INDUSTRIAL AREA IM/IRA SURFACE WATER MONITORING

MONTHLY STATUS REPORT

MARCH 1995

U.S. DEPARTMENT OF ENERGY

Rocky Flats Plant

Golden, Colorado

ENVIRONMENTAL PROTECTION MANAGEMENT DEPARTMENT

SURFACE WATER

April 27, 1995

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1. INTRODUCTION

The Interim Measure/Interim Remedial Action/Decision Document (IM/IRA/DD) for the Industrial Area at the Rocky Flats Environmental Technology Site (RFETS) was prepared in accordance with the Rocky Flats Plant Interagency Agreement (IAG), dated January 22, 1991, and applicable regulatory guidance documents. The objective of the Industrial Area IM/IRA/DD is to ensure that environmental monitoring is adequate to support decontamination and decommisioning (D&D) and other nonroutine activities within the Industrial Area at RFETS. To achieve this objective, a monitoring safety net approach is used around the RFETS Industrial Area to monitor for, protect against, and respond to any actual or potential contaminant releases.

The following elements relating to surface water monitoring are detailed in the IM/IRA/DD:

- Surface water monitoring in areas of concern, which previously focused on the terminal ponds (and other sites in the Buffer Zone), will be expanded to include the Industrial Area.

- Surface water quality and hydraulic flow conditions will be studied in the Industrial Area to establish baseline conditions.

- Monitoring systems for air and surface water use state-of-the-art technologies to accomplish plant transition monitoring objectives. Technical improvements for monitoring building D&D activities will be reviewed regularly in an attempt to improve air and surface water monitoring capabilities.

- Verification monitoring for D&D activities is the second and outer layer of environmental surveillance that will verify that D&D contaminant pathway protection procedures and site-specific monitoring activities are effective.

- The type and extent of verification monitoring will depend on the type of D&D activity being performed and the assessed environmental hazard associated with that activity.

- A statistically based methodology has been identified to develop site-specific baseline conditions for environmental media at D&D activity locations and to determine when pre-programmed response actions are needed.

EG&G, Environmental Protection Department, Surface Water is responsible for the implementation of surface water monitoring activities required by the Industrial Area IM/IRA/DD. The report contained herein provides a monthly summary of the highlights and analytical results of this activity for the month of January 1995. Figure 1-1 shows the location surface water monitoring sites discussed in this report. Figure 1-2 shows the Industrial Area subbasins and hydrologic routing. Figure 1-3 shows a close-up of gaging stations GS27 and GS28 which support D&D operations at Building 889 and the Industrial Area IM/IRA Pilot Project.

2. HIGHLIGHTS

The following activities occurred during the period from March 1, 1995 to March 31, 1995:

- Surface Water personnel completed HazCom and ER QA/QC computer based training. This training was required by the ER Readiness Assessment Document for the IA IM/IRA Surface Water Monitoring Program.

- Gaging stations GS27 and GS28 (see Figure 1-3) were installed and instrumented. Equipment includes: cutthroat flumes; flow meters; automatic samplers; automatic VOC samplers; and radio telemetry hardware. Collection of discharge record began on March 8, 1995.

- A shipment of flumes was received from Free Flow Inc. to be used at gaging stations GS22, GS23, GS24, and GS25.

- Gaging stations SW022 and SW998 were upgraded. Equipment included: equipment shelters; automatic samplers; automatic VOC samplers.

- Gaging station GS10, SW093, and SW027 were upgraded. Equipment included: equipment shelters, automatic samplers.

- Two radio telemetry systems were received from Geomation Inc.

- Two Recorder® water quality probes were received from Hydrolab Inc. These probes will be deployed at Tier II gaging stations GS27 and GS28 to collect real-time temperature, conductivity, and pH data.

- A shipment of ISCO equipment was received, thus fulfilling ISCO equipment requirements.

- Surface Water personnel attended a Pre-Evolution Briefing on March 21, regarding installation of flumes on the 881 Hillside. All paperwork was completed and work commenced that day.

- A 1 foot H flume was installed on the 18" cmp at gaging station GS25.

- A 1 foot H flume was installed in the gully draining the area east of the Solar Ponds gaging station SW091.

- A 1.5 foot H flume was installed on the apron of the 400 Area culvert (gaging station GS22) where it outfalls to the SID.

- Dedicated solar power systems for each site were received from Applied Power Inc.

- Surface Water personnel attended a one-on-one factory training course at ISCO Inc. in Lincoln, Nebraska. The training will enhance the ability of Surface Water personnel to effectively operate, maintain, and repair ISCO equipment.

3. DATA SUMMARY

All discharge data provided in Monthly Status Reports are **preliminary and subject to revision**. Final data will be delivered in the Annual Report.

3.1 Tier 1: Industrial Area Outfalls

The objective of the Tier I Industrial Area gaging stations is to monitor and characterize surface water leaving the Industrial Area and determine if D&D activities have impacted surface water. These gaging stations monitor six (6) of the seven (7) major pathways discussed in the Industrial Area IM/IRA/DD.

3.1.1 Gaging Station GS10

Location:

- 39° 53' 35.11"N 105° 11' 26.6"W
- South Walnut Creek, above the Pond B-1 Bypass; co-located with SW023

Drainage Characteristics:

- Pathway 2
- Total and Effective Area: 0.281 $mi.^2$ = 179.8 ac (approximately 78% impervious)
- Sub-basins: CSWAB1, CSWAB2, CSWAB3, CSWAB4, CSWAB5, CSWAA2, CSWAA3, CSWAA4, CSWAA5, CSWAA6 (Figure 1-2)
- Description: GS10 lies on South Walnut Creek just above the B-1 Bypass. The basin consists of the central and southern area of the Industrial Area (total of 140ac 100% impervious).
- Areas draining to this site: 900, 800, 700, 600, 500, 400, 300, 100

Hardware Configuration:

- Primary Device: 9½" Parshall flume
- Flow Meter: ISCO® Model 3230 (bubbler)
- Sampler: ISCO® Model 3700R Refrigerated
- Radio Telemetry: No
- Power: DC solar power system
- Water Quality Parameters: None

Discharge Data

Table 3-1. GS10 Mean Daily Discharge Data

Date	Mean CFS	Min. CFS	Max. CFS	Discharge
3/1/95	0.063	0.053	0.108	5432
3/2/95	0.048	0.000	0.448	4169
3/3/95	0.041	0.000	0.116	3566
3/4/95	0.054	0.044	0.063	4651
3/5/95	0.052	0.043	0.154	4526
3/6/95	0.356	0.060	2.958	30758
3/7/95	0.104	0.060	0.195	8995
3/8/95	0.119	0.059	0.554	10308
3/9/95	0.075	0.062	0.105	6485
3/10/95	0.065	0.054	0.122	5646
3/11/95	0.059	0.053	0.090	5064
3/12/95	0.057	0.047	0.074	4887
3/13/95	0.055	0.047	0.062	4732
3/14/95	0.054	0.046	0.063	4644
3/15/95	0.060	0.053	0.137	5225
3/16/95	0.083	0.053	0.644	7142
3/17/95	0.081	0.062	0.367	7032
3/18/95	0.061	0.054	0.072	5293
3/19/95	0.057	0.047	0.066	4882
3/20/95	0.056	0.049	0.068	4825
3/21/95	0.053	0.044	0.059	4550
3/22/95	0.053	0.046	0.060	4572
3/23/95	0.052	0.045	0.060	4453
3/24/95	0.048	0.037	0.061	4138
3/25/95	0.044	0.039	0.054	3841
3/26/95	0.132	0.050	0.531	11429
3/27/95	0.089	0.050	0.318	7659
3/28/95	0.203	0.072	0.985	17511
3/29/95	0.137	0.067	0.837	11797
3/30/95	0.130	0.061	0.425	11269
3/31/95	0.085	0.057	0.118	7315
Monthly Values				
Mean	0.085	0.049	0.322	7316
Min.	0.041	0.000	0.054	3566
Max.	0.356	0.072	2.958	30758

Total Discharge: 226798 Cubic Feet

KEY: BD = bad data; *italics* = estimated data from field observations and discharge record at adjacent gages

Figure 3-1. GS10 Monthly Discharge

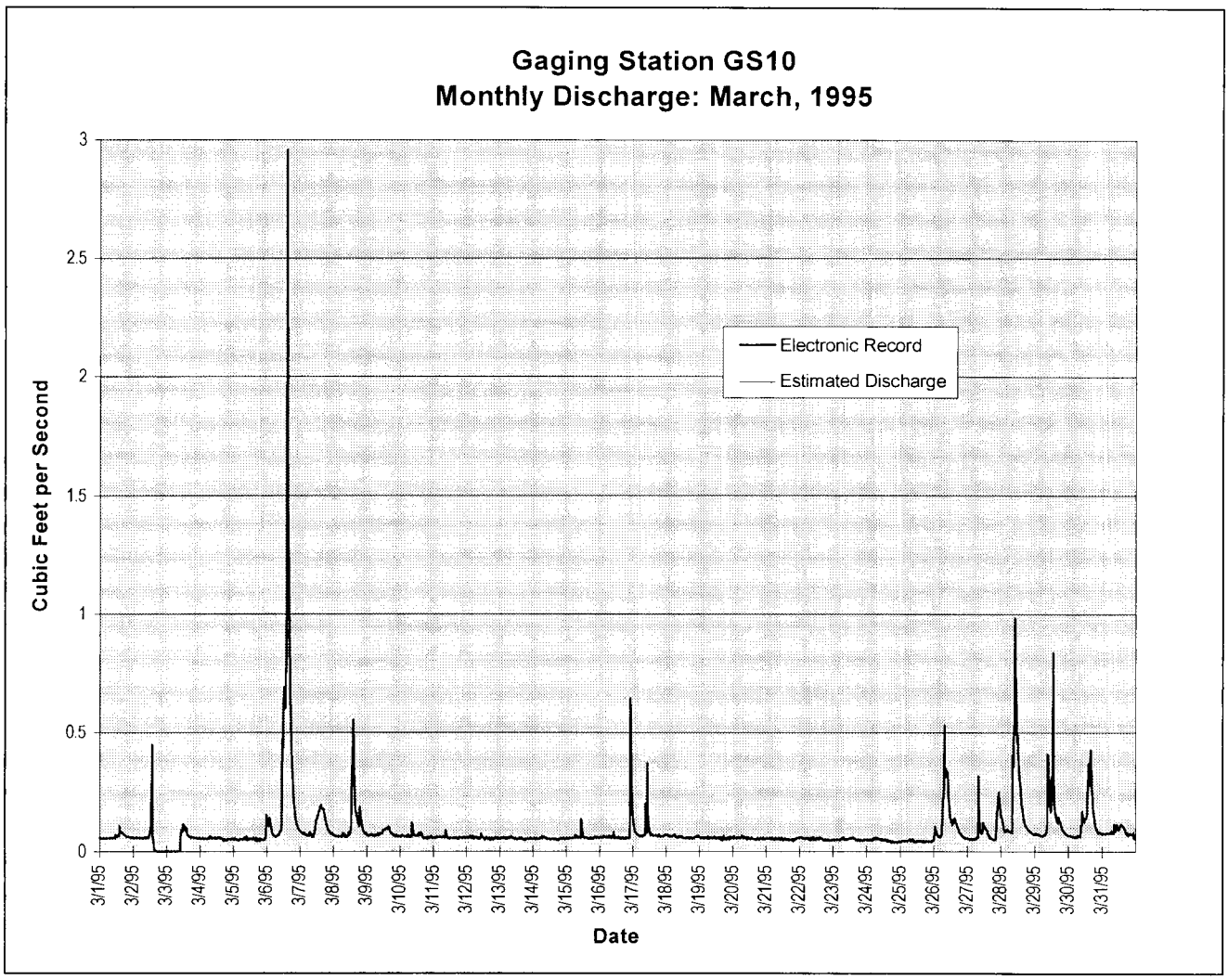
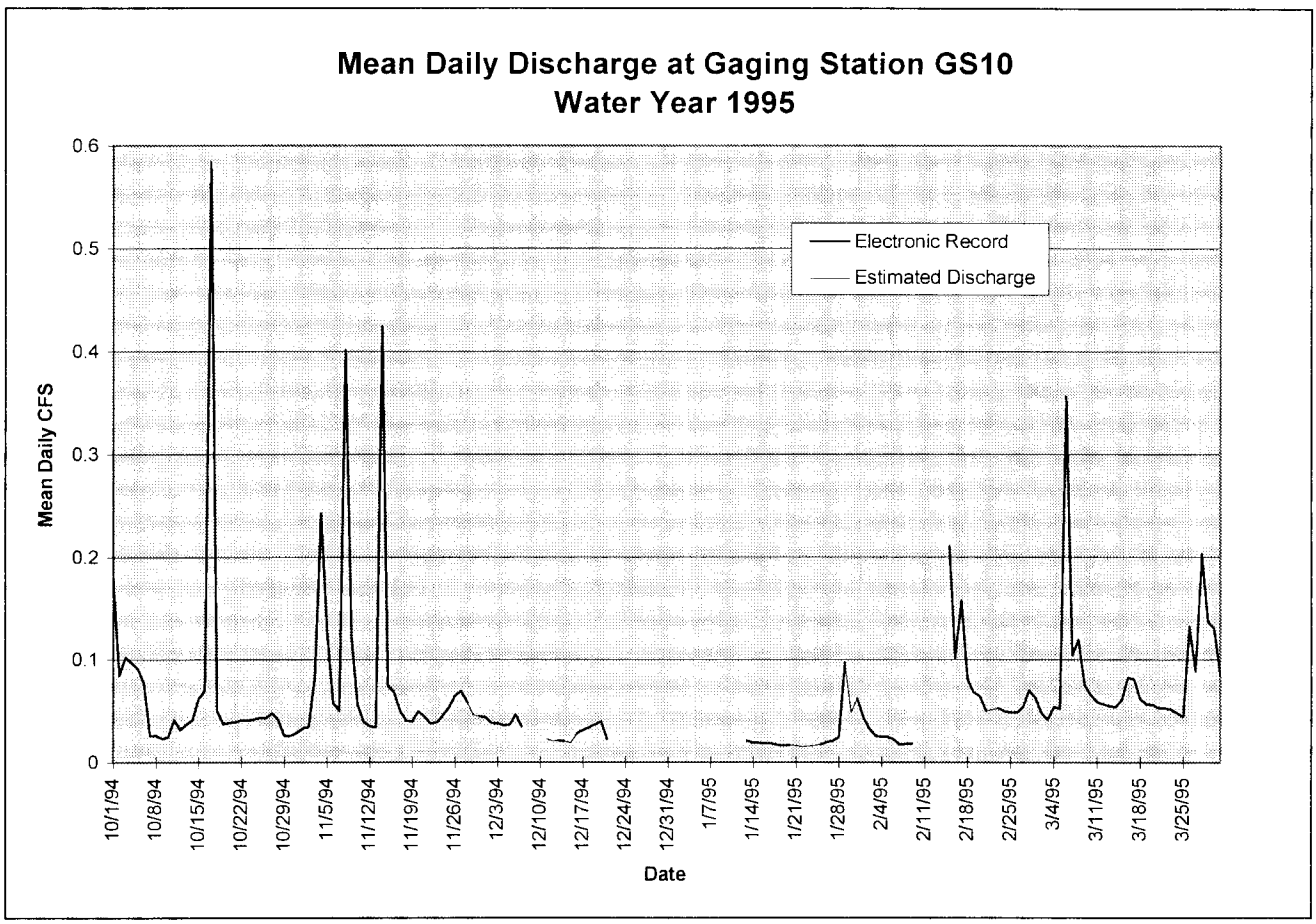


Figure 3-2. GS10 Mean Daily Discharge, Water Year 1995



Analytical Results

No analytical results compiled to date.

3.1.2 Gaging Station SW022

Location:

- State Plane: 2086443.2; 749757.8
- Central Avenue Ditch at the splitter box near T903A, Inner East Gate

Drainage Characteristics:

- Pathway 1
- Total and Effective Area: 0.132 $mi.^2$ = 84.5 ac (approximately 75% impervious)
- Sub-basins: CSWAA2, CSWAA3, CSWAA4, CSWAA5, CSWAA6 (Figure 1-2)
- Description: SW022 lies on the Central Avenue Ditch at the splitter box near T903A, Inner East Gate. The basin consists of the southern area of the Industrial Area.
- Areas draining to this site: 900, 800, 600, 400, 300, 100

Hardware Configuration:

- Primary Device: 9 ½" Parshall flume
- Flow Meter: ISCO® Model 4230 (bubbler)
- Sampler: ISCO® Model 3700R Refrigerated
  ISCO® Model 6000 Automatic VOC
- Radio Telemetry: No
- Power: DC power system
- Water Quality Parameters: None

Discharge Data

Table 3-2. SW022 Mean Daily Discharge Data

Date	Mean CFS	Min. CFS	Max. CFS	Discharge
3/1/95	0.000	0.000	0.000	0
3/2/95	0.000	0.000	0.000	0
3/3/95	0.000	0.000	0.000	0
3/4/95	0.000	0.000	0.000	0
3/5/95	0.000	0.000	0.000	0
3/6/95	0.111	0.000	2.025	9611
3/7/95	0.009	0.000	0.056	767
3/8/95	0.007	0.000	0.070	608
3/9/95	0.001	0.000	0.009	72
3/10/95	0.000	0.000	0.000	0
3/11/95	0.000	0.000	0.000	0
3/12/95	0.000	0.000	0.000	0
3/13/95	0.000	0.000	0.000	0
3/14/95	0.000	0.000	0.000	0
3/15/95	0.000	0.000	0.000	0
3/16/95	0.000	0.000	0.000	0
3/17/95	0.000	0.000	0.000	0
3/18/95	0.000	0.000	0.000	0
3/19/95	0.000	0.000	0.000	0
3/20/95	0.000	0.000	0.000	0
3/21/95	0.000	0.000	0.000	0
3/22/95	0.000	0.000	0.000	0
3/23/95	0.000	0.000	0.000	0
3/24/95	0.000	0.000	0.000	0
3/25/95	0.000	0.000	0.000	0
3/26/95	0.004	0.000	0.054	342
3/27/95	0.000	0.000	0.000	0
3/28/95	0.079	0.000	0.687	6793
3/29/95	0.031	0.000	0.297	2657
3/30/95	0.016	0.000	0.068	1402
3/31/95	0.001	0.000	0.008	58
Monthly Values				
Mean	0.008	0.000	0.106	720
Min.	0.000	0.000	0.000	0
Max.	0.111	0.000	2.025	9611

Total Discharge: 22311 Cubic Feet

KEY: BD = bad data; *italics* = estimated data from field observations and discharge record at adjacent gages

Bad data can be attributed to equipment failures and winter freezing conditions.

Figure 3-3. SW022 Monthly Discharge

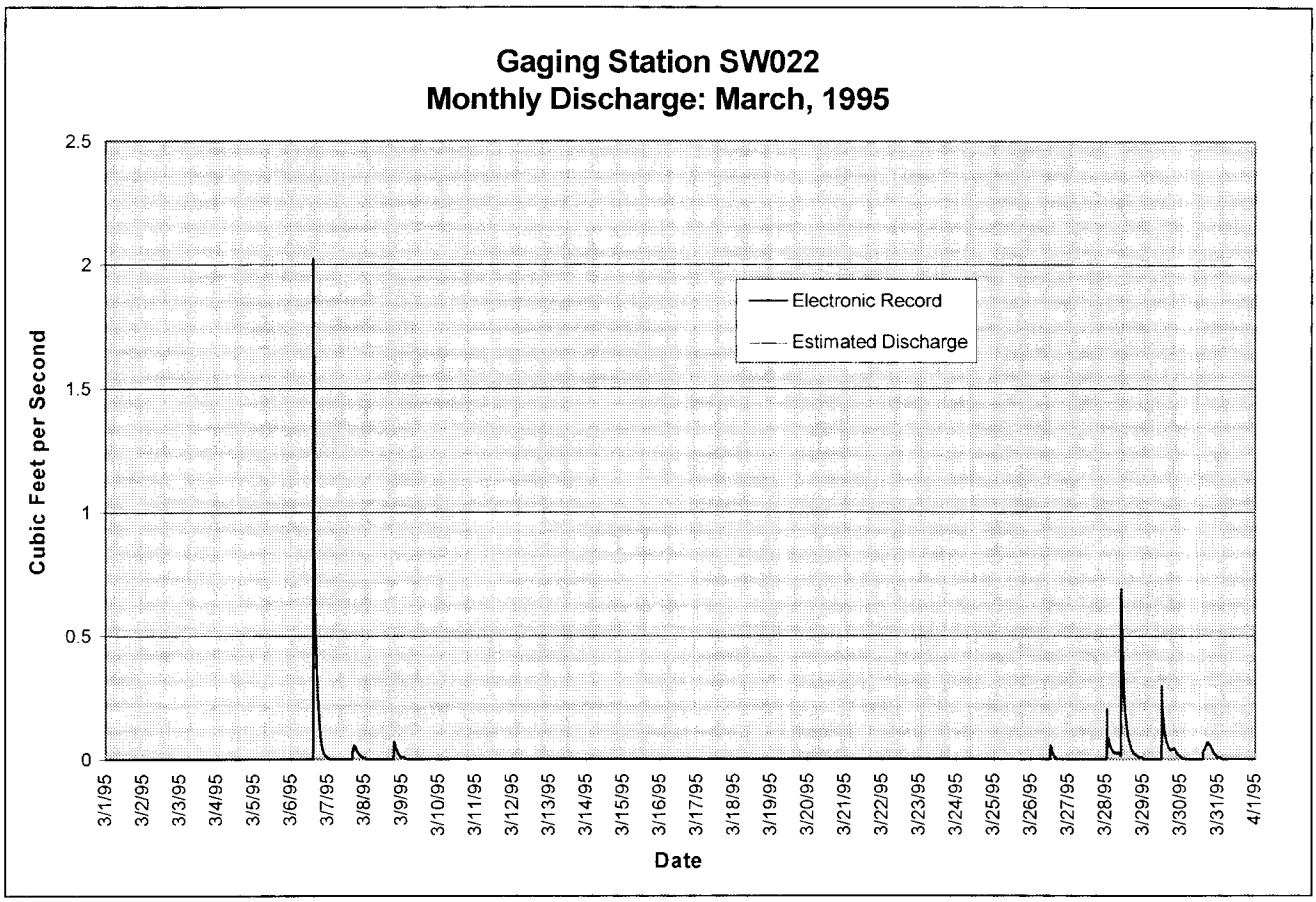
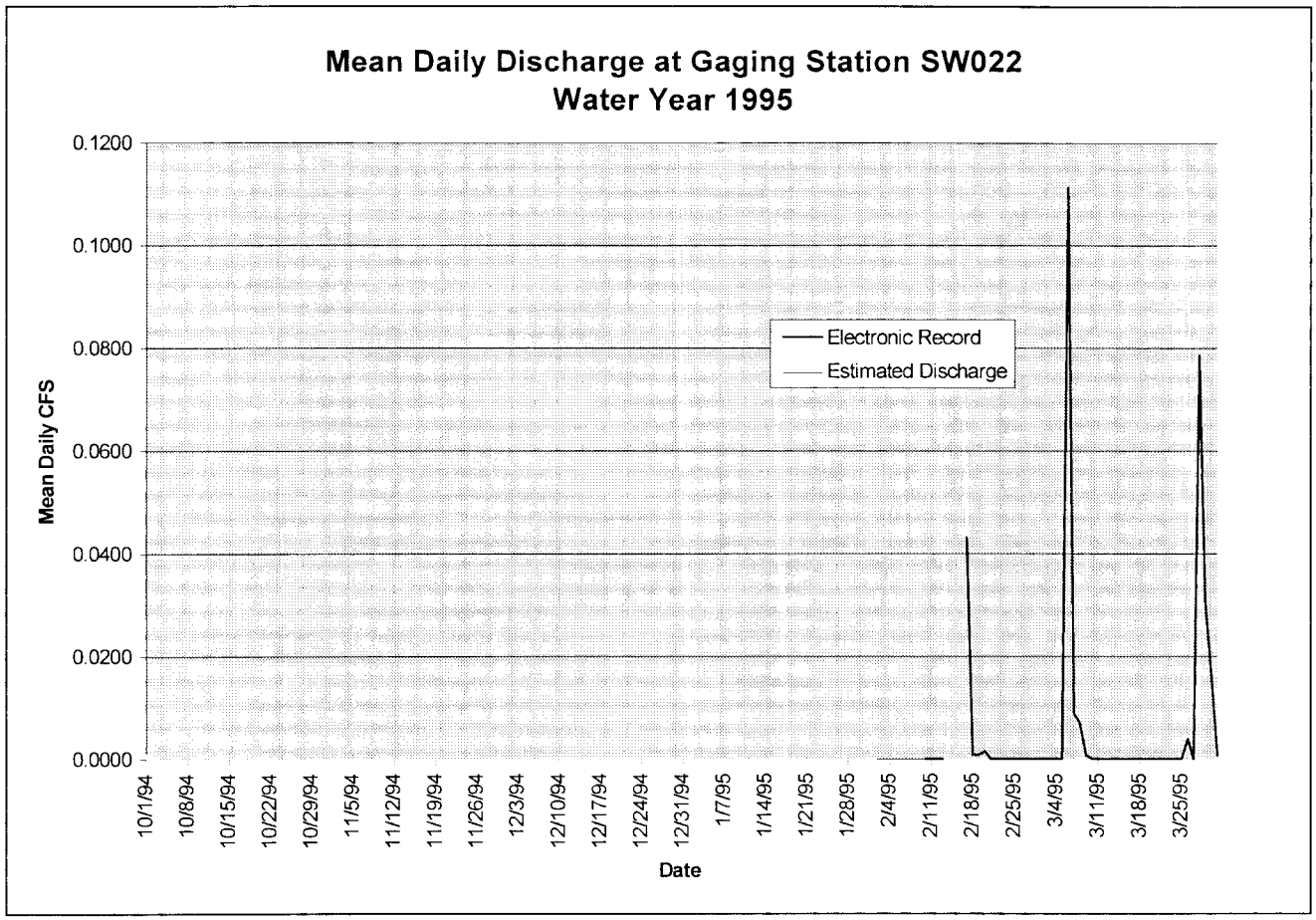


Figure 3-4. SW022 Mean Daily Discharge, Water Year 1995



Analytical Results

No analytical results compiled to date.

3.1.3 Gaging Station SW027

Location:

- 39° 53' 11.5"N 105° 11' 4.3"W
- SID Culvert Number 4; outlet of SID to Pond C-2 prior to crossing under Woman Creek

Drainage Characteristics:

- Pathway 5
- Area: 0.29 $mi.^2$ = 185.6 ac (approximately 15% impervious)
- Sub-basins: DIV2, DIV3, CDIV1 (Figure 1-2)
- Description: SW027 lies on the South Interceptor Ditch at the upstream end of dual 66" cmps which convey SID water under Woman Creek and into Pond C-2. The basin consists of the sloping, vegetated area immediately south of the Industrial Area. This basin receives Industrial Area runoff primarily from the 800 and 400 Areas.

Hardware Configuration:

- Primary Device: Dual 66" Parallel cmps
- Flow Meter: ISCO® Model 3230 (bubbler)
- Sampler: ISCO® Model 3700R Refrigerated
- Radio Telemetry: No
- Power: DC solar power system
- Water Quality Parameters: None

Discharge Data

Stage only is provided for SW027 due to an inability to accurately rate the dual 66" cmps at this site.

Table 3-3. SW027 Mean Daily Stage Data

Date	Mean Feet	Min. Feet	Max. Feet
3/1/95	0.000	0.000	0.000
3/2/95	0.000	0.000	0.000
3/3/95	0.000	0.000	0.000
3/4/95	0.000	0.000	0.000
3/5/95	0.000	0.000	0.000
3/6/95	0.000	0.000	0.000
3/7/95	0.000	0.000	0.000
3/8/95	0.001	0.000	0.110
3/9/95	0.078	0.036	0.148
3/10/95	0.032	0.025	0.041
3/11/95	0.022	0.016	0.031
3/12/95	0.013	0.006	0.020
3/13/95	*0.008*	*0.000*	*0.015*
3/14/95	0.000	0.000	0.000
3/15/95	0.000	0.000	0.000
3/16/95	0.000	0.000	0.000
3/17/95	0.000	0.000	0.000
3/18/95	0.000	0.000	0.000
3/19/95	0.000	0.000	0.000
3/20/95	0.000	0.000	0.000
3/21/95	0.000	0.000	0.000
3/22/95	0.000	0.000	0.000
3/23/95	0.000	0.000	0.000
3/24/95	0.000	0.000	0.000
3/25/95	0.000	0.000	0.000
3/26/95	0.000	0.000	0.000
3/27/95	0.000	0.000	0.000
3/28/95	0.000	0.000	0.000
3/29/95	0.000	0.000	0.000
3/30/95	0.000	0.000	0.000
3/31/95	0.044	0.000	0.109
Monthly Values			
Mean	0.006	0.003	0.015
Min.	0.000	0.000	0.000
Max.	0.078	0.036	0.148

KEY: BD = bad data; *italics* = estimated data from field observations and discharge record at adjacent gages

Bad data can be attributed to equipment failures and winter freezing conditions.

Figure 3-5. SW027 Monthly Stage

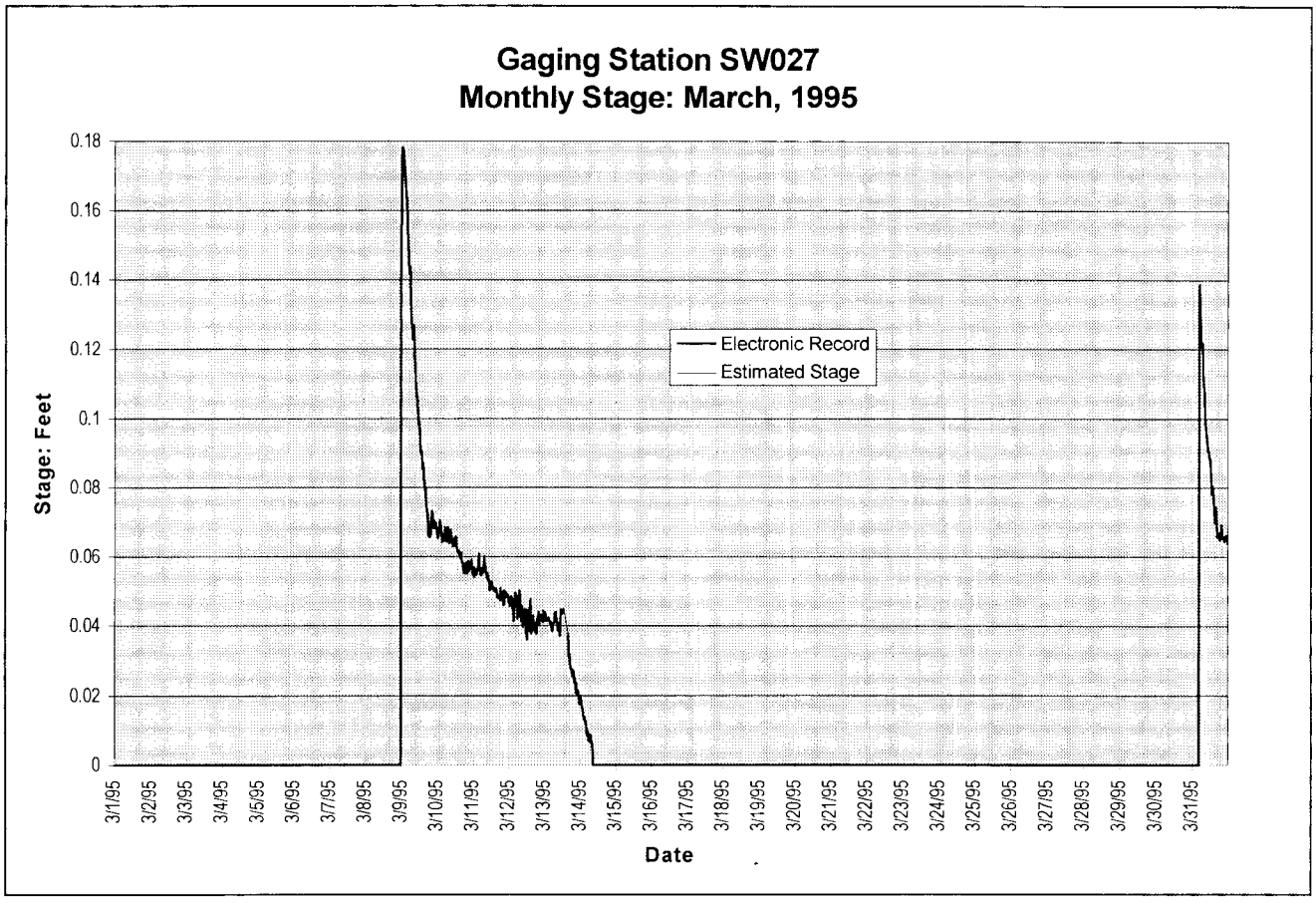
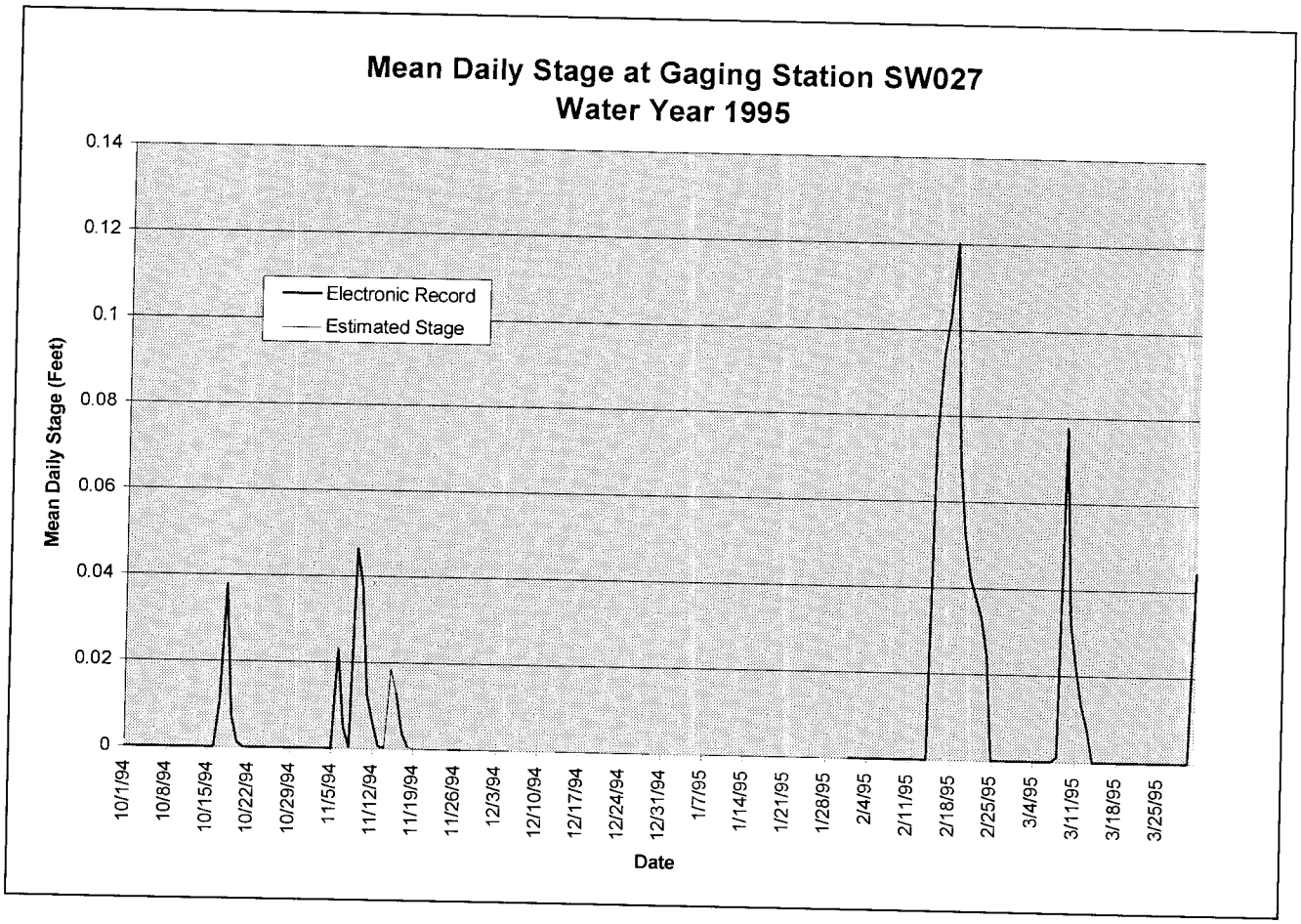


Figure 3-6. SW027 Mean Daily Stage, Water Year 1995



Analytical Results

No analytical results compiled to date.

3.1.4 Gaging Station SW091

Location:

- State Plane: 2086064; 751322
- small tributary of North Walnut Creek, which drains the northeast corner of Industrial Area near the Solar Ponds

Drainage Characteristics:

- Pathway 6
- Area: 0.019 $mi.^2$ = 12.2 ac (approximately 45% impervious)
- Sub-basins: CWAB1, CWAB2, portion of WA11 (Figure 1-2)
- Description: SW091 lies on a small tributary of North Walnut Creek, which drains the northeast corner of Industrial Area near the Solar Ponds. The basin consists of 10.9 acres of the Industrial Area. This basin receives Industrial Area runoff primarily from the open area immediately east of the Solar Ponds.

Hardware Configuration:

- Primary Device: 1' H Flume
- Flow Meter: Not yet instrumented
- Sampler: Not yet instrumented
- Radio Telemetry: Not yet instrumented
- Power: Not yet instrumented
- Water Quality Parameters: None

Discharge Data

No record to date.

Analytical Results

No analytical results compiled to date.

3.1.5 Gaging Station SW093

Location:

- State Plane: 2085008.5; 751710.2
- North Walnut Creek below 6' cmp draining Industrial Area; directly north of Solar Pond C

Drainage Characteristics:

- Pathway 3
- Area: 0.362 $mi.^2$ = 231.7 ac (approximately 46% impervious)
- Sub-basins: WA12a, WA13, WA14, CWAA1, CWAC6, CWAC5, CWAC2, CWAC4, CWAC3, CWAC10, CWAC13, CWAC11, CWAC1, CWAC12, CWADIV2b (Figure 1-2)
- Description: SW093 lies on North Walnut Creek, which drains the north and northwest areas of Industrial Area. The basin consists of 150.4 acres of the Industrial Area. This basin receives Industrial Area runoff from the 700, 500, 300, and 100 Areas.

Hardware Configuration:

- Primary Device: 36" Parshall Flume w/ a 36" Rectangular Weir
- Flow Meter: ISCO® Model 3230 (bubbler)
- Sampler: ISCO® Model 3700R Refrigerated
  ISCO® Model 6000 VOC
- Radio Telemetry: Yes
- Power: DC solar power system
- Water Quality Parameters: None

Discharge Data

Table 3-4. SW093 Mean Daily Discharge Data

Date	Mean CFS	Min. CFS	Max. CFS	Discharge
3/1/95	BD	BD	BD	BD
3/2/95	BD	BD	BD	BD
3/3/95	BD	BD	BD	BD
3/4/95	BD	BD	BD	BD
3/5/95	BD	BD	BD	BD
3/6/95	BD	BD	BD	BD
3/7/95	BD	BD	BD	BD
3/8/95	0.205	0.085	0.691	17709
3/9/95	0.144	0.111	0.195	12398
3/10/95	0.106	0.065	0.144	9116
3/11/95	0.085	0.066	0.106	7338
3/12/95	0.079	0.058	0.170	6849
3/13/95	0.067	0.050	0.097	5755
3/14/95	0.060	0.039	0.091	5151
3/15/95	0.064	0.043	0.167	5526
3/16/95	0.080	0.040	0.543	6901
3/17/95	0.084	0.045	0.276	7273
3/18/95	0.060	0.044	0.099	5215
3/19/95	0.060	0.041	0.094	5145
3/20/95	0.052	0.036	0.114	4535
3/21/95	0.053	0.031	0.084	4605
3/22/95	0.052	0.028	0.091	4490
3/23/95	0.045	0.026	0.072	3890
3/24/95	0.047	0.032	0.137	4094
3/25/95	0.045	0.031	0.105	3883
3/26/95	0.155	0.040	0.717	13407
3/27/95	0.077	0.042	0.222	6678
3/28/95	0.244	0.107	0.898	21063
3/29/95	0.182	0.077	0.454	15719
3/30/95	0.171	0.078	0.355	14765
3/31/95	0.146	0.094	0.293	12593
Monthly Values				
Mean	0.098	0.055	0.259	8504
Min.	0.045	0.026	0.072	3883
Max.	0.244	0.111	0.898	21063

Total Discharge: 204097 Cubic Feet
Partial Month

KEY: BD = bad data; *italics* = estimated data from field observations and discharge record at adjacent gages

Bad data can be attributed to equipment failures and winter freezing conditions.

Figure 3-7. SW093 Monthly Discharge

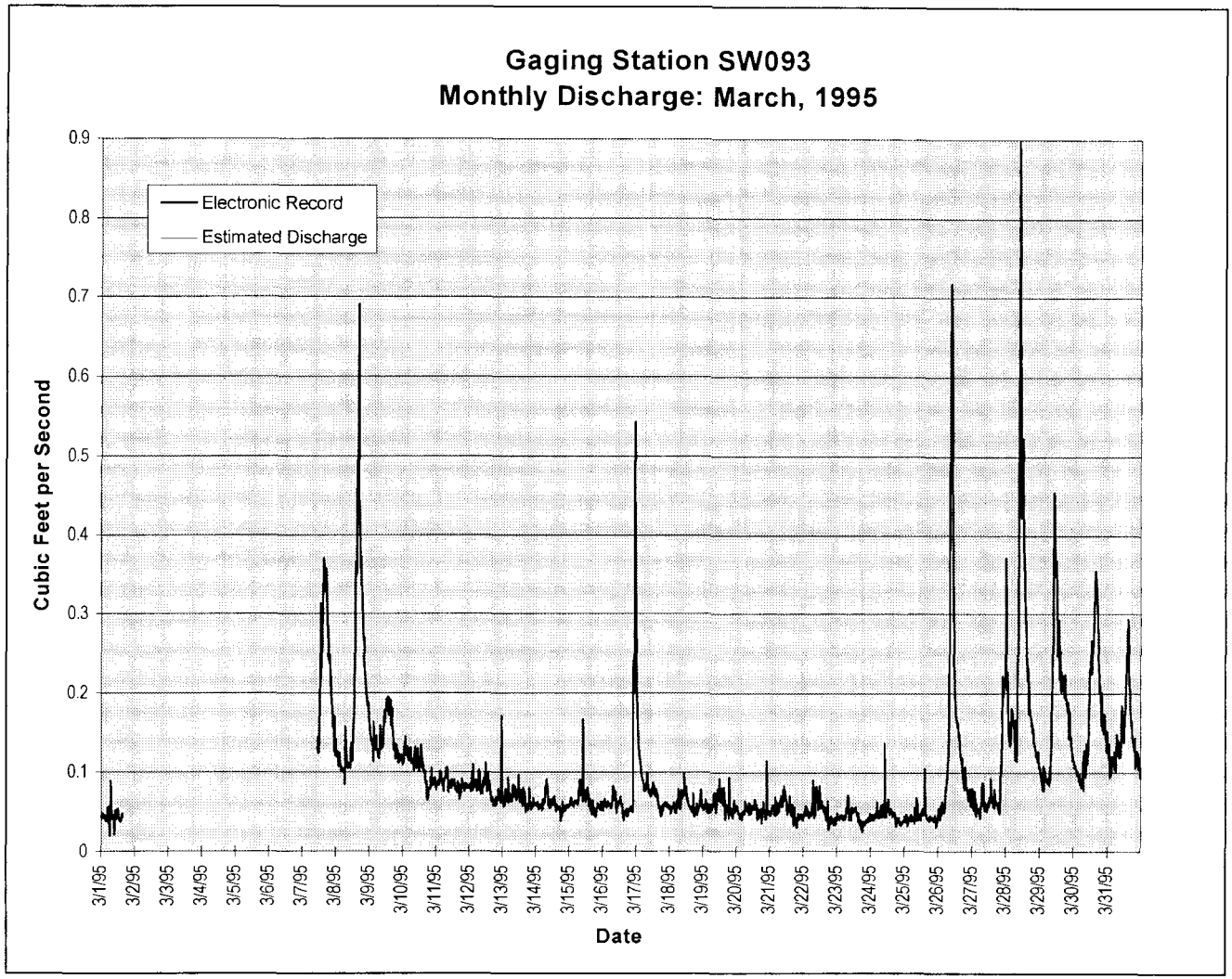
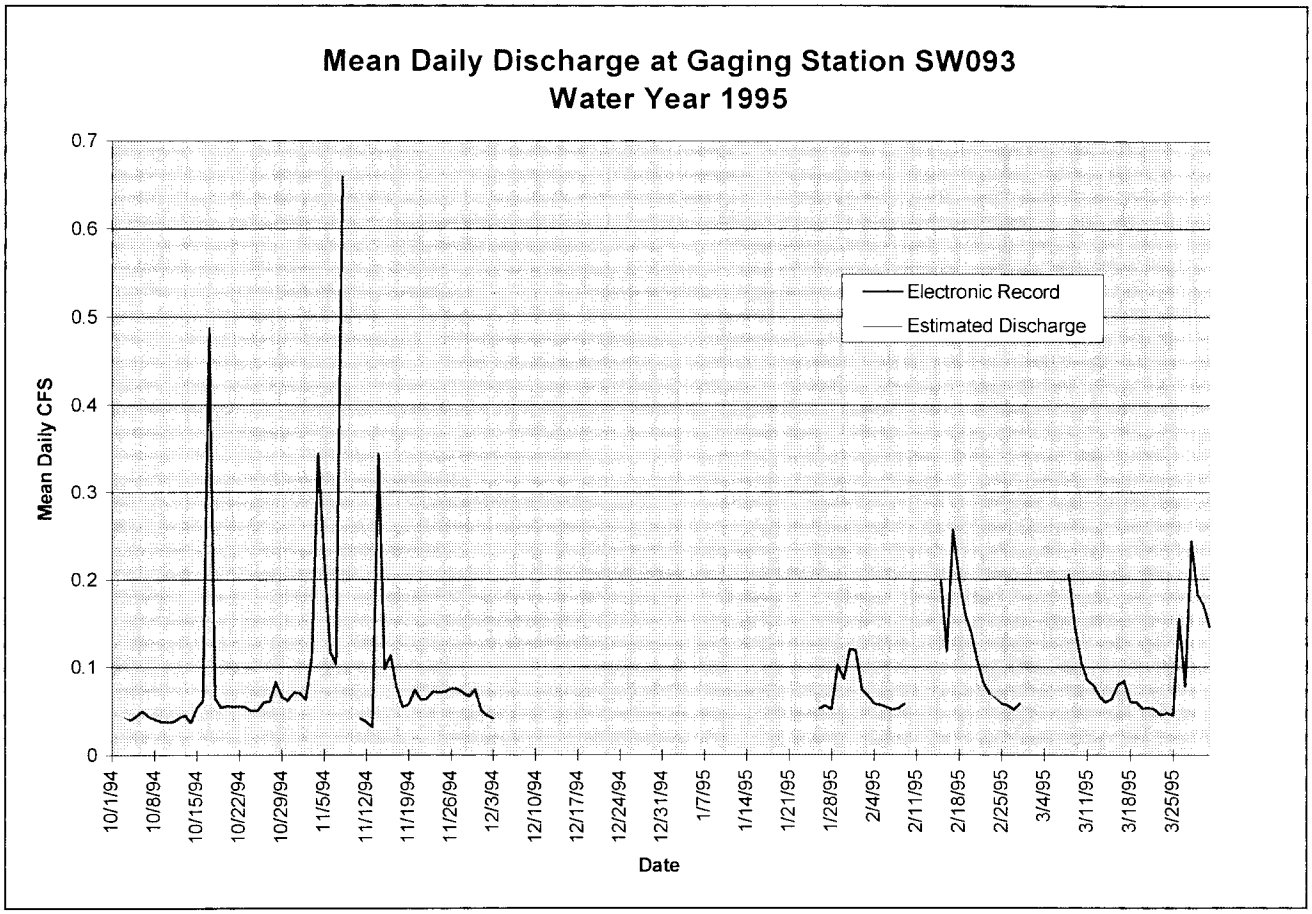


Figure 3-8. SW093 Mean Daily Discharge, Water Year 1995



Analytical Results

No analytical results compiled to date.

3.1.6 Gaging Station SW998

Location:

- State Plane: 2080607.8; 749862.5
- West Diversion Ditch north of 130 buildings

Drainage Characteristics:

- Pathway 4
- Area: 0.069 $mi.^2$ = 44.2 ac (approximately 90% impervious)
- Sub-basins: CWADIV1, CWADIV2a, WADIV2b (Figure 1-2)
- Description: SW998 lies on the West Diversion Ditch north of the 130 area. This basin receives Industrial Area runoff from the 130 areas only.

Hardware Configuration:

- Primary Device: 9.5" Parshall Flume
- Flow Meter: ISCO® Model 3230 (bubbler)
- Sampler: ISCO® Model 3700 Portable
  ISCO® Model 6000 VOC
- Radio Telemetry: No
- Power: AC line power
- Water Quality Parameters: None

Discharge Data

Table 3-5. SW998 Mean Daily Discharge Data

Date	Mean CFS	Min. CFS	Max. CFS	Discharge
3/1/95	BD	BD	BD	BD
3/2/95	BD	BD	BD	BD
3/3/95	BD	BD	BD	BD
3/4/95	BD	BD	BD	BD
3/5/95	BD	BD	BD	BD
3/6/95	BD	BD	BD	BD
3/7/95	BD	BD	BD	BD
3/8/95	*0.012*	*0.000*	*0.087*	*1008*
3/9/95	0.001	0.000	0.013	107
3/10/95	0.000	0.000	0.006	34
3/11/95	0.003	0.000	0.009	217
3/12/95	0.011	0.005	0.028	983
3/13/95	0.012	0.003	0.032	999
3/14/95	0.003	0.000	0.013	298
3/15/95	0.002	0.000	0.009	132
3/16/95	0.025	0.000	0.477	2172
3/17/95	0.005	0.000	0.066	471
3/18/95	0.001	0.000	0.005	104
3/19/95	0.002	0.000	0.011	213
3/20/95	0.002	0.000	0.008	211
3/21/95	0.004	0.001	0.013	387
3/22/95	0.004	0.000	0.028	322
3/23/95	0.003	0.000	0.007	241
3/24/95	0.006	0.002	0.014	545
3/25/95	0.008	0.006	0.014	695
3/26/95	0.110	0.009	1.049	9515
3/27/95	0.022	0.006	0.129	1920
3/28/95	0.144	0.024	1.077	12483
3/29/95	0.056	0.015	0.215	4854
3/30/95	0.063	0.016	0.180	5434
3/31/95	0.013	0.000	0.060	1128
Monthly Values				
Mean	0.021	0.004	0.148	1853
Min.	0.000	0.000	0.005	34
Max.	0.144	0.024	1.077	12483

Total Discharge: 44473 Cubic Feet
Partial Month

KEY: BD = bad data; *italics* = estimated data from field observations and discharge record at adjacent gages

Bad data can be attributed to equipment failures and winter freezing conditions.

Figure 3-9. SW998 Monthly Discharge

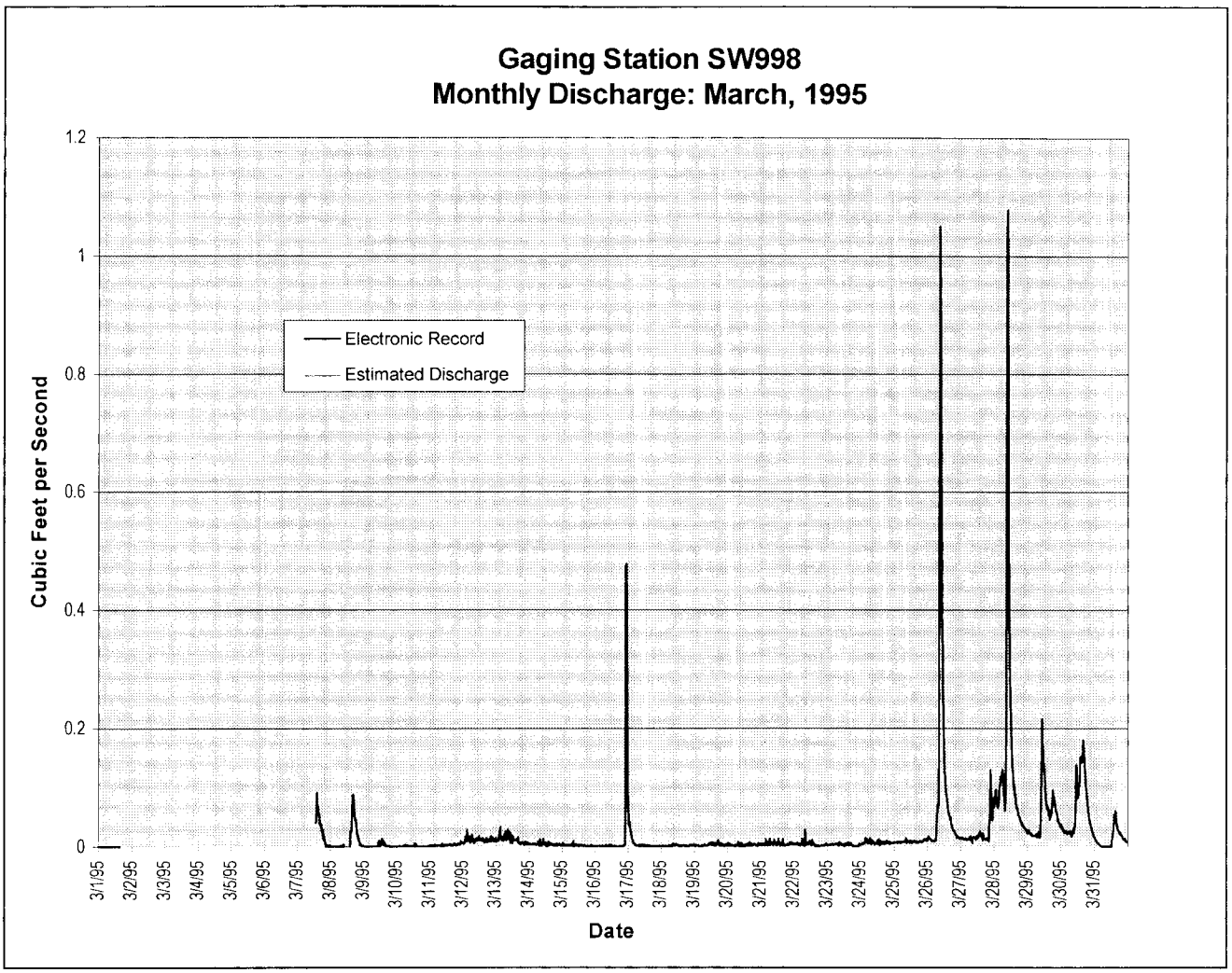
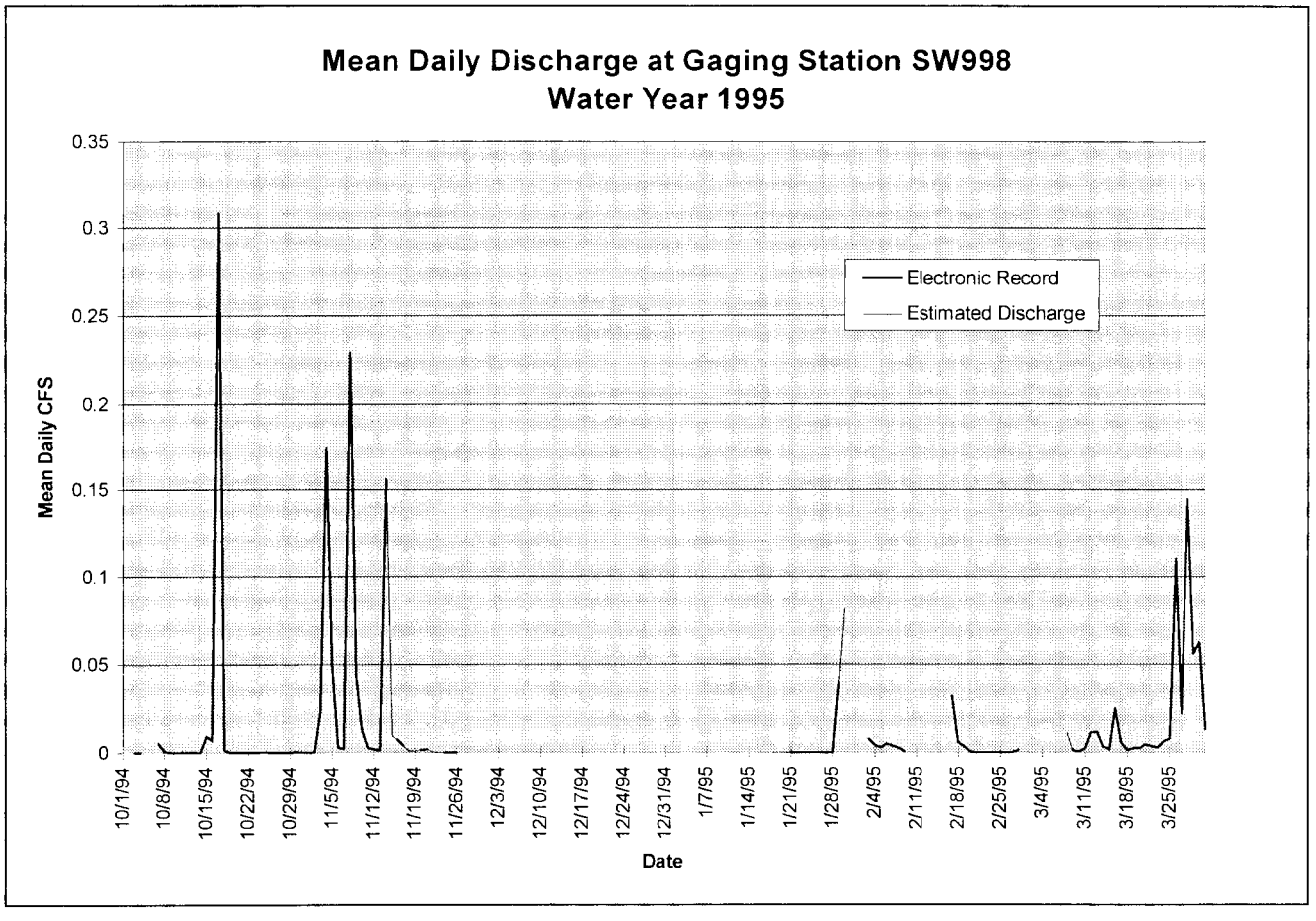


Figure 3-10. SW998 Mean Daily Discharge, Water Year 1995



Analytical Results

No analytical results compiled to date.

3.2 Tier II: D&D Subbasin Outfalls

The objective of the Tier II Industrial Area gaging stations is to monitor surface water at the outlet of the subbasins where D&D activities are located. This tier provides a more detailed monitoring approach to identify potential releases and to evaluate the effectiveness of the engineering controls being employed at the specific D&D location.

3.2.1 Gaging Station GS21

Location:

- State Plane: 2083061; 748147
- concrete spillway near intersection of Seventh St. and Cactus Avenue

Drainage Characteristics:

- Pathway 5
- Buildings: T664A, 664
- Sub-basins: DIV3 (Figure 1-2)
- Description: GS21 lies on the concrete spillway near intersection of Seventh St. and Cactus Avenue, at the southwest corner of the 850 parking lot. This basin receives Industrial Area runoff principally from the roads, parking lots and storage area south of Building 664.

Hardware Configuration:

- Primary Device: 4" cutthroat flume
- Flow Meter: Not yet instrumented
- Sampler: Not yet instrumented
- Radio Telemetry: Not yet instrumented
- Power: Not yet instrumented
- Water Quality Parameters: None

Discharge Data

No record to date.

Analytical Results

No samples to date.

3.2.2 Gaging Station GS22

Location:

- State Plane: 2082646; 747799
- concrete apron at 400 Area outfall to SID

Drainage Characteristics:

- Pathway 5
- Buildings: T124A, 440, 444, T444A, 447, 451, 457, 460, 461, 462
- Sub-basins: CDIV1 (Figure 1-2)
- Description: GS22 lies at the concrete apron at the 400 Area outfall to the SID. This basin receives Industrial Area runoff principally from the roads, parking lots and buildings of the 400 Area.

Hardware Configuration:

- Primary Device: 1.5 foot H flume
- Flow Meter: Not yet instrumented
- Sampler: Not yet instrumented
- Radio Telemetry: No
- Power: Not yet instrumented
- Water Quality Parameters: None

Discharge Data

No record to date.

Analytical Results

No samples to date.

3.2.3 Gaging Station GS23

Location:

- State Plane: 2083781; 747885
- Building 881 septic lift station overflow outfall south of 881

Drainage Characteristics:

- Pathway 5
- Buildings: unknown surface water flow
- Sub-basins: unknown surface water contributions (Figure 1-2)
- Description: GS23 monitors a 5.5" metal pipe which outfalls on the hillside south of the southwest corner of Building 881. The pipe is thought to be the outfall for the overflow from the Bldg. 881 septic lift station. The sources of any surface water seen at this site is unknown.

Hardware Configuration:

- Primary Device: .6 foot HS flume
- Flow Meter: Not yet instrumented
- Sampler: Not yet instrumented
- Radio Telemetry: No
- Power: Not yet instrumented
- Water Quality Parameters: None

Discharge Data

No record to date.

Analytical Results

No samples to date.

3.2.4 Gaging Station GS24

Location:

- State Plane: 2083973; 747999
- 12" cmp south of 881

Drainage Characteristics:

- Pathway 5
- Buildings: 869, 881, T881G, 887, 885
- Sub-basins: DIV3 (Figure 1-2)
- Description: GS24 monitors a 12" cmp which outfalls on the hillside south of Building 881. Surface water originates as runoff from the areas south and west of Building 881.

Hardware Configuration:

- Primary Device: Not yet installed
- Flow Meter: Not yet instrumented
- Sampler: Not yet instrumented
- Radio Telemetry: No
- Power: Not yet instrumented
- Water Quality Parameters: None

Discharge Data

No record to date.

Analytical Results

No samples to date.

3.2.5 Gaging Station GS25

Location:

- State Plane: 2084114; 747891
- 18.5" cmp southeast of 881

Drainage Characteristics:

- Pathway 5
- Buildings: 883, T883, T881A, -B, 890, 881, 881F, 882, 830, T881G, 887, 885
- Sub-basins: DIV3 (Figure 1-2)
- Description: GS25 monitors a 18.5" cmp which outfalls on the hillside southeast of Building 881. Surface water at this site originates as runoff from the areas east, north, and northeast of 881.

Hardware Configuration:

- Primary Device: 1 foot H flume
- Flow Meter: Not yet instrumented
- Sampler: Not yet instrumented
- Radio Telemetry: No
- Power: Not yet instrumented
- Water Quality Parameters: None

Discharge Data

No record to date.

Analytical Results

No samples to date.

3.2.6 Gaging Station GS27

Location:

- State Plane: 2083680; 749282
- small drainage ditch NW of Building 884 (see Figure 1-3)

Drainage Characteristics:

- Pathway 1
- Buildings: 889, T889A, 884
- Sub-basins: CSWAA5 (Figure 1-2)
- Description: GS27 monitors a small ditch which outfalls to the Central Avenue Ditch northwest of Building 884. Surface water at this site originates as runoff from the areas north and west of 889 and surrounding 884.

Hardware Configuration:

- Primary Device: 2" cutthroat flume
- Flow Meter: ISCO® Model 4230 (bubbler)
- Sampler: ISCO® Model 3710 Portable
  ISCO® Model 6000 VOC
- Radio Telemetry: Yes
- Power: DC solar power system
- Water Quality Parameters: Not yet installed

Discharge Data

Table 3-6. GS27 Mean Daily Discharge Data

Date	Mean CFS	Min. CFS	Max. CFS	Discharge
3/1/95	No Data	No Data	No Data	No Data
3/2/95	No Data	No Data	No Data	No Data
3/3/95	No Data	No Data	No Data	No Data
3/4/95	No Data	No Data	No Data	No Data
3/5/95	No Data	No Data	No Data	No Data
3/6/95	No Data	No Data	No Data	No Data
3/7/95	No Data	No Data	No Data	No Data
3/8/95	No Data	No Data	No Data	No Data
3/9/95	0.000	0.000	0.000	0
3/10/95	0.000	0.000	0.000	0
3/11/95	0.000	0.000	0.000	0
3/12/95	0.000	0.000	0.000	0
3/13/95	0.000	0.000	0.000	0
3/14/95	0.000	0.000	0.000	0
3/15/95	0.000	0.000	0.000	0
3/16/95	0.000	0.000	0.000	0
3/17/95	0.000	0.000	0.000	0
3/18/95	0.000	0.000	0.000	0
3/19/95	0.000	0.000	0.000	0
3/20/95	0.000	0.000	0.000	0
3/21/95	0.000	0.000	0.000	0
3/22/95	0.000	0.000	0.000	0
3/23/95	0.000	0.000	0.000	0
3/24/95	0.000	0.000	0.000	0
3/25/95	0.000	0.000	0.000	0
3/26/95	0.000	0.000	0.002	9
3/27/95	0.000	0.000	0.000	0
3/28/95	0.001	0.000	0.073	79
3/29/95	0.001	0.000	0.038	59
3/30/95	0.000	0.000	0.006	35
3/31/95	0.000	0.000	0.000	0
Monthly Values				
Mean	0.000	0.000	0.005	8
Min.	0.000	0.000	0.000	0
Max.	0.001	0.000	0.073	79

Total Discharge: 181 Cubic Feet
Partial Month

KEY: BD = bad data; *italics* = estimated data from field observations and discharge record at adjacent gages

Bad data can be attributed to equipment failures and winter freezing conditions.

Figure 3-11. GS27 Monthly Discharge

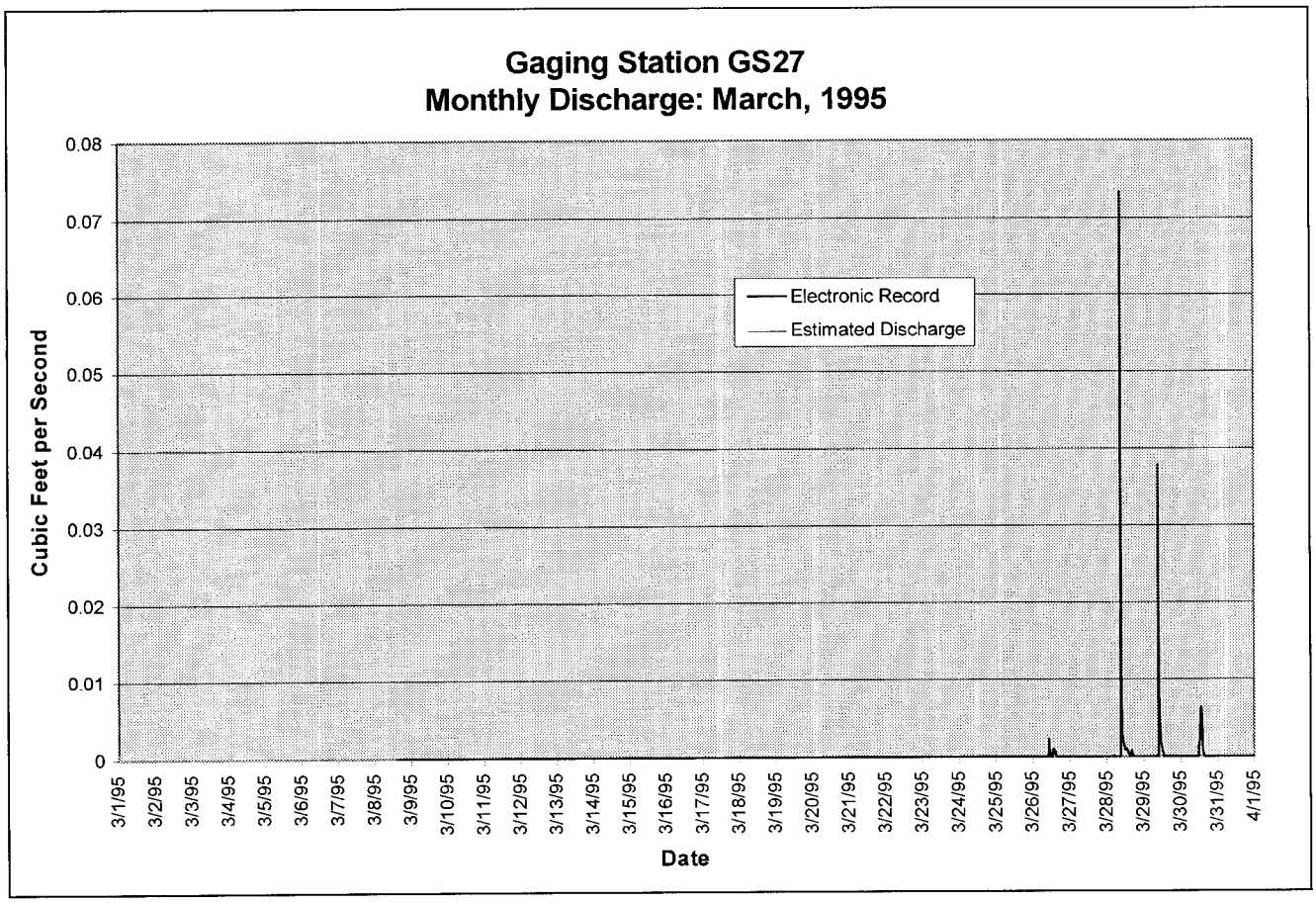
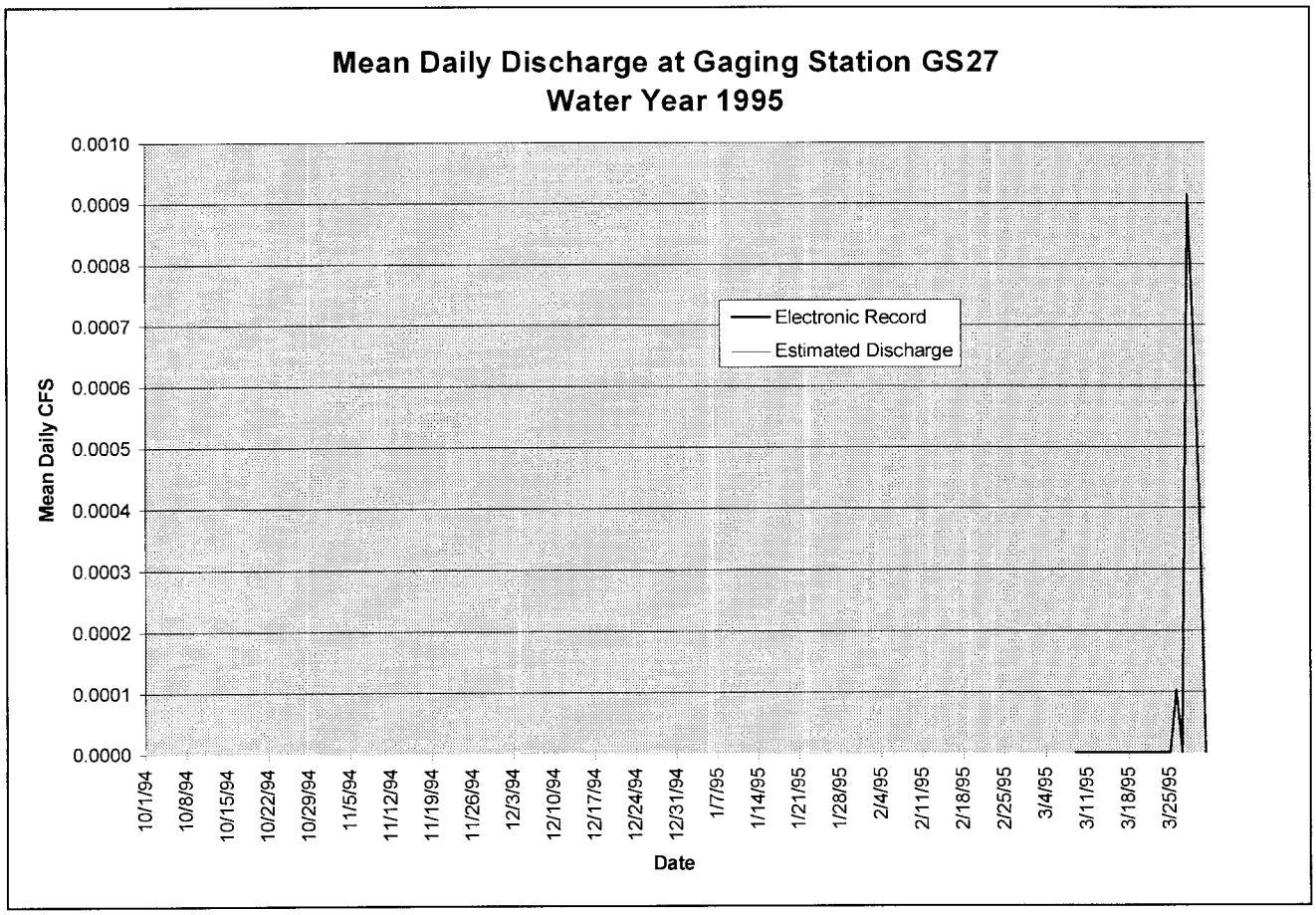


Figure 3-12. GS27 Mean Daily Discharge, Water Year 1995



Analytical Results

No samples to date.

3.2.7 Gaging Station GS28

Location:

- State Plane: 2084010; 749282
- concrete drainage channel northeast of Building 889 (see Figure 1-3)

Drainage Characteristics:

- Pathway 1
- Buildings: 889, T889A, 879, 883, 866, 827, 867, 865
- Sub-basins: CSWAA5 (Figure 1-2)
- Description: GS28 monitors a concrete drainage channel which outfalls to the Central Avenue Ditch northeast of Building 889. Surface water at this site originates as runoff from the northern portion of the 800 Area.

Hardware Configuration:

- Primary Device: 4" cutthroat flume
- Flow Meter: ISCO® Model 4230 (bubbler)
- Sampler: ISCO® Model 3710 Portable
  ISCO® Model 6000 VOC
- Radio Telemetry: Yes
- Power: DC solar power system
- Water Quality Parameters: Not yet installed

Discharge Data

Table 3-7. GS28 Mean Daily Discharge Data

Date	Mean CFS	Min. CFS	Max. CFS	Discharge
3/1/95	No Data	No Data	No Data	No Data
3/2/95	No Data	No Data	No Data	No Data
3/3/95	No Data	No Data	No Data	No Data
3/4/95	No Data	No Data	No Data	No Data
3/5/95	No Data	No Data	No Data	No Data
3/6/95	No Data	No Data	No Data	No Data
3/7/95	No Data	No Data	No Data	No Data
3/8/95	No Data	No Data	No Data	No Data
3/9/95	*0.000*	*0.000*	*0.000*	*0*
3/10/95	0.000	0.000	0.000	0
3/11/95	0.000	0.000	0.000	0
3/12/95	0.000	0.000	0.000	0
3/13/95	0.000	0.000	0.000	0
3/14/95	0.000	0.000	0.000	0
3/15/95	0.000	0.000	0.000	0
3/16/95	0.000	0.000	0.000	0
3/17/95	0.000	0.000	0.000	0
3/18/95	0.000	0.000	0.000	0
3/19/95	0.000	0.000	0.000	0
3/20/95	0.000	0.000	0.000	0
3/21/95	0.000	0.000	0.000	0
3/22/95	0.000	0.000	0.000	0
3/23/95	0.000	0.000	0.000	0
3/24/95	0.000	0.000	0.000	0
3/25/95	0.000	0.000	0.000	0
3/26/95	0.000	0.000	0.000	0
3/27/95	0.000	0.000	0.000	0
3/28/95	0.000	0.000	0.000	0
3/29/95	0.000	0.000	0.000	0
3/30/95	0.000	0.000	0.000	0
3/31/95	0.000	0.000	0.000	0
Monthly Values				
Mean	0.000	0.000	0.000	0
Min.	0.000	0.000	0.000	0
Max.	0.000	0.000	0.000	0

Total Discharge: 0 Cubic Feet
Partial Month

KEY: BD = bad data; *italics* = estimated data from field observations and discharge record at adjacent gages

Bad data can be attributed to equipment failures and winter freezing conditions.

Figure 3-13. GS28 Monthly Discharge

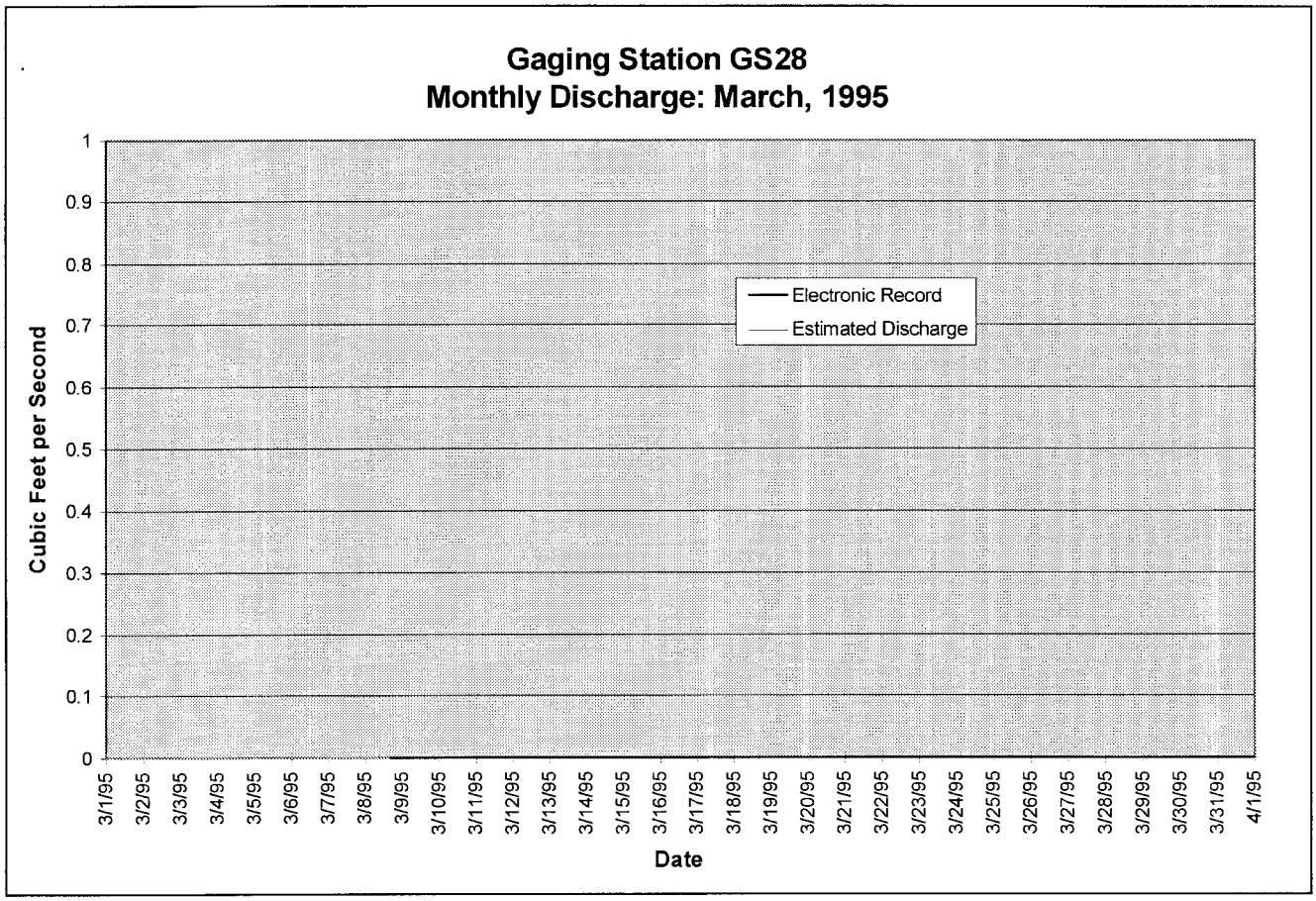
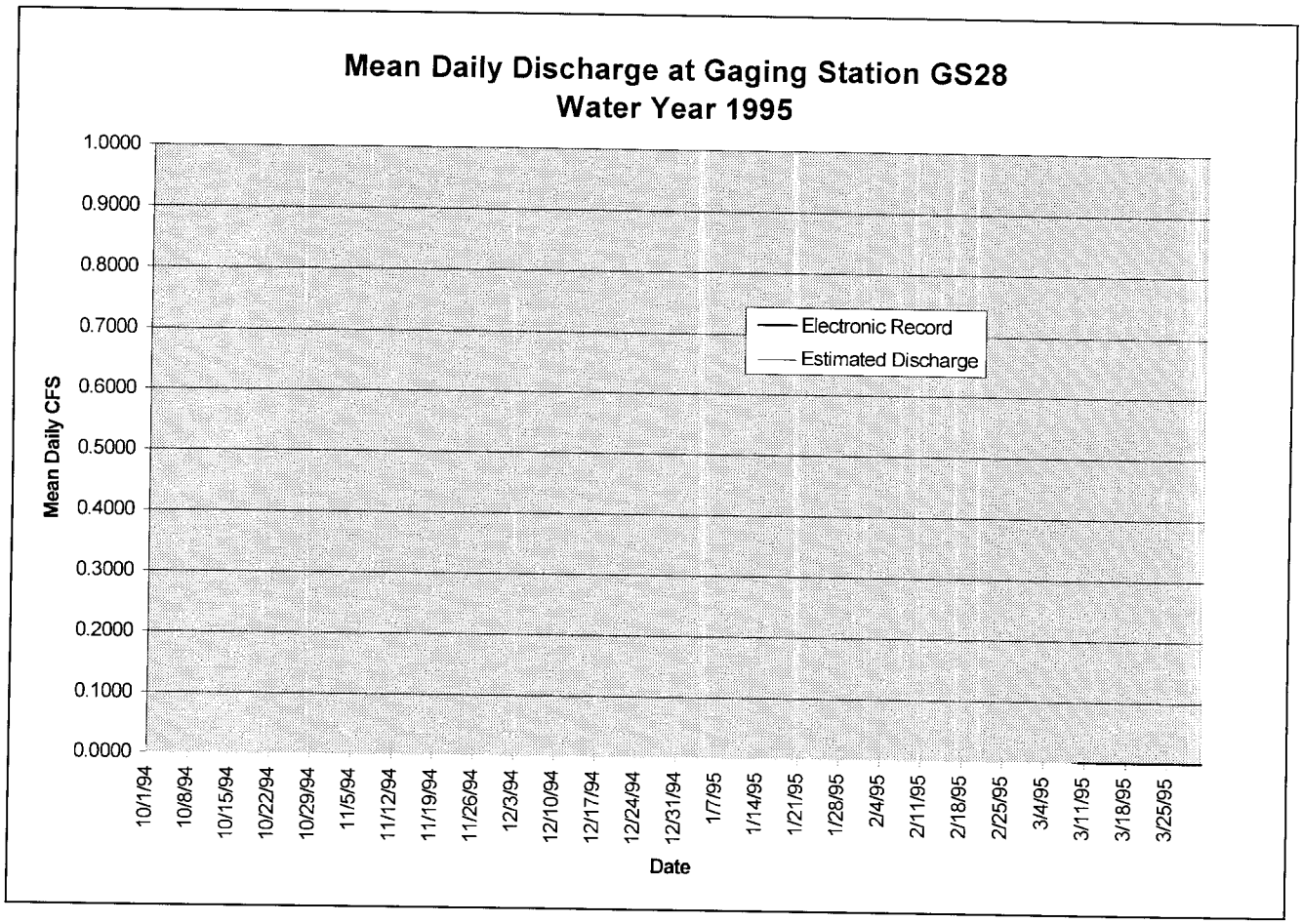


Figure 3-14. GS28 Mean Daily Discharge, Water Year 1995



Analytical Results

No samples to date.

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