E	20900
ANTIMONY	1.2	1.8	C	E	ND
ARSENIC	ND	4.2	C	E	5
BARIUM	134	77	C	E	105
BERYLLIUM	ND	0.55	C	E	0.54
CADMIUM	ND	0.53	C	E	0.19
CALCIUM	51000	9540	C	E	8430
CHROMIUM	0.8	12.8	C	E	18.9
COBALT	ND	3.4	C	E	3.9
COPPER	2.4	29.9	C	E	20.4
IRON	358	9860	C	E	15500
LEAD	0.62	13.7	C	E	7.2
LITHIUM	11	10.2	C	E	12.7
MAGNESIUM	8600	3490	C	E	4490
MANGANESE	5.3	175	C	E	155
MERCURY	ND	ND	C	E	ND
MOLYBDENUM	1	2.1	C	E	1.8
NICKEL	1.8	9.3	C	E	14
POTASSIUM	2130	5930	C	E	4760
SELENIUM	ND	0.88	C	E	ND
SILVER	ND	0.49	C	E	ND
SODIUM	16400	34500	C	E	44700
STRONTIUM	284	55.2	C	E	54.2
THALLIUM	ND	ND	C	E	ND
TIN	ND	ND	C	E	ND
VANADIUM	2.3	22.5	C	E	42.3
ZINC	6.2	334	C	E	309

Table Notes: ND = not detected; R = rejected; A = not applicable; B = not collected; C = incomplete analysis; D = insufficient quantity; E = composite sample in progress; * = sampler waiting to trigger on next flow period

Table 4-47. Other Metals, Water Year 2003 [Jul, Aug, and Sep 2003] (continued).

Analyte (ug/L)	SW021	SW086	SW119	SW120	
	6/9-11/5/2003	7/18/2003 -	5/15/2003	6/6/2003 -	
ALUMINUM	C	E	E	E	
ANTIMONY	C	E	E	E	
ARSENIC	C	E	E	E	
BARIUM	C	E	E	E	
BERYLLIUM	C	E	E	E	
CADMIUM	C	E	E	E	
CALCIUM	C	E	E	E	
CHROMIUM	C	E	E	E	
COBALT	C	E	E	E	
COPPER	C	E	E	E	
IRON	C	E	E	E	
LEAD	C	E	E	E	
LITHIUM	C	E	E	E	
MAGNESIUM	C	E	E	E	
MANGANESE	C	E	E	E	
MERCURY	C	E	E	E	
MOLYBDENUM	C	E	E	E	
NICKEL	C	E	E	E	
POTASSIUM	C	E	E	E	
SELENIUM	C	E	E	E	
SILVER	C	E	E	E	
SODIUM	C	E	E	E	
STRONTIUM	C	E	E	E	
THALLIUM	C	E	E	E	
TIN	C	E	E	E	
VANADIUM	C	E	E	E	
ZINC	C	E	E	E	

Table Notes: ND = not detected; R = rejected; A = not applicable; B = not collected; C = incomplete analysis; D = insufficient quantity; E = composite sample in progress; * = sampler waiting to trigger on next flow period

Table 4-48. Water Quality Parameters, Water Year 2003 (Jul, Aug, Sep 2003).

Location	Sample Dates	Hardness mg/L
GS10	7/7 - 7/16/2003	470
GS10	7/16 - 7/21/2003	210
GS10	7/21 - 7/30/2003	400
GS10	7/30 - 8/18/2003	370
GS10	8/18 - 8/30/2003	180
GS10	8/30 - 9/16/2003	230
GS10	9/16 - 10/13/2003	320
SW027	5/11/2003 - *	C
SW093	7/11 - 7/22/2003	260
SW093	7/22 - 8/19/2003	370
SW093	8/19 - 8/30/2003	160
SW093	8/30 - 9/4/2003	250
SW093	9/4 - 10/21/2003	C

Table Notes: B = not collected; E = composite sample in progress; * = sampler waiting to trigger on next flow period

Table 4-49. Buffer Zone/Hydrologic Water Quality Parameters, Water Year 2003 (Apr-May 2003).

Location	Sample Date	Analytes (mg/L)								
		TSS	Ca	Mg	Na	K	Cl	F	SO_4	Total Alkalinity
SW134	8/29/2003	1400	19.4	7.23	11.9	8.46	13	0.5	26	36

Table Notes: ND = not dectected

5.0 INCIDENTAL WATERS

5.1 INCIDENTAL WATERS DEFINITION AND ROUTING MATRIX

An incidental water is defined as precipitation, surface water, groundwater, utility water, process water, or waste water collecting in one or more of several types of containments. These containments can include excavation sites, foundation drains, secondary containment berms, electrical vaults, utility pits and manholes, or other natural or manmade depressions, which must be dewatered.

Water collected in this manner has the potential to become contaminated via contact with the surrounding containment material. Sampling and disposition of incidental waters is conducted per Site Procedure 1-C91-EPR-SW.01, *Control and Disposition of Incidental Waters.* Incidental waters are typically sampled for pH, nitrates, conductivity, and gross alpha and gross beta (when radionuclides are suspected). Additional testing for volatile organic compounds and metals is performed when a specific potential contaminant source is known to exist. Disposition depends on the analytical results. Routing options for incidental waters are outlined in the following table.

Table 5-1. Incidental Waters Routing Matrix.

Incidental Water Routing	Routing Criteria	Treatment Processes
Ground/Storm Drain	• Water meets discharge limits per Incidental Waters procedure	N/A
Building 995 Waste Water Treatment Plant (WWTP)	• Water above discharge to ground limits • Water meets Internal Waste Streams Program review criteria	Activated Sludge w/ tertiary clarifiers Dual media filtration UV disinfection
Building 891 Consolidated Water Treatment Facility (CWTF)	• Water above discharge to ground limits • Water not accepted by WWTP • Water meets CWTF acceptance criteria and has both radionuclide and organic constituents	Chemical precipitation Microfiltration UV/ peroxide oxidation Granular activated carbon Ion exchange
Aqueous Wast Treatment System (AWTS)	• Water above discharge to ground limits • Water not accepted by WWTP • Water may have radionuclides, organic, RCRA Permitted wastes	Liquids shipped offiste for treatment by approved vendor

5.2 QUARTERLY INCIDENTAL WATER DISPOSITIONS

Eight (8) incidental waters were sampled/dispositioned during the fourth quarter of FY03. Table 5-2 summarizes the location and route of disposal.

Table 5-2. Quarterly Incidental Water Dispositions FY2003 (Jul, Aug, Sep 2003).

Location Or Building	Location Type	Location Description	Number of Incidental Waters	Route of Disposal
231A	Secondary Containment	Sump for T231A Secondary containment	2	To AWTS
231B	Secondary Containment	Sump for T231B Secondary containment	1	To B995
372A	Manhole	Alarm manhole around 372A	1	To B891
559	Cooling Tower	Internal closed loop cooling water	1	To B891
559	DCW	DCW used to cool generator during installation test	1	To Ground or Storm Drain
881	Excavation	NE B881- 10" water main break	1	To Ground or Storm Drain
887	Utility Pit	887 Lift station previously used to send water to 995.	1	To B995

The 8 incidental waters requiring treatment were routed to the following Site treatment facilities:

- Building 995 – WWTP 2
- Building 891 – CWTF 2
- AWTS 2
- Ground 2
- Cancelled 0