

*Rocky Flats Environmental Technology Site
Quarterly Environmental Monitoring Report
January – March 2002*

**ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
QUARTERLY
ENVIRONMENTAL MONITORING REPORT
JANUARY – MARCH 2002**



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MAY 2002

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PREPARED BY SAFE SITES OF COLORADO, L.L.C.

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

MAY 2002



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HIGHLIGHTS FOR JANUARY - MARCH 2002

This report is produced and distributed quarterly as part of our 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 Meeting, the Site is consolidating its reporting for selected media. In an effort to provide a more meaningful interpretation of the data presented and to save some natural resources, namely trees, 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, and 2001. Ambient air data are represented by two graphs – a summary of estimated off-site dose as compared to a 10 Mrem 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.

Compliance data in support of the Site National Pollutant Discharge Elimination System (NPDES) permit are presented for the reporting period. Analytical data collected in support of RFCA will routinely include the following locations: GS01, GS03, GS08, GS10, GS11, GS31, SW022, SW027, and SW093. Data include the hydrograph, mean daily flow and available water quality measurements for each location during the reporting period. Other stations may appear or be deleted, as performance monitoring locations are added or dropped, as well as any new source detection locations that may be required. 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. The last section provides quarterly summary information for the Incidental Waters program.

Airborne Effluent

Complete isotopic analytical data through January 2002 are included in this report. All data are within the normally observed ranges of concentrations for their respective locations. 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 all data.

Ambient Air

Complete isotopic analytical data through January 2002 for coarse (>10 micrometers) and fine (≤10 micrometers) ambient air samples are included in this report. All data are within the normally observed ranges of concentrations for their respective locations.

Beginning last quarter, this report now includes an additional section, Demolition and Remediation Performance Monitoring. It provides air monitoring results for radionuclides and, for selected projects beryllium, related to current demolition and remediation activities. This quarter, preliminary data from building 886 have been included.

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 (6,140 feet) above sea level. All meteorological data are collected on a real-time basis and are transmitted as 15-minute averaged values to the Computer Assisted Protective Action Recommendations System (CAPARS) model for emergency response purposes. The same data are logged at the tower and downloaded for air quality and surface water modeling purposes.

Climatic summaries and wind roses for January, February and March 2002 are included in this report.

As a result of the protocols used to validate the meteorological data, 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, for example, rather than recording all observations missing for the same 15-minute period. There were no missing wind speed and/or direction data during the quarter.

Surface Water

Surface water analytical data collected during the reporting period for NPDES permit compliance are presented in this report. During March there were two elevated nitrite observations, one on the 18th of 4.7 mg/l, and a second later in the same week on the 21st of 5.8 mg/l, as compared to the permitted daily maximum of 4.5 mg/l. There were two mechanical failures in March that likely contributed to the elevated nitrites. Early in the month, there was damage to the number 2 secondary clarifier rake, requiring a shift to the alternate treatment train, number 1. The number 1 aeration basin and secondary clarifier are about 26% smaller than the number 2 train, which is normally in service. The reduced capacity may have contributed to the fluctuations in nitrite. Also in March, the main blower on the number 2 aeration basin failed, preventing its use in combination with the number 1 secondary clarifier. The blower was repaired by the close of business on March 21st, but the number 2 secondary clarifier is still out of service. A new rake has been fabricated and replacement parts for the gear box are being installed. All repairs should be completed by April 30th. Nitrite results for the remainder of the reporting period were within permit limitations.

All repairs complete April 22. Two nitrite hits in April due to these problems. See next quarter report.

Included in this report are 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.

Three additional RFCA monitoring stations (GS28, GS57, and GS58) were included with this report. Locations GS28 and GS58 are new installations, where as GS57 is a re-installation of a previously abandoned station. Location GS58, like GS32, has no flow monitoring capabilities and only analytical data are provided, when available.

Incidental Water Monitoring

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



1.0 AIR DATA

1.1 EFFLUENT AIR DATA

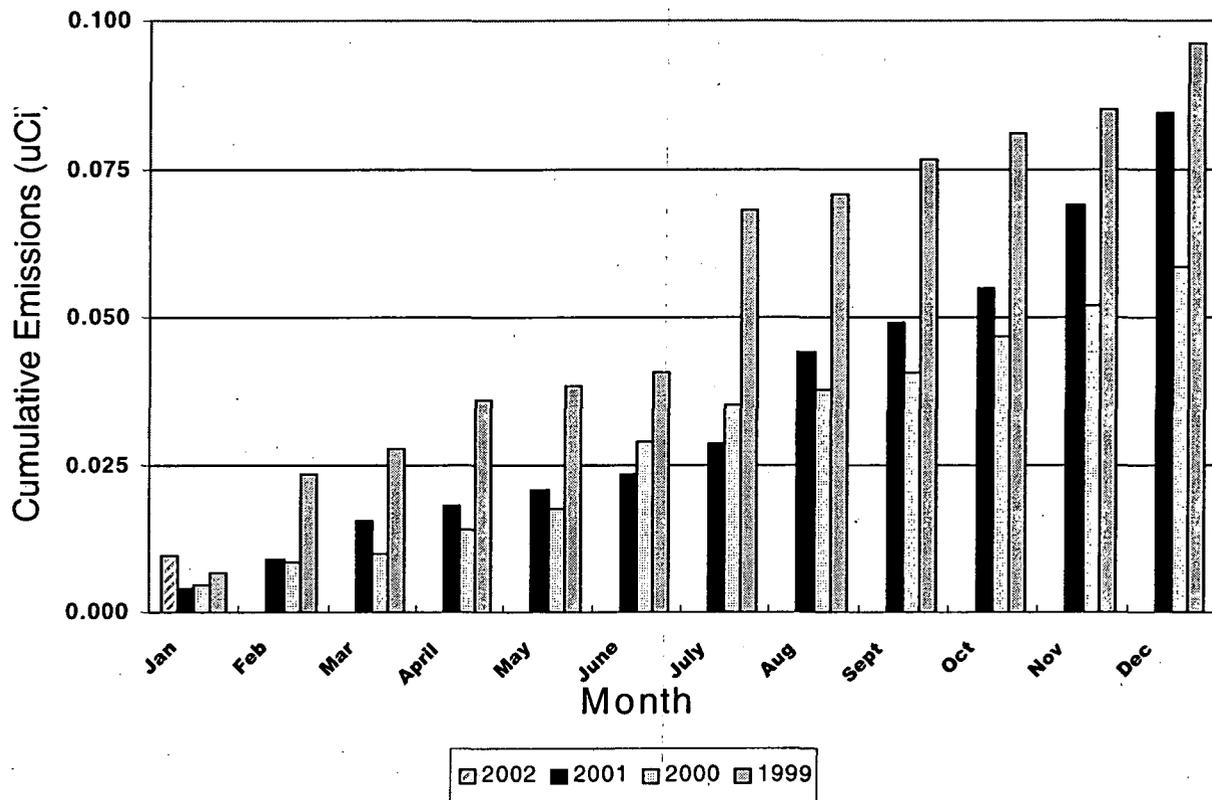
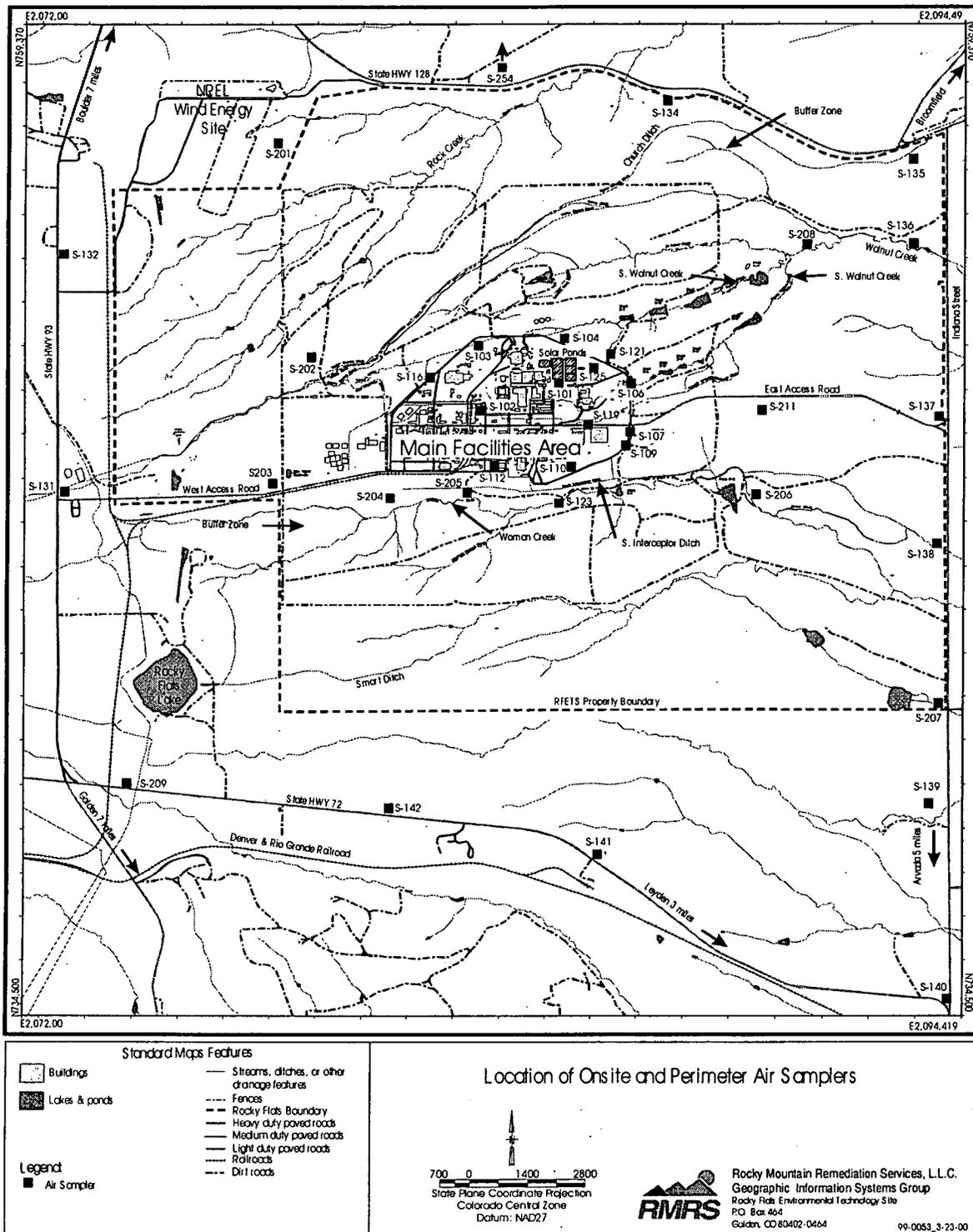


Figure 1-1 Cumulative Plutonium Airborne Effluent Emissions

The above graph shows the cumulative airborne effluent emissions of plutonium from the Site building stacks. Results from the most recently analyzed effluent stack samples (December 2001 and January 2002) were consistent with previously measured plutonium concentrations, with a total for 2001 of 0.0846 micro curies (μCi) and a cumulative, year-to-date (January 2002) plutonium emission of 0.0096 μCi .

Americium and uranium emissions for December 2001 and January 2002, while somewhat higher than the respective 2000 and 2001 data, were consistent with the levels seen in the previous three years.

Map 1-1. Location of Onsite and Perimeter Air Samplers



2.0 AMBIENT AIR DATA

2.1.1 Perimeter Sampler Locations

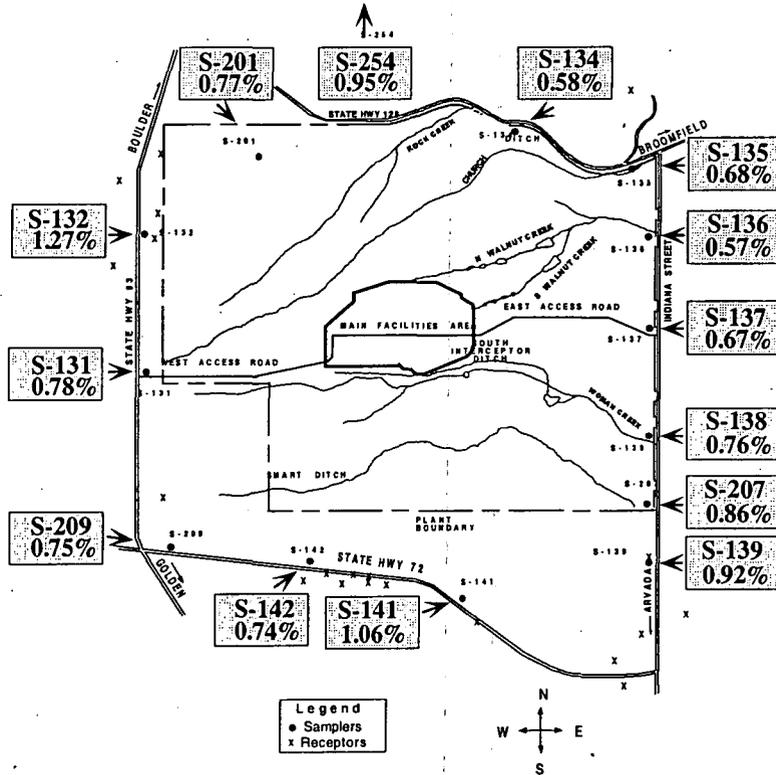


Figure 2-1. Perimeter Samplers Dose Map

The above map illustrates the perimeter Radioactive Ambient Air Monitoring Program (RAAMP) sampler locations and the twelve-month rolling-average maximum potential dose through January 2002, 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 year and converted as a percent of the Rad NESHAP concentration limits.

The percentages include the naturally occurring uranium isotopes as well as the isotopes from site contributions. The average concentration observed at location S-132 (northwest corner of Site) equates to the highest potential dose of 1.27% of the Rad NESHAP concentration limit. All perimeter samplers show percentages consistent with the previously reported results ranging from 0.57 % at S-136 (northeast corner of Site) to the high at S-132 stated previously.

2.1.2 Perimeter Sampler Locations – Dose Rate Graphs

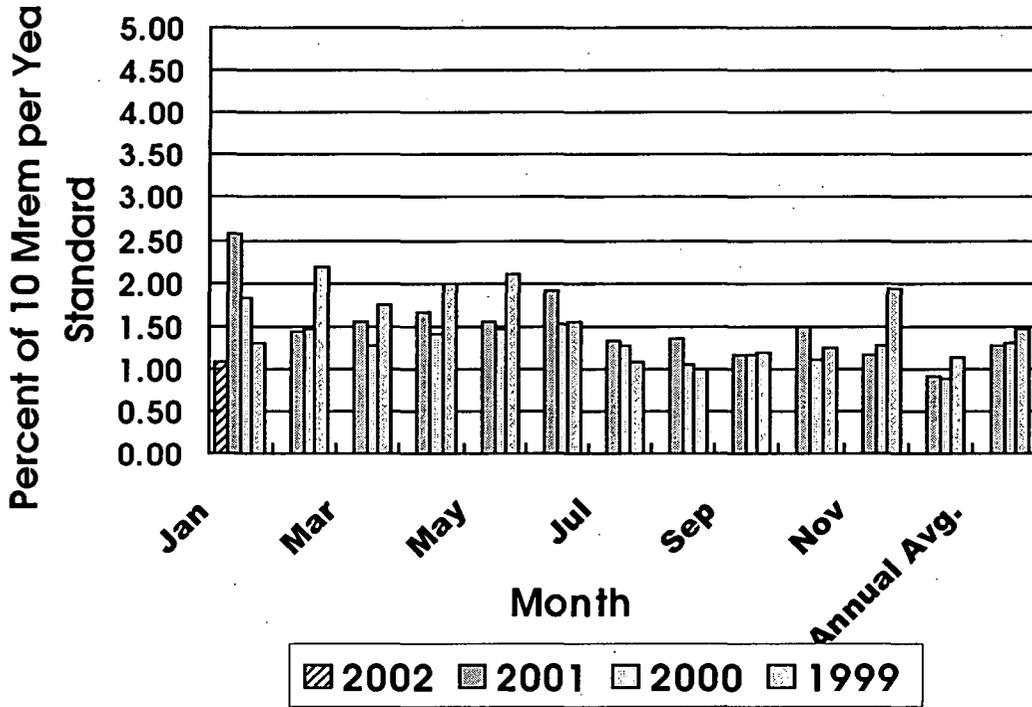


Figure 2-2. Offsite Dose Rate Summary

The above graph illustrates the monthly estimated maximum potential dose rates at the perimeter sampler showing the highest total radionuclide concentrations, including contributions from naturally occurring uranium isotopes. The highest dose rates for October, November, December 2001 and January 2002 were at locations S-132, S-141, S-136 and S-141, respectively.

2.2.2 Perimeter Sampler Locations – Dose Rate Graphs, continued

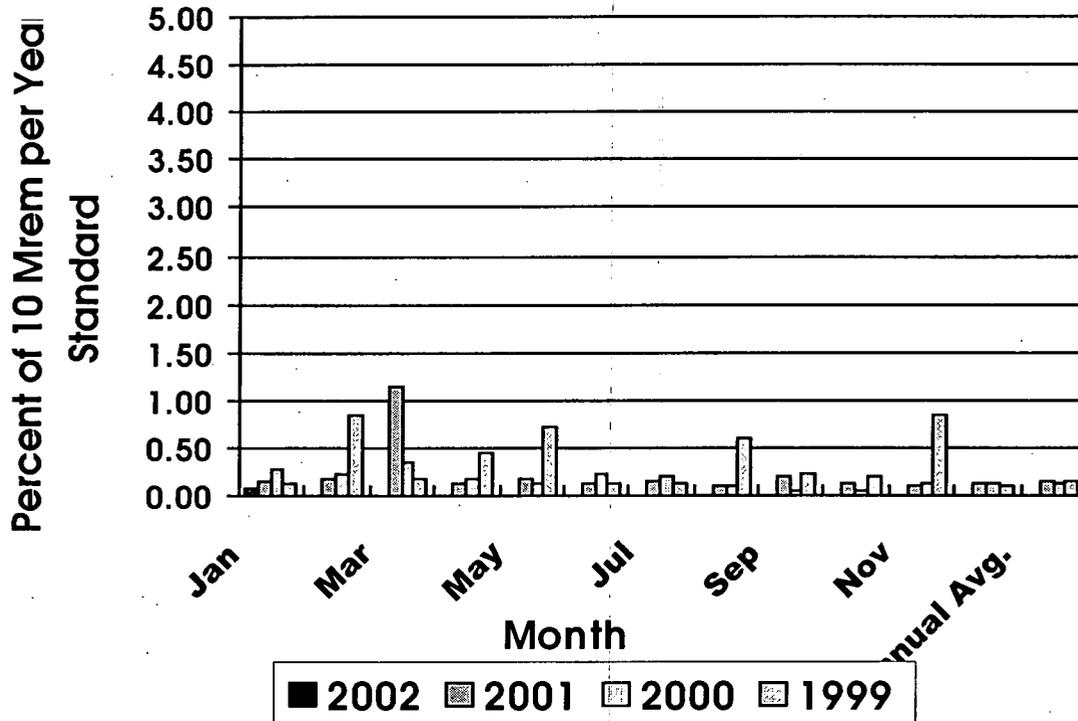


Figure 2-3. Offsite Dose Rate Summary Without U-234 and U-238

Omitting the dose contributions from uranium 234 and 238 may better reflect the contribution from Site operations at the same sampling location, since uranium occurs naturally in Colorado soils. This view displays the maximum offsite dose rate, resulting from Site activities in the months from October 2001 through January 2002, to be less than 0.13% percent of the 10 mrem standard. The highest dose rates for October, November, December 2001 and January 2002 were found at locations S-132, S-136, S-141 and S-209, respectively.

Ambient concentrations and dose rates for 2001 and 2002 are consistent with data from 1999 through 2000 for each respective month.

2.1.3 Demolition and Remediation Project Specific Air Monitoring

2.1.3.1. Monitoring Data

Last quarter, the Air Quality Monitoring (AQM) Program began presenting performance monitoring data from ongoing demolition and remediation projects in this format. In March 2002, AQM initiated Performance Monitoring for Radionuclides (PM-Rad) for Building 886 demolition. Preliminary data from the PM-Rad network can be found in Table 2-1.

Table 2-1. Gross Alpha Concentrations, by Location

Date Range	Location ID	Filter Concentration (pCi/m ³)	Filter Error (pCi/m ³)	
3/13/02-3/20/02	S-103	-0.0006065	0.00034580	
	S-104	0.0004766	0.00063552	
	S-106	0.0000832	0.00056857	
	S-114	-0.0003898	0.00031049	
	S-116	0.0013660	0.00098714	
	S-119	0.0009084	0.00084487	
	S-121	0.0000000	0.00050094	
	S-123	0.0004318	0.00062804	
	S-205	0.0006019	0.00073646	
	S-212	0.0008491	0.00079768	
	3/20/02-3/27/02	S-103	0.0011896	0.00098053
		S-104	0.0008659	0.00077618
S-106		0.0010835	0.00091185	
S-114		0.0005780	0.00074811	
S-116		0.0011084	0.00093106	
S-119		0.0009779	0.00086314	
S-121		0.0009211	0.00082048	
S-123		0.0010676	0.00085111	
S-205		0.0006319	0.00076697	
S-212		0.0015921	0.00104754	
3/27/02-4/3/02		S-103	0.0010762	0.00095053
		S-104	0.0011454	0.00087496
	S-106	0.0017269	0.00107792	
	S-114	0.0009336	0.00086899	
	S-116	0.0008755	0.00082996	
	S-119	0.0011638	0.00093939	
	S-121	0.0004400	0.00068508	
	S-123	0.0014568	0.00094234	
	S-205	0.0011903	0.00095209	
S-212	0.0004625	0.00064370		

Table 2-1. Gross Alpha Concentrations, by Location, continued

Date Range	Location ID	Filter Concentration (pCi/m3)	Filter Error (pCi/m3)	
4/3/02-4/10/02	S-103	0.0016289	0.00111679	
	S-104	0.0007454	0.00089490	
	S-106	0.0014440	0.00101748	
	S-114	0.0011578	0.00094545	
	S-116	0.0016866	0.00111058	
	S-119	0.0011698	0.00090184	
	S-121	0.0015694	0.00106458	
	S-123	0.0016002	0.00100485	
	S-205	0.0014790	0.00102774	
	S-212	0.0007776	0.00079825	
	4/10/02-4/17/02	S-103	0.0008734	0.00087337
		S-104	0.0011053	0.00086660
S-106		0.0004705	0.00070112	
S-114		0.0008830	0.00083958	
S-116		0.0007960	0.00083936	
S-119		0.0003677	0.00065548	
S-121		0.0003420	0.00059600	
S-123		0.0008109	0.00079949	
S-205		0.0007171	0.00076807	
S-212		0.0012623	0.00094628	
4/17/02-4/24/02		S-103	0.0011069	0.00099699
		S-104	0.0010147	0.00084479
	S-106	0.0010358	0.00092355	
	S-114	0.0007465	0.00080047	
	S-116	0.0008584	0.00084814	
	S-119	0.0002124	0.00054811	
	S-121	0.0008627	0.00082998	
	S-123	0.0008140	0.00077525	
	S-205	0.0001890	0.00056880	
	S-212	0.0005095	0.00069865	
	4/24/02-5/1/02	S-103	0.0000000	0.00104382
		S-104	0.0012939	0.00062205
S-106		0.0003888	0.00102597	
S-114		0.0013686	0.00110395	
S-116		0.0017402	0.00096145	
S-119		0.0011950	0.00079479	
S-121		0.0007277	0.00084775	
S-123		0.0008780	0.00084826	
S-205		0.0010451	0.00094922	
S-212		0.0013328	0.00093941	

2.1.3.2. Project Specific Maps/Figures

This map illustrate the sampling locations used for PM-Rad of Industrial Area demolition and remediation activities.

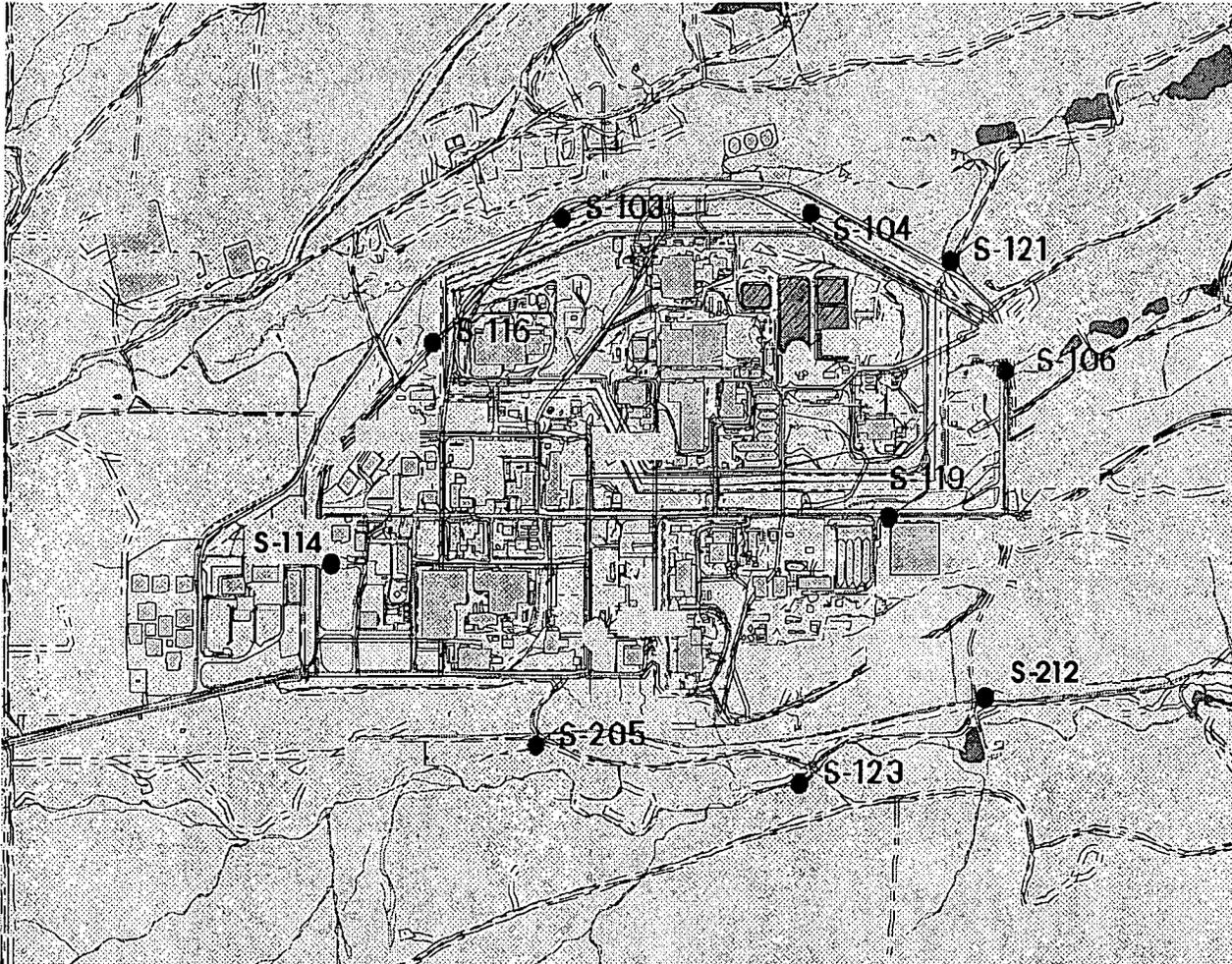


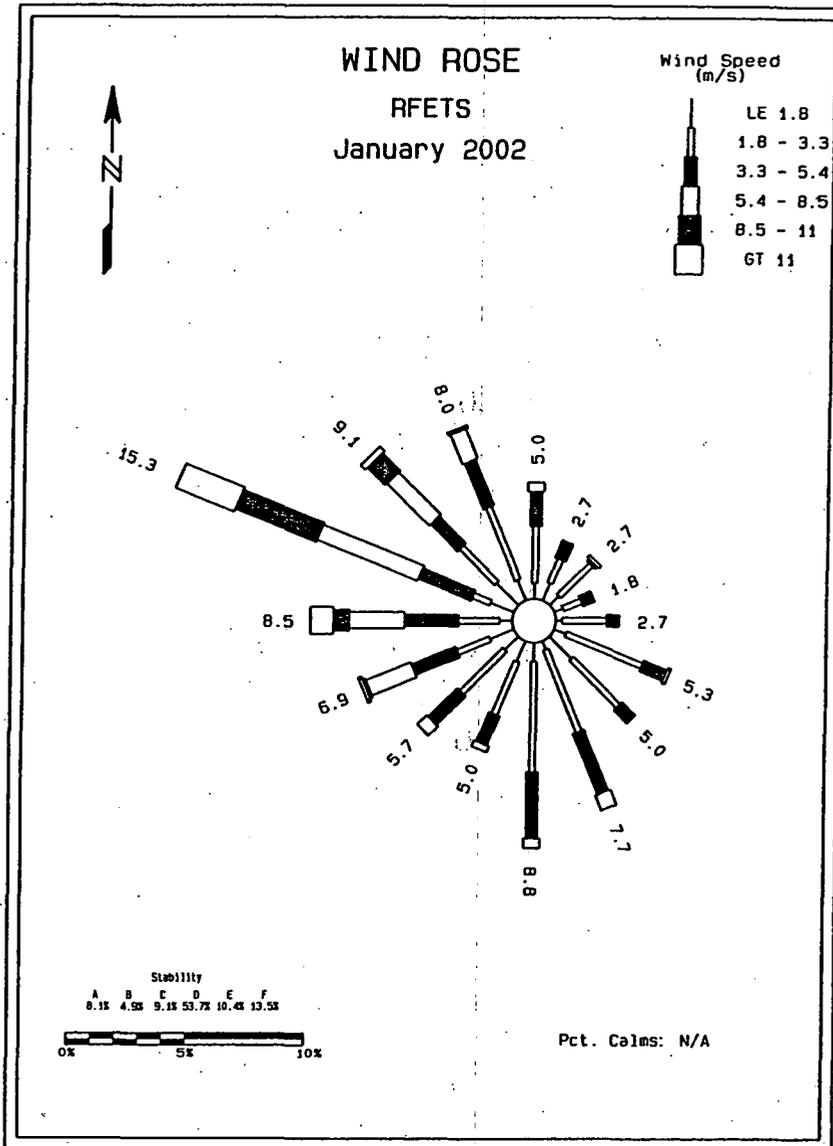
Figure 2-4. Performance Monitoring for Radionuclides (PM-Rad) Network

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3.0 METEOROLOGY AND CLIMATOLOGY

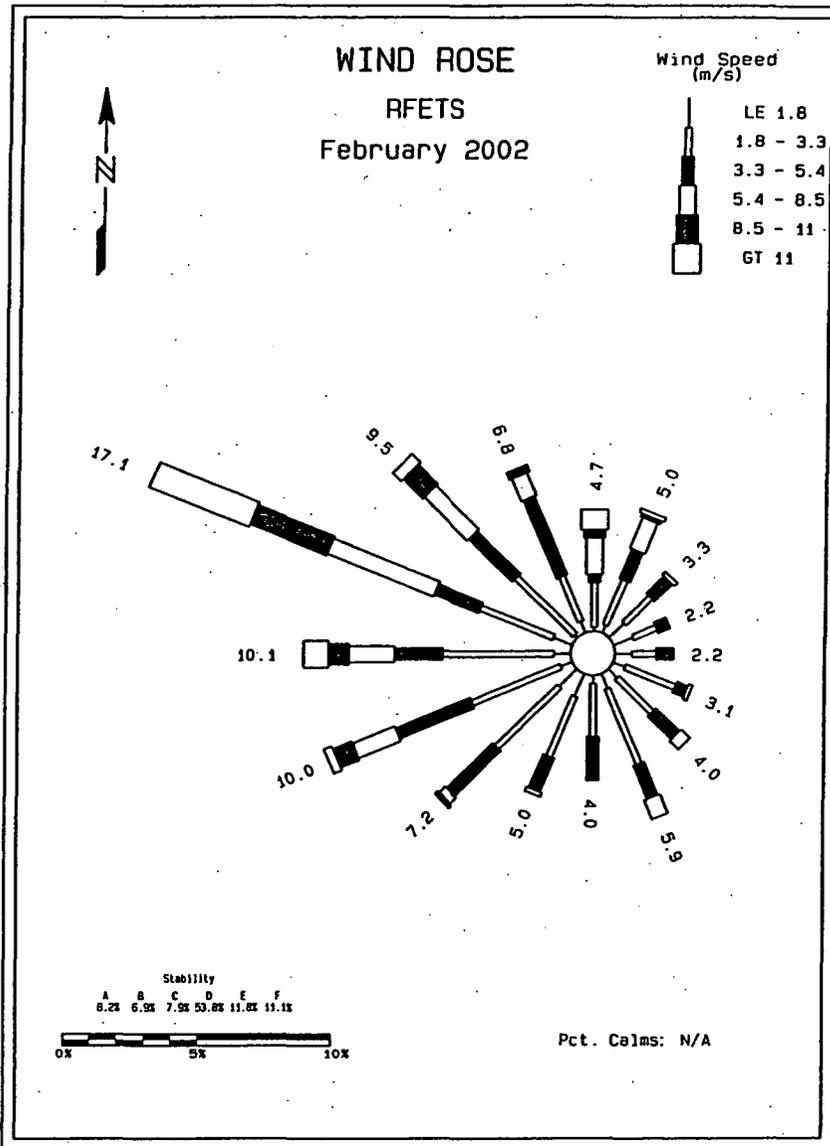
3.1 WIND ROSES FOR JANUARY, FEBRUARY, AND MARCH 2002



Monthly Climatic Summary

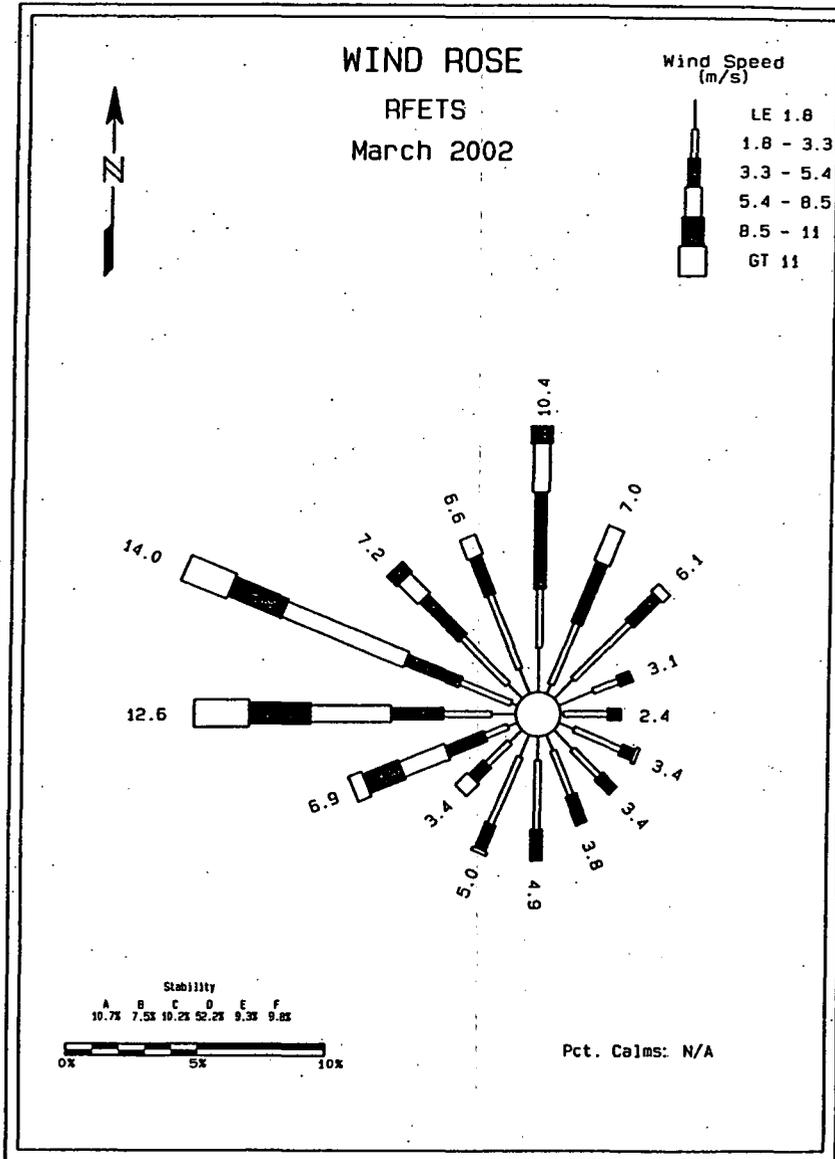
Month	Temperature (°F)			Mean Dew Point (°F)	Mean Relative Humidity (%)	Wind Speed (mph)		Pressure (mb)	Solar Total (kW-h/m ²)	Precipitation (in)	
	Mean Daily High	Mean Daily Low	Daily Mean			Mean	Max			Total	Max
Jan-02	41.56	22.19	32.25	19.0	64.5	9.7	69.1	811.0	83.6	0.59	0.03

Figure 3-1. Wind Rose for Rocky Flats Environmental Technology Site for January 2002



Monthly Climatic Summary											
Month	Temperature (°F)			Mean Dew Point (°F)	Mean Relative Humidity (%)	Wind Speed (mph)		Pressure (mb)	Solar Total (kW-h/m ²)	Precipitation (in)	
	Mean Daily High	Mean Daily Low	Mean Daily			Mean	Max			Total	Max
	Feb-02	44.62	23.31			34.75	18.7			58.0	10.5

Figure 3-2. Wind Rose for Rocky Flats Environmental Technology Site for February 2002



Monthly Climatic Summary											
Month	Temperature (°F)			Mean Dew Point (°F)	Mean Relative Humidity (%)	Wind Speed (mph)		Pressure (mb)	Solar Total (kW-h/m ²)	Precipitation (in)	
	Mean Daily High	Mean Daily Low	Daily Mean			Mean	Max			Total	Max
Mar-02	45.37	21.79	34.27	23.0	69.5	10.3	76.8	810.4	144.8	0.67	0.05

Figure 3-3. Wind Rose for Rocky Flats Environmental Technology Site for March 2002

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4.0 SURFACE WATER DATA

Map 4-1. Holding Ponds and Liquid Effluent Water Courses

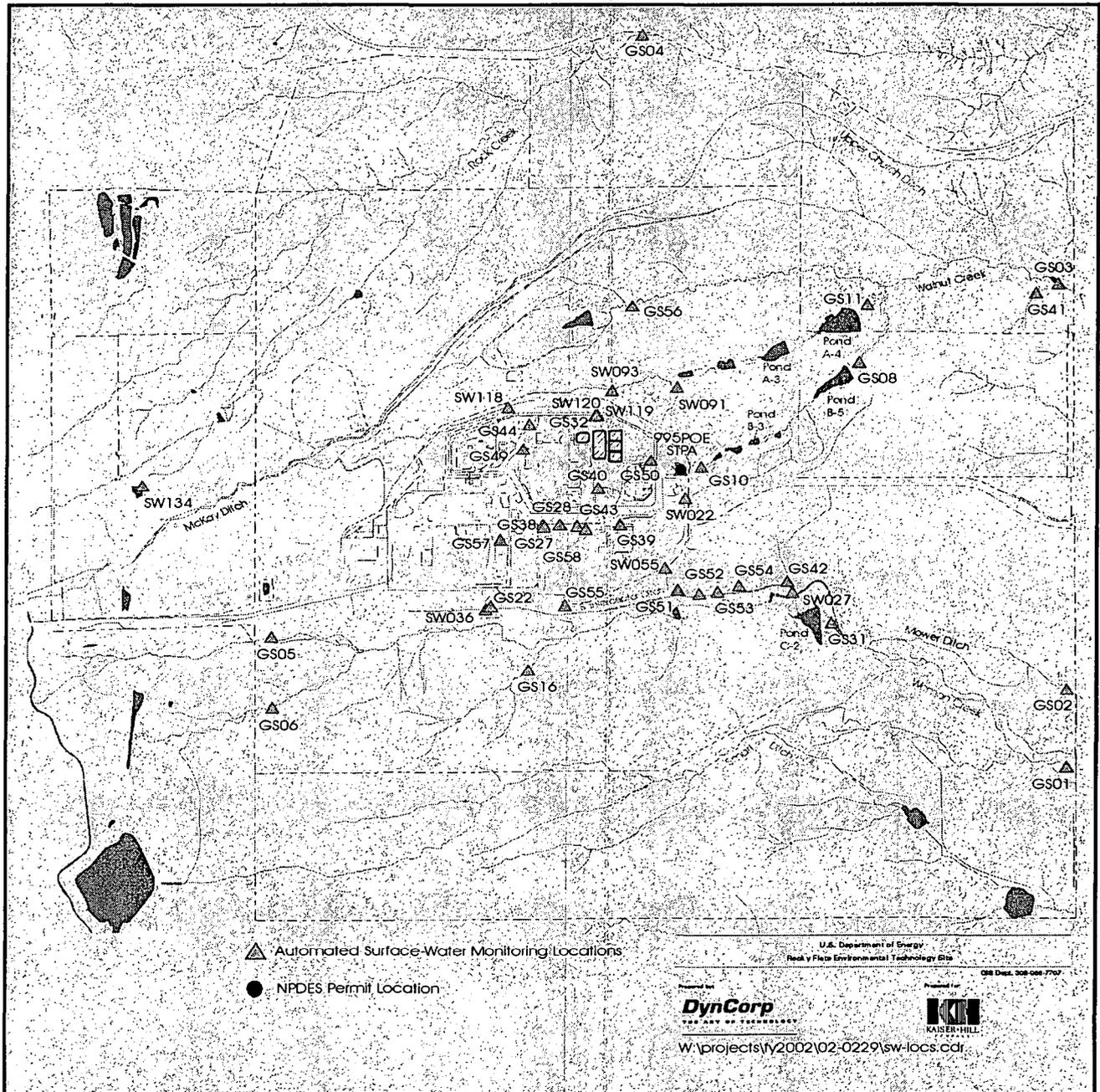


Table 4-1. Sewage Treatment Plant (Outfall STP1), continued

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	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gross beta, pCi/l	4 - 8	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	>100 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	>100 pass	N/A	N/A
Ceriodaphnia Chronic test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NS	N/A	N/A
Fathead Minnows Chronic test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NS	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

4.2 MOUND PLUME SUMMARY DATA

Table 4-2. Mound Plume Locations SW061 and SW132

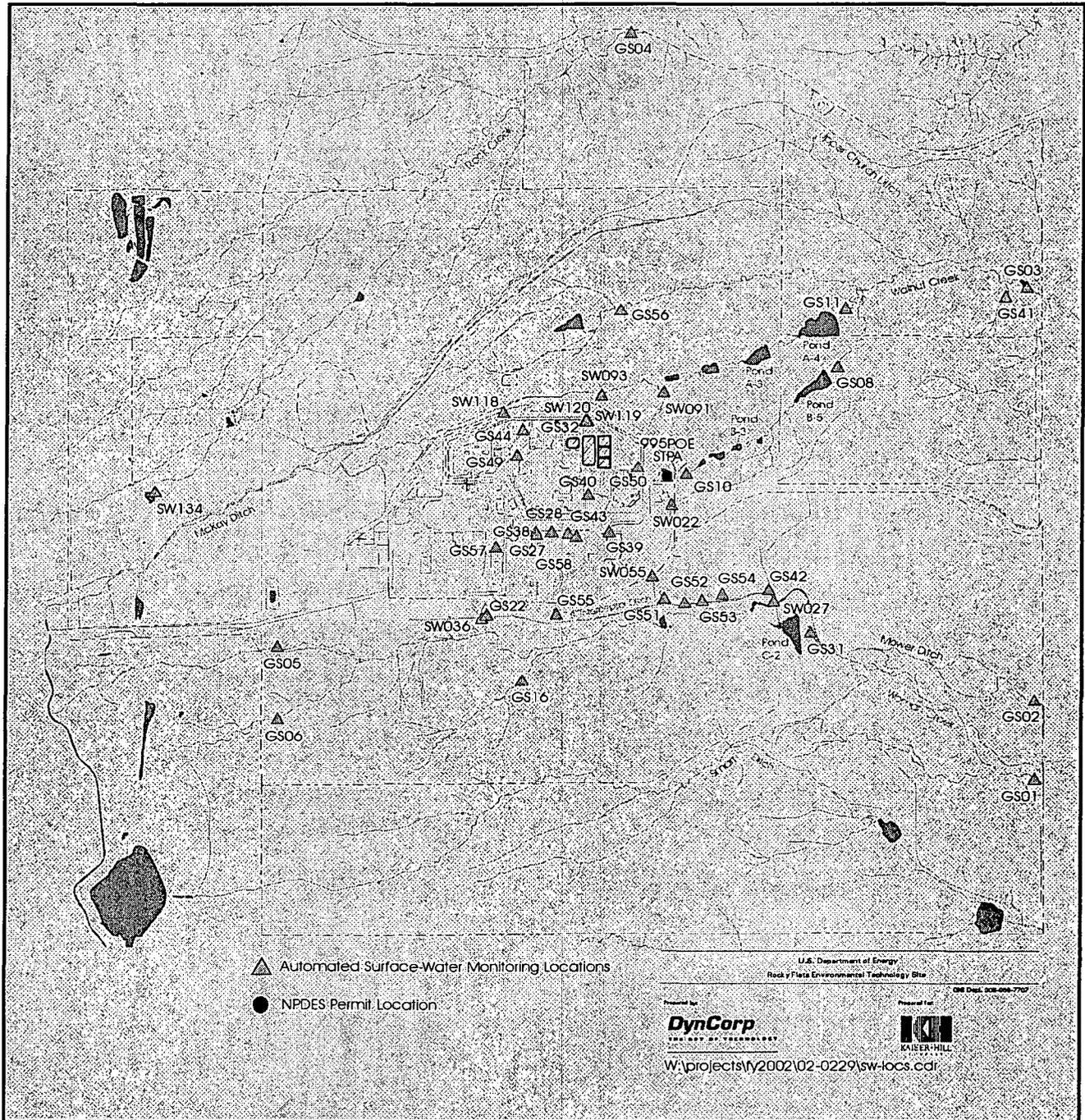
Analyte	SW061	SW132
	03/19/02	03/19/02
Pu 239/240, pCi/l	0.009 +/- 0.018	-0.004 +/- 0.005
Am 241, pCi/l	0.005 +/- 0.015	0.018 +/- 0.020
Silver, dissolved, ug/l	0.33	0.33
Aluminum, total, ug/l	532	78.5
Arsenic, total, ug/l	2.0	2.0
Barium, total, ug/l	503	321
Beryllium, total, ug/l	0.25	0.25
Cadmium, dissolved, ug/l	0.18	0.28
Copper, dissolved, ug/l	2.9	2.1
Iron, total, ug/l	1510	355
Mercury, total, ug/l	0.023	0.023
Manganese, total, ug/l	158	207
Nickel, dissolved, ug/l	2.2	2.2
Lead, dissolved, ug/l	0.98	0.98
Antimony, total, ug/l	2.1	5.7
Selenium, dissolved, ug/l	2.0	2.0
Zinc, dissolved, ug/l	240	101
EPA VOA Method 8260, compounds found >RFCA Seg 5 Action Level	Carbon Tetrachloride, 18 ug/l; Tetrachloroethene, 11 ug/l; Trichloroethene, 7.2 ug/l	None detected

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

Map 5-1. Gaging Station Locations



5.1 FLOW MONITORING

Table 5-1. Gaging Station GS01: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.061a	0.068a	0.201a
2	0.058a	0.065a	0.113a
3	0.057a	0.048a	0.092a
4	0.049a	0.049a	0.120a
5	0.059a	0.053a	0.236a
6	0.047a	0.043a	0.406
7	0.053	0.037a	0.490
8	0.173a	0.038a	0.454
9	0.201	0.046a	0.303
10	0.212	0.049a	0.267
11	0.176	0.052a	0.332
12	0.172	0.057a	0.284
13	0.150	0.034a	0.305
14	0.110a	0.045a	0.317
15	0.088a	0.047a	0.239
16	0.079a	0.043	0.253
17	0.069a	0.091	0.292
18	0.069a	0.160	0.234
19	0.060a	0.152	0.223
20	0.051a	0.130	0.251
21	0.045a	0.098	0.184
22	0.050a	0.086	0.173
23	0.051a	0.135	0.192
24	0.052a	0.154	0.171
25	0.042a	0.081a	0.148
26	0.053a	0.062a	0.126
27	0.100a	0.074a	0.129
28	0.133a	0.081a	0.101
29	0.110a	NA	0.083
30	0.095a	NA	0.079
31	0.062a	NA	0.076
Monthly Average (cfs)	0.090	0.074	0.222

Monthly Discharge

Cubic Feet	240629	179624	593832
Gallons	1800029	1343683	4442168
Acre-Feet	5.52	4.12	13.63

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.

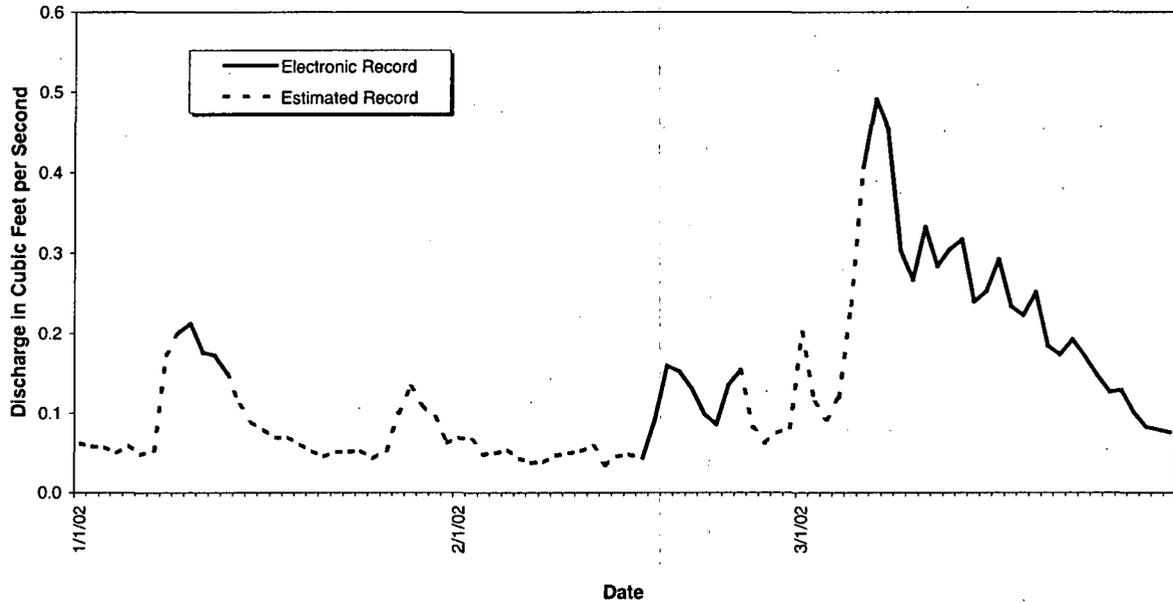


Figure 5-1. Mean Daily Discharge at GS01, Water Year 2002 (January, February, and March)

Table 5-2. Gaging Station GS02: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
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	NA	0.000
30	0.000	NA	0.000
31	0.000	NA	0.000
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.

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.

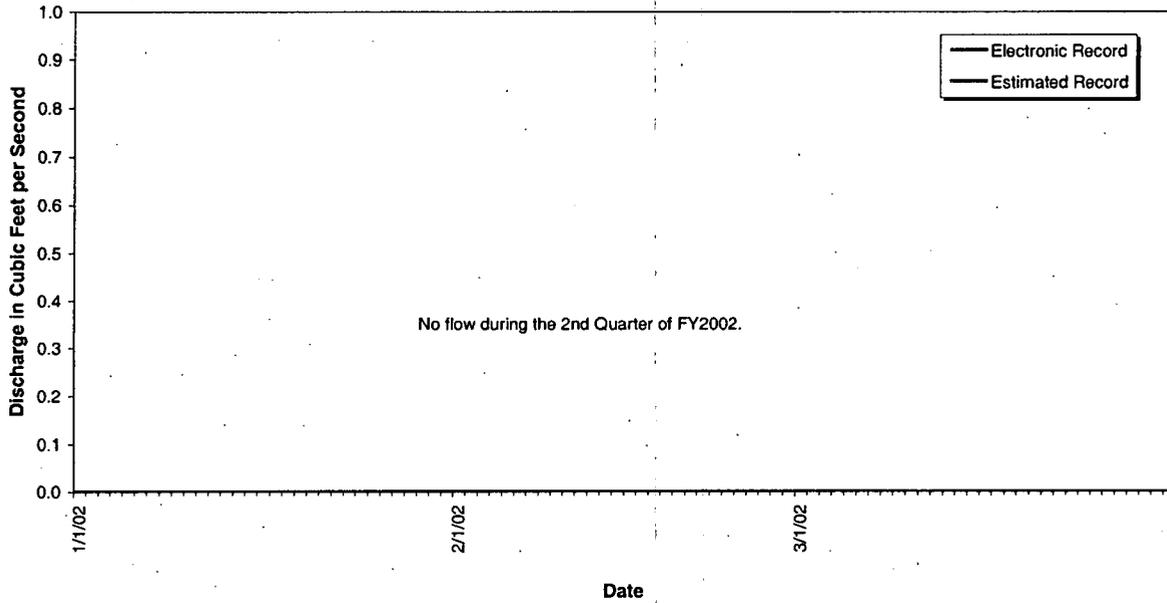


Figure 5-2. Mean Daily Discharge at GS02, Water Year 2002 (January, February, and March)

Table 5-3. Gaging Station GS03: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.000a	1.199	0.006
2	0.000a	0.569	0.007
3	0.000a	0.299	0.011
4	0.000a	0.145	0.013
5	0.000a	0.006	0.002
6	0.000	0.003	0.001
7	0.001	0.002	0.001
8	0.001	0.002	0.000
9	0.001	0.002	0.000
10	0.003	0.006	0.000
11	0.001	0.009	0.000
12	0.001	0.001	0.000
13	0.001	0.003	0.000
14	0.001	0.003	0.001
15	0.001	0.003	0.000
16	0.002	0.003	0.000
17	0.001	0.002	0.000
18	0.000	0.002	0.000
19	0.000a	0.002	0.000
20	0.000a	0.002	0.000
21	0.000	0.002	0.679
22	0.000	0.001	1.541
23	0.000	0.000	1.526
24	0.459	0.001	1.608
25	1.203	0.002	1.356
26	1.281	0.003	1.131
27	1.224	0.004	1.203
28	1.190	0.005	1.118
29	0.991	NA	0.799
30	0.962	NA	0.866
31	1.139	NA	0.877
Monthly Average (cfs)	0.273	0.081	0.411

Monthly Discharge

Cubic Feet	731175	197074	1101507
Gallons	5469566	1474213	8239842
Acre-Feet	16.79	4.52	25.29

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.

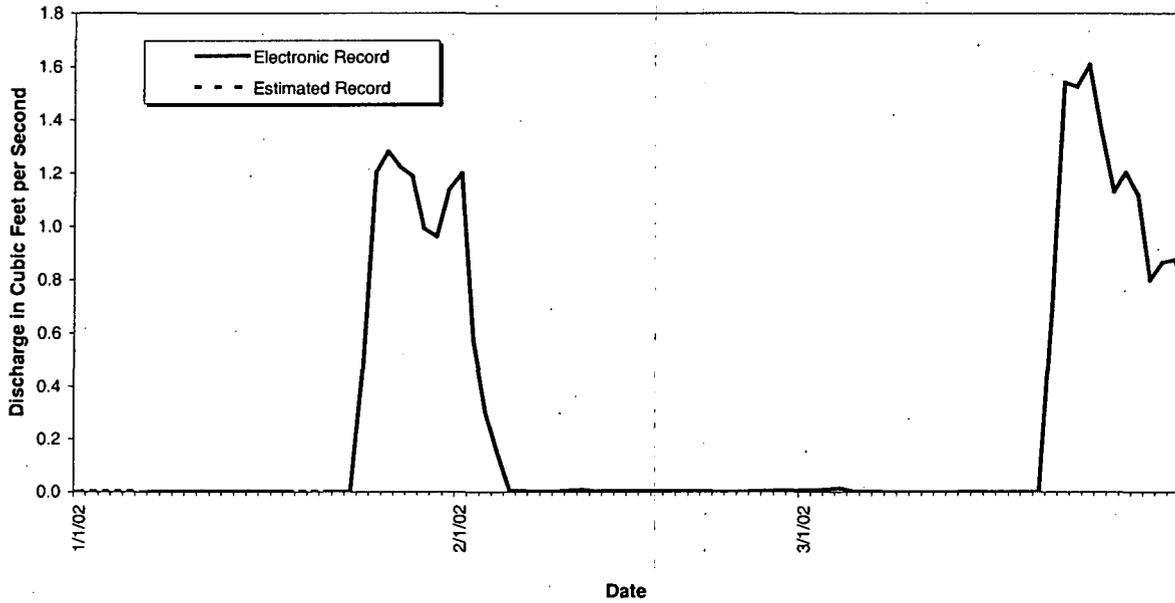


Figure 5-3. Mean Daily Discharge at GS03, Water Year 2002 (January, February, and March)

Table 5-4. Gaging Station GS04: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.065	WR	0.144
2	WR	WR	0.163
3	WR	WR	WR
4	0.070	WR	WR
5	0.090	WR	WR
6	0.110	WR	0.624
7	0.155	WR	0.585
8	0.263	0.083	0.353
9	0.259	0.096	0.304
10	0.244	0.083a	0.371
11	0.229	0.085	0.380
12	0.217	0.111	0.379
13	0.200	0.106a	0.370
14	0.141	0.116	0.329
15	0.123	0.125a	0.263
16	0.104	0.150	0.348
17	WR	0.197	0.311
18	WR	0.211	0.267
19	WR	0.207	0.325
20	WR	0.192	0.306
21	WR	0.167	0.242
22	0.000	0.206	0.223
23	0.000	0.277	0.253
24	0.006	0.238	0.216
25	0.084	0.156	0.187
26	0.177	WR	0.195
27	0.172	WR	0.200
28	0.147	WR	0.190
29	0.126	NA	0.190
30	0.110	NA	0.183
31	WR	NA	0.177
Monthly Average (cfs)	0.134	0.156	0.288

Monthly Discharge

Cubic Feet	267087	242644	697779
Gallons	1997952	1815104	5219753
Acre-Feet	6.13	5.57	16.02

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.

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

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.

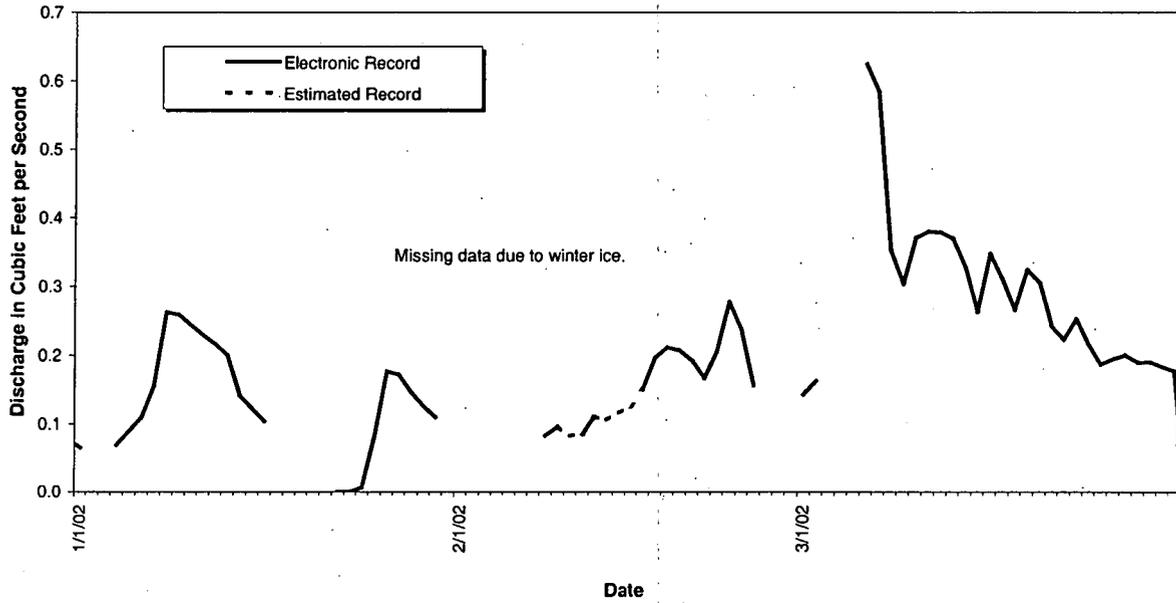


Figure 5-4. Mean Daily Discharge at GS04, Water Year 2002 (January, February, and March)

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

Day	Jan-02	Feb-02	Mar-02
1	WR	WR	WR
2	WR	WR	WR
3	WR	WR	WR
4	WR	WR	WR
5	WR	WR	WR
6	WR	WR	WR
7	WR	WR	WR
8	WR	WR	WR
9	WR	WR	WR
10	WR	WR	WR
11	WR	WR	WR
12	WR	WR	WR
13	WR	WR	WR
14	WR	WR	WR
15	WR	WR	WR
16	WR	WR	WR
17	WR	WR	WR
18	WR	WR	WR
19	WR	WR	WR
20	WR	WR	WR
21	WR	WR	WR
22	WR	WR	WR
23	WR	WR	WR
24	WR	WR	WR
25	WR	WR	WR
26	WR	WR	WR
27	WR	WR	0.047
28	WR	WR	0.041
29	WR	NA	0.039
30	WR	NA	0.038
31	WR	NA	0.036
Monthly Average (cfs)	No Data	No Data	0.040

Monthly Discharge

Cubic Feet	0	0	17394
Gallons	0	0	130117
Acre-Feet	0.00	0.00	0.40

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

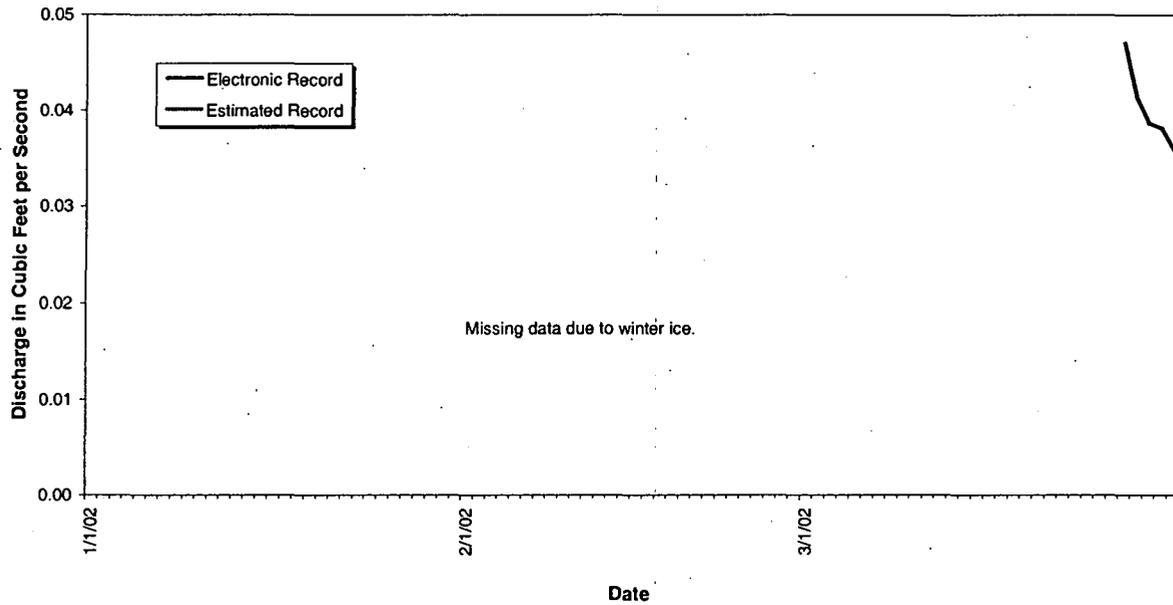


Figure 5-5. Mean Daily Discharge at GS05, Water Year 2002 (January, February, and March)

Table 5-6. Gaging Station GS06: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.0000	WR	WR
2	0.0000	WR	WR
3	0.0000	WR	WR
4	0.0000	WR	WR
5	0.0000	WR	WR
6	0.0000	WR	0.0045
7	0.0006	WR	0.0048
8	0.0010	WR	WR
9	0.0007	WR	WR
10	WR	WR	0.0021a
11	WR	WR	0.0011
12	0.0011a	WR	0.0014
13	0.0001a	WR	0.0021
14	0.0000a	WR	0.0019
15	0.0000	WR	0.0015a
16	0.0000	WR	0.0023a
17	0.0000	WR	0.0022a
18	0.0000	0.0006	0.0021a
19	0.0000	0.0002a	0.0031
20	0.0000	0.0002a	0.0035
21	0.0000	0.0001a	0.0051a
22	0.0001	0.0002a	0.0043a
23	0.0000a	0.0004	0.0040a
24	0.0000a	0.0000	0.0040
25	0.0006a	0.0000	0.0036a
26	0.0016a	WR	0.0037a
27	0.0011a	WR	0.0029
28	WR	WR	0.0031
29	WR	NA	0.0032
30	WR	NA	0.0028
31	WR	NA	0.0026
Monthly Average (cfs)	0.0003	0.0002	0.0030

Monthly Discharge

Cubic Feet	598	152	6203
Gallons	4475	1133	46403
Acre-Feet	0.01	0.00	0.14

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 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.

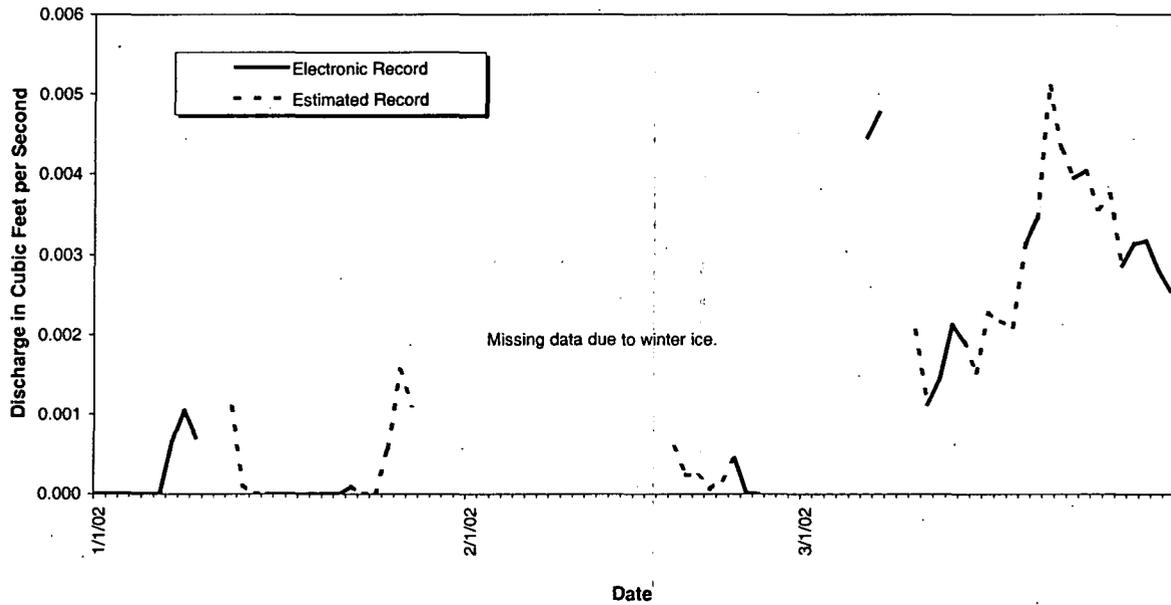


Figure 5-6. Mean Daily Discharge at GS06, Water Year 2002 (January, February, and March)

Table 5-7. Gaging Station GS08: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.000	1.570	0.000
2	0.000	0.716	0.000
3	0.000	0.439	0.000
4	0.000	0.150	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	1.548
22	0.000	0.000	2.234
23	0.000	0.000	2.193
24	1.131	0.000	2.275
25	1.830	0.000	1.840
26	1.795	0.000	1.588
27	1.685	0.000	1.699
28	1.627	0.000	1.519
29	1.313	NA	1.034
30	1.299	NA	1.257
31	1.618	NA	1.177
Monthly Average (cfs)	0.397	0.103	0.592

Monthly Discharge

Cubic Feet	1793947	114446	1205492
Gallons	13419657	856119	9017707
Acre-Feet	41.18	2.63	27.67

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

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.

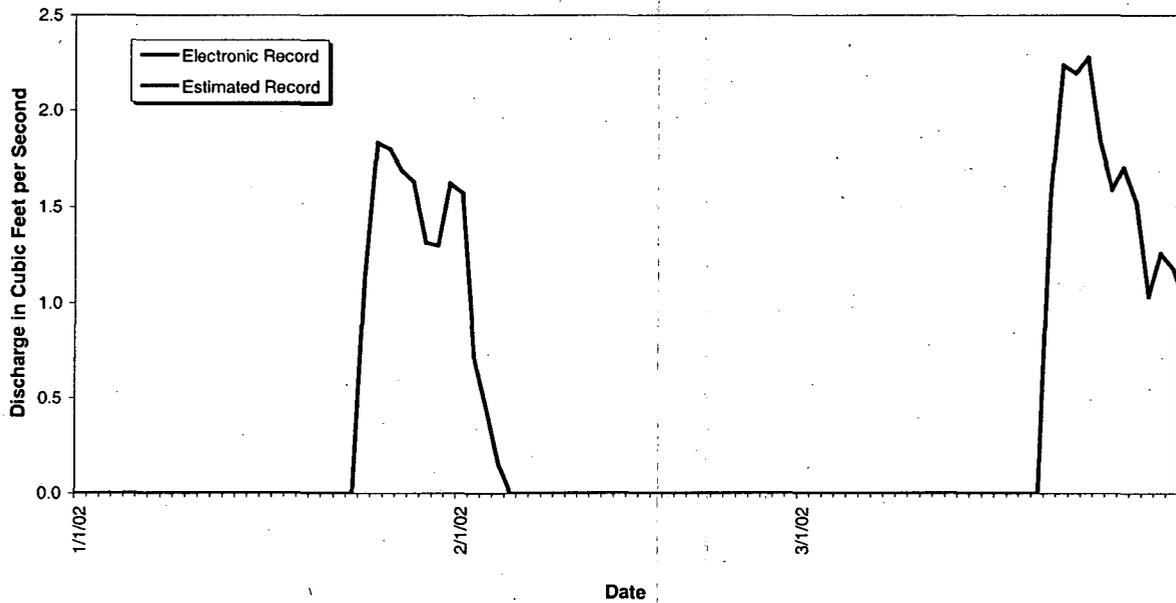


Figure 5-7. Mean Daily Discharge at GS08, Water Year 2002 (January, February, and March)

Table 5-8. Gaging Station GS10: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.047	0.041a	0.042
2	0.054	0.035a	0.067
3	0.062	0.033a	0.053a
4	0.052	0.030a	0.119
5	0.052	0.028	0.135
6	0.049	0.029	0.107
7	0.056	0.032	0.086
8	0.057	0.040	0.050
9	0.055	0.037	0.079
10	0.112	0.030a	0.054
11	0.066	0.032	0.050
12	0.050	0.030	0.049
13	0.050	0.030	0.048
14	0.047a	0.031	0.142
15	0.046a	0.066	0.056
16	0.047a	0.033	0.066
17	0.044a	0.033	0.045
18	0.047a	0.035	0.048
19	0.047a	0.035	0.061
20	0.047a	0.035	0.048
21	0.046a	0.034	0.045
22	0.047	0.039	0.048
23	0.060	0.039	0.051
24	0.050	0.038	0.048
25	0.066	0.051	0.050
26	0.055	0.045a	0.047
27	0.052	0.037	0.048
28	0.047	0.044	0.046
29	0.045	NA	0.043
30	0.052	NA	0.042
31	0.050	NA	0.042
Monthly Average (cfs)	0.053	0.037	0.062

Monthly Discharge

Cubic Feet	143027	88366	165633
Gallons	1069918	661023	1239019
Acre-Foot	3.28	2.03	3.80

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.

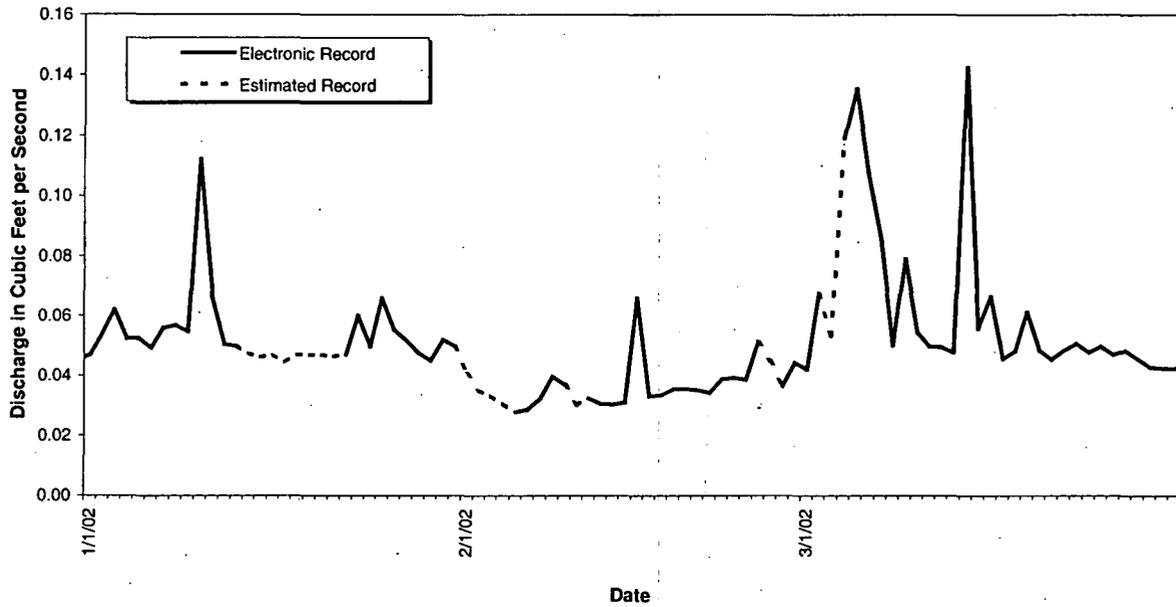


Figure 5-8. Mean Daily Discharge at GS10, Water Year 2002 (January, February, and March)

Table 5-9. Gaging Station GS11: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
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	NA	0.000
30	0.000	NA	0.000
31	0.000	NA	0.000
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.

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.

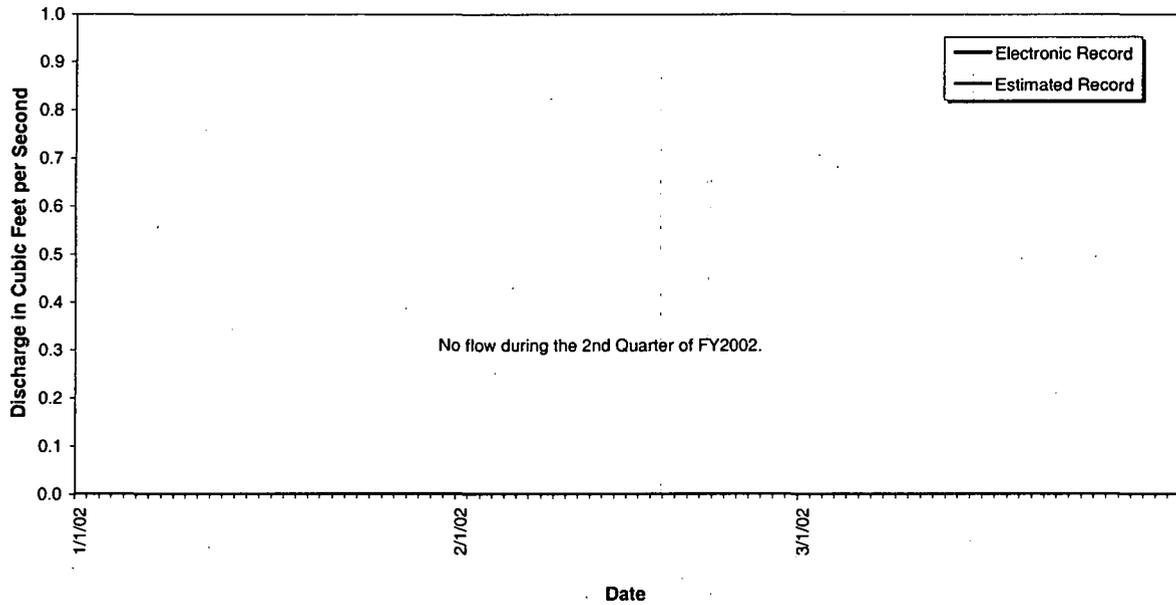


Figure 5-9. Mean Daily Discharge at GS11 Water Year 2002 (January, February, and March)

Table 5-10. Gaging Station GS16: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	WR	WR	WR
2	WR	WR	WR
3	WR	WR	WR
4	WR	WR	WR
5	WR	WR	WR
6	WR	WR	WR
7	WR	WR	WR
8	WR	WR	WR
9	WR	WR	WR
10	WR	WR	WR
11	WR	WR	WR
12	WR	WR	WR
13	WR	WR	WR
14	WR	WR	WR
15	WR	WR	WR
16	WR	WR	WR
17	WR	WR	WR
18	WR	WR	WR
19	WR	WR	WR
20	WR	WR	0.110a
21	WR	WR	WR
22	WR	WR	WR
23	WR	WR	0.101a
24	WR	WR	WR
25	WR	WR	WR
26	WR	WR	WR
27	WR	WR	0.089a
28	WR	WR	0.083
29	WR	NA	0.081
30	WR	NA	0.083
31	WR	NA	0.082a
Monthly Average (cfs)	No Data	No Data	0.090

Monthly Discharge

Cubic Feet	0	0	54425
Gallons	0	0	407126
Acre-Feet	0.00	0.00	1.25

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.

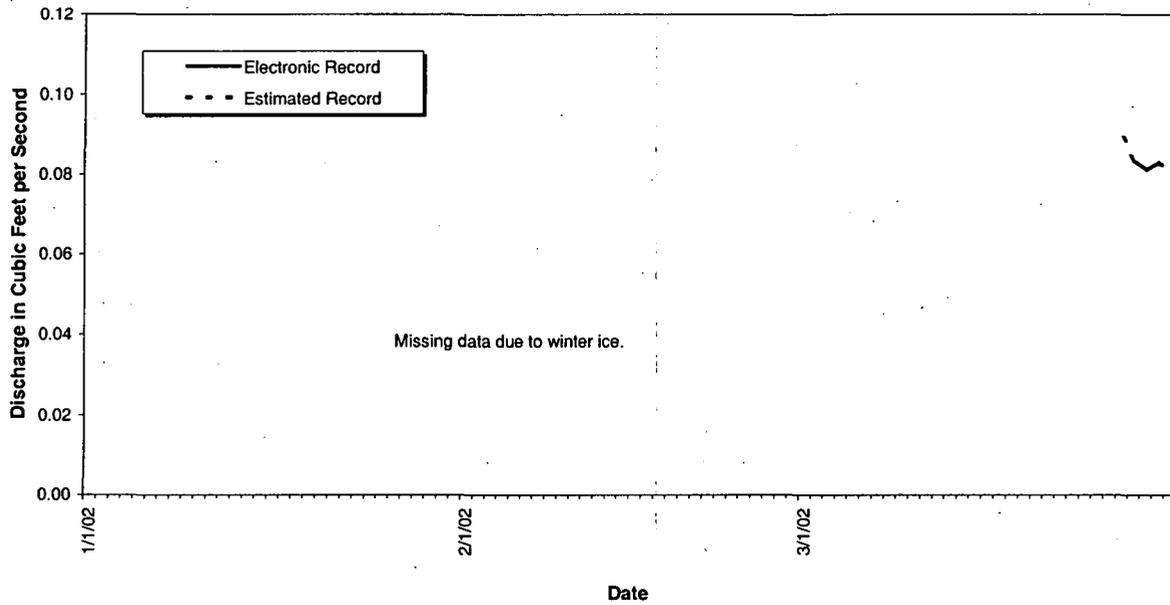


Figure 5-10. Mean Daily Discharge at GS16, Water Year 2002 (January, February, and March)

Table 5-11. Gaging Station GS22: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.016	0.011	0.020
2	0.020	0.010	0.031a
3	0.011	0.010	0.024a
4	0.014	0.011	0.069
5	0.022	0.011	0.038
6	0.010	0.016	0.040
7	0.010	0.012	0.032
8	0.014	0.012	0.017
9	0.011	0.011	0.046
10	0.072	0.011	0.025
11	0.041	0.012	0.033
12	0.013	0.012	0.019
13	0.013	0.013	0.017
14	0.027	0.013	0.058
15	0.013	0.058	0.038
16	0.012	0.009	0.070
17	0.012	0.009	0.022
18	0.012	0.011	0.027
19	0.012	0.014	0.048
20	0.012	0.012	0.020
21	0.011	0.011	0.019
22	0.010	0.010	0.018
23	0.026	0.010	0.018
24	0.026	0.010	0.018
25	0.023	0.021a	0.023
26	0.011	0.036a	0.017
27	0.010	0.022	0.018
28	0.011	0.017	0.017
29	0.011	NA	0.018
30	0.027	NA	0.018
31	0.018	NA	0.017
Monthly Average (cfs)	0.018	0.015	0.029

Monthly Discharge

Cubic Feet	47643	35959	77454
Gallons	356397	268993	579400
Acre-Feet	1.09	0.83	1.78

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.

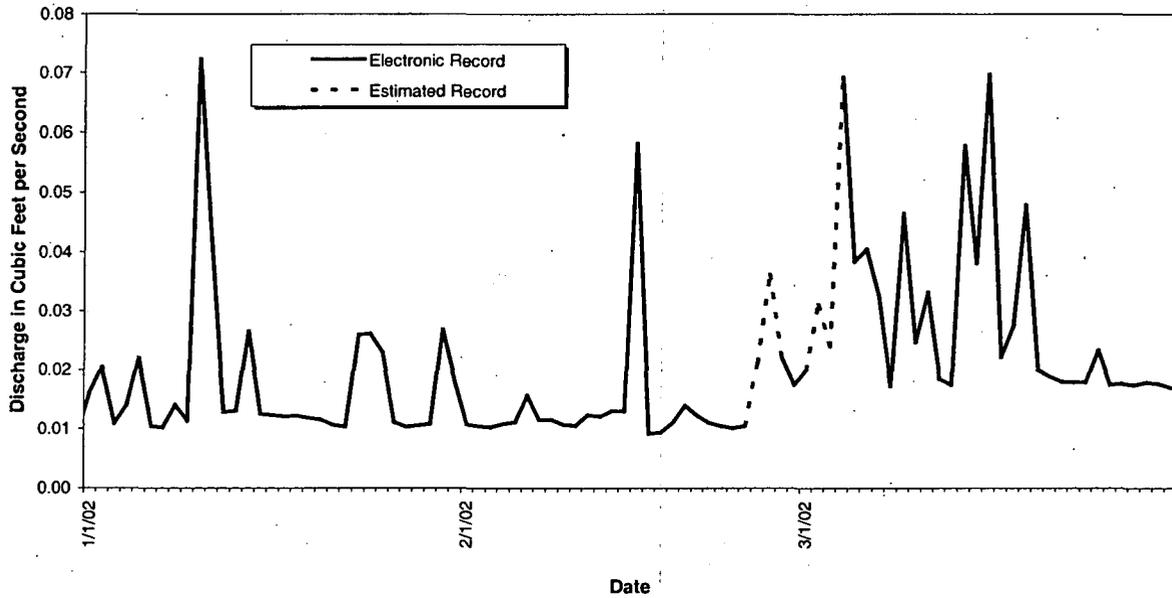


Figure 5-11. Mean Daily Discharge at GS22, Water Year 2002 (January, February, and March)

Table 5-12. Gaging Station GS27: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
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	0.0004
5	0.0000	0.0000	0.0007
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	0.0001
15	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0001
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	NA	0.0000
30	0.0000	NA	0.0000
31	0.0000	NA	0.0000
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	4	0	119
Gallons	30	0	887
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.

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.

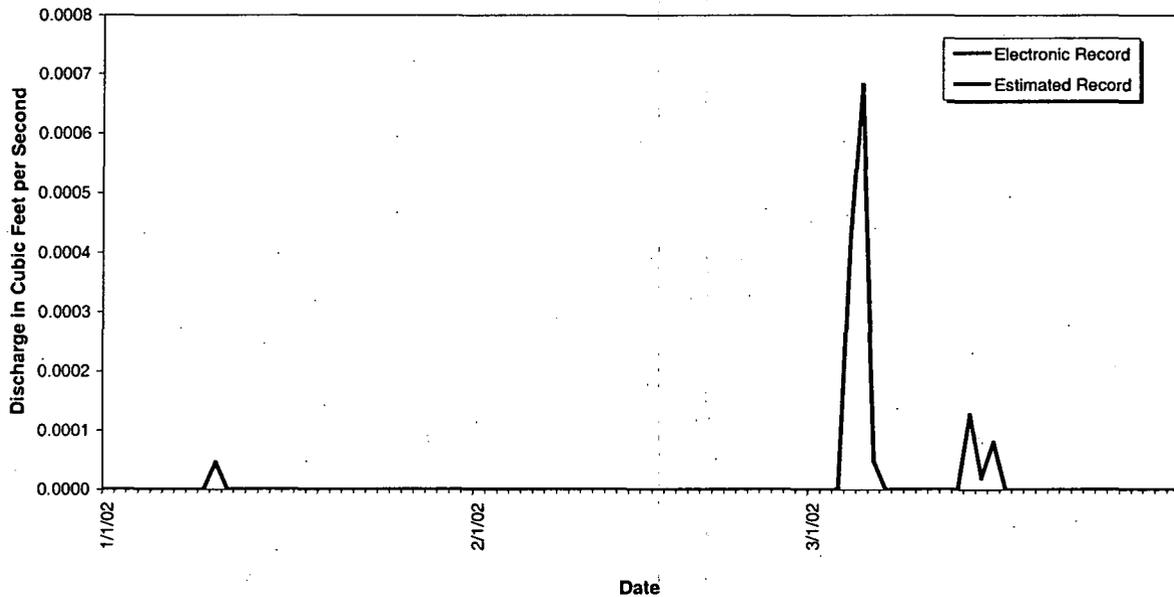


Figure 5-12. Mean Daily Discharge at GS27 Water Year 2002 (January, February, and March)

Table 5-13. Gaging Station GS28: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	No Data	No Data	0.0000
2	No Data	No Data	0.0000
3	No Data	No Data	0.0000
4	No Data	No Data	0.0000
5	No Data	No Data	0.0000
6	No Data	No Data	0.0000
7	No Data	No Data	0.0000
8	No Data	No Data	0.0000
9	No Data	No Data	0.0000a
10	No Data	No Data	0.0000
11	No Data	No Data	0.0000
12	No Data	No Data	0.0000
13	No Data	No Data	0.0000
14	No Data	No Data	0.0000
15	No Data	No Data	0.0000
16	No Data	No Data	0.0000a
17	No Data	No Data	0.0000
18	No Data	No Data	0.0000
19	No Data	0.0000	0.0000
20	No Data	0.0000	0.0000
21	No Data	0.0000	0.0000
22	No Data	0.0000	0.0000
23	No Data	0.0000	0.0000
24	No Data	0.0000	0.0000
25	No Data	0.0000	0.0000
26	No Data	0.0000	0.0000
27	No Data	0.0000	0.0000
28	No Data	0.0000	0.0000
29	No Data	NA	0.0000
30	No Data	NA	0.0000
31	No Data	NA	0.0000
Monthly Average (cfs)	No Data	0.000	0.000

Monthly Discharge

Cubic Feet	No Data	0	0
Gallons	No Data	0	0
Acre-Feet	No Data	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 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.

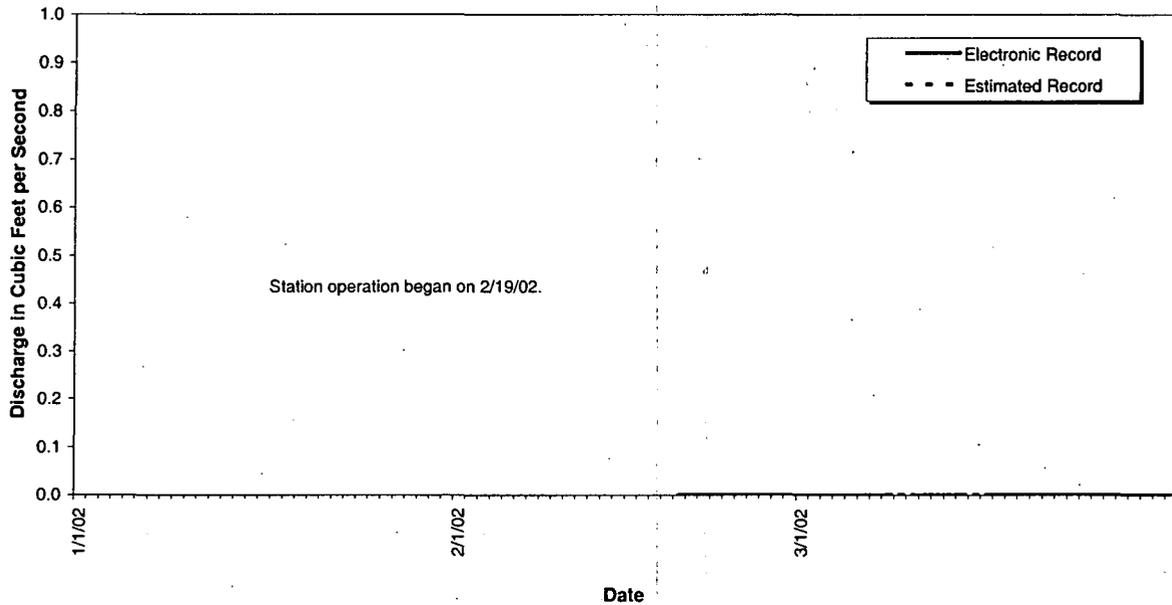


Figure 5-13. Mean Daily Discharge at GS28 Water Year 2002 (January, February, and March)

Table 5-14. Gaging Station GS31: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
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	NA	0.000
30	0.000	NA	0.000
31	0.000	NA	0.000
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.

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.

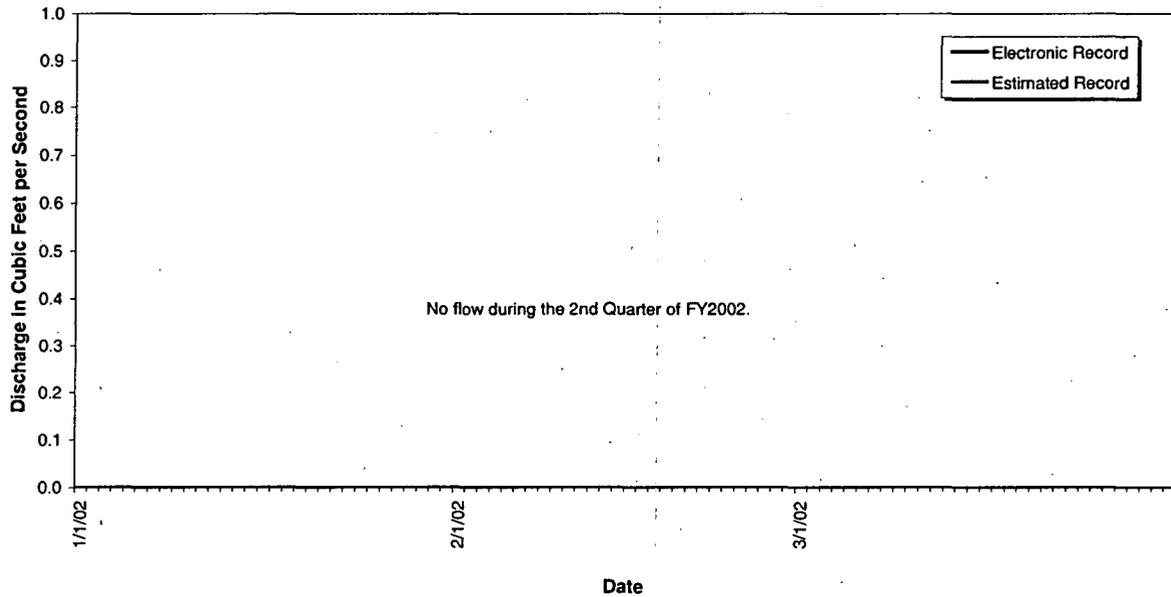


Figure 5-14. Mean Daily Discharge at GS31 Water Year 2002 (January, February, and March)

Table 5-15. Gaging Station GS39: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.000	0.000a	0.000
2	0.000	0.000a	0.000
3	0.000	0.000a	0.000
4	0.000	0.000	0.000
5	0.000	0.000	0.003
6	0.000	0.000	0.001
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	0.001
15	0.000	0.000	0.000a
16	0.000	0.000	0.000a
17	0.000	0.000	0.000a
18	0.000	0.000	0.000a
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000a
22	0.000	0.000	0.000a
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	0.000a
27	0.000	0.000a	0.000
28	0.000	0.000a	0.000
29	0.000	NA	0.000
30	0.000	NA	0.000
31	0.000a	NA	0.000
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	0	0	413
Gallons	0	0	3086
Acre-Feet	0.00	0.00	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.

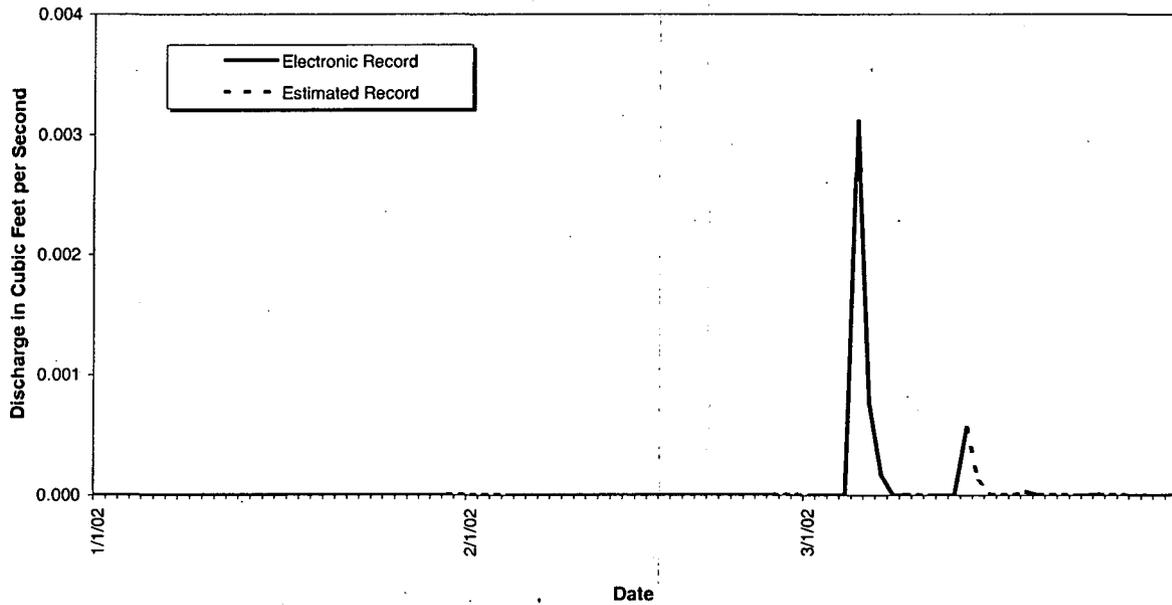


Figure 5-15. Mean Daily Discharge at GS39 Water Year 2002 (January, February, and March)

Table 5-16. Gaging Station GS40: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.015	0.019a	0.030
2	0.025a	0.017a	0.054a
3	0.017a	0.016a	0.037a
4	0.023	0.016a	0.083a
5	0.026	0.019a	0.070
6	0.017	0.018a	0.058
7	0.021	0.019	0.043
8	0.020	0.021a	0.029a
9	0.017	0.021a	0.054a
10	0.074	0.019a	0.037
11	0.041	0.021	0.032
12	0.022	0.021a	0.033
13	0.019	0.018a	0.033
14	0.020a	0.020	0.087
15	0.022a	0.053a	0.053
16	0.024a	0.021	0.072
17	0.025a	0.021	0.040
18	0.025a	0.022	0.046
19	0.024a	0.022	0.055
20	0.023a	0.020	0.036
21	0.022a	0.019	0.038
22	0.024a	0.021	0.038
23	0.040a	0.019	0.038
24	0.025a	0.021	0.039
25	0.034	0.044a	0.042
26	0.023	0.031a	0.030
27	0.020	0.031	0.029
28	0.019	0.033	0.028
29	0.024	NA	0.029
30	0.029	NA	0.029
31	0.025a	NA	0.027
Monthly Average (cfs)	0.025	0.023	0.044

Monthly Discharge

Cubic Feet	67746	55442	116745
Gallons	506775	414734	873311
Acre-Feet	1.56	1.27	2.68

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.

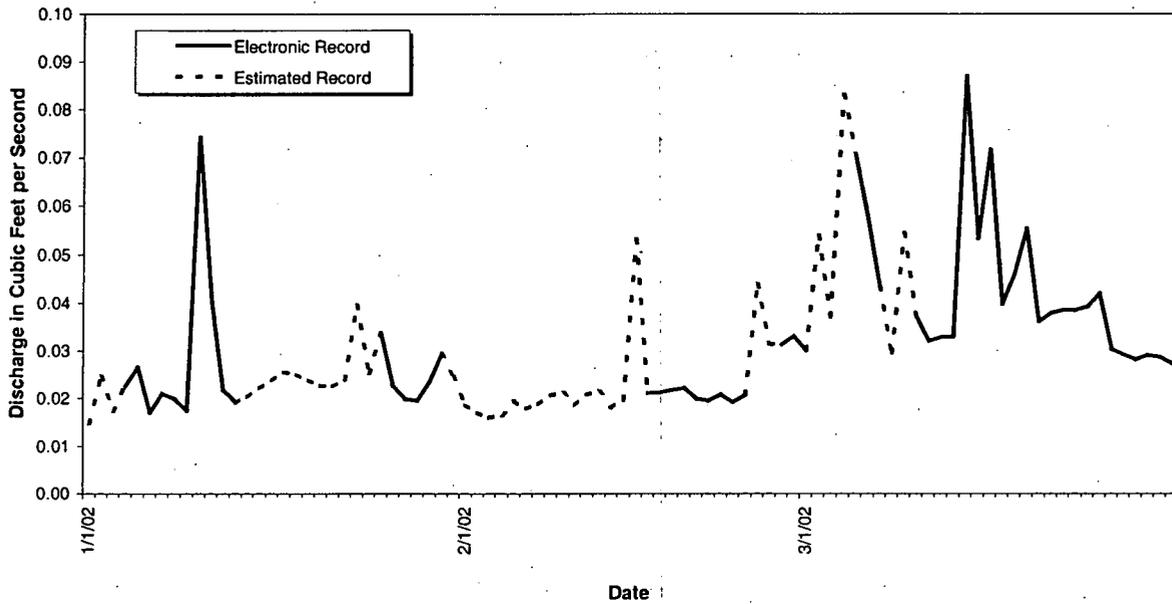


Figure 5-16. Mean Daily discharge at GS40 Water Year 2002 (January, February, and March)

Table 5-17. Gaging Station GS42: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
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	0.000a
16	0.000	0.000	0.000a
17	0.000	0.000	0.000a
18	0.000	0.000	0.000a
19	0.000	0.000	0.000a
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	NA	0.000
30	0.000	NA	0.000
31	0.000	NA	0.000
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.

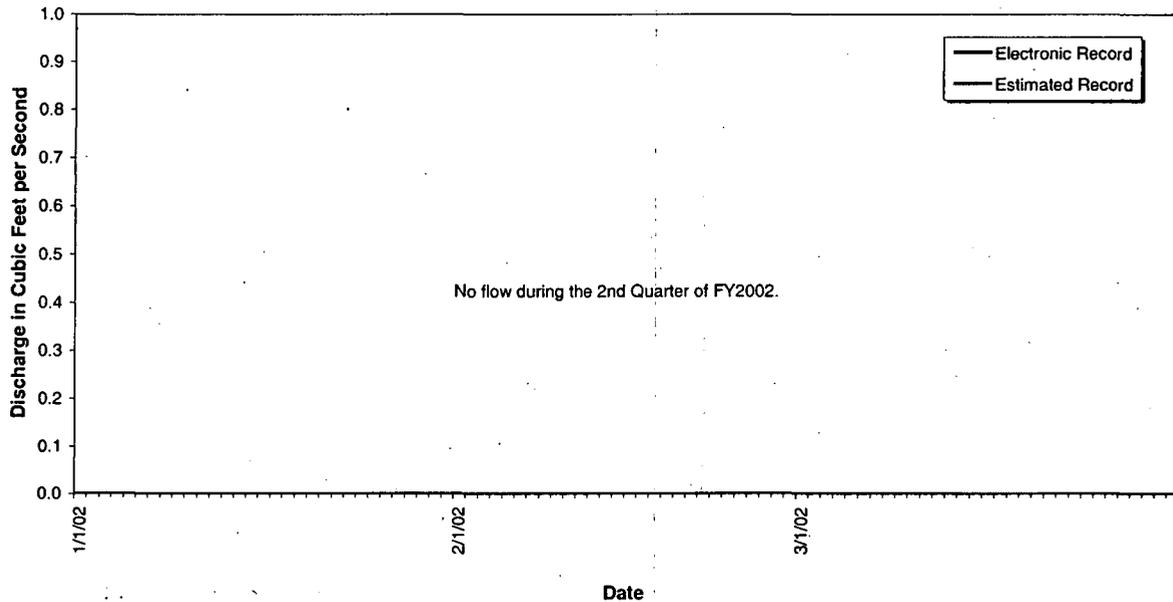


Figure 5-17. Mean Daily Discharge at GS42, Water Year 2002 (January, February, and March)

Table 5-18. Gaging Station GS43: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
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	0.000a
7	0.000	0.000	0.000a
8	0.000	0.000	0.000
9	0.000	0.000	0.000a
10	0.000	0.000	0.000a
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	0.000a
17	0.000	0.000	0.000a
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	0.000a
26	0.000	0.000	0.000a
27	0.000	0.000	0.000
28	0.000	0.000	0.000
29	0.000	NA	0.000
30	0.000	NA	0.000
31	0.000	NA	0.000
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	18	0	9
Gallons	131	0	71
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 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.

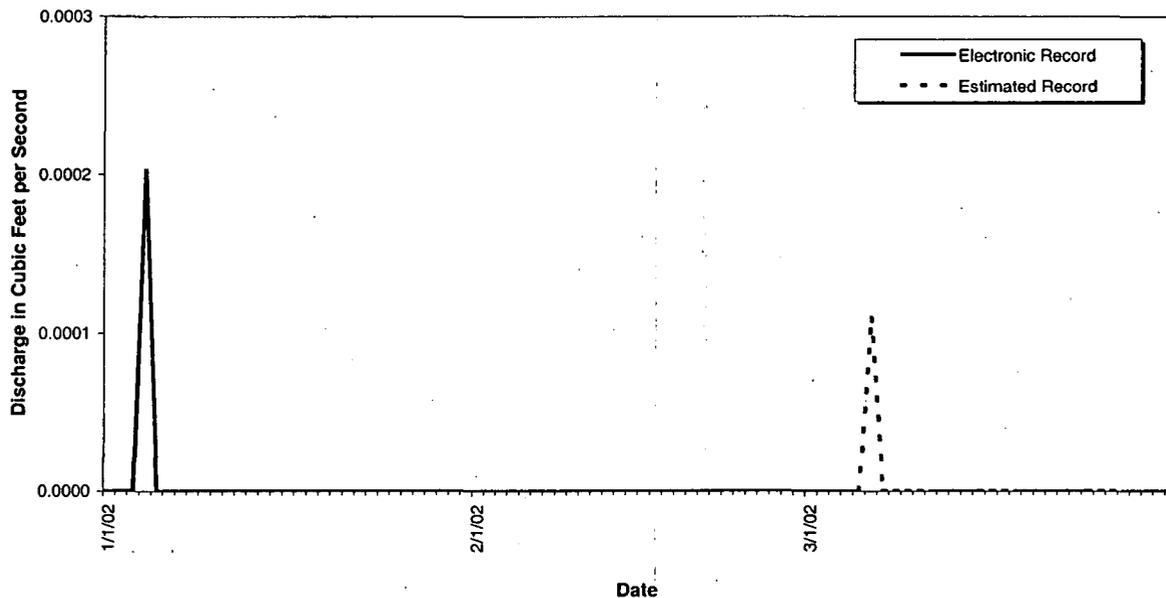


Figure 5-18. Mean Daily Discharge at GS43, Water Year 2002 (January, February, and March)

Table 5-19. Gaging Station GS44 Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.0000	0.0000a	0.0000a
2	0.0000	0.0000a	0.0000a
3	0.0000	0.0000a	0.0012a
4	0.0000	0.0000a	0.0021a
5	0.0000	0.0000a	0.0028a
6	0.0000	0.0001a	0.0016a
7	0.0000	0.0001a	0.0008a
8	0.0000	0.0000a	WR
9	0.0003	WR	WR
10	0.0011a	0.0000a	WR
11	0.0012a	0.0001a	0.0000
12	0.0010a	0.0000a	0.0000
13	0.0007a	0.0000a	0.0000
14	WR	0.0000a	0.0022a
15	WR	WR	0.0010a
16	WR	WR	0.0009a
17	WR	0.0006a	0.0005a
18	WR	0.0007a	WR
19	WR	0.0007a	WR
20	WR	0.0007a	0.0001
21	WR	0.0006a	0.0000
22	WR	0.0004a	0.0000
23	WR	0.0004	0.0000
24	WR	WR	0.0000
25	0.0007	WR	0.0000
26	0.0008a	WR	0.0000
27	0.0007a	WR	0.0000
28	0.0008a	WR	0.0000
29	WR	NA	0.0000
30	WR	NA	0.0000
31	WR	NA	0.0001
Monthly Average (cfs)	0.000	0.000	0.001

Monthly Discharge

Cubic Feet	633	393	1150
Gallons	4737	2938	8599
Acre-Feet	0.01	0.01	0.03

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 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.

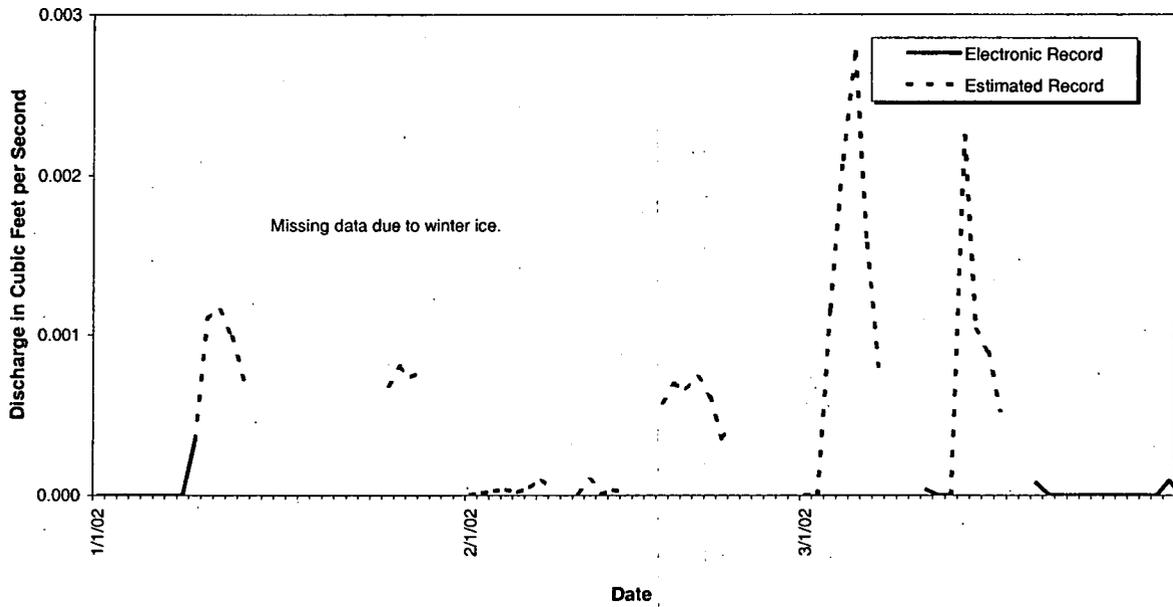


Figure 5-19. Mean Daily Discharge at GS44 Water Year 2002 (January, February, and March)

Table 5-20. Gaging Station GS49 Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.0000	WR	0.0000
2	WR	WR	0.0000
3	WR	0.0000	WR
4	WR	0.0002	WR
5	0.0000	0.0000	0.0034
6	0.0001	WR	0.0027
7	0.0003	WR	0.0001
8	0.0000	0.0000	0.0000
9	0.0000	0.0000	0.0007
10	0.0000	0.0000	0.0003
11	0.0019	0.0000	0.0002
12	0.0011	0.0000	0.0000
13	0.0000	0.0000	0.0000
14	0.0000	0.0000	0.0023
15	0.0000	0.0026	0.0000
16	0.0000	0.0004	0.0027
17	0.0000	0.0000	0.0035
18	0.0000	0.0000	0.0008
19	0.0000	0.0000	0.0024
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	0.0027	0.0000	0.0008
26	0.0007	0.0000	0.0000
27	0.0003	0.0000	0.0000
28	0.0000	0.0002	0.0000
29	0.0000	NA	0.0000
30	0.0000	NA	0.0000
31	0.0047	NA	0.0000
Monthly Average (cfs)	0.000	0.000	0.001

Monthly Discharge

Cubic Feet	1017	293	1713
Gallons	7607	2191	12814
Acre-Feet	0.02	0.01	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.

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.

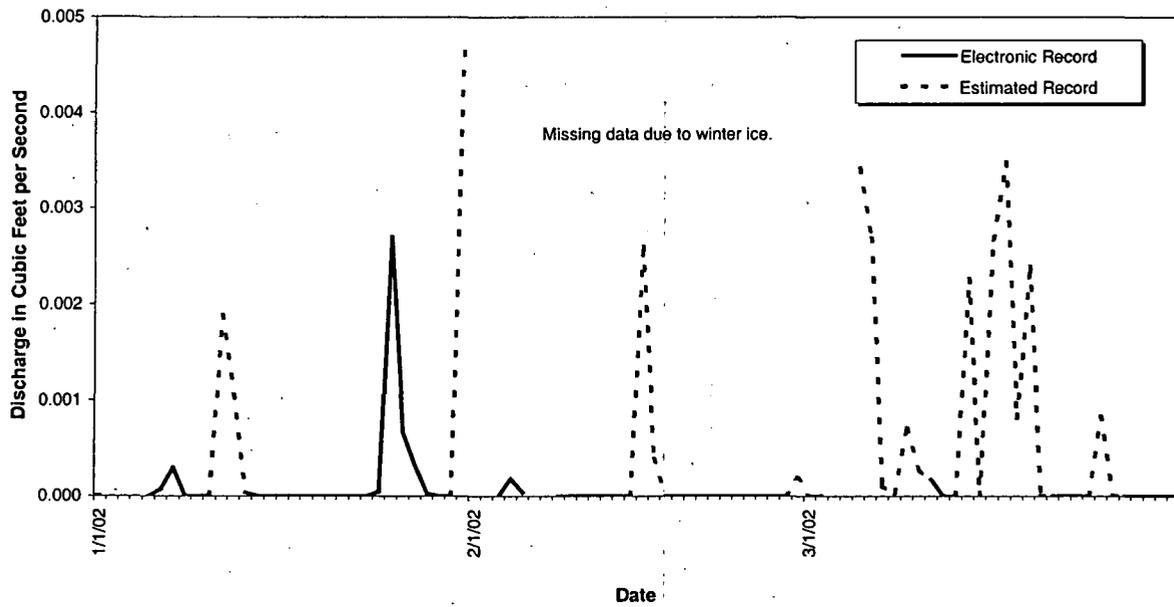


Figure 5-20. Mean Daily Discharge at GS49 Water Year 2002 (January, February, and March)

Table 5-21. Gaging Station GS50 Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
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	NA	0.0000
30	0.0000	NA	0.0000
31	0.0000	NA	0.0000
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.

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.

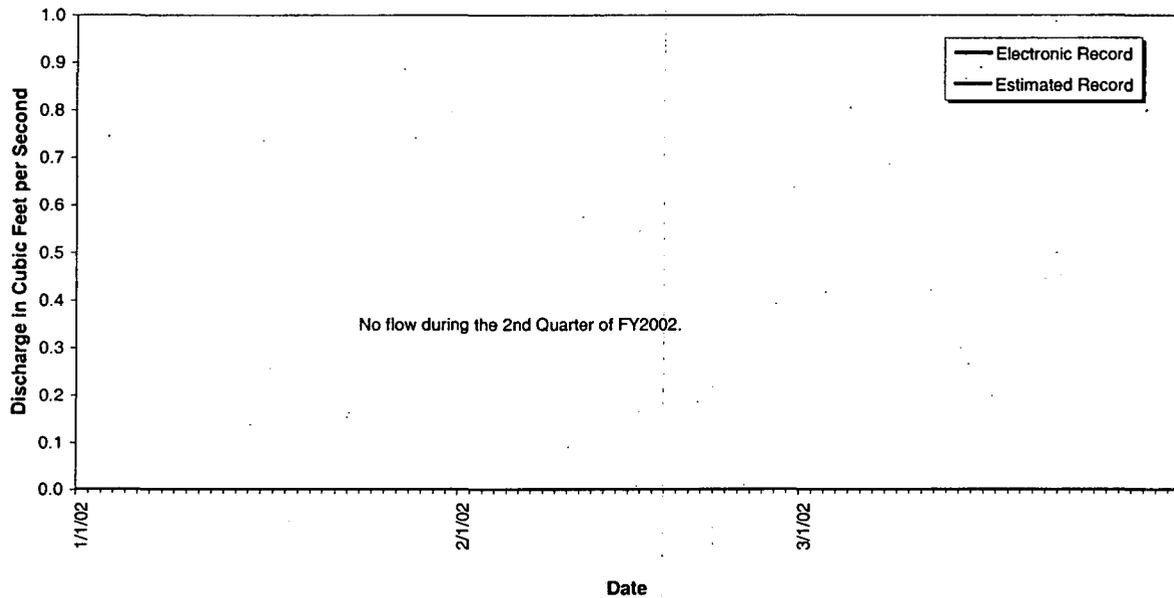


Figure 5-21. Mean Daily Discharge at GS50 Water Year 2002 (January, February, and March)

Table 5-22. Gaging Station GS51: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.0000	0.0000	0.0000
2	0.000	0.0000	0.0000
3	0.000	0.0000	0.0000
4	0.000	0.0000	0.0000
5	0.000	0.0000	0.0000
6	0.000	0.0000	0.0000
7	0.000	0.0000	0.0000
8	0.000	0.0000	0.0000
9	0.000	0.0000	0.0000
10	0.000	0.0000	0.0000
11	0.000	0.0000	0.0000
12	0.000	0.0000	0.0000
13	0.000	0.0000	0.0000
14	0.000	0.0000	0.0000
15	0.000	0.0000	0.0000
16	0.000	0.0000	0.0000
17	0.000	0.0000	0.0000
18	0.000	0.0000	0.0000
19	0.000	0.0000	0.0000
20	0.000	0.0000	0.0000
21	0.000	0.0000	0.0000
22	0.000	0.0000	0.0000
23	0.000	0.0000	0.0000
24	0.000	0.0000	0.0000
25	0.000	0.0000	0.0000
26	0.000	0.0000	0.0000
27	0.000	0.0000	0.0000
28	0.000	0.0000	0.0000
29	0.000	NA	0.0000
30	0.000	NA	0.0000
31	0.000	NA	0.0000
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 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.

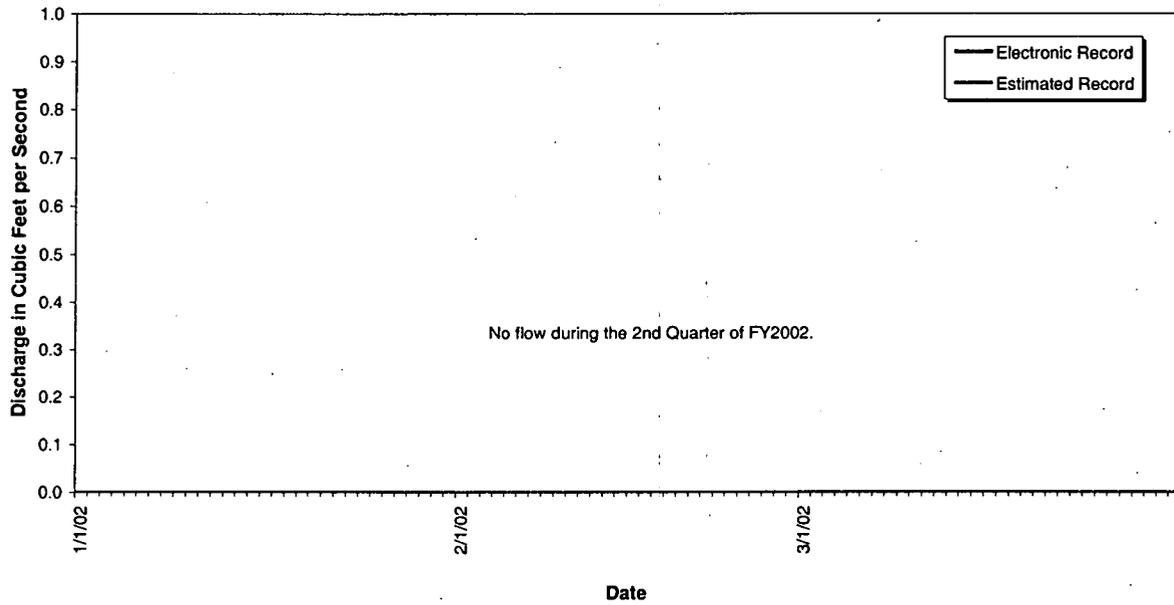


Figure 5-22. Mean Daily Discharge at GS51, Water Year 2002 (January, February, and March)

Table 5-23. Gaging Station GS52: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
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	NA	0.0000
30	0.0000	NA	0.0000
31	0.0000	NA	0.0000
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 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.

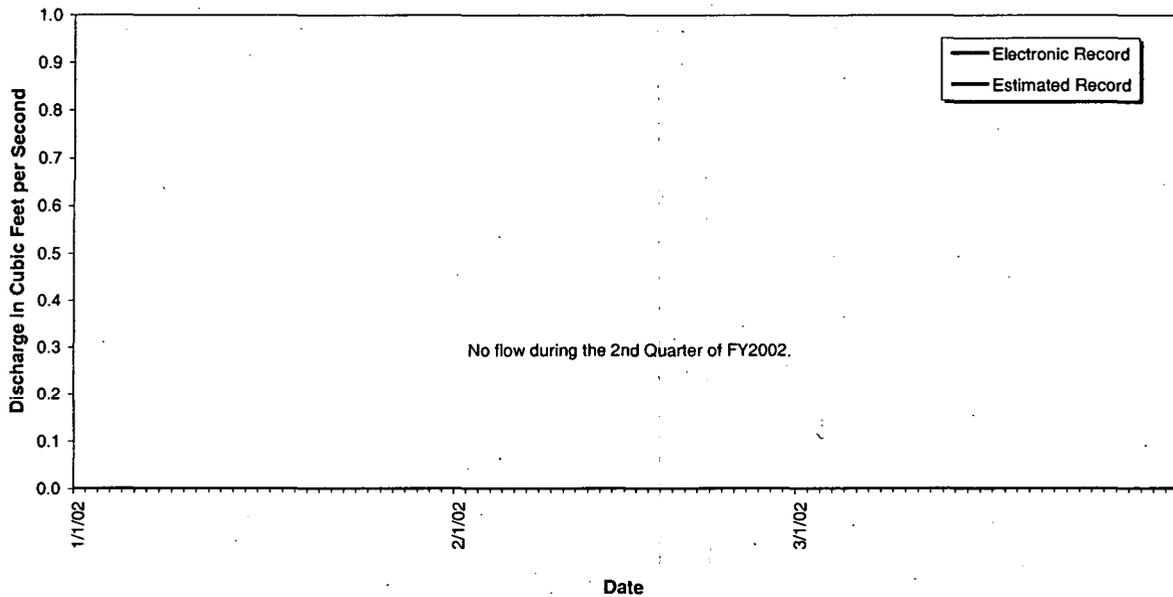


Figure 5-23. Mean Daily Discharge at GS52, Water Year 2002 (January, February, and March)

Table 5-24. Gaging Station GS53: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
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	NA	0.0000
30	0.0000	NA	0.0000
31	0.0000	NA	0.0000
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 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.

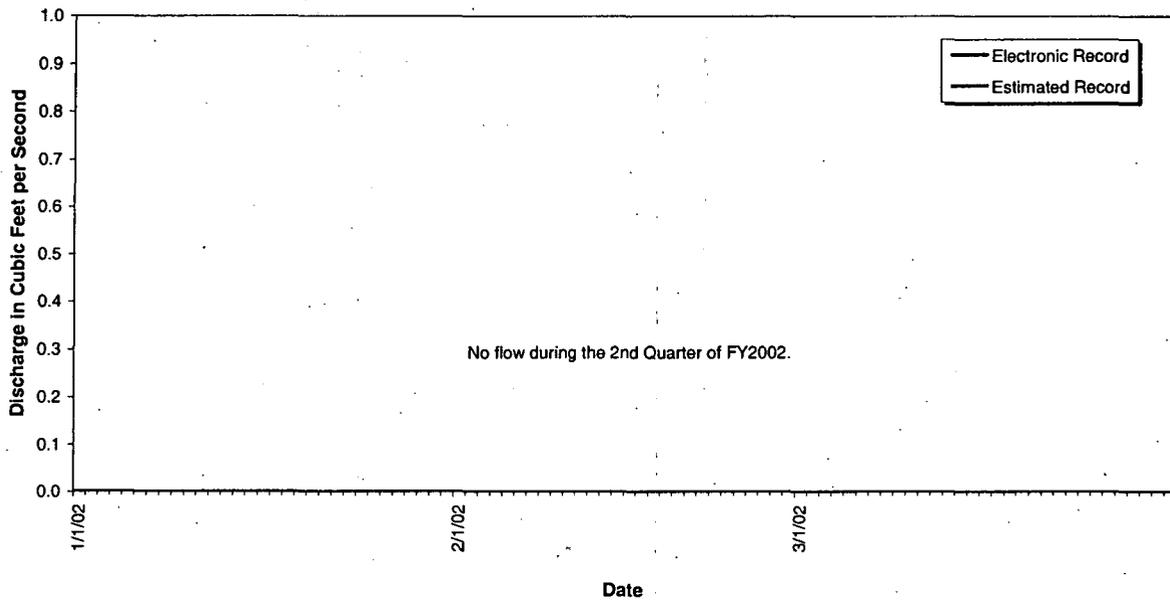


Figure 5-24. Mean Daily Discharge at GS53, Water Year 2002 (January, February, and March)

Table 5-25. Gaging Station GS54: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
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	NA	0.0000
30	0.0000	NA	0.0000
31	0.0000	NA	0.0000
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 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.

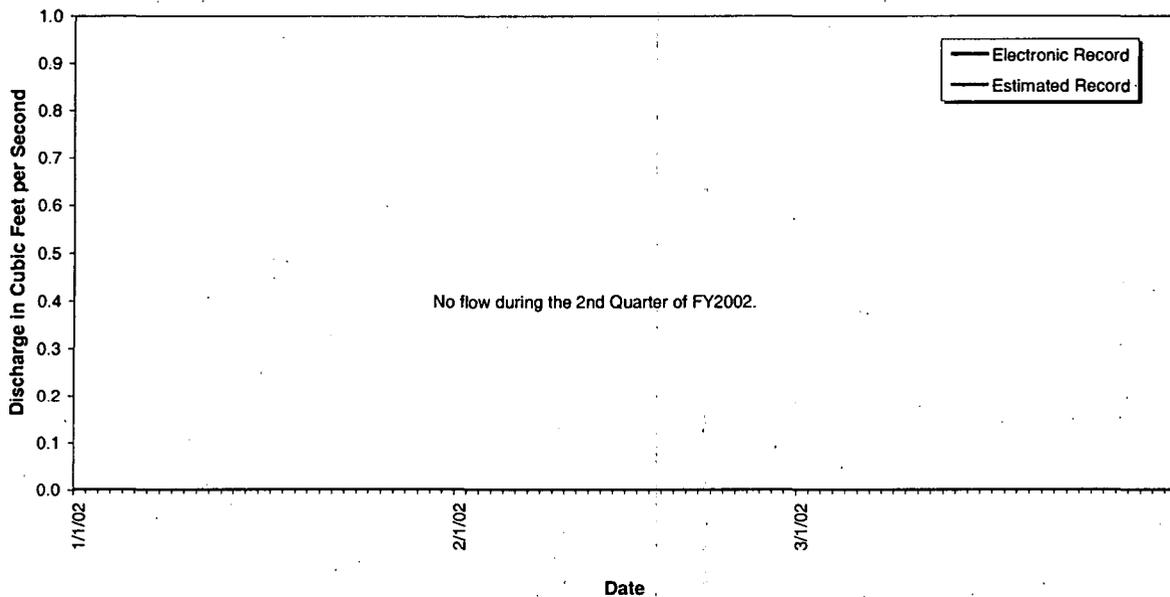


Figure 5-25. Mean Daily Discharge at GS54, Water Year 2002 (January, February, and March)

Table 5-26. Gaging Station GS57: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	No Data	No Data	No Data
2	No Data	No Data	No Data
3	No Data	No Data	No Data
4	No Data	No Data	No Data
5	No Data	No Data	No Data
6	No Data	No Data	No Data
7	No Data	No Data	No Data
8	No Data	No Data	No Data
9	No Data	No Data	No Data
10	No Data	No Data	No Data
11	No Data	No Data	No Data
12	No Data	No Data	No Data
13	No Data	No Data	No Data
14	No Data	No Data	WR
15	No Data	No Data	WR
16	No Data	No Data	0.0114a
17	No Data	No Data	0.0030a
18	No Data	No Data	0.0013a
19	No Data	No Data	0.0046a
20	No Data	No Data	0.0017
21	No Data	No Data	0.0004a
22	No Data	No Data	0.0023a
23	No Data	No Data	0.0024
24	No Data	No Data	0.0001a
25	No Data	No Data	0.0010a
26	No Data	No Data	0.0005a
27	No Data	No Data	0.0000
28	No Data	No Data	0.0000
29	No Data	NA	0.0000
30	No Data	NA	0.0005
31	No Data	NA	0.0005
Monthly Average (cfs)	No Data	No Data	0.002

Monthly Discharge

Cubic Feet	0	0	2571
Gallons	0	0	19234
Acre-Feet	0.00	0.00	0.06

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.

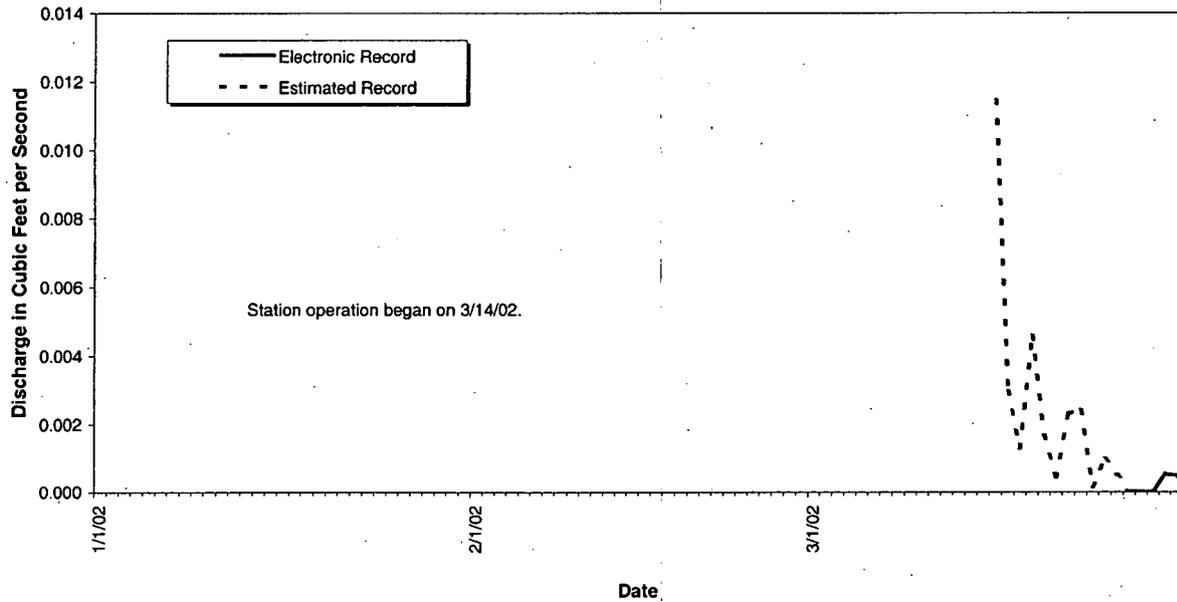


Figure 5-26. Mean Daily Discharge at GS57 Water Year 2002 (January, February, and March)

Table 5-27. Gaging Station 995 POE Mean Daily Discharge (cubic feet per second)^a

Day	Jan-02	Feb-02	Mar-02
1	0.179	0.142	0.128
2	0.192	0.209	0.169
3	0.164	0.188	0.162
4	0.155	0.132	0.235
5	0.229	0.194	0.242
6	0.158	0.218	0.210
7	0.176	0.230	0.232
8	0.242	0.146	0.209
9	0.200	0.171	0.226
10	0.261	0.148	0.184
11	0.142	0.187	0.244
12	0.144	0.238	0.217
13	0.178	0.184	0.252
14	0.174	0.143	0.250
15	0.134	0.138	0.279
16	0.175	0.238	0.364
17	0.182	0.217	0.286
18	0.193	0.158	0.234
19	0.256	0.114	0.340
20	0.226	0.149	0.312
21	0.234	0.161	0.316
22	0.225	0.184	0.248
23	0.235	0.267	0.279
24	0.148	0.162	0.217
25	0.122	0.209	0.238
26	0.167	0.261	0.272
27	0.198	0.259	0.278
28	0.205	0.112	0.237
29	0.159	NA	0.243
30	0.183	NA	0.316
31	0.147	NA	0.268
Monthly Average (cfs)	0.187	0.184	0.248

Monthly Discharge

	Jan-02	Feb-02	Mar-02
Cubic Feet	499591	445744	664312
Gallons	3737200	3334400	4969400
Acre-Feet	11.47	10.23	15.25

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 totalizer 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.

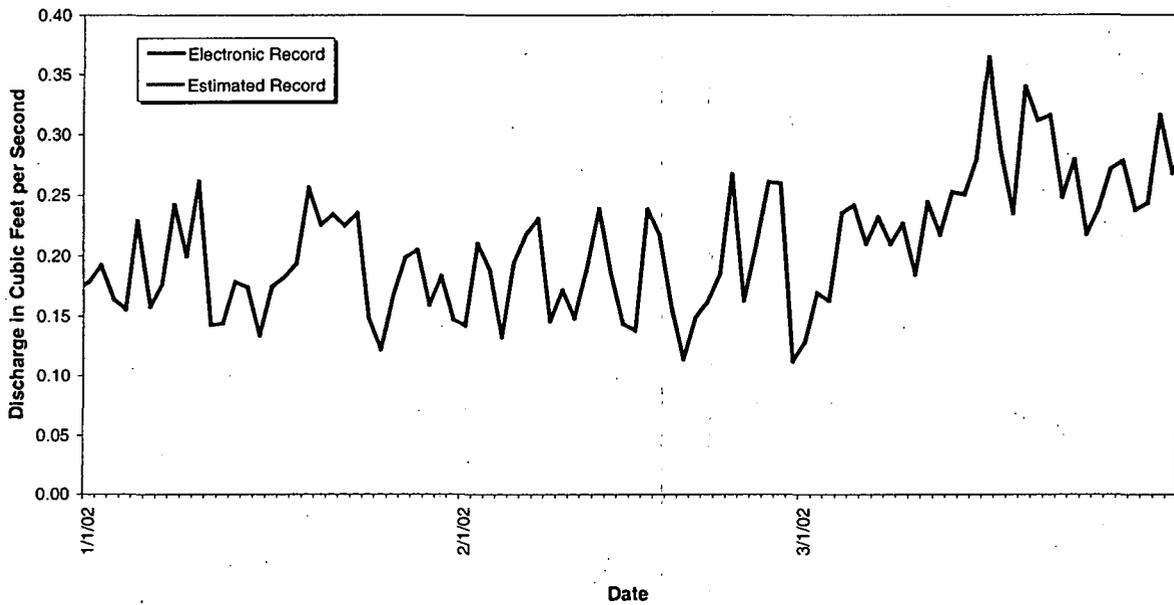


Figure 5-27. Mean Daily Discharge at 995 POE Water Year 2002 (January, February, and March)

Table 5-28. Gaging Station SW022: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
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	0.051
5	0.001	0.000	0.088
6	0.000	0.000	0.065a
7	0.000	0.000	0.033a
8	0.000	0.000	0.006a
9	0.000	0.000	0.038a
10	0.032a	0.000	0.017
11	0.001a	0.000	0.005
12	0.000	0.000	0.002
13	0.000	0.000	0.001a
14	0.000	0.000	0.093a
15	0.000	0.002	0.032a
16	0.000	0.000	0.019a
17	0.000	0.000	0.004a
18	0.000	0.000	0.001a
19	0.000	0.000	0.018
20	0.000	0.000	0.001
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	NA	0.000
30	0.000	NA	0.000
31	0.000	NA	0.000
Monthly Average (cfs)	0.001	0.000	0.015

Monthly Discharge

Cubic Feet	3051	165	40833
Gallons	22823	1238	305456
Acre-Feet	0.07	0.00	0.94

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 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.

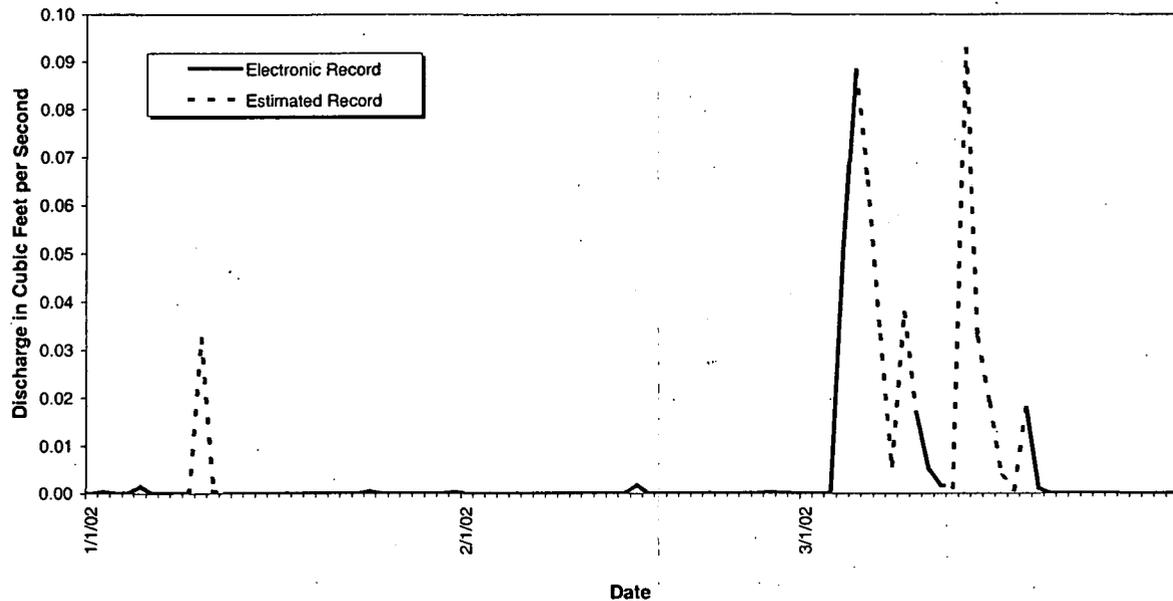


Figure 5-28. Mean Daily Discharge at SW022, Water Year 2002 (January, February, and March)

Table 5-29. Gaging Station SW027: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
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	NA	0.000
30	0.000	NA	0.000
31	0.000	NA	0.000
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.

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.

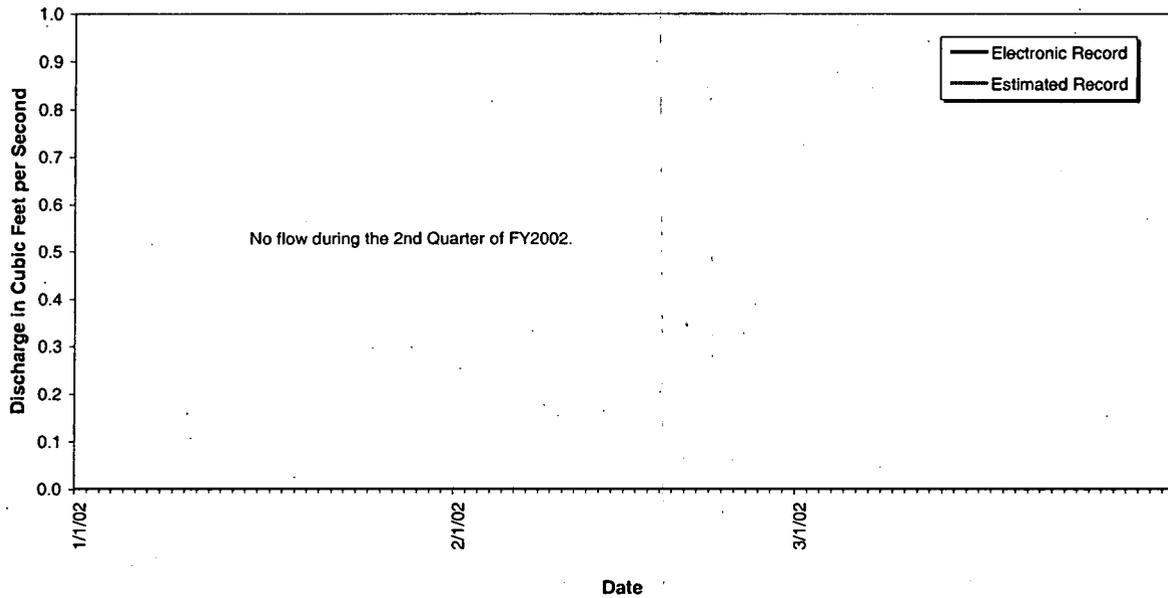


Figure 5-29. Mean Daily Discharge at SW027, Water Year 2002 (January, February, and March)

Table 5-30. Gaging Station SW055: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.0000	0.0000a	0.0000
2	0.0000	0.0000a	0.0000
3	0.0000	0.0000a	0.0000
4	0.0000	0.0000a	0.0000
5	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0002a
8	0.0000	0.0000	0.0000a
9	0.0000	0.0000	0.0000a
10	0.0000a	0.0000	0.0000a
11	0.0000a	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	0.0000a	0.0000a
16	0.0000	0.0000a	0.0000a
17	0.0000	0.0000	0.0000a
18	0.0000	0.0000	0.0000a
19	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
21	0.0000	0.0000	0.0000a
22	0.0000	0.0000	0.0000a
23	0.0000	0.0000	0.0000
24	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000a
26	0.0000a	0.0000	0.0000a
27	0.0000a	0.0000a	0.0000
28	0.0000	0.0000a	0.0000
29	0.0000	NA	0.0000
30	0.0000	NA	0.0000
31	0.0000	NA	0.0000
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	0	0	16
Gallons	0	0	119
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 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.

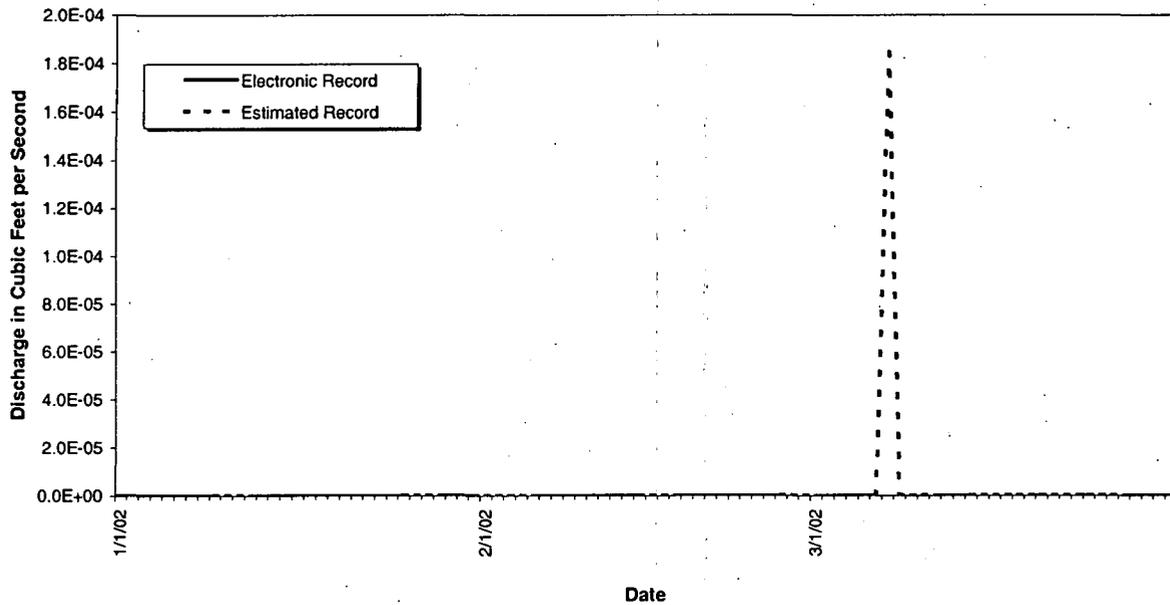


Figure 5-30. Mean Daily Discharge at SW055, Water Year 2002 (January, February, and March)

Table 5-31. Gaging Station SW091: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.0000	0.0000	0.000
2	0.0000	0.0000	0.000
3	0.0000	0.0000	0.000
4	0.0000	0.0000	0.000
5	0.0000	0.0000	0.000
6	0.0000	0.0000	0.000
7	0.0000	0.0000	0.000a
8	0.0000	0.0000a	0.000
9	0.0000	0.0000	0.000
10	0.0000	0.0000	0.000
11	0.0000	0.0000	0.000
12	0.0000	0.0000	0.000
13	0.0000a	0.0000	0.000
14	0.0000	0.0000	0.000
15	0.0000	0.0000	0.000
16	0.0000	0.0000	0.000
17	0.0000	0.0000	0.000
18	0.0000	0.0000	0.000
19	0.0000	0.0000	0.000
20	0.0000	0.0000	0.000
21	0.0000	0.0000	0.000
22	0.0000	0.0000	0.000
23	0.0000	0.0000	0.000
24	0.0000	0.0000	0.000
25	0.0000	0.0000	0.000
26	0.0000	0.0000	0.000
27	0.0000	0.0000	0.000
28	0.0000	0.0000	0.000
29	0.0000	NA	0.000
30	0.0000	NA	0.000
31	0.0000	NA	0.000
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	0	0	6
Gallons	0	0	43
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 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.

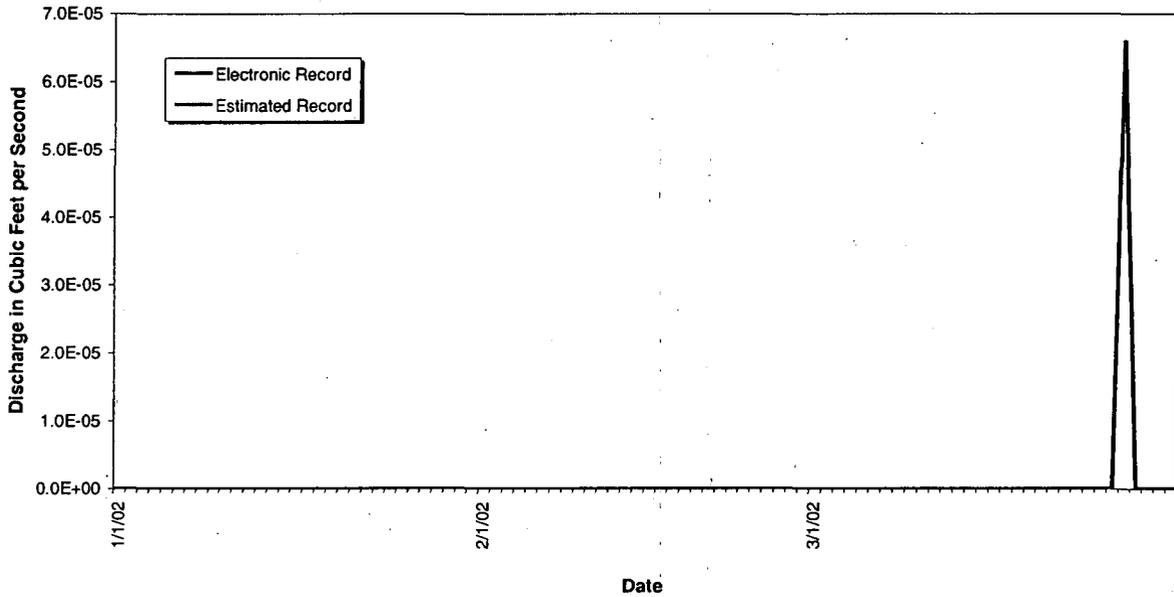


Figure 5-31. Mean Daily Discharge at SW091, Water Year 2002 (January, February, and March)

Table 5-32. Gaging Station SW093: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.047	0.072	0.063
2	0.044	0.080	0.105
3	0.055	0.074	0.218
4	0.055	0.074	0.182
5	0.055	0.082	0.188
6	0.059	0.077	0.203
7	0.080	0.084	0.201
8	0.088	0.087	0.120
9	0.080	0.077	0.128
10	0.135	0.069	0.126
11	0.093	0.071	0.134
12	0.084	0.062	0.125
13	0.076	0.060	0.111
14	0.070	0.061	0.195
15	0.064	0.069	0.161
16	0.067	0.060	0.160
17	0.061	0.078	0.125
18	0.061	0.083	0.110
19	0.068	0.082	0.144
20	0.070	0.079	0.116
21	0.077	0.077	0.092
22	0.078	0.082	0.096
23	0.076	0.094	0.102
24	0.073	0.083	0.091
25	0.102	0.073	0.089
26	0.127	0.074	0.090
27	0.089	0.068	0.083
28	0.079	0.069	0.085
29	0.074	NA	0.083
30	0.070	NA	0.086
31	0.065	NA	0.090
Monthly Average (cfs)	0.075	0.075	0.126

Monthly Discharge

Cubic Feet	200651	181352	337345
Gallons	1500973	1356604	2523519
Acre-Feet	4.61	4.16	7.74

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

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.

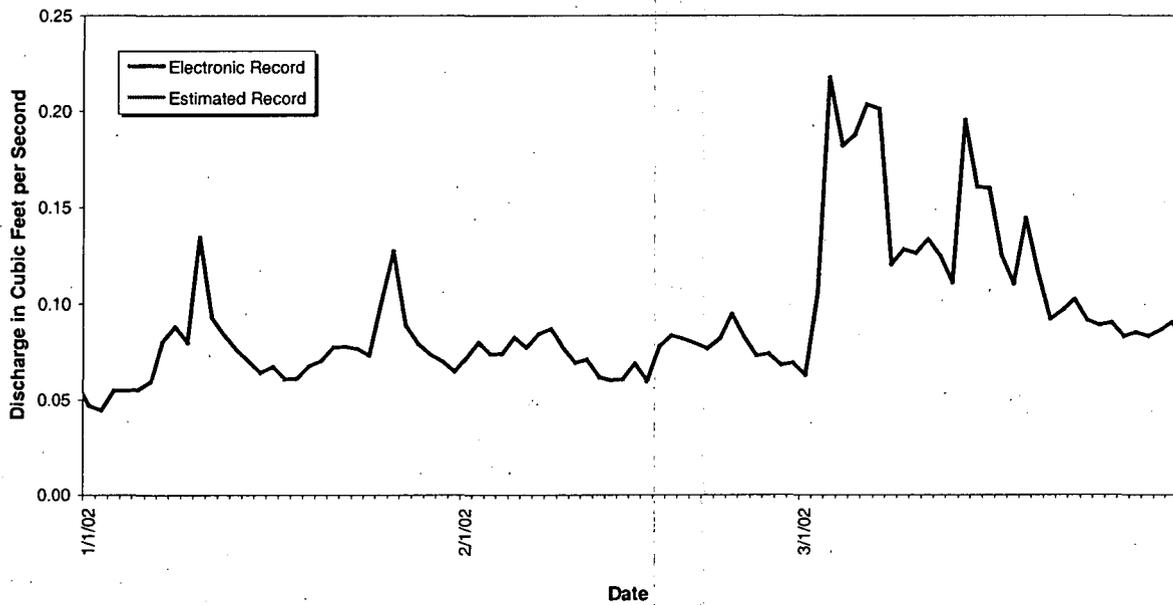


Figure 5-32. Mean Daily Discharge at SW093, Water Year 2002 (January, February, and March)

Table 5-33. Gaging Station SW118: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	WR	WR	WR
2	WR	WR	WR
3	WR	WR	WR
4	WR	WR	WR
5	WR	WR	WR
6	WR	WR	WR
7	WR	WR	WR
8	WR	WR	WR
9	WR	WR	WR
10	0.028	WR	WR
11	0.014	WR	WR
12	WR	WR	WR
13	WR	WR	WR
14	WR	WR	0.0309a
15	WR	WR	0.0480a
16	WR	WR	0.0358a
17	WR	WR	0.0221a
18	WR	WR	0.0177a
19	WR	0.007a	0.0205
20	WR	0.005a	0.0174
21	WR	WR	0.0204a
22	WR	0.001a	0.0143a
23	WR	WR	0.0108
24	WR	WR	0.0093
25	WR	WR	0.0074a
26	WR	WR	0.0087a
27	WR	WR	0.0085
28	WR	WR	0.0064
29	WR	NA	0.0070
30	WR	NA	0.0083
31	WR	NA	0.0079
Monthly Average (cfs)	0.021	0.005	0.017

Monthly Discharge

Cubic Feet	3646	1167	26027
Gallons	27276	8732	194694
Acre-Feet	0.08	0.03	0.60

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.

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.

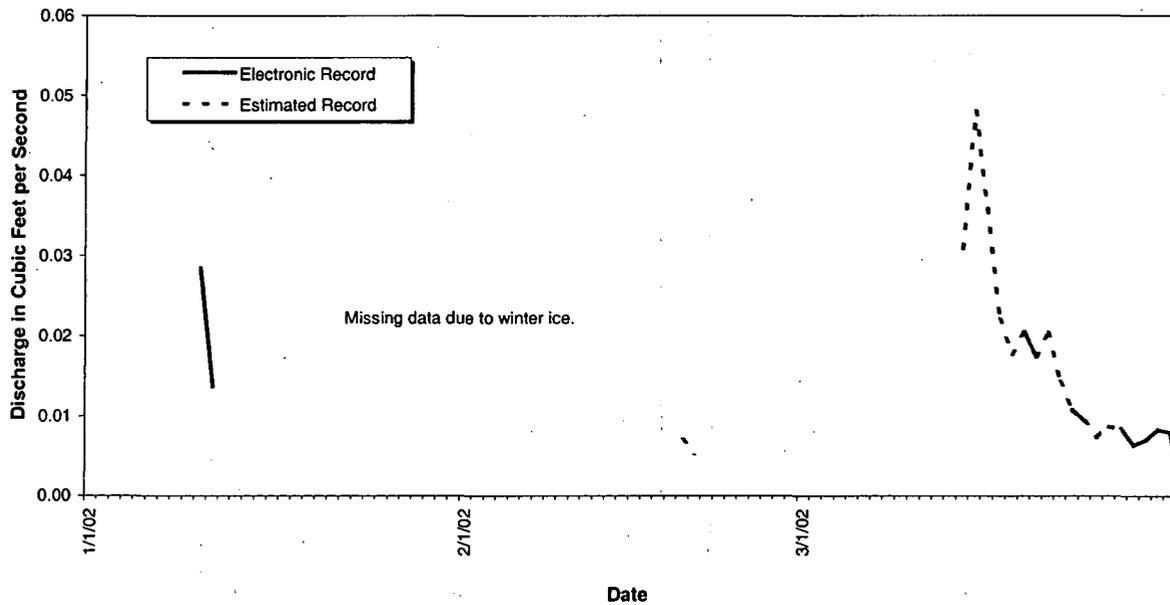


Figure 5-33. Mean Daily Discharge at SW118, Water Year 2002 (January, February, and March)

Table 5-34. Gaging Station SW119: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	0.0000	0.000	0.0000
2	0.0000	0.000	0.0000
3	0.0000	0.000	0.0000
4	0.0000	0.000	0.0000
5	0.0000	0.000	0.0000
6	0.0000	0.000	0.0000
7	0.0000	0.000	0.0001
8	0.0000	0.000	0.0000
9	0.0000	0.000	0.0000
10	0.0000	0.000	0.0000
11	0.0000	0.000	0.0000
12	0.0000	0.000	0.0000
13	0.0000	0.000	0.0000
14	0.0000	0.000	0.0000
15	0.0000	0.000	0.0000
16	0.0000	0.000	0.0000
17	0.0000	0.000	0.0000
18	0.0000	0.000	0.0000
19	0.0000	0.000	0.0000
20	0.0000	0.000	0.0000
21	0.0000	0.000	0.0000
22	0.0000	0.000	0.0000
23	0.0000	0.000	0.0000
24	0.0000	0.000	0.0000
25	0.0000	0.000	0.0000
26	0.0000	0.000	0.0000
27	0.0000	0.000	0.0000
28	0.0000	0.000	0.0000
29	0.0000	NA	0.0000
30	0.0000	NA	0.0000
31	0.0000	NA	0.0000
Monthly Average (cfs)	0.000	0.000	0.000

Monthly Discharge

	Jan-02	Feb-02	Mar-02
Cubic Feet	3	92	7
Gallons	25	685	55
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.

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.

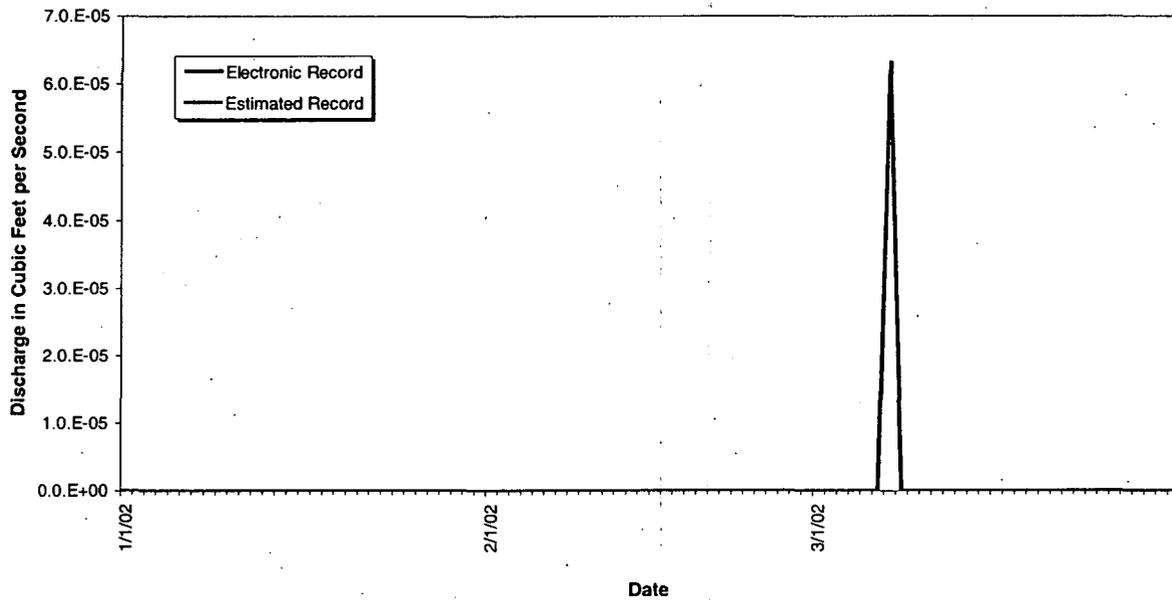


Figure 5-34. Mean Daily Discharge at SW119, Water Year 2002 (January, February, and March)

Table 5-35. Gaging Station SW120: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
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	0.0020
6	0.0000	0.0000	0.0176a
7	0.0000	0.0000	0.0240a
8	0.0000	0.0002	0.0070a
9	0.0000	0.0000	0.0027a
10	0.0000	0.0000	0.0046a
11	0.0000	0.0000	0.0045
12	0.0000	0.0000	0.0000
13	0.0001	0.0000	0.0000
14	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0010a
17	0.0000	0.0000	0.0000a
18	0.0000	0.0000	0.0000
19	0.0000	0.0000	0.0000
20	0.0001	0.0000	0.0000
21	0.0000	0.0000	0.0000
22	0.0000	0.0001	0.0000
23	0.0000	0.0000	0.0000
24	0.0000	0.0000	0.0000
25	0.0212	0.0000	0.0000
26	0.0505a	0.0000	0.0000
27	0.0010a	0.0000	0.0002
28	0.0000	0.0000	0.0000
29	0.0000	NA	0.0000
30	0.0000	NA	0.0000
31	0.0000	NA	0.0000
Monthly Average (cfs)	0.002	0.000	0.002

Monthly Discharge

Cubic Feet	6292	26	5505
Gallons	47068	197	41179
Acre-Feet	0.14	0.00	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.

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.

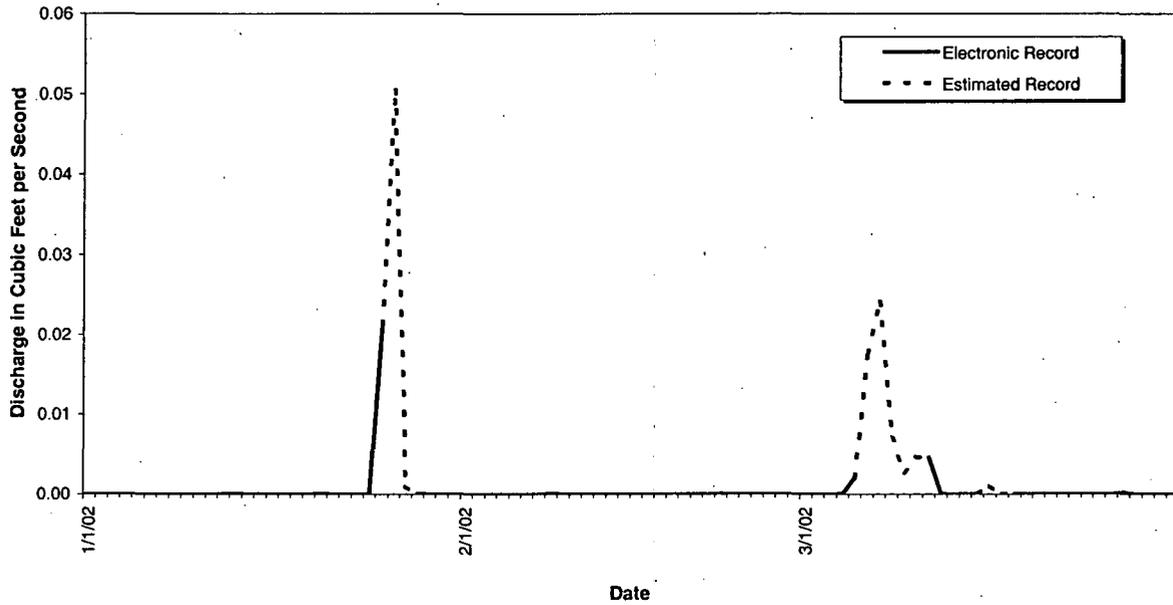


Figure 5-35. Mean Daily Discharge at SW120, Water Year 2002 (January, February, and March)

Table 5-36. Gaging Station SW134: Mean Daily Discharge (cubic feet per second)

Day	Jan-02	Feb-02	Mar-02
1	WR	WR	WR
2	WR	WR	WR
3	WR	WR	WR
4	WR	WR	WR
5	WR	WR	WR
6	0.0000	WR	WR
7	0.0000	WR	WR
8	0.0000	WR	0.0000
9	0.0000	WR	0.0000
10	0.0000	WR	0.0000
11	0.0000	WR	0.0000
12	0.0000	WR	0.0972
13	0.0000	WR	0.0857
14	0.0597	WR	0.0000
15	0.0000	WR	0.0000
16	WR	WR	0.0000
17	WR	0.000	0.0000
18	WR	0.000	0.0000
19	WR	0.000	0.0000
20	WR	0.000	0.0746
21	WR	0.000	0.0000
22	WR	0.000	0.0000
23	WR	0.000	0.0000
24	WR	0.000	0.0000
25	WR	0.000	0.0000
26	WR	WR	0.0426
27	0.0000	WR	0.0682
28	0.1120	WR	0.0000
29	0.0000	NA	0.0378
30	WR	NA	0.0137
31	WR	NA	0.0000
Monthly Average (cfs)	0.013	0.000	0.017

Monthly Discharge

Cubic Feet	14838	0	36262
Gallons	110994	0	271261
Acre-Feet	0.34	0.00	0.83

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

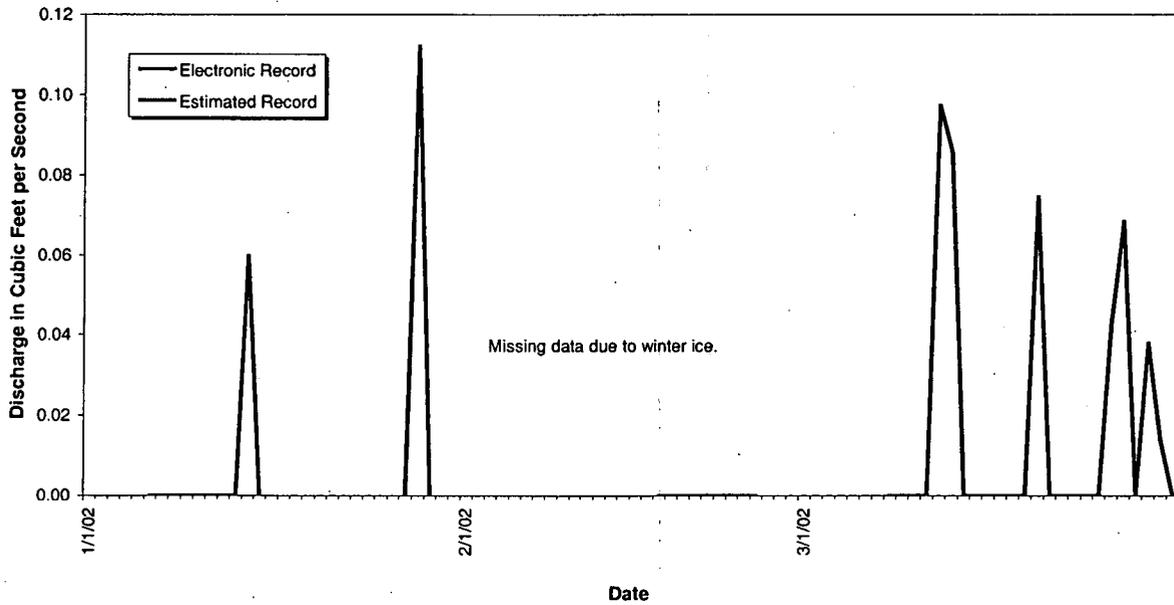


Figure 5-36. Mean Daily Discharge at SW134, Water Year 2002 (January, February, and March)

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5.2 WATER QUALITY DATA

Table 5-37. Radionuclides, Water Year 2002 (January, February, and March)

Location	Sample Dates	Result	Result	Result	Result
		Pu-239, -240 [pCi/l]	Am-241 [pCi/l]	Total Uranium [pCi/l]	Tritium [pCi/l]
GS01	1/2 - 1/17/02	-0.001	0.005	a	54
GS01	1/17 - 1/21/02	-0.001	-0.002	a	b
GS01	1/21 - 2/4/02	-0.002	0.004	a	25
GS01	2/4 - 2/18/02	-0.001	-0.002	a	-26
GS01	2/18 - 3/4/02	-0.003	0.010	a	82
GS01	3/4 - 3/14/02	0.005	-0.004	a	53
GS01	3/14 - 3/22/02	-0.003	-0.002	a	202
GS01	3/22 - 4/8/02	b	b	a	-6
GS03	1/24 - 1/28/02	0.016	-0.004	a	-27
GS03	1/28 - 2/5/02	0.006	0.004	a	50
GS03	2/5 - 2/22/02	-0.001	-0.005	a	-28
GS03	2/22 - 3/21/02	c	c	a	d
GS03	3/21 - 3/25/02	0.046	-0.002	a	50
GS03	3/25 - 4/3/02	0.004	-0.002	a	25
GS08	1/24 - 1/28/02	-0.001	0.008	0.815	a
GS08	1/28 - 2/4/02	0.007	0.003	0.997	a
GS08	3/21 - 3/25/02	-0.002	0.003	0.936	a
GS08	3/25 - 4/2/02	0.004	-0.002	0.774	a
GS10	1/9 - 2/4/02	0.019	0.029	4.772	a
GS10	2/4 - 2/28/02	0.022	0.004	6.127	a
GS10	2/28 - 3/14/02	0.070	0.054	3.393	a
GS10	3/14 - 4/2/02	0.042	0.028	6.149	a
GS22	11/15/01 - 1/17/02	-0.005	0.005	0.838	a
GS22	1/17 - 4/5/02	b	b	b	a
GS32	1/10/02	0.260	0.262	3.170	52
GS32	3/5/02	0.081	0.266	2.095	152
GS39	9/13/01 - 5/16/02	b	b	b	a
GS40	12/24/01 - 1/21/02	0.004	0.011	11.174	55
GS40	1/21 - 2/6/02	0.019	0.004	4.877	-99
GS40	2/6 - 3/13/02	0.011	-0.002	3.188	53

- a Not applicable
- b Incomplete analysis
- c Non-sufficient quantity

Table 5-35. Radionuclides, Water Year 2002 (January, February, and March), continued

Location	Sample Dates	Result	Result	Result	Result
		Pu-239, -240 [pCi/l]	Am-241 [pCi/l]	Total Uranium [pCi/l]	Tritium [pCi/l]
GS40	3/13 - 5/3/02	b	b	b	b
GS43	7/15/01 -	d	d	d	a
GS44	11/12/01 - 5/1/02	c	c	c	c
GS44	5/1/02 -	d	d	d	d
GS49	11/18/01 - 1/25/02	0.004	-0.002	0.140	0
GS49	1/25 - 4/21/02	0.003	0.003	0.645	102
GS50	8/9/01 -	d	d	d	a
GS58	3/19/02	0.003	-0.005	4.898	a
GS58	3/21/02	-0.002	-0.004	6.124	a
SW022	12/17/01 - 3/11/02	-0.001	0.004	1.725	a
SW022	3/11 - 5/14/02	b	b	b	a
SW027	8/9/01 - 5/12/02	0.009	-0.003	0.428	a
SW055	5/28/01 - *	3.160	0.557	2.908	a
SW093	1/9 - 1/25/02	0.006	0.017	3.355	a
SW093	1/25 - 2/11/02	0.014	0.021	3.182	a
SW093	2/11 - 2/22/02	0.014	0.069	4.045	a
SW093	2/22 - 3/6/02	0.004	0.020	3.334	a
SW093	3/6 - 3/14/02	0.018	0.009	2.230	a
SW093	3/14 - 3/27/02	-0.004	-0.002	3.315	a
SW093	3/27 - 4/8/02	b	b	b	a
SW119	8/9/01 - *	d	d	d	a
SW120	9/13/01 - 3/5/02	0.026	0.054	2.463	56
SW120	3/5 - 3/27/02	0.006	0.001	3.395	80
SW120	3/27/02 -	d	d	d	d
995POE	12/31/01 - 2/7/02	0.000	0.000	0.212	0
995POE	2/7 - 3/12/02	0.011	0.004	0.267	53
995POE	3/12 - 4/9/02	0.000	0.015	0.247	0

- a Not applicable
- b Incomplete analysis
- c Non-sufficient quantity
- d Composite sample in progress

Table 5-38. POE Metals, Water Year 2002 (January, February, and March)

Location	Sample Dates	Analyte Be:ug/L	Analyte Dissolved Cd ug/L	Analyte Cr ug/L	Analyte Dissolved Ag ug/L
GS10	1/9 - 2/4/02	0.06	0.09	0.87	<0.12
GS10	2/4 - 2/28/02	0.19	0.08	0.64	<0.12
GS10	2/28 - 3/14/02	0.19	0.40	2.00	<0.12
GS10	3/14 - 4/2/02	0.16	0.15	1.10	<0.12
SW027	8/9/01 - 5/12/02	0.40	<0.08	5.60	<0.12
SW093	1/9 - 1/25/02	0.09	<0.08	0.86	<0.12
SW093	1/25 - 2/11/02	<0.02	0.11	<0.20	<0.12
SW093	2/11 - 2/22/02	0.19	<0.08	0.53	<0.12
SW093	2/22 - 3/6/02	0.23	0.23	1.4	<0.12
SW093	3/6 - 3/14/02	0.14	0.18	0.42	<0.12
SW093	3/14 - 3/27/02	0.15	0.14	2.3	<0.12
SW093	3/27 - 4/8/02	0.06	<0.08	0.67	<0.12

Table 5-39. Other Metals, Water Year 2002 (January, February, and March)

Analyte ug/l	Result GS22, 1/17/02 – 4/5/02	Result GS32, 1/10/02	Result GS32, 3/5/02	Result GS40, 1/21/02 – 2/6/02	Result GS40, 2/6/02 – 3/13/02
Aluminum	918	5440	5270	638	403
Antimony	undetect	10.5	9.1	15.7	9.9
Arsenic	undetect	2.8	2.8	1.2	1.5
Barium	158	361	159	893	553
Beryllium	0.15	0.19	0.4	0.19	undetect
Cadmium	0.27	2.1	0.75	2.5	0.74
Calcium	86900	133000	143000	326000	176000
Chromium	3.1	11.7	11.8	0.9	4
Cobalt	2	3.1	2.2	1.4	1.2
Copper	6.4	38.5	26.2	5.8	4.6
Iron	1080	7070	5600	2120	2580
Lead	2.9	13.4	13.7	1.2	undetect
Lithium	32.3	131	177	76.6	33.7
Magnesium	13700	15500	7570	78700	49700
Manganese	64.6	448	173	1010	2450
Mercury	undetect	undetect	undetect	undetect	undetect
Molybdenum	0.99	3.4	4	1.3	1.2
Nickel	1.6	11.2	8.9	4.2	6.5
Potassium	5840	25700	16700	40500	16400
Selenium	undetect	undetect	undetect	undetect	undetect
Silver	undetect	0.3	undetect	undetect	undetect
Sodium	717000	3360000	882000	1610000	682000
Strontium	489	1070	1820	2700	1510
Thallium	undetect	1.8	undetect	1.9	undetect
Tin	undetect	undetect	2.3	undetect	1.9
Vanadium	2.8	11.3	16	0.88	0.96
Zinc	240	6780	1980	866	367

Table 5-39. Other Metals, Water Year 2002 (January, February, and March) continued

Analyte ug/l	Result GS40, 3/13/02 - 5/13/02	Result GS43, 7/15/02	Result GS44, 11/12/01 - 5/1/02	Result GS44, 5/1/02 -	Result GS49, 01/25/02 - 4/21/02
Aluminum	a	c	b	c	2620
Antimony	a	c	b	c	0.76
Arsenic	a	c	b	c	1.4
Barium	a	c	b	c	49.7
Beryllium	a	c	b	c	0.14
Cadmium	a	c	b	c	0.28
Calcium	a	c	b	c	11900
Chromium	a	c	b	c	5.8
Cobalt	a	c	b	c	0.59
Copper	a	c	b	c	34.8
Iron	a	c	b	c	1910
Lead	a	c	b	c	2.4
Lithium	a	c	b	c	3.4
Magnesium	a	c	b	c	1740
Manganese	a	c	b	c	57.1
Mercury	a	c	b	c	undetect
Molybdenum	a	c	b	c	1
Nickel	a	c	b	c	3
Potassium	a	c	b	c	2250
Selenium	a	c	b	c	1.1
Silver	a	c	b	c	undetect
Sodium	a	c	b	c	91500
Strontium	a	c	b	c	55.5
Thallium	a	c	b	c	undetect
Tin	a	c	b	c	undetect
Vanadium	a	c	b	c	4.6
Zinc	a	c	b	c	250

- a Incomplete analysis
- b Non-sufficient quantity
- c Composite sample in progress

Table 5-39. Other Metals, Water Year 2002 (January, February, and March) continued

Analyte ug/l	Result GS50, 8/9/01	Result GS58, 3/19/02	Result GS58, 3/21/02	Result SW119, 8/9/01 *	Result SW120, 9/13/01 – 3/5/02
Aluminum	b	188	69.1	a	6420
Antimony	b	0.85	0.66	a	1.3
Arsenic	b	undetect	undetect	a	1.6
Barium	b	82	99.5	a	98.1
Beryllium	b	undetect	0.07	a	0.31
Cadmium	b	0.13	undetect	a	0.04
Calcium	b	44000	53000	a	44300
Chromium	b	6.8	2.9	a	6.4
Cobalt	b	0.25	undetect	a	1.4
Copper	b	4.8	2.6	a	9.8
Iron	b	183	61.9	a	4120
Lead	b	2.7	0.93	a	5.8
Lithium	b	12.5	16.2	a	20.3
Magnesium	b	16500	21400	a	9510
Manganese	b	17.2	5.6	a	111
Mercury	b	undetect	undetect	a	0.05
Molybdenum	b	2.8	3.3	a	1.6
Nickel	b	15.6	1.1	a	4.3
Potassium	b	3430	4050	a	7490
Selenium	b	undetect	1.3	a	1.5
Silver	b	undetect	undetect	a	0.09
Sodium	b	52400	62500	a	141000
Strontium	b	502	623	a	256
Thallium	b	undetect	undetect	a	0.7
Tin	b	undetect	undetect	a	0.41
Vanadium	b	2.4	2.4	a	15.7
Zinc	b	76.7	57.1	a	79.8

- a Incomplete analysis
- b Composite sample in progress
- * Sampler waiting to trigger on next flow period

Table 5-39. Other Metals, Water Year 2002 (January, February, and March) continued

Analyte ug/l	Result SW120, 3/5/02 – 3/27/02	Result SW120, 3/27/02 -
Aluminum	114	a
Antimony	0.97	a
Arsenic	undetect	a
Barium	275	a
Beryllium	undetect	a
Cadmium	0.15	a
Calcium	125000	a
Chromium	0.81	a
Cobalt	0.26	a
Copper	4.1	a
Iron	163	a
Lead	undetect	a
Lithium	49	a
Magnesium	22400	a
Manganese	179	a
Mercury	undetect	a
Molybdenum	1.2	a
Nickel	1.5	a
Potassium	18500	a
Selenium	undetect	a
Silver	undetect	a
Sodium	620000	a
Strontium	711	a
Thallium	undetect	a
Tin	1.3	a
Vanadium	0.62	a
Zinc	34	a

a Composite sample in progress

Table 5-40. Water Quality Parameters, Water Year 2002 (January, February, and March)

Location	Sample Dates	Analyte Hardness mg/L
GS10	1/9 - 2/4/02	469
GS10	2/4 - 2/28/02	437
GS10	2/28 - 3/14/02	361
GS10	3/14 - 4/2/02	493
SW027	8/9/01 - 5/12/02	73
SW093	1/9 - 1/25/02	380
SW093	1/25 - 2/11/02	325
SW093	2/11 - 2/22/02	371
SW093	2/22 - 3/6/02	394
SW093	3/6 - 3/14/02	455
SW093	3/14 - 3/27/02	499
SW093	3/27 - 4/8/02	417

Table 5-41. Buffer Zone/Hydrologic Water Quality Parameters, Water Year 2002 (January, February, and March)

Analyte mg/l	Result SW-134, 1/14/02
TSS	18
Calcium	29.1
Magnesium	6.78
Sodium	16.4
Potassium	1.61
Chloride	11.9
Fluoride	0.48
SO ₄	38.2
HCO ₃	90.6



6.0 INCIDENTAL WATERS

6.1 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 6-1. Incidental Waters Routing Matrix

Incidental Water Routing	Routing Criteria	Treatment Processes
Ground/Storm Drain	<ul style="list-style-type: none"> Water meets discharge limits per Incidental Waters procedure 	N/A
Building 995 Waste Water Treatment Plant (WWTP)	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> 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
Building 374	<ul style="list-style-type: none"> Water above discharge to ground limits Water not accepted by WWTP Water has radionuclides, but no organic constituents 	Flash evaporation (Steam-heated reactor with spray evaporation)

6.2 QUARTERLY INCIDENTAL WATER DISPOSITIONS

Twenty three (23) incidental waters were sampled/dispositioned during the second quarter of FY02. The following table summarizes the location and route of disposal.

Table 6-2. Quarterly Incidental Water Dispositions FY2002 (January, February, and March)

Location/Building	Location Type	Location Description	# of Incidental Waters	Route of Disposal
664	Drum	Leaking roof in 664	1	Ground or Storm Drain
881	Drum	Rainwater from roof	1	Ground or Storm Drain
14	Electrical Pit	Electrical pit/vault W. Central & 1st St.	1	B995
371	Manhole	#2 North of B371	1	B891
440	Steam Condensate	Condensate Lines in B440	1	Ground or Storm Drain
771C	Excavation	In ground between 771C and 770	1	Ground or Storm Drain
5	Manhole	# 5 North of B865	1	B891
123	Excavation	SW corner of Building	1	B891
124	Building Pit	Pump house North of Cedar St. & South of B124	1	Ground or Storm Drain
371	Walkway	20' from SE corner	1	Ground or Storm Drain
T124A	Grate	Tanker in lot North of T124A	1	Ground or Storm Drain
875	Excavation	West of 875	1	Ground or Storm Drain
664	Tarmac	Tarmac NE of B664	1	To Ground or Storm Drain
440	Fire Suppression System	White 5 gallon bucket in room 123	1	B995
442	Excavation	Excavation W of 442	1	B995
443	Utility Pit	Telecom/Utility Pit	1	Ground or Storm Drain
371	Fire Suppression System	North side of Building	1	Ground or Storm Drain
884	Excavation	NE of B884	1	Ground or Storm Drain

Table 6-2. Quarterly Incidental Waters Disposition FY02 (January, February, and March), con't.

Location/Building	Location Type	Location Description	# of Incidental Waters	Route of Disposal
966	Secondary Containment	Black polyliner acting as Secondary Containment	1	To B995
123	Excavation	West of 123 near 3rd	1	Ground or Storm Drain
891	Secondary Containment	Secondary Containment around T201-T204	1	Ground or Storm Drain
966	Sump	Grated sump in 966 area	1	Ground or Storm Drain
280	Fire Suppression System	Tank holding suppression water on 280 pad	1	Ground or Storm Drain

The 12 incidental waters requiring treatment were routed to the following Site treatment facilities:

- Building 995 – WWTP 4
- Building 891 – CWTF 3
- Building 374 0



