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Memorandum

To: SFWMD/Seminole Agreement Working Group

Through: Linda Lindstrom, Director, Hydro Information Systems and Assessment Division, Environmental Monitoring and Assessment Department

From: Tim Bechtel, Sr. Supv. Environ. Scientist, Hydro Information Systems and Assessment Division, Environmental Monitoring and Assessment Department

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Date: February 23, 2000

Subject: Final Fifth Progress Report - May 1, 1998 to April 30, 1999

Enclosed is the final fifth progress report preprepared in accordance with the SFWMD/Seminole Tribe Agreement, Paragraph A.3. The report summarizes the water quality data collected and the resulting total phosphorus load calculations for the period May 1, 1998 through April 30, 1999.

Please contact Tim Bechtel at 561-682-6392 or E-mail tbechtel@sfwmd.gov if you have any questions or suggestions regarding this report.

Final

Fifth Progress Report

Total Phosphorus Load Calculations for Sites Stipulated in the SFWMD/Seminole Tribe Agreement

For Period May 1, 1998 to April 30, 1999

By

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February 23, 2000

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Submitted to

SFWMD/ Seminole Tribe Agreement Working Group

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Introduction

The Agreement between the South Florida Water Management District (the District) and the Seminole Tribe of Florida (the Seminole Tribe), executed on January 17, 1996, required periodic monitoring of the quality of surface water entering, originating on and leaving the Big Cypress Seminole Indian Reservation (the Reservation). The results of the monitoring were to ensure compliance with applicable water quality standards imposed by law and that the overall surface water quality within the Reservation was not adversely impacted.

Pursuant to the Agreement, the District, with the cooperation of the Seminole Tribe, initiated a water quality monitoring program in June of 1996. To help the SFWMD/Seminole Agreement Working Group track the results and progress of this monitoring effort, the District has been preparing semiannual reports that summarize and analyze the water quality and flow data collected since the implementation of the program.

The following six sites are monitored by the District: North Feeder Canal (**NFEED**), West Feeder Canal (**WWEIR**), S190 Spillway (**S190**), L3 Canal Sampling Station (**L3BRS/USL3BRS**), U.S. Sugar Outfall (**USSO**) from the C-139 Annex, and the S140 Pump Station Complex (**S140**). The two sites monitored by the Seminole Tribe are L28 Interceptor Canal North (**L28IN**) and L28 Canal Upstream (**L28U**). The Seminole Tribe began their water quality and nutrient data collection at these sites on August 21, 1997. The Miccosukee Tribe has collected water quality data at the L28 Interceptor Canal South (**L28IS**) site since March 13, 1998. The United States Geological Survey (USGS) has been collecting flow data at the L28IN, L28IS and L28U sites since March 1, 1997. These flow data are used in the TP load calculations for L28IN, L28IS and L28U.

This fifth progress report includes data from May 1, 1998 through April 30, 1999 (Water Year 99). Data for the six sites monitored by the District for the period May 1, 1998 through October 31, 1998 were reported in the Fourth Semiannual Progress Report dated March 8, 1999. The Seminole Tribe water quality data were not available for that report. The Miccosukee Tribe water quality data were not available at the time the draft report was prepared, but were appended to the final report. The results of TP load calculations from both autosample and grab sample data from all monitoring sites for Water Year 99 are presented in this report. In addition, all flow and TP concentration data collected from the beginning of the monitoring program through April 30, 1999 are plotted to help interpret the relationship between flow and concentration at each site.

In this report flows are compared between the following sites:

1) WWEIR + NFEED with S190
2) L28IN and L28IS with S190
3) L28IN and L28IS
4) L28U with G89DS (a SFWMD UVM site) and USSO.

All the water quality data collected from May 1996 through April 1999 at the nine monitoring sites are summarized by water year. Dissolved oxygen concentrations below the 5.0 mg/L criterion were measured periodically at all sites. This condition is typical of South Florida canals. The minimum pH criterion of 6.0 pH units was exceeded at WWEIR and NFEED and the maximum pH criterion of 8.5 pH units was exceeded at L28IN in Water Year 1999.

Most trace metal measurements were below the method detection limit (MDL). Cadmium, copper and zinc were detected above the MDL. When the measured concentrations were compared with the Class III criteria, which is a function of water hardness, all concentrations were less than their respective criterion.

Methods

The water quality sampling and flow measurement sites that were established for the Agreement are indicated in **Figure 1**. The NFEED, WWEIR, USSO, L3BRS/USL3BRS, S190 and S140 sites are maintained and sampled by the District. The NFEED, USSO, and L3BRS/USL3BRS sites are equipped with ultrasonic velocity meters (UVMs) to measure flow and auto-samplers to collect flow proportional water quality samples. The WWEIR site uses a weir equation to calculate flow and trigger an auto-sampler. Grab samples are also collected at the NFEED, WWEIR, USSO and L3BRS/USL3BRS sites to supplement the auto-sampler data. Flow through S190 and S140 is calculated using structure-specific equations. At both S190 and S140 water quality data are collected by grab sampling procedures. The sites at L28IN and L28U are equipped with UVMs installed and maintained by the USGS and auto-samplers supplied and operated by the Seminole Tribe. The Miccosukee Tribe has a monitoring site located at L28IS, which is equipped with a UVM supplied by the USGS and a Tribe-owned auto-sampler.

During this reporting period the West Feeder Canal sheet pile weir was modified to provide better flow data. Many problems were encountered while trying to compute flows using the sheet pile weir. The weir crest was irregular in length, being longer during low flows because water flowed over each segment of the Z-shaped crest. As flows and water depth over the weir increased, the discharge became more similar to that of a straight, sharp-crested weir. In addition, elevations of the 91 individual sheet piles ranged from 17.095 to 16.853 feet, creating an uneven weir crest. The Z-shape of the sheets tended to trap floating vegetation, which interfered with free flow over the crest and prevented accurate flow computation. Between February 19 and March 28, 1999, a straight and level concrete weir cap was poured over the old weir. The new weir crest elevation is 17.00 feet +/- 0.125 inches and length is 136.25 feet. The following new free flow weir equation was applied beginning March 28:

$$Q = 3 * [136.25 - 0.2(H_w - 17)] * [H_w - 17]^{1.5}$$

Four stream gauging events have since been conducted. The R^2 value for the linear regression equation comparing flows based on the weir equation with the flows measured during the stream gauging events is 0.974.

There have been ongoing problems measuring reliable flows at the North Feeder Canal site due to the unique circulation pattern as described in previous reports. A decision was made in November 1998 to monitor inflows near the north end of the North Feeder Canal at structures G108 and Culvert 17A to resolve the flow-measuring problem at the NFEED site. As of the writing of this report, the structures have been instrumented for flow measurement but there have been some culvert flow sensor failures that are currently being investigated. Once the sensor problem is resolved, autosamplers will be used at both sites to collect flow-proportional samples. The NFEED UVM site will remain operational until the flow data collected at G108 and Culvert 17A are considered to be reliable.

In the meantime, we are collecting time composite.

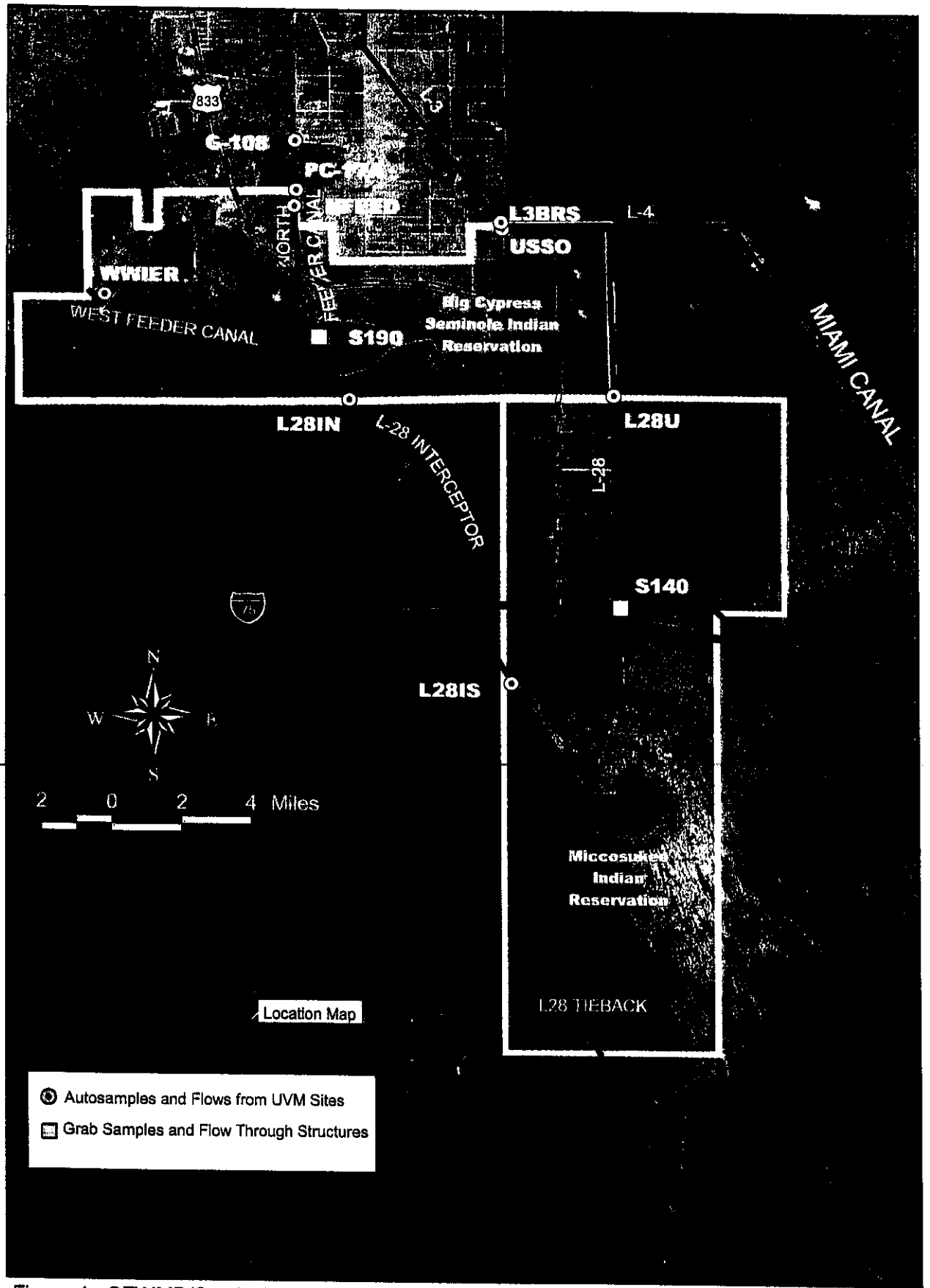


Figure 1. SFWMD/Seminole Agreement Water Quality and Flow Sampling Sites.

Results of Phosphorus Load Calculations

Graphs for the nine sites summarizing 1) daily mean flows, expressed in cubic feet per second (cfs), 2) individual auto and grab sample TP concentrations in parts per billion (ppb), and 3) the resulting calculated daily TP loads in kilograms (kg) are presented in **Figures 2a** through **10a** for the period May 1, 1998 through April 30, 1999. Note that the same scales for flows, TP concentrations and TP loads are used in all nine figures, except for the flow and TP load at L3BRS, to make comparisons easy. Graphs of TP concentration versus flow, using all data collected since the monitoring program began, are presented for each site in **Figures 2b** through **10b.** to demonstrate the relationship between flow and TP concentrations.

The results of the water flow analyses and the calculated total phosphorus loads are presented in **Tables 1** and **2**. These data were used to create the total phosphorus load graph for each site.

The flow data from May 1, 1998 through the middle of July reflect the very dry conditions that existed throughout south Florida (**Figures 2a-10a**). Rainfall beginning in the middle of July resulted in slowly increasing flows until the typical wet season, tropical storm induced rainfall caused more normal flow conditions from August through early October. Tropical Storm Mitch contributed almost six inches of rain in just over one day (November 4 and 5) which created the highest monthly flow for the entire water year. From December 1998 through April 1999 rainfall was below historical monthly averages except for January which had 2.99 inches or 134% of the historical average. The individual monthly flows, TP loads and TP flow-weighted mean concentrations for each site can be found in **Table 3**.

Figure 11 presents TP load and flow-weighted mean calculation results separately for autosamplers and grab samples. These data were taken from **Table 2**. Theoretically, loads calculated from autosampler data should be somewhat greater and more representative of all flows at a site than loads calculated from grab sample data because grab sampling is generally not conducted during storms that cause high canal flows. Consequently, grab samples tend to underestimate the load. The second point to note about the data in **Figure 11** is that the following relationships between TP loads should exist at the following sites:

1) The sum of the loads from the West Feeder and North Feeder Canals should be close to the load passing through the S190 structure. For this reporting period the WWEIR + NFEED grab sample load was 4339 kg compared to the S190 grab sample load 4446 kg.
2) The loads at L28IN and L28IS should be close to the S190 load because there are no inflow points along the L28 Interceptor Canal between S190 and L28IS. For this reporting period loads calculated from grab samples at L28IN (2290 kg) and L28IS (3013 kg) were lower than the S190 load of 4446 kg calculated from grab samples.
3) The load between USSO, L28U and S140 should increase during wet periods due to discharges into the L28 Canal from drainage ditches along the southern and western banks of the canal. For this reporting period, the USSO grab

Do we have any irrigation connections?

look at flows.

sample load was 3014 kg compared to the L28U and S140 grab sample loads of 4736 and 6372 kg, respectively.

Until autosamplers are installed at S190 and S140, similar comparisons between TP loads collected by autosamplers can not be made.

Figures 2a-10a provide information regarding possible data problems. Potential solutions are proposed for the problems.

Figure 2a. L3BRS/USL3BRS: TP concentration data collected by autosampler and grab sampling respond consistently to the magnitude of high flows. On three occasions during very low flows in February, March and April 1999 autosampler TP data were 2.1, 1.8 and 3.6 times higher, respectively, than the corresponding grab sample or interpolated grab sample TP data. On April 22 the grab and autosampler results were essentially the same, 0.065 and 0.066 ppb.
Possible problems: higher concentrations of TP in samples collected by autosampler in near-stagnant water; auto samples and grab samples not collected at the same exact location; dense mats of floating vegetation frequently present USL3BRS
Potential solution: collect grab sample through autosampler as well as at L3BRS.

Figure 3a. USSO: Seven times during the water year the grab sample data were higher than the autosampler data.
Possible problem: contamination in grab samples since this area is frequently covered with floating vegetation.
Potential solution: relocate grab sample site to vegetation-free area.

Figure 4a. L28U. The majority of autosampler TP data have been significantly greater than the corresponding grab sample data. The autosampler TP data appear, when two composite samples taken during the high flow period in November 1998 are excluded, to be independent of flow (**Figure 4b**).
Possible problem: the autosampler is not working properly.
Problem resolved July 22, 1999: the PVC pipe holding the autosampler intake tubing had a cap placed over it when installed, thereby not allowing the intake to be properly purged. This caused the TP data to be biased high. Autosampler and grab sample data collected from August 4 through September 8, 1999 were not significantly different.

Figure 5a. S140. The grab sample data are not being collected during the peak flow events. **Figure 5b** indicates that the higher flows have lower concentrations than the lower flows, creating a negative linear relationship.
Possible problem: the TP load is being underestimated.
Potential solution: install autosampler.

Figure 6a. WWEIR. The modification of the weir crest and subsequent stream gauging to verify the new weir equation were described in the Methods section of this report. At this time there are no known problems at WWEIR.

Figure 7a. NFEED. The selection of G108 and C17A as new sites to directly monitor inflows to the North Feeder Canal was discussed in the Methods section of this report. The autosampler and grab sample TP concentration data match very well, however the concentration relationship to flow is not well defined (**Figure 7b**).
Possible problem: the total flow discharged from the North Feeder Canal has been difficult to measure thereby making the TP load suspect.
Potential solution: instrumenting G108 and C17A to measure inflows and trigger autosamplers at these locations.

Figure 8a. S190. The grab sample data are not being collected during the peak flow events. **Figure 8b** indicates a positive linear relationship between TP samples collected by grab sampling and flow.
Possible problem: the TP load is being underestimated.
Potential solution: install autosampler.

Figure 9a. L28IN. Almost all autosampler TP data are significantly greater than the corresponding grab sample data. The autosampler was being triggered by predominantly low flows in March and April 1999 (**Table 2**). The autosampler TP data are negatively related to flow (**Figure 9b**).
Possible problem: the autosampler is not working properly.
Problem resolved July 22, 1999: the PVC pipe holding the autosampler intake tubing had a cap placed over it when installed, thereby not allowing the intake to be properly purged. This caused the TP data to be biased high. Autosampler and grab sample data collected from August 4 through September 8, 1999 were not significantly different.

Figure 10a. L28IS. Autosampler TP data were in almost all cases higher than the grab sampling data. There were several occasions during low flow conditions when the autosampler data were much higher than the grab sample data. Both the autosampler and grab sample TP concentration data were linear but not strongly related to flow (**Figure 10b**).
Possible problem: the UVMs do not produce accurate flow estimates under low or no flow conditions. Analyzing autosampler data when there is no net positive flow in the L28 Interceptor Canal, *i.e.* the S190 gates are closed for long periods and there has been no significant rainfall, may be a waste of resources. Based on the flow data for S190 (**Figure 8a**), the gates were closed from May 1998 through the beginning of August and closed again from the second week in March through April 30, 1999. No practical information regarding TP loading or flow-weighted mean concentrations into or from the L28 Interceptor Canal is obtained during dry periods.

Potential solutions: coordinate autosampling with the District control room regarding the flow status of S190 during dry periods and track local rainfall events. Set the CR10 to record positive flows at a higher minimum threshold, thereby reducing the occurrences when the autosampler would be triggered by wind driven flows. These same potential solutions would apply to L28IN.

Figure 2a. L3BRS TP Load, Flow and TP Concentration

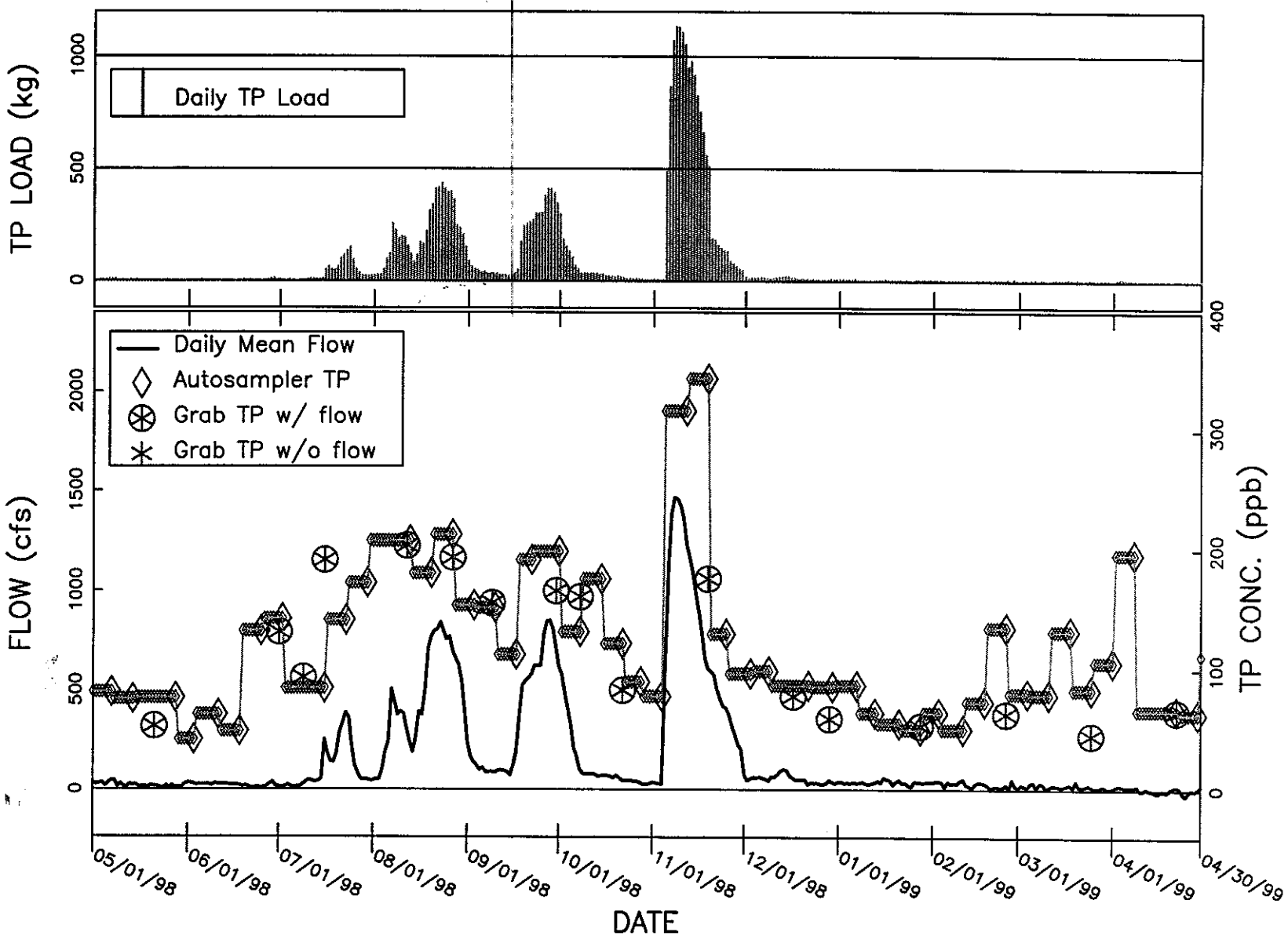


Figure 2b. Relationship between L3BRS Flow and TP Concentration for WY97 through WY99

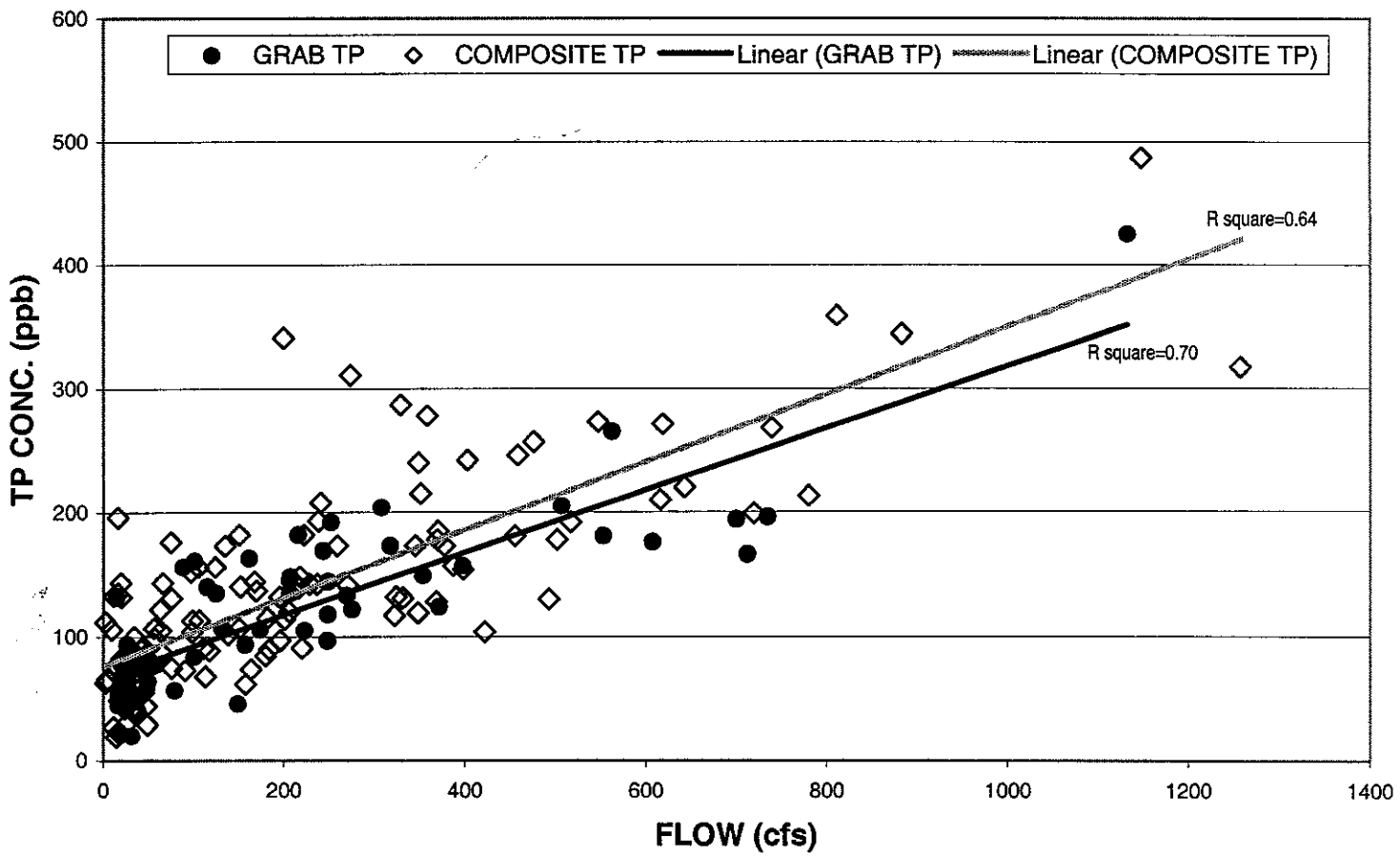


Figure 3a. USSO TP Load, Flow and TP Concentration

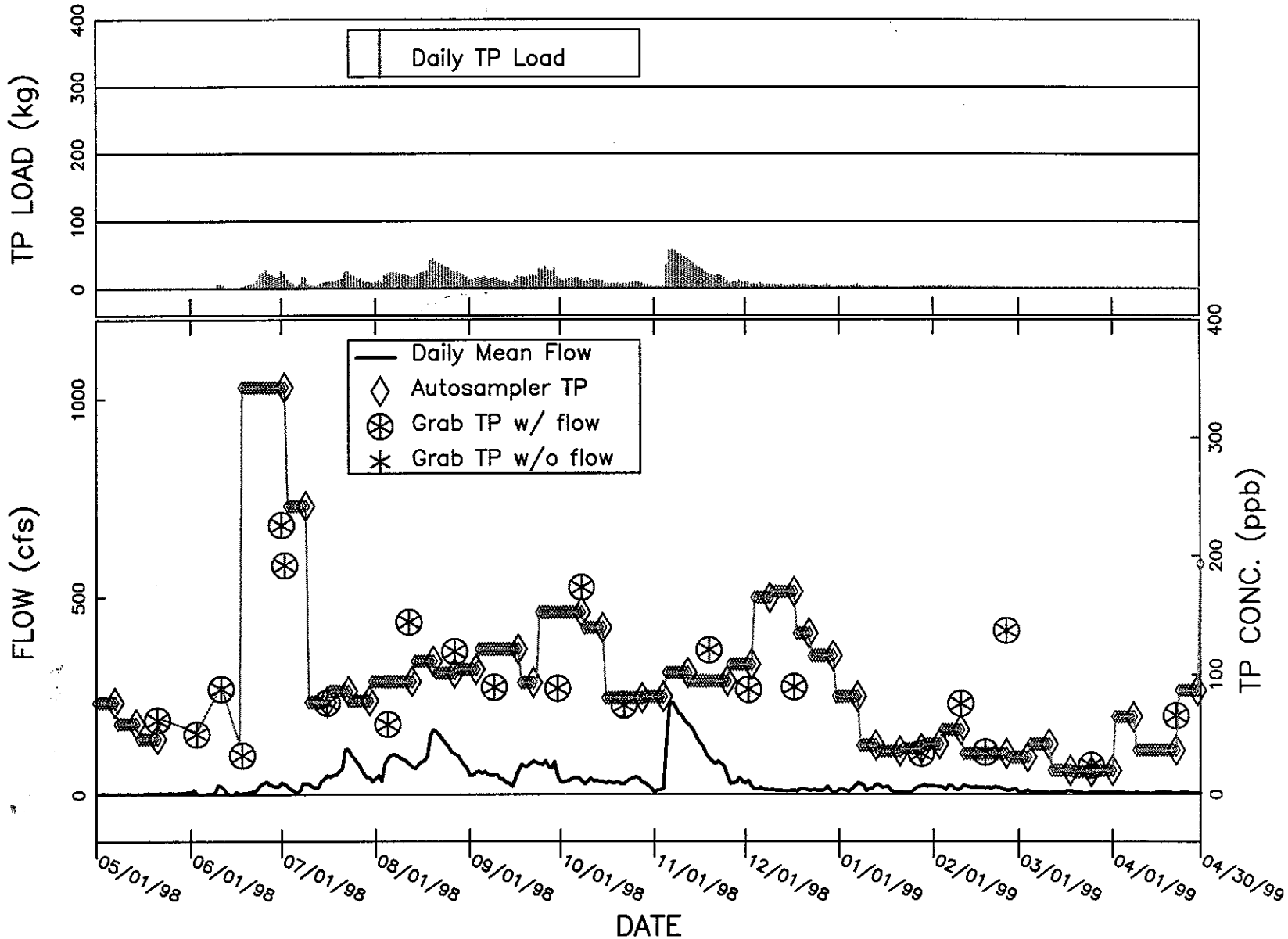


Figure 3b. Relationship between USSO Flow and TP Concentration for WY97 through WY99

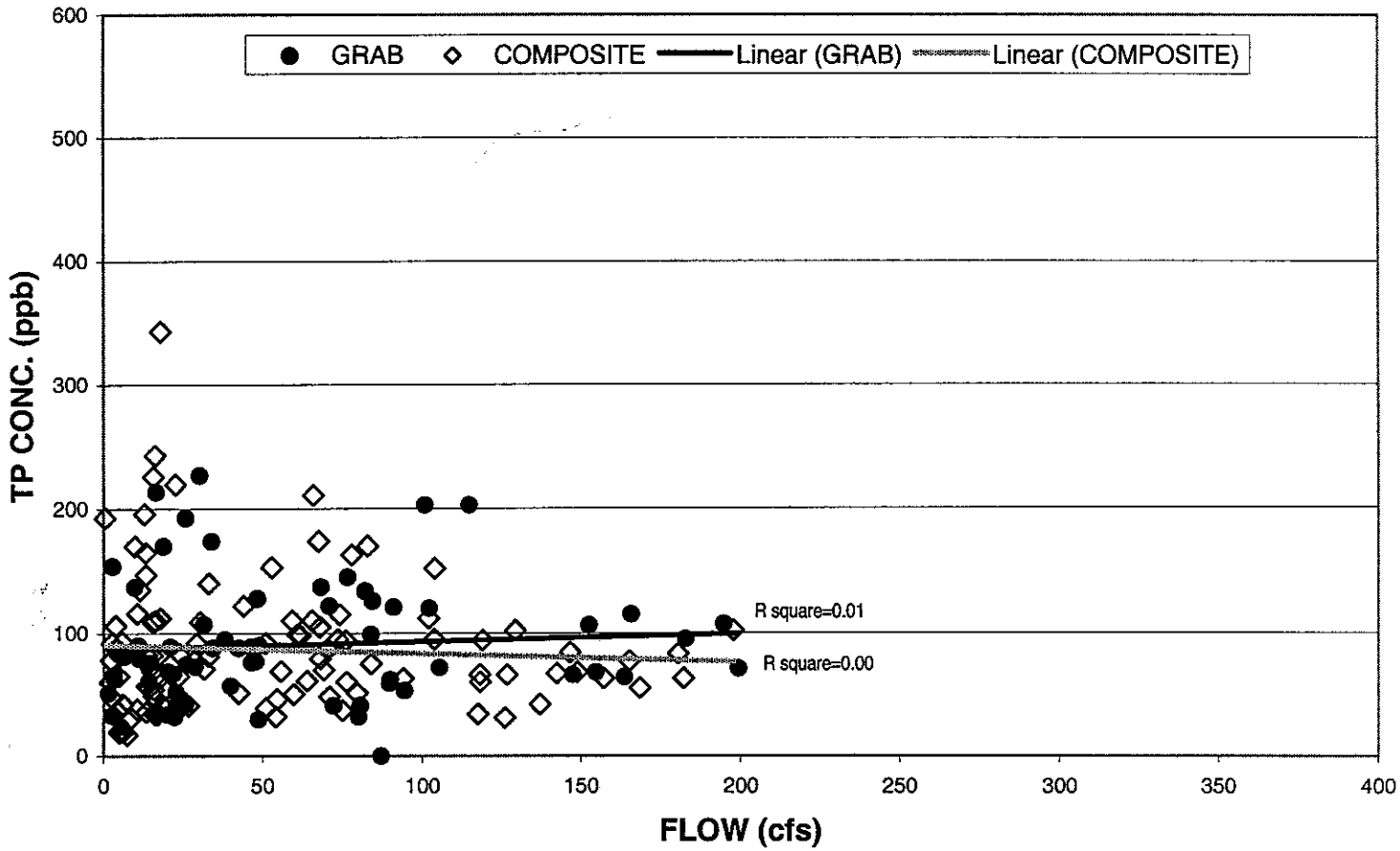


Figure 4a. L28U TP Load, Flow and TP Concentration

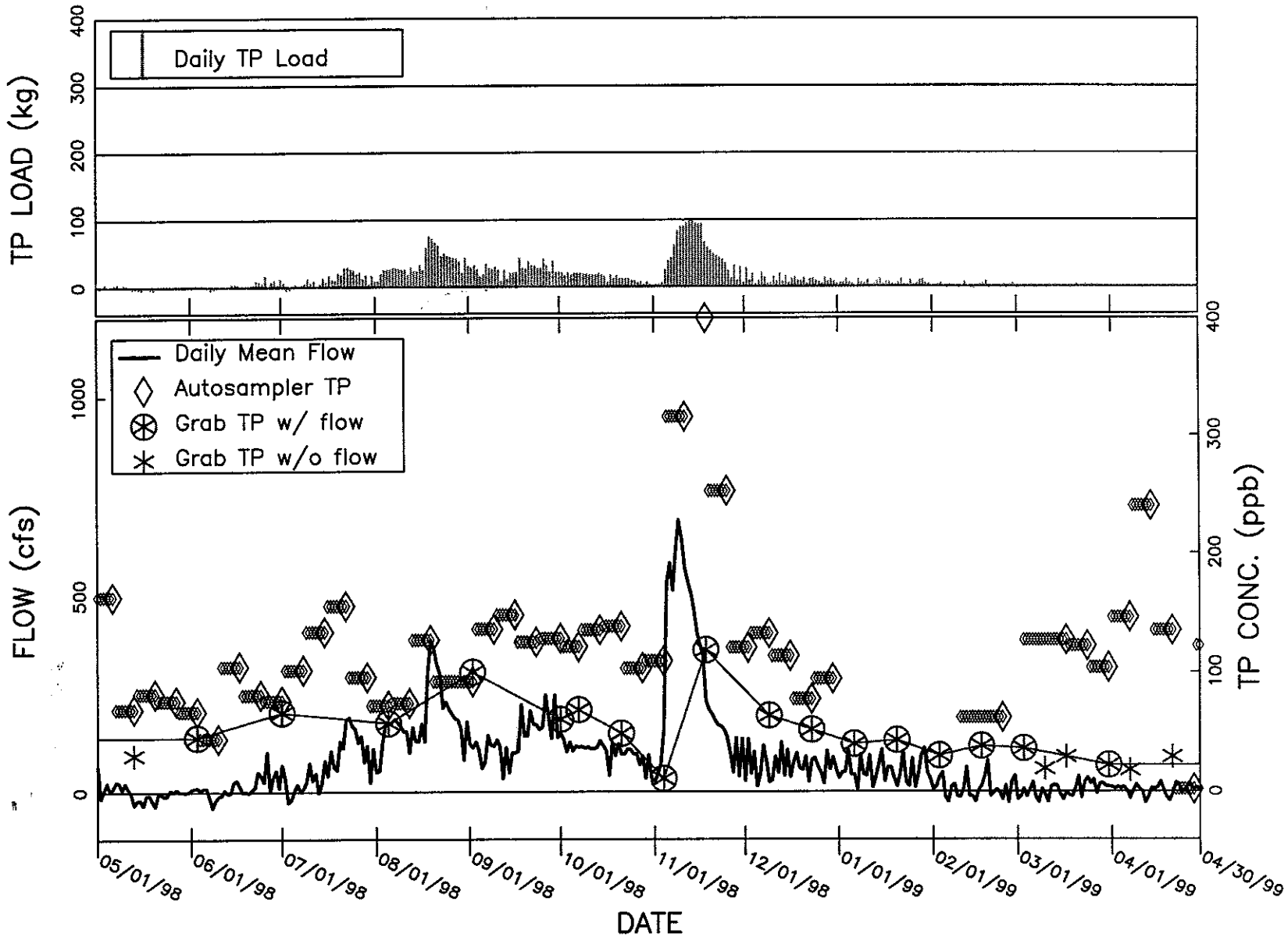


Figure 4b. Relationship between L28U Flow and TP Concentration for WY98 through WY99

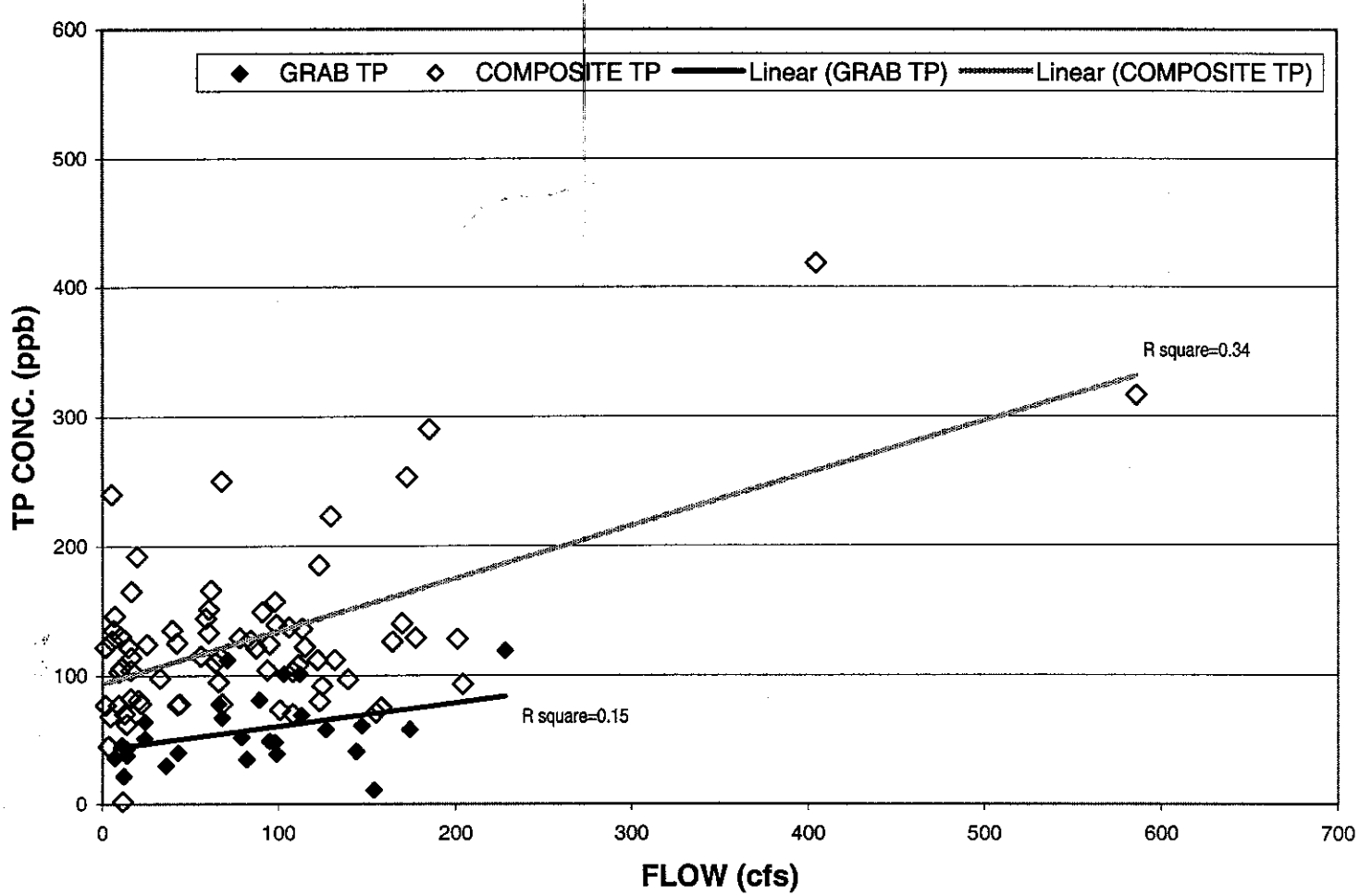


Figure 5a. S140 TP Load, Flow and TP Concentration

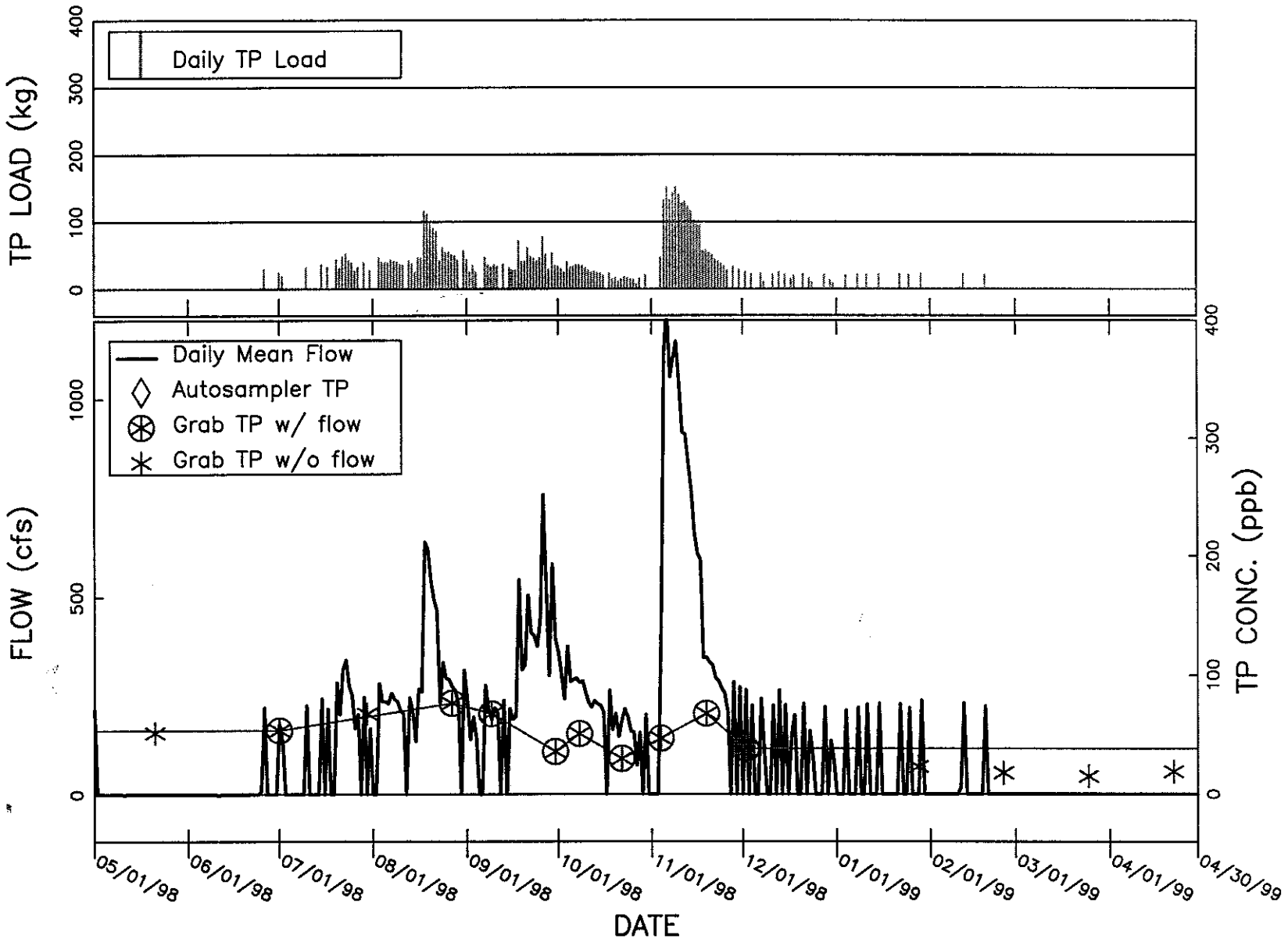


Figure 5b. Relationship between S140 Flow and TP Concentrations for WY97 through WY99

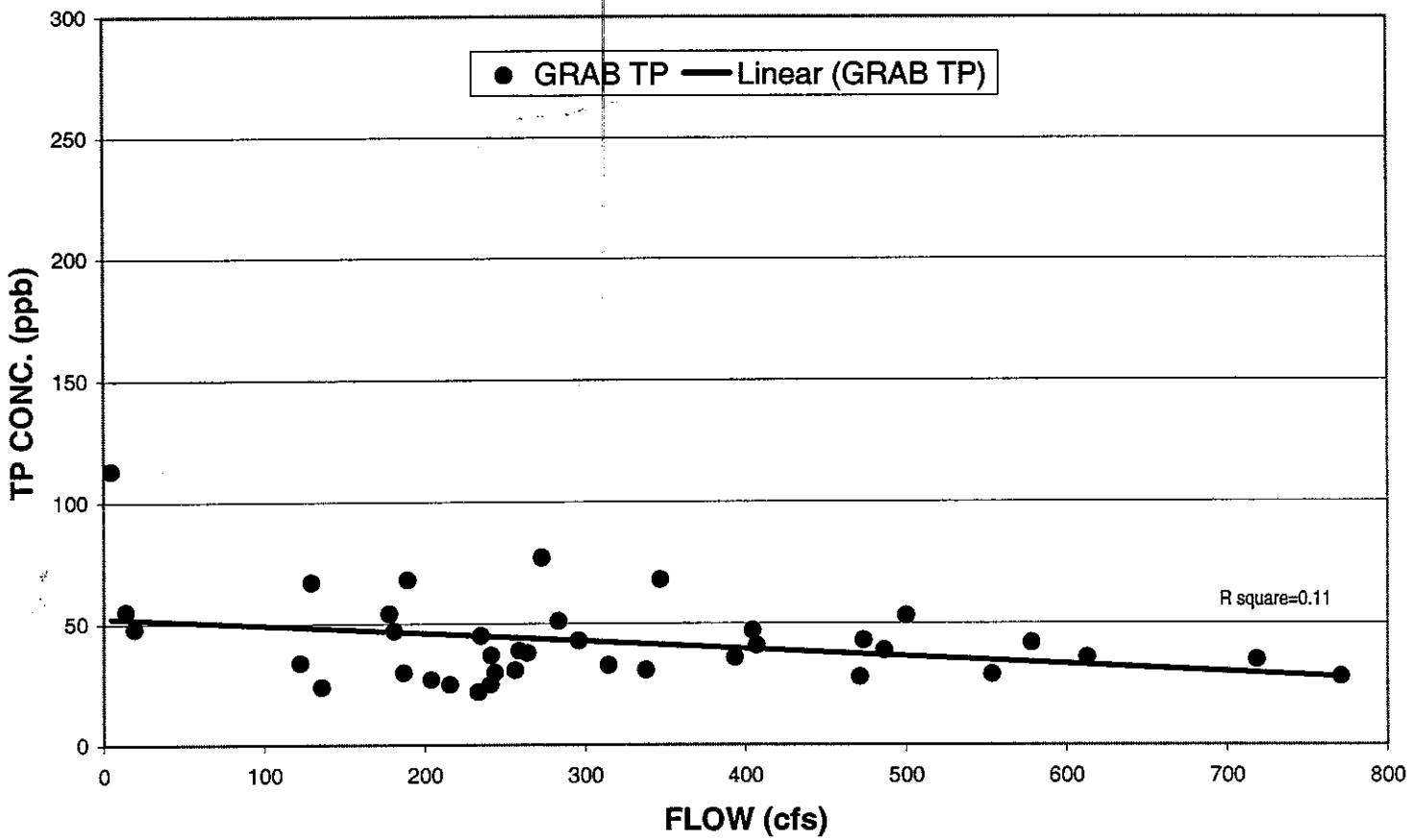


Figure 6a. WWEIR TP Load, Flow and TP Concentration

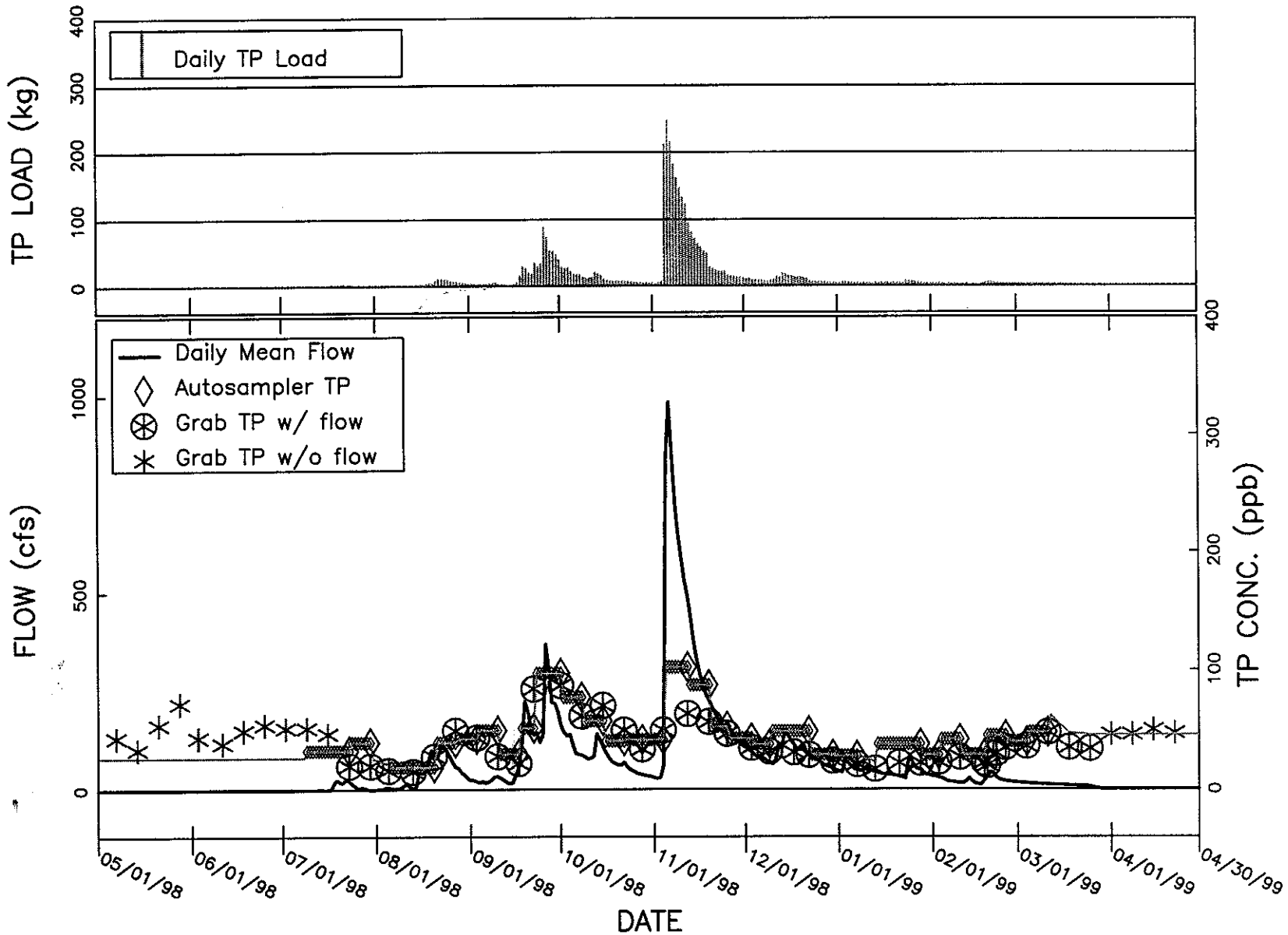


Figure 6b. Relationship between WWEIR Flow and TP Concentration for WY98 through WY99

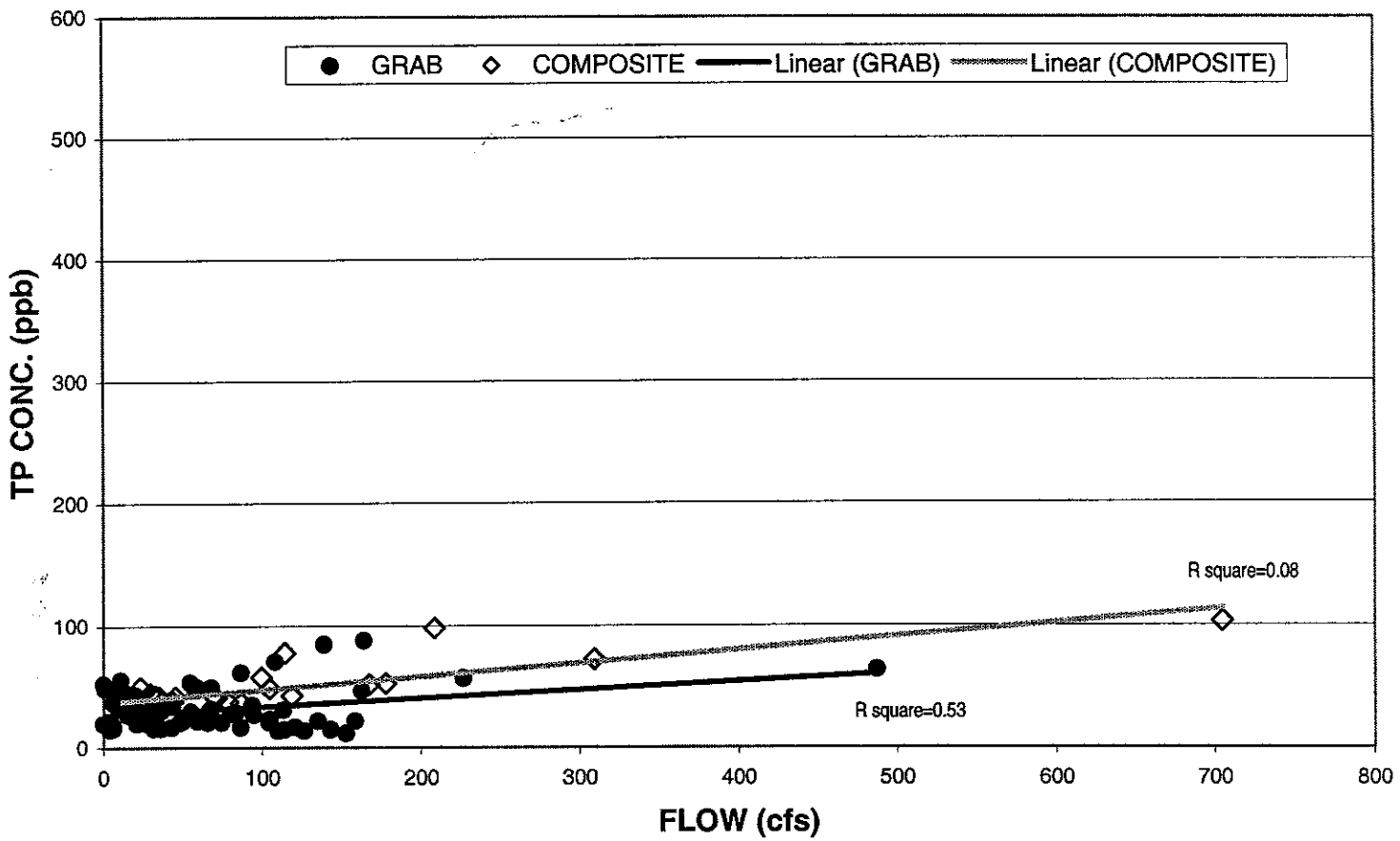


Figure 7a. NFEED TP Load, Flow and TP Concentration

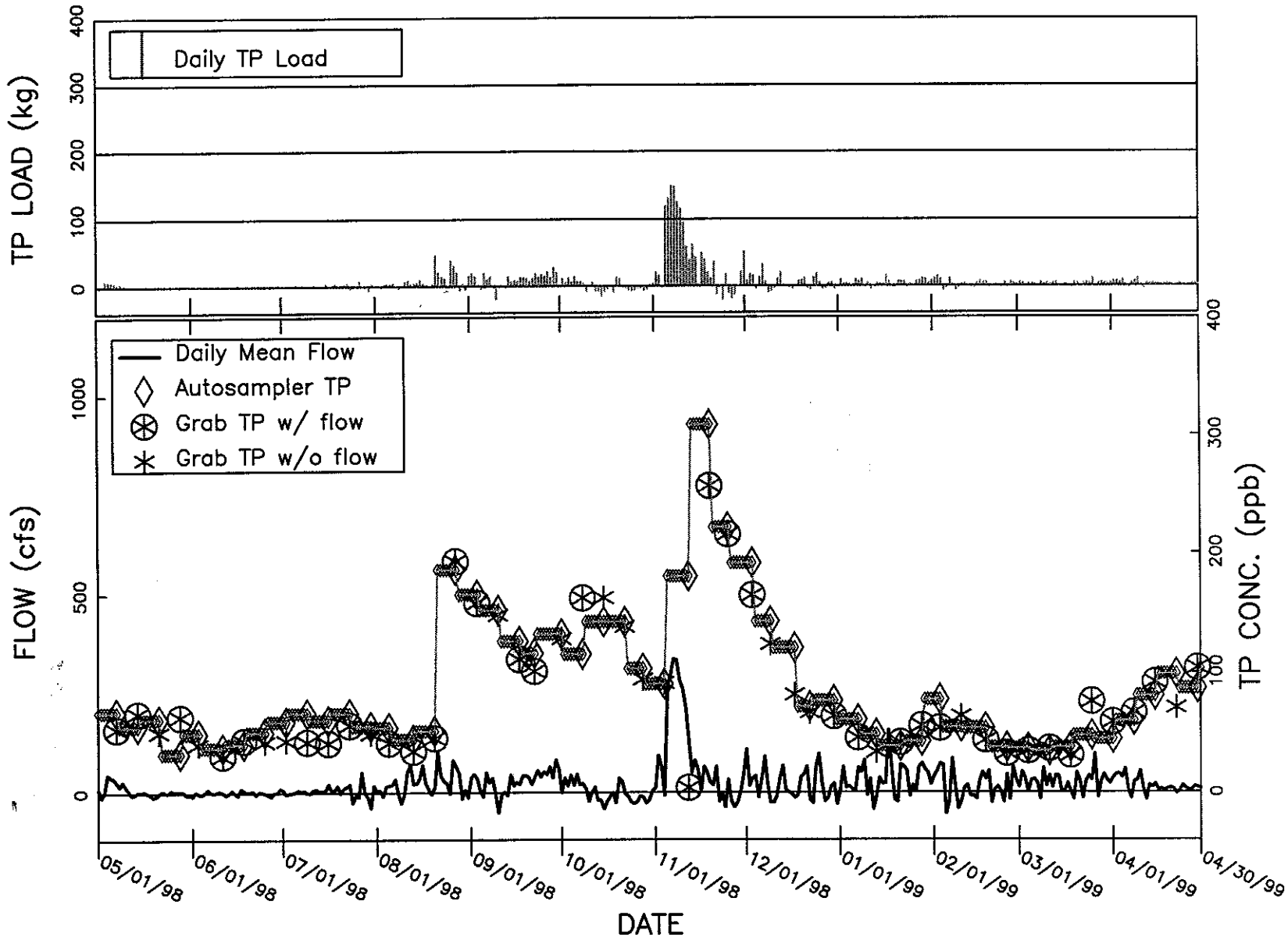


Figure 7b. Relationship between NFEED Flow and TP Concentration for WY97 through WY99

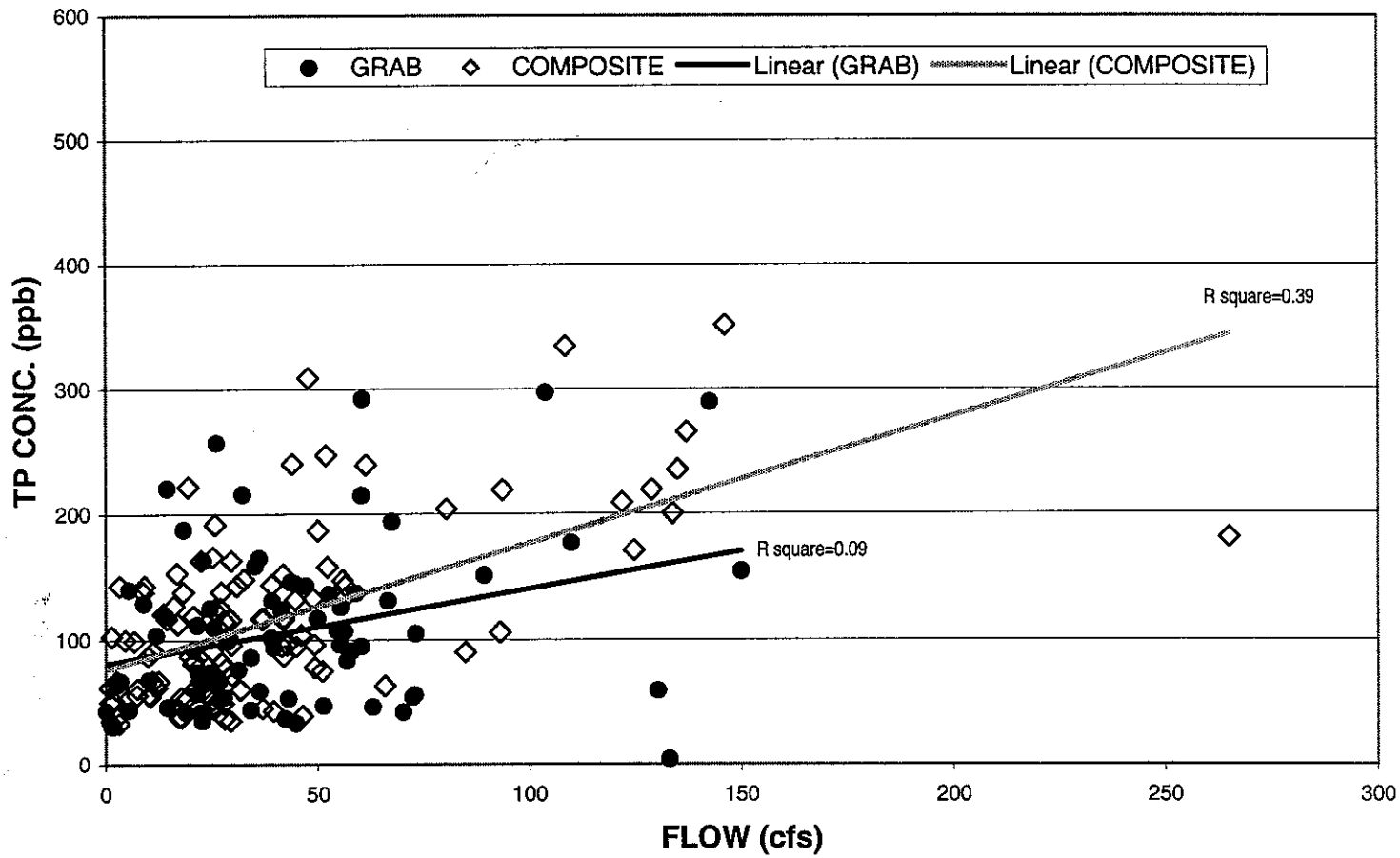


Figure 8a. S190 TP Load, Flow and TP Concentration

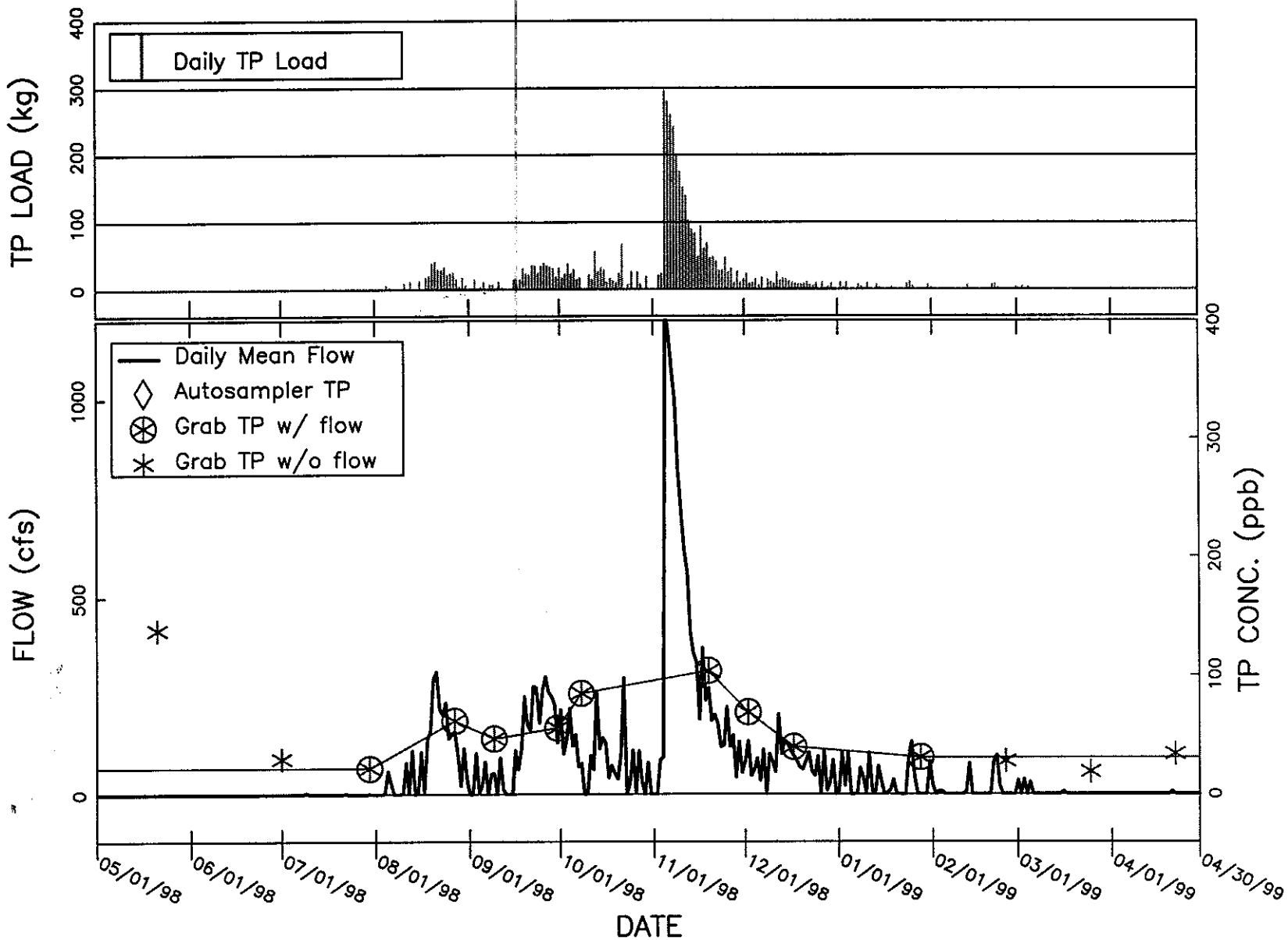


Figure 8b. Relationship between S190 Flow and TP Concentration for WY97 through WY99

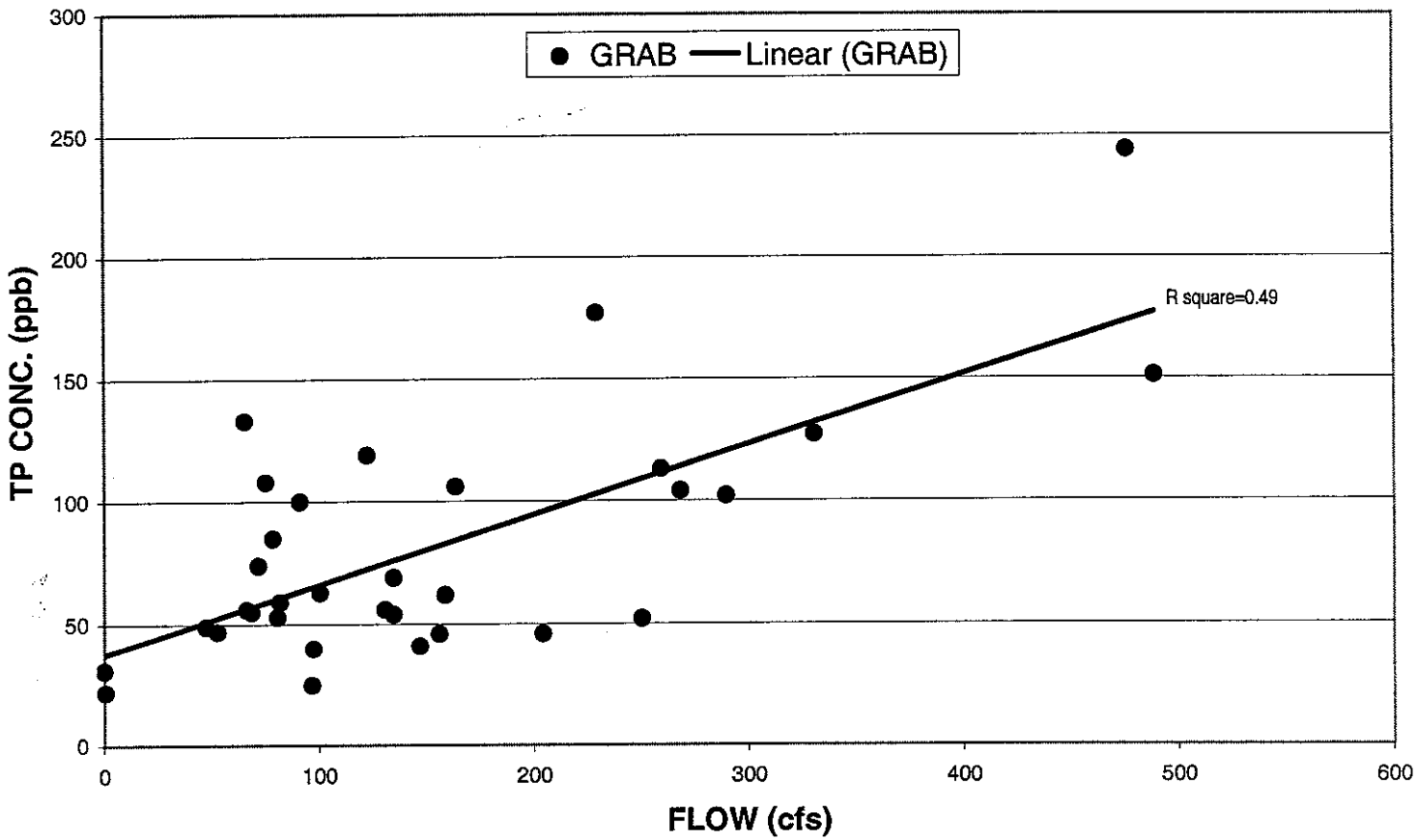


Figure 9a. L28IN TP Load, Flow and TP Concentration

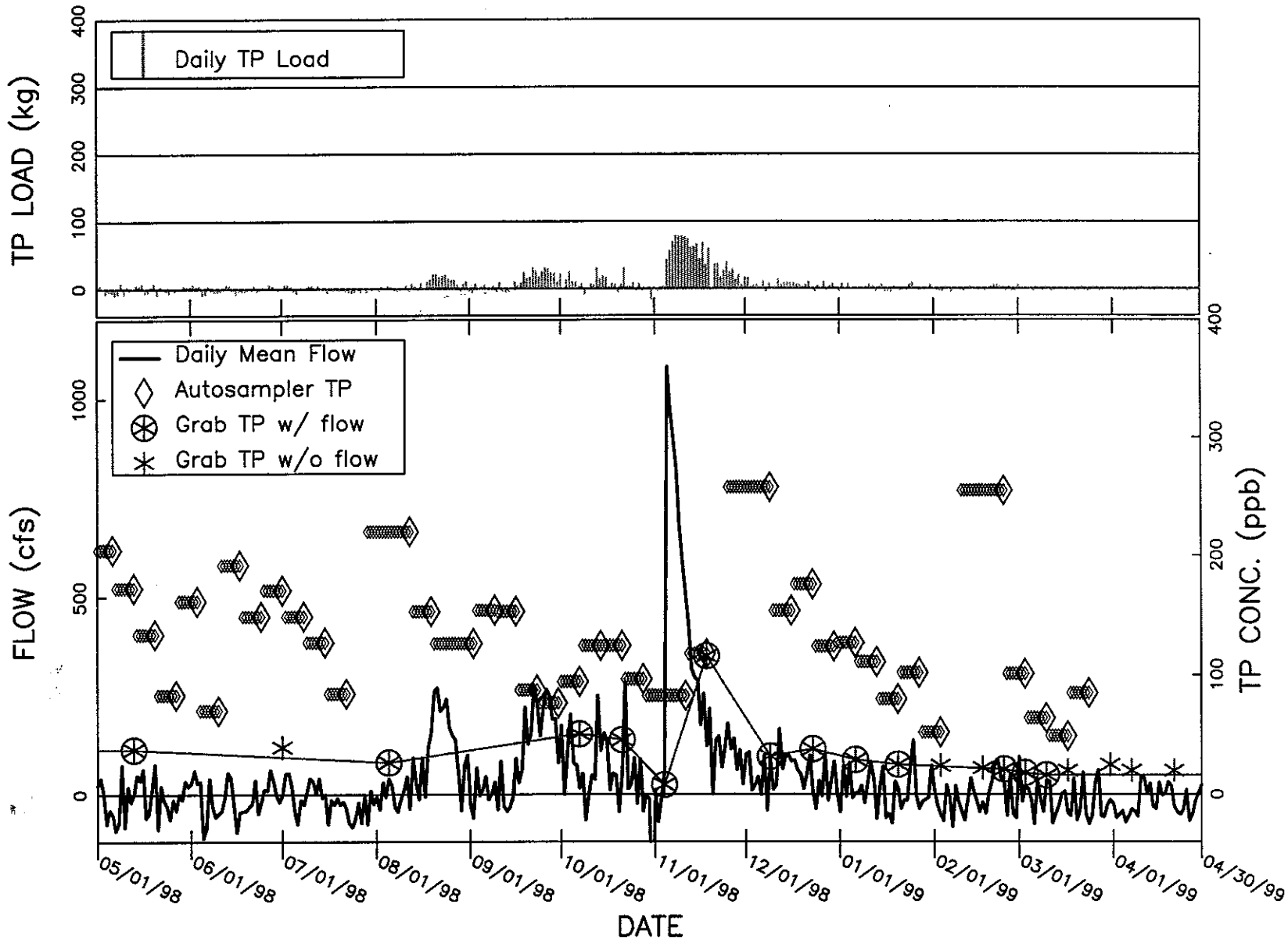


Figure 9b. Relationship between L28IN Flow and TP Concentration for WY98 through WY99

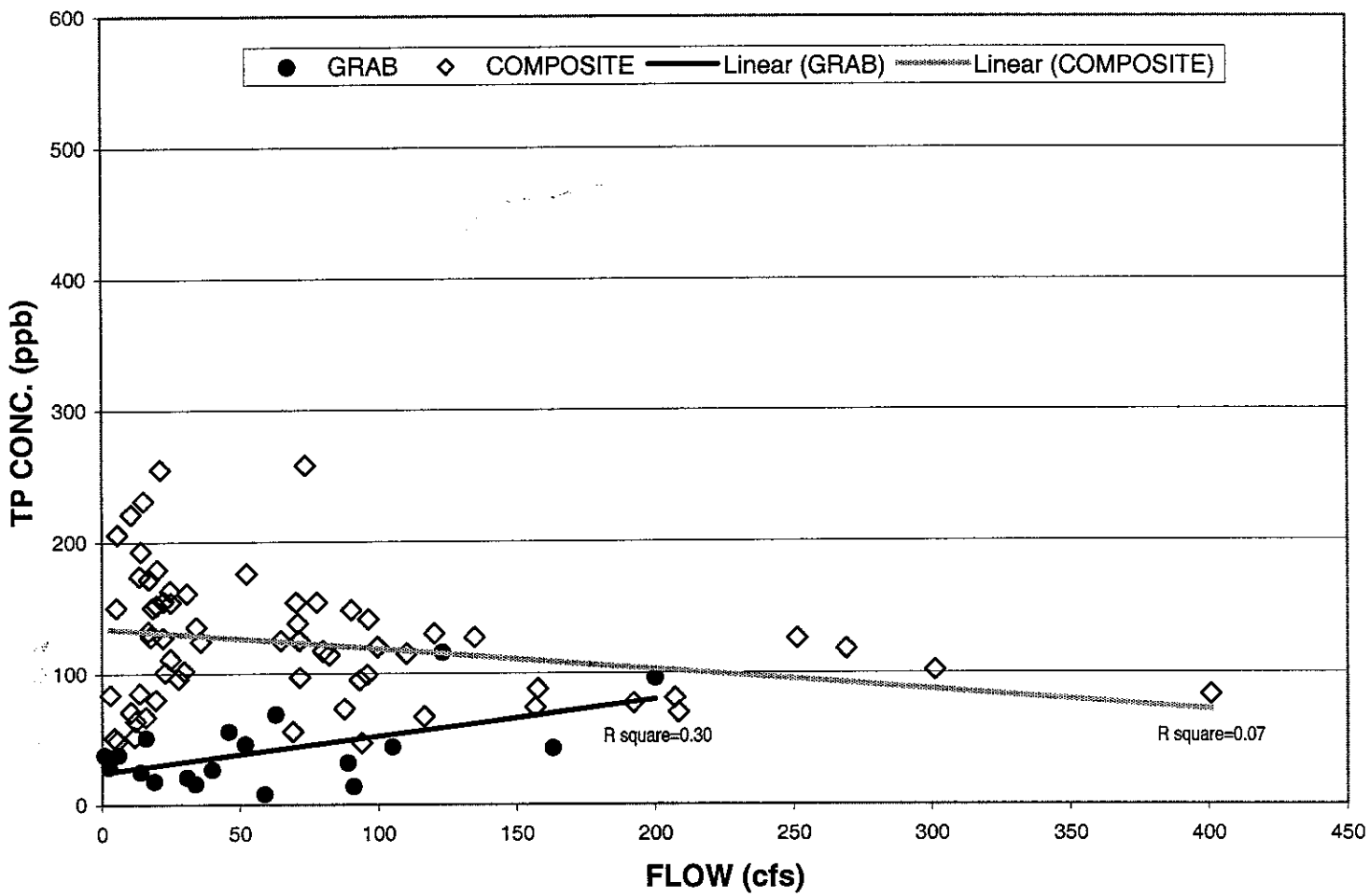


Figure10a. L28IS TP Load, Flow and TP Concentration

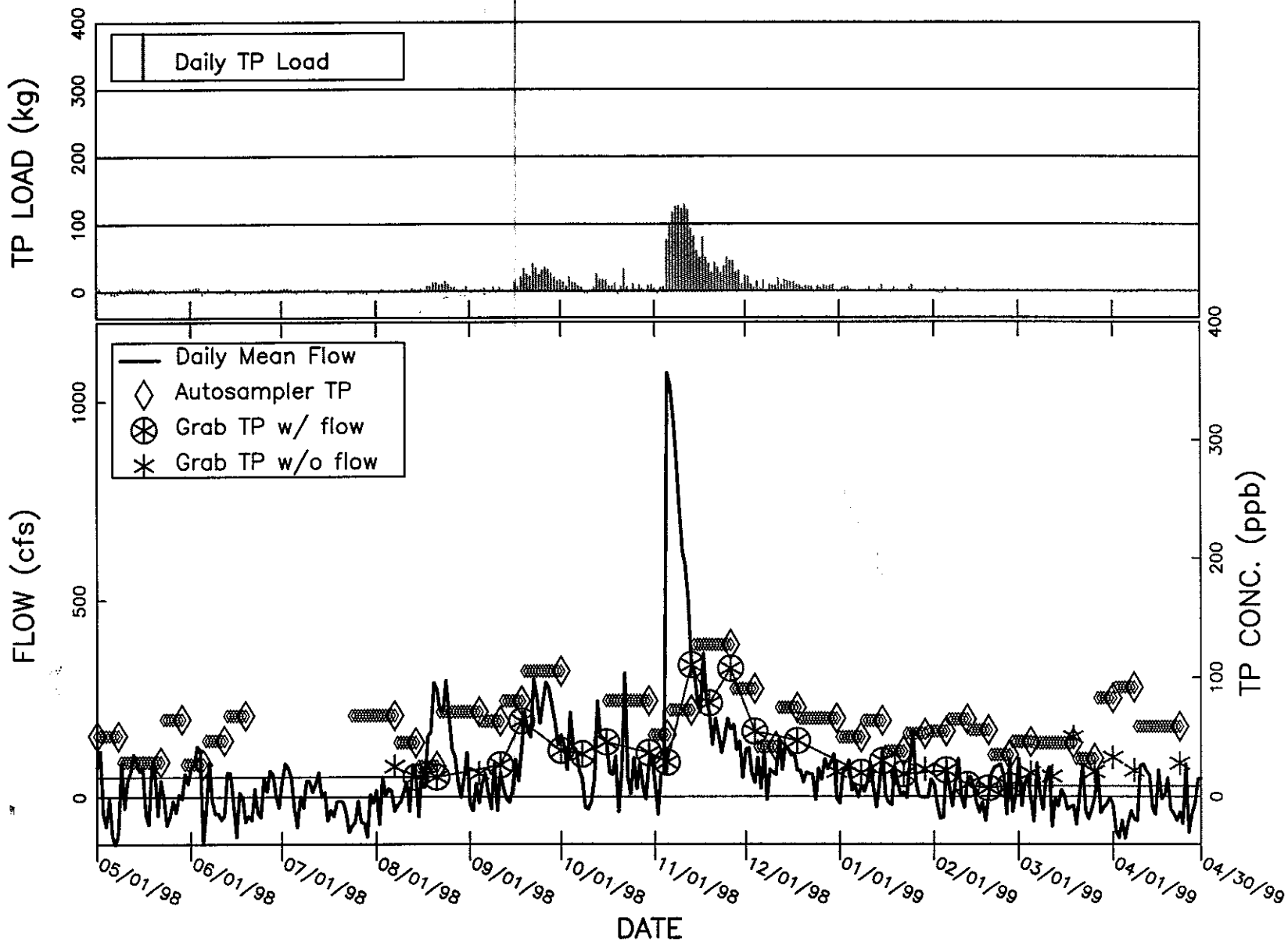


Figure 10b. Relationship between L28IS Flow and TP Concentration for WY98 through WY99

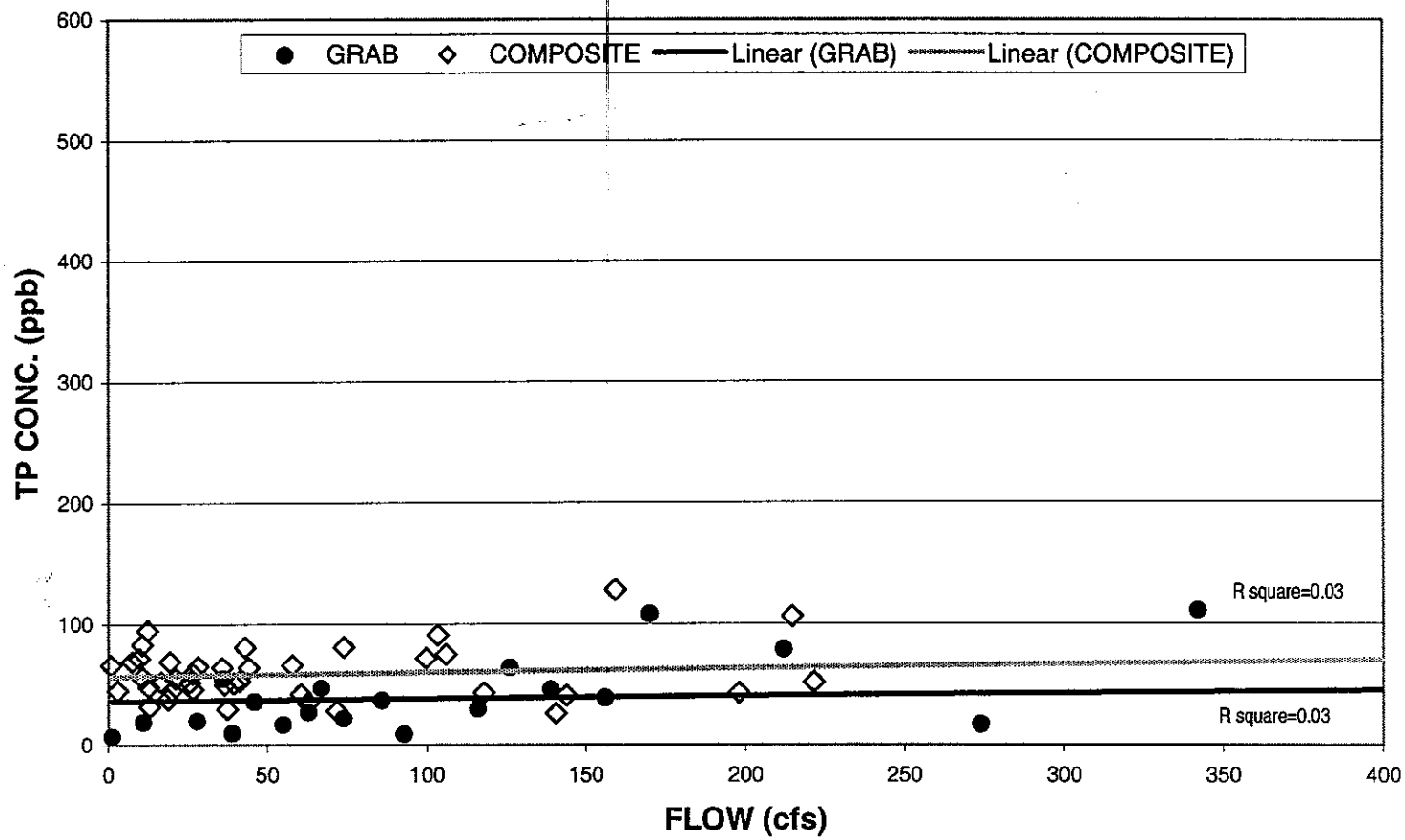


Table 1. Seminole/SFWMD Agreement total phosphorus (TP) data and water flow data summary for the period of May 1, 1998 through April 30, 1999.

For L3BRS/USL3BRS:

Term	clab	glab	qlab	dbkey	iymdcomp
L3BRS	USL3BRS	L3BRS	L3BRS_O	16245	19841030

```
Grab sample n = 18
   first datum : 1998/05/21
   last datum  : 1999/04/22
   average value (arithmetic mean) = 113 ppb
   range = 45 to 204 ppb
   note: duplicate data on grab sample 1998/05/21

Grab sample w/ positive flow n = 17
   first datum : 1998/05/21
   last datum  : 1999/04/22
   average value (arithmetic mean) = 116 ppb
   range = 45 to 204 ppb
   flow weighted mean for data w/ +flow = 170 ppb
   regression: TP conc. (in ppb) = 85.7837 + 0.1675 * flow (in cfs)

Automatic sampler (flow proportional composite) n = 48
   first datum : 1998/05/07
   last datum  : 1999/05/06
   average value (arithmetic mean) = 119 ppb
   range = 42 to 344 ppb
   flow weighted mean for data = 206 ppb
   regression: TP conc. (in ppb) = 87.4935 + 0.1960 * flow (in cfs)
   load ratio of comp:grab
      for raw data = 1.22153 (common days = 17)
      for load model = 1.29849 (common days = 352)

Flow data for 1998/05/01 through 1999/04/30
   number of no flow days = 0
   number of positive flow days = 352
   total positive flow = 58539.21 cfs-d
   number of reverse flow days = 13
   total negative (reverse) flow = -106.86 cfs-d
   no missing flow data
```

Table 1. (continued).

For USSO:

Term	clab	glab	qlab	dbkey	iymdcomp
USSO	USSO	USSO	USSO_O	16749	19961231

```
 Grab sample n = 24
    first datum : 1998/05/21
    last datum  : 1999/04/22
    average value (arithmetic mean) = 92 ppb
    range = 24 to 227 ppb
    note: duplicate data on grab sample 1998/06/03

Grab sample w/ +flow n = 23
    first datum : 1998/05/21
    last datum  : 1999/04/22
    average value (arithmetic mean) = 94 ppb
    range = 24 to 227 ppb
    flow weighted mean for data w/ +flow = 107 ppb
    regression: TP conc. (in ppb) = 76.6853 + 0.5135 * flow (in cfs)

 Automatic sampler (flow proportional composite) n = 41
    first datum : 1998/05/07
    last datum  : 1999/05/06
    average value (arithmetic mean) = 94 ppb
    range = 19 to 343 ppb
    flow weighted mean for data w/ +flow = 105 ppb
    regression: TP conc. (in ppb) = 88.1178 + 0.1615 * flow (in cfs)
    load ratio of comp:grab
       for raw data = 1.09517 (common days = 21)
       for load model = 1.03941 (common days = 337)
    note: composite sample missing after 19980521 for 28 days

Flow data from 1998/05/01 to 1999/04/30
    number of no flow days = 1
    number of positive flow days = 363
    total positive flow = 12235.89 cfs-d
    number of reverse flow days = 1
    total negative (reverse) flow = -0.08 cfs-d
    no missing flow data
```

Table 1. (continued).

For S140:

Term	clab	glab	qlab	dbkey	iymdcomp
S140	NONE	S140	S140_T	06754	

```
Grab sample n = 15
   first datum : 1998/05/21
   last datum  : 1999/04/22
   average value (arithmetic mean) = 44 ppb
   range = 15 to 77 ppb

Grab sample w/ +flow = 9
   first datum : 1998/07/01
   last datum  : 1998/12/02
   average value (arithmetic mean) = 52 ppb
   range = 30 to 77 ppb
   flow weighted mean for data w/ +flow = 52 ppb
   regression: TP conc. (in ppb) = 56.4391 - 0.0155 * flow (in cfs)

Flow data from 1998/05/01 to 1999/04/30
   number of no flow days = 209
   number of positive flow days = 150
   total positive flow = 47632.96 cfs-d
   number of reverse flow days = 6
   total negative (reverse) flow = -5.49 cfs-d
   no missing flow data
```

Table 1. (continued).

For L28IN:

Term	clab	glab	qlab	dbkey	iymdcomp
L28IN	L28IN	BSC5	L28IN_O	FF809	19970910

```
 Grab sample n = 20
    first datum : 1998/05/13
    last datum  : 1999/04/21
    average value (arithmetic mean) = 32 ppb
    range = 8 to 116 ppb

 Grab sample w/ +flow n = 13
    first datum : 1998/05/13
    last datum  : 1999/03/10
    average value (arithmetic mean) = 36 ppb
    range = 8 to 116 ppb
    flow weighted mean for data w/flow = 50 ppb
    regression: TP conc. (in ppb) = 19.7005 + 0.4294 * flow (in cfs)

Automatic sampler (flow proportional composite) n = 39
    first datum : 1998/05/06
    last datum  : 1999/03/24
    average value (arithmetic mean) = 130 ppb
    range = 49 to 258 ppb
    flow weighted mean for data = 119 ppb
    regression: TP conc (ppb) = 138.3332 - 0.1257 * flow (cfs)
    load ratio of comp:grab for data = 3.06613 (common days = 13)

Flow data from 1998/05/01 to 1999/04/30
    number of no flow days = 0
    number of positive flow days = 204
    total positive flow = 20878.58 cfs-d
    number of reverse flow days = 157
    total negative (reverse) flow = -6291.37 cfs-d
    number of missing flow data: 4 days
      1998/10/2, 1998/10/10, 1998/10/29, 1998/11/20
```

Table 1. (continued).

For L28IS:

Term	clab	glab	qlab	dbkey	iymdcomp
L28IS	L28IS	L28I@175	L28IS_O	FF812	19999999

```
 Grab sample n = 32
    first datum : 1998/08/07
    last datum  : 1999/04/23
    average value (arithmetic mean) = 35 ppb
    range = 7 to 111 ppb

 Grab sample w/ +flow n = 21
    first datum : 1998/08/14
    last datum  : 1999/02/26
    average value (arithmetic mean) = 39 ppb
    range = 7 to 111 ppb
    flow weighted mean for data = 47 ppb
    regression: TP conc. (in ppb) = 36.1513 + 0.0218 * flow (in cfs)

Automatic sampler (flow proportional composite) n = 44
    first datum : 1998/05/01
    last datum  : 1999/04/23
    average value (arithmetic mean) = 61 ppb
    range = less than 1 to 148 ppb
    flow weighted mean for data = 75 ppb
    regression: TP conc. (in ppb) = 56.0021 + 0.0509 * flow (in cfs)
    load ratio of comp:grab for data = 1.46326 (common days = 20)

Flow data from 1998/05/01 to 1999/04/30
    number of no flow days = 0
    number of positive flow days = 233
    total positive flow = 26258.28 cfs-d
    number of reverse flow days = 132
    total negative (reverse) flow = -5079.53 cfs-d
    no missing flow data
```

Table 1. (continued).

For WWEIR:

Term	clab	glab	qlab	dbkey	iymdcomp
WWEIR	WWEIR	WFEED	WFEED_O	16752	19971224

```
 Grab sample n = 55
    first datum : 1998/05/07
    last datum  : 1999/04/22
    average value (arithmetic mean) = 40 ppb
    range = 15 to 88 ppb
    note: duplicate data on grab sample: 1999/02/25, 1999/03/04,

Grab sample w/ +flow n = 38
    first datum : 1998/07/23
    last datum  : 1999/03/25
    average value (arithmetic mean) = 37 ppb
    range = 15 to 88 ppb
    flow weighted mean for data = 50 ppb
    regression: TP conc. (in ppb) = 28.3172 + 0.1221 * flow (in cfs)

 Automatic sampler (flow proportional composite) n = 29
    first datum : 1998/07/23
    last datum  : 1999/03/11
    average value (arithmetic mean) = 48 ppb
    range = 19 to 103 ppb
    flow weighted mean for data = 70 ppb
    regression: TP conc. (in ppb) = 36.0908 + 0.1172 * flow (in cfs)
    load ratio of comp:grab
      for data = 1.25264 (common days = 34)
      for load model = 1.34572 (common days = 226)

Flow data from 1998/05/01 to 1999/04/30
    number of no flow days = 111
    number of positive flow days = 254
    total positive flow = 21607.77 cfs-d
    number of reverse flow days = 0
    no missing flow data
```

Table 1. (continued).

For NFEED:

Term	clab	glab	qlab	dbkey	iymdcomp
NFEED	NFEED	NONE	NFEED_O	16754	19960619

```
 Grab sample n = 52
    first datum : 1998/05/07
    last datum  : 1999/04/29
    average value (arithmetic mean) = 80 ppb
    range = less than 4 to 257 ppb
 Grab sample w/ +flow n = 35
    first datum : 1998/05/07
    last datum  : 1999/04/29
    average value (arithmetic mean) = 78 ppb
    range = less than 4 to 257 ppb
    flow weighted mean for data = 43 ppb
    flow weighted mean for data = 77 ppb
    regression: TP conc. (in ppb) = 80.1446 - 0.0615 * flow (in cfs)
Automatic sampler (flow proportional composite) n = 53
    first datum : 1998/05/07
    last datum  : 1999/05/06
    average value (arithmetic mean) = 89 ppb
    range = 33 to 309 ppb
    flow weighted mean for data = 116 ppb
    regression: TP conc. (in ppb) = 76.0070 + 0.4970 * flow (in cfs)
    load ratio of comp:grab
      for data = 1.32274 (common days = 35)
      for load model = 1.63979 (common days = 260)

 Flow data from 1998/05/01 to 1999/04/30
    number of no flow days = 0
    number of positive flow days = 260
    total positive flow = 9462.82 cfs-d
    number of reverse flow days = 104
    total negative (reverse) flow = -1492.13 cfs-d
    number of missing flow data: 1 on 1998/10/01
```

Table 1. (continued).

For S190:

Term	clab	glab	qlab	dbkey	iymdcomp
S190	NONE	S190	S190_S	15987	

```
Grab sample n = 14
   first datum : 1998/05/21
   last datum  : 1999/04/22
   average value (arithmetic mean) = 55 ppb
   range = 19 to 139 ppb

Grab sample w/ +flow n = 9
   first datum : 1998/07/30
   last datum  : 1999/01/28
   average value (arithmetic mean) = 57 ppb
   range = 22 to 104 ppb
   flow weighted mean for data = 73 ppb
   regression: TP conc. (in ppb) = 30.9046 + 0.2581 * flow (in cfs)

Flow data from 1998/05/01 to 1999/04/30
   number of no flow days = 179
   number of positive flow days = 186
   total positive flow = 23931.41 cfs-d
   number of reverse flow days = 0
   no missing flow data
```

Table 1. (continued).

For L28U:

Term	clab	glab	qlab	dbkey	iymdcomp
L28U	L28U	BCS7	L28U_O	FF808	19970917

```
Grab sample n = 24
   first datum : 1998/05/13
   last datum  : 1999/04/21
   average value (arithmetic mean) = 49 ppb
   range = 11 to 119 ppb
   note: duplicate data on grab sample 1998/06/03, 1998/09/02

Grab sample w/ +flow n = 17
   first datum : 1998/06/03
   last datum  : 1999/03/31
   average value (arithmetic mean) = 53 ppb
   range = 11 to 119 ppb
   flow weighted mean for data = 43 ppb
   flow weighted mean for data = 65 ppb
   regression: TP conc. (in ppb) = 36.2712 + 0.2174 * flow (in cfs)

Automatic sampler (flow proportional composite) n = 43
   first datum : 1998/05/06
   last datum  : 1999/05/05
   average value (arithmetic mean) = 125 ppb
   range = less than 2 to 419 ppb
   flow weighted mean for data = 181 ppb
   regression: TP conc. (in ppb) = 88.4528 + 0.4289 * flow (in cfs)
   load ratio of comp:grab for data = 2.39669 common days = 14)

Flow data from 1998/05/01 to 1999/04/30
   number of no-flow days = 0
   number of positive flow days = 305
   total positive flow = 29242.41 cfs-d
   number of reverse flow days = 60
   total negative (reverse) flow = -866.10 cfs-d
   no missing flow data
```

Table 2. Seminole/SFWMC Agreement TP load calculation summary: Total flow and total TP loads for the period of May 1, 1998 through April 30, 1999.

Flow in million cubic meters. Load in kg. FMWC in ppb.

For positive flow:

Station	TP data	Flow	TP load	FWMC*
L3BRS	auto and grab	143.2	29563.0	
	(auto only		29563.0)	206
	(grab only		22767.1)	170
USSO	auto and grab	29.9	3132.8	
	(auto only		3186.5)	105
	(grab only		3014.0)	107
L28U	auto and grab	71.5	12589.7	
	(auto only		12481.5)	181
	(grab only		4735.8)	65
S140	grab only	116.5	6372.2	52
WWEIR	auto and grab	52.9	3639.9	
	(auto only		3644.6)	70
	(grab only		2704.8)	50
NFEED	auto and grab	23.2	2692.6	
	(auto only		2692.6)	116
	(grab only		1642.1)	77
S190	grab only	58.5	4446.0	73
L28IN	auto and grab	51.1	6265.9	
	(auto only		6145.5)	119
	(grab only		2290.0)	50
L28IS	auto and grab	64.2	4657.4	
	(auto only		4852.1)	75
	(grab only		3012.5)	47

note: flow-weighted mean concentration(FWMC) are from Table 1.

Table 2. (continued)

For negative flow:

Station	TP data	Flow	TP load
L3BRS	auto and grab	-0.3	-16.8
	(auto only		-16.8)
	(grab only		-16.5)
USSO	auto and grab	0.0	0.0
	(auto only		-0.1)
	(grab only		0.0)
L28U	auto and grab	-2.1	-210.4
	(auto only		-207.9)
	(grab only		-82.9)
S140	grab only	0.0	-0.7
WWEIR	auto and grab	0.0	0.0
	(auto only		0.0)
	(grab only		0.0)
NFEED	auto and grab	-3.7	-350.7
	(auto only		-350.7)
	(grab only		-338.5)
S190	grab only	0.0	0.0
L28IN	auto and grab	-15.4	-1678.3
	(auto only		-1857.9)
	(grab only		-408.2)
L28IS	auto and grab	-12.4	-656.0
	(auto only		-754.4)
	(grab only		-190.8)

Table 3. Seminole/SFWMD Agreement Report total phosphorus (TP) load calculation monthly summary by station.

Note 1: Flow is in million cubic meter (and in thousand acre-feet).
Note 2: Flow-weighted-mean for each month is calculated by dividing monthly load with monthly total flow.

For L3BRS:

station	month	days	flow	load(kg)	fwmc(ppb)	flow_neg	load_neg
L3BRS	1998/05	31	1.546 (1.254)	117.054	76	0.000 (0.000)	0.000
L3BRS	1998/06	30	1.589 (1.289)	125.265	79	0.000 (0.000)	0.000
L3BRS	1998/07	31	8.102 (6.568)	1140.552	141	0.000 (0.000)	0.000
L3BRS	1998/08	31	34.757 (28.178)	6789.787	195	0.000 (0.000)	0.000
L3BRS	1998/09	30	25.478 (20.655)	4730.105	186	0.000 (0.000)	0.000
L3BRS	1998/10	31	10.234 (8.297)	1461.259	143	0.000 (0.000)	0.000
L3BRS	1998/11	30	50.681 (41.088)	14297.095	282	0.000 (0.000)	0.000
L3BRS	1998/12	31	4.131 (3.349)	373.111	90	0.000 (0.000)	0.000
L3BRS	1999/01	31	2.831 (2.295)	179.842	64	0.000 (0.000)	0.000
L3BRS	1999/02	28	1.936 (1.570)	140.812	73	0.000 (0.000)	0.000
L3BRS	1999/03	31	1.383 (1.122)	132.970	96	0.000 (0.000)	0.000
L3BRS	1999/04	30	0.552 (0.448)	75.120	136	-0.261 (-0.212)	-16.836

For USSO:

station	month	days	flow	load(kg)	fwmc(ppb)	flow_neg	load_neg
USSO	1998/05	31	0.223 (0.181)	13.492	60	0.000 (0.000)	0.000
USSO	1998/06	30	0.770 (0.624)	198.459	258	0.000 (0.000)	-0.012
USSO	1998/07	31	3.362 (2.725)	358.031	107	0.000 (0.000)	0.000
USSO	1998/08	31	7.194 (5.832)	736.517	102	0.000 (0.000)	0.000
USSO	1998/09	30	4.243 (3.439)	517.551	122	0.000 (0.000)	0.000
USSO	1998/10	31	2.497 (2.024)	287.169	115	0.000 (0.000)	0.000
USSO	1998/11	30	7.666 (6.215)	759.504	99	0.000 (0.000)	0.000
USSO	1998/12	31	0.955 (0.774)	131.569	138	0.000 (0.000)	0.000
USSO	1999/01	31	1.133 (0.919)	55.194	49	0.000 (0.000)	0.000
USSO	1999/02	28	1.136 (0.921)	44.983	40	0.000 (0.000)	0.000
USSO	1999/03	31	0.438 (0.355)	11.677	27	0.000 (0.000)	0.000
USSO	1999/04	30	0.321 (0.260)	18.639	58	0.000 (0.000)	0.000

For L28U:

station	month	days	flow	load(kg)	fwmc(ppb)	flow_neg	load_neg
L28U	1998/05	31	0.519 (0.421)	23.870	46	-0.554 (-0.449)	-25.499
L28U	1998/06	30	1.146 (0.929)	68.820	60	-0.249 (-0.202)	-12.596
L28U	1998/07	31	5.389 (4.369)	333.382	62	-0.115 (-0.093)	-7.621
L28U	1998/08	31	13.970 (11.326)	1079.889	77	0.000 (0.000)	0.000
L28U	1998/09	30	9.872 (8.003)	785.290	80	0.000 (0.000)	0.000
L28U	1998/10	31	7.665 (6.214)	416.674	54	0.000 (0.000)	0.000
L28U	1998/11	30	21.745 (17.629)	1501.716	69	0.000 (0.000)	0.000
L28U	1998/12	31	5.008 (4.060)	301.070	60	0.000 (0.000)	0.000
L28U	1999/01	31	3.933 (3.188)	157.589	40	0.000 (0.000)	0.000
L28U	1999/02	28	1.023 (0.829)	35.747	35	-0.453 (-0.368)	-15.928
L28U	1999/03	31	0.731 (0.592)	19.792	27	-0.487 (-0.395)	-15.512
L28U	1999/04	30	0.543 (0.440)	11.939	22	-0.261 (-0.211)	-5.732

Table 3. (continued)

For S140:

station	month	days	flow	load(kg)	fwmc(ppb)	flow_neg	load_neg
S140	1998/05	31	0.532 (0.431)	28.728	54	-0.002 (-0.002)	-0.127
S140	1998/06	30	0.555 (0.450)	29.985	54	-0.008 (-0.006)	-0.431
S140	1998/07	31	8.448 (6.849)	521.759	62	0.000 (0.000)	0.000
S140	1998/08	31	20.167 (16.349)	1471.492	73	0.000 (0.000)	0.000
S140	1998/09	30	20.883 (16.930)	1075.160	51	0.000 (0.000)	0.000
S140	1998/10	31	15.796 (12.806)	648.670	41	0.000 (0.000)	0.000
S140	1998/11	30	38.231 (30.995)	2143.245	56	0.000 (0.000)	0.000
S140	1998/12	31	6.928 (5.616)	263.250	38	0.000 (0.000)	-0.011
S140	1999/01	31	3.846 (3.118)	146.158	38	0.000 (0.000)	0.000
S140	1999/02	28	1.152 (0.934)	43.770	38	0.000 (0.000)	0.000
S140	1999/03	31	0.000 (0.000)	0.000	-999	-0.001 (-0.001)	-0.040
S140	1999/04	30	0.000 (0.000)	0.000	-999	-0.002 (-0.001)	-0.067

For WWEIR:

station	month	days	flow	load(kg)	fwmc(ppb)	flow_neg	load_neg
WWEIR	1998/05	31	0.000 (0.000)	0.000	-999	0.000 (0.000)	0.000
WWEIR	1998/06	30	0.000 (0.000)	0.000	-999	0.000 (0.000)	0.000
WWEIR	1998/07	31	0.400 (0.325)	13.851	35	0.000 (0.000)	0.000
WWEIR	1998/08	31	2.988 (2.423)	97.768	33	0.000 (0.000)	0.000
WWEIR	1998/09	30	7.287 (5.908)	558.806	77	0.000 (0.000)	0.000
WWEIR	1998/10	31	6.195 (5.022)	379.183	61	0.000 (0.000)	0.000
WWEIR	1998/11	30	23.640 (19.166)	2108.023	89	0.000 (0.000)	0.000
WWEIR	1998/12	31	6.608 (5.357)	278.640	42	0.000 (0.000)	0.000
WWEIR	1999/01	31	3.534 (2.865)	113.278	32	0.000 (0.000)	0.000
WWEIR	1999/02	28	1.550 (1.257)	58.889	38	0.000 (0.000)	0.000
WWEIR	1999/03	31	0.662 (0.537)	31.481	48	0.000 (0.000)	0.000
WWEIR	1999/04	30	0.000 (0.000)	0.000	-999	0.000 (0.000)	0.000

For NFEED:

station	month	days	flow	load(kg)	fwmc(ppb)	flow_neg	load_neg
NFEED	1998/05	31	0.662 (0.537)	40.800	62	-0.112 (-0.091)	-6.782
NFEED	1998/06	30	0.180 (0.146)	8.182	45	-0.111 (-0.090)	-5.474
NFEED	1998/07	31	0.552 (0.448)	34.183	62	-0.242 (-0.197)	-13.669
NFEED	1998/08	31	2.031 (1.647)	233.646	115	-0.186 (-0.151)	-17.611
NFEED	1998/09	30	2.390 (1.938)	324.450	136	-0.192 (-0.156)	-28.504
NFEED	1998/10	31	0.731 (0.592)	90.265	124	-0.782 (-0.634)	-95.883
NFEED	1998/11	30	6.816 (5.526)	1313.477	193	-0.384 (-0.311)	-76.169
NFEED	1998/12	31	2.036 (1.650)	242.272	119	-0.522 (-0.423)	-50.788
NFEED	1999/01	31	2.717 (2.202)	134.020	49	-0.275 (-0.223)	-12.287
NFEED	1999/02	28	1.702 (1.380)	93.371	55	-0.601 (-0.487)	-30.065
NFEED	1999/03	31	2.038 (1.652)	83.866	41	-0.150 (-0.122)	-6.591
NFEED	1999/04	30	1.297 (1.052)	94.089	73	-0.094 (-0.076)	-6.909

For S190:

station	month	days	flow	load(kg)	fwmc(ppb)	flow_neg	load_neg
S190	1998/05	31	0.000 (0.000)	0.000	-999	0.000 (0.000)	0.000
S190	1998/06	30	0.001 (0.000)	0.011	22	0.000 (0.000)	0.000
S190	1998/07	31	0.015 (0.012)	0.329	22	0.000 (0.000)	0.000
S190	1998/08	31	6.575 (5.330)	351.094	53	0.000 (0.000)	0.000
S190	1998/09	30	8.435 (6.838)	446.405	53	0.000 (0.000)	0.000
S190	1998/10	31	7.012 (5.685)	578.034	82	0.000 (0.000)	0.000
S190	1998/11	30	27.102 (21.972)	2667.058	98	0.000 (0.000)	0.000
S190	1998/12	31	5.935 (4.812)	288.576	49	0.000 (0.000)	0.000
S190	1999/01	31	2.390 (1.938)	80.864	34	0.000 (0.000)	0.000
S190	1999/02	28	0.794 (0.644)	24.622	31	0.000 (0.000)	0.000
S190	1999/03	31	0.274 (0.223)	8.508	31	0.000 (0.000)	0.000
S190	1999/04	30	0.017 (0.014)	0.521	31	0.000 (0.000)	0.000

Table 3. (continued)

For L28IN:

station	month	days	flow	load(kg)	fwmc(ppb)	flow_neg	load_neg
L28IN	1998/05	31	1.164 (0.943)	43.557	37	-1.938 (-1.571)	-72.563
L28IN	1998/06	30	1.089 (0.883)	36.889	34	-1.884 (-1.528)	-63.843
L28IN	1998/07	31	0.643 (0.521)	19.744	31	-1.896 (-1.537)	-55.210
L28IN	1998/08	31	6.182 (5.012)	205.819	33	-0.568 (-0.460)	-16.915
L28IN	1998/09	30	6.803 (5.515)	309.077	45	-0.600 (-0.487)	-24.047
L28IN	1998/10	31	5.157 (4.181)	239.924	47	-1.311 (-1.063)	-34.230
L28IN	1998/11	30	21.559 (17.478)	1180.111	55	-0.186 (-0.151)	-2.446
L28IN	1998/12	31	4.004 (3.246)	157.065	39	-0.235 (-0.190)	-8.545
L28IN	1999/01	31	1.827 (1.481)	48.900	27	-1.148 (-0.931)	-30.300
L28IN	1999/02	28	1.029 (0.834)	22.097	21	-1.620 (-1.313)	-35.617
L28IN	1999/03	31	1.036 (0.840)	17.464	17	-2.070 (-1.678)	-33.525
L28IN	1999/04	30	0.586 (0.475)	9.381	16	-1.935 (-1.569)	-30.968

For L28IS:

station	month	days	flow	load(kg)	fwmc(ppb)	flow_neg	load_neg
L28IS	1998/05	31	2.486 (2.016)	42.266	17	-1.957 (-1.586)	-33.262
L28IS	1998/06	30	2.068 (1.677)	35.156	17	-1.862 (-1.509)	-31.651
L28IS	1998/07	31	1.127 (0.914)	19.162	17	-2.040 (-1.654)	-34.688
L28IS	1998/08	31	6.460 (5.238)	116.156	18	-0.548 (-0.444)	-9.320
L28IS	1998/09	30	7.876 (6.385)	391.485	50	-0.373 (-0.302)	-9.886
L28IS	1998/10	31	6.686 (5.420)	271.448	41	-0.279 (-0.226)	-11.147
L28IS	1998/11	30	24.605 (19.948)	1757.444	71	-0.108 (-0.087)	-3.552
L28IS	1998/12	31	5.519 (4.475)	268.988	49	-0.054 (-0.044)	-2.269
L28IS	1999/01	31	2.608 (2.114)	61.741	24	-0.223 (-0.181)	-5.855
L28IS	1999/02	28	2.018 (1.636)	23.509	12	-0.957 (-0.776)	-12.910
L28IS	1999/03	31	1.393 (1.129)	12.538	9	-1.441 (-1.168)	-12.965
L28IS	1999/04	30	1.396 (1.132)	12.564	9	-2.587 (-2.098)	-23.285

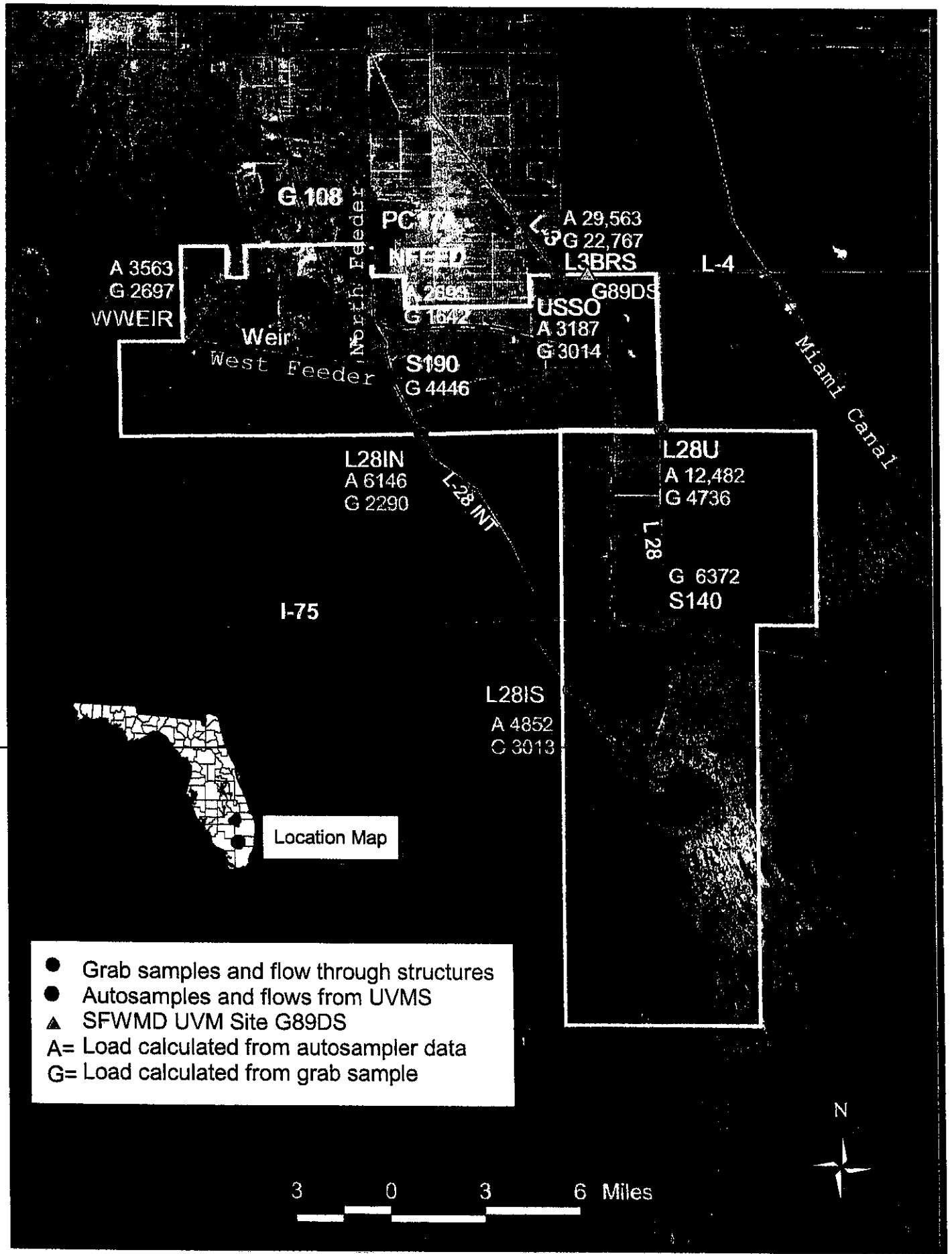


Figure 11.TP Loads Calculated from Auto and Grab Sampling Data

Results of Flow Comparisons

Similarity of flow data at different sampling locations within a canal is one indication as to whether different measuring methods are providing essentially the same data.

West Feeder Canal, North Feeder Canal and S190

Because S190 is fed by the West and North Feeder Canals, the flow at S190 should be close to the sum of these two flows. The graphs for the daily flows at the three sites and the sum of WWEIR + NFEED compared with S190 flow show that the peak flows match well (**Figure 12**). During moderate flow conditions, WWEIR + NFEED flows frequently exceeded the S190 flows. Low positive and negative flows occurred in the North Feeder Canal when the S190 gates were closed, indicating wind driven flow conditions.

S190, L28IN and L28IS

Flow in the L28 Interceptor Canal is measured by the USGS at the southern boundary of the Big Cypress Seminole Indian Reservation (site L28IN) and at the western boundary of the Miccosukee Reservation (site L28IS). The S-190 spillway located within the Seminole Reservation is operated by the District and determines the flow in the L28I canal. It can be observed in **Figure 13** that the flows at L28IN and L28IS correlate very well when there is flow from S190 but become more variable when the S190 gates are closed. During closed gate conditions, flows at L28IN and L28IS can be both positive and negative, indicating they are wind driven (**Figures 8, 9** and **10**). **Figure 14** shows a strong linear relationship between L28IN and L28IS flows. From approximately +100 cfs to -100 cfs the data are more variable, reflecting predominantly wind driven flows.

USSO, G89DS and L28U

The L28 Canal flow, which originates at the USSO site, was compared with flow measured at SFWMD UVM site G89DS and L28U (**Figure 15**). The high and low flow periods correlate fairly well between the sites with high flow periods having the greatest differences in flow rates, *i.e.* cfs, between the sites. Flows increased between USSO and L28U during rainfall events due to discharges from unmonitored drainage ditches along the canal. In response to the high flow created by Tropical Storm Mitch in November 1998, the G89 culverts were opened from November 8 to 18. This action transferred some flow from the L3 Extension Canal to the L28 Canal, which contributed to the peak flow observed in **Figure 15**. During the May 1998 and April 1999 dry periods there were no discharges from USSO, however, the UVMs at G89DS and L28U indicated both positive and negative flows. It is most likely these flows were wind driven.

Figure 12. Comparison of WWEIR, NFEED, and S190 Flows

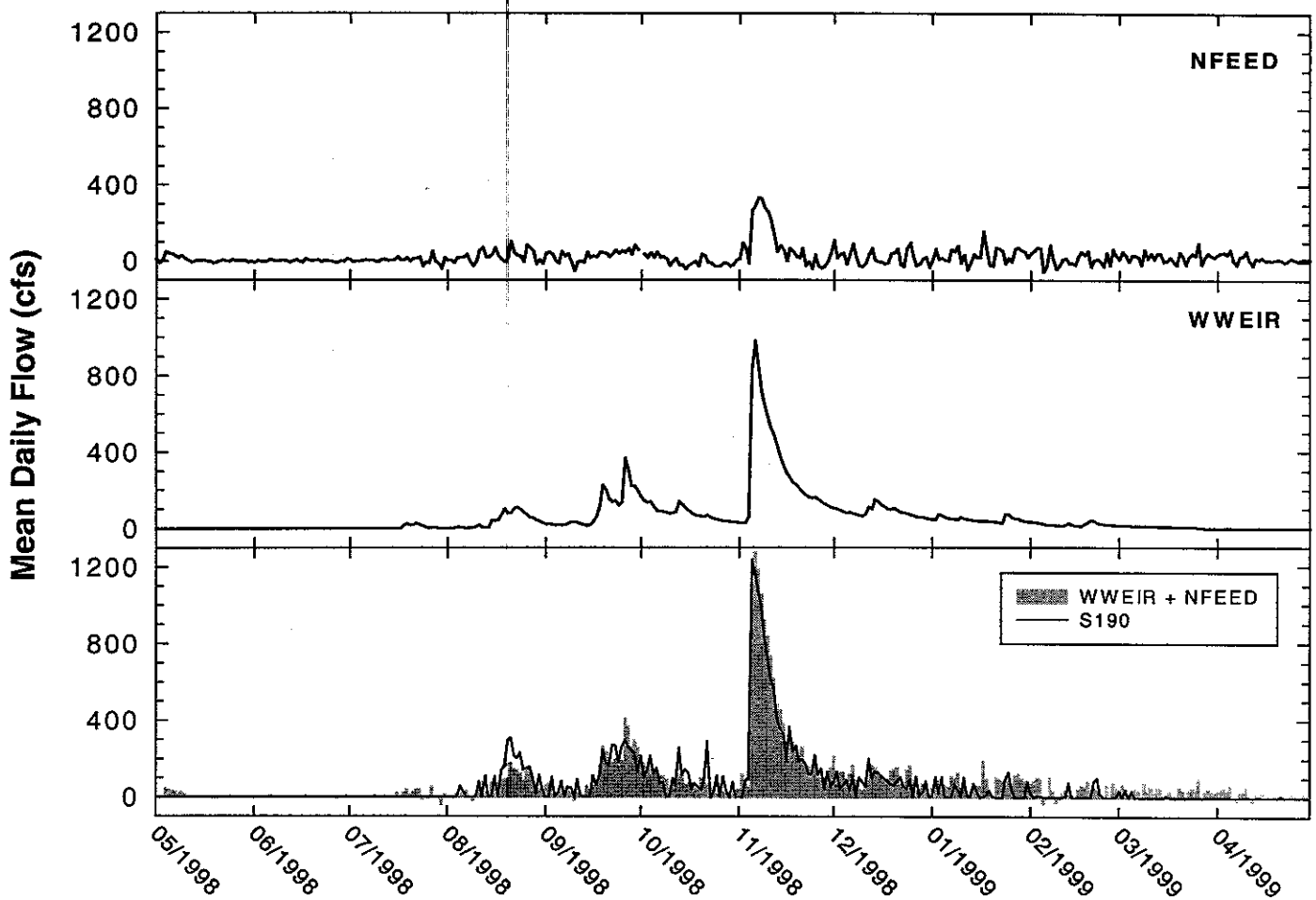


Figure 13. Comparison of L28IN and L28IS Flows with S190 Flow.

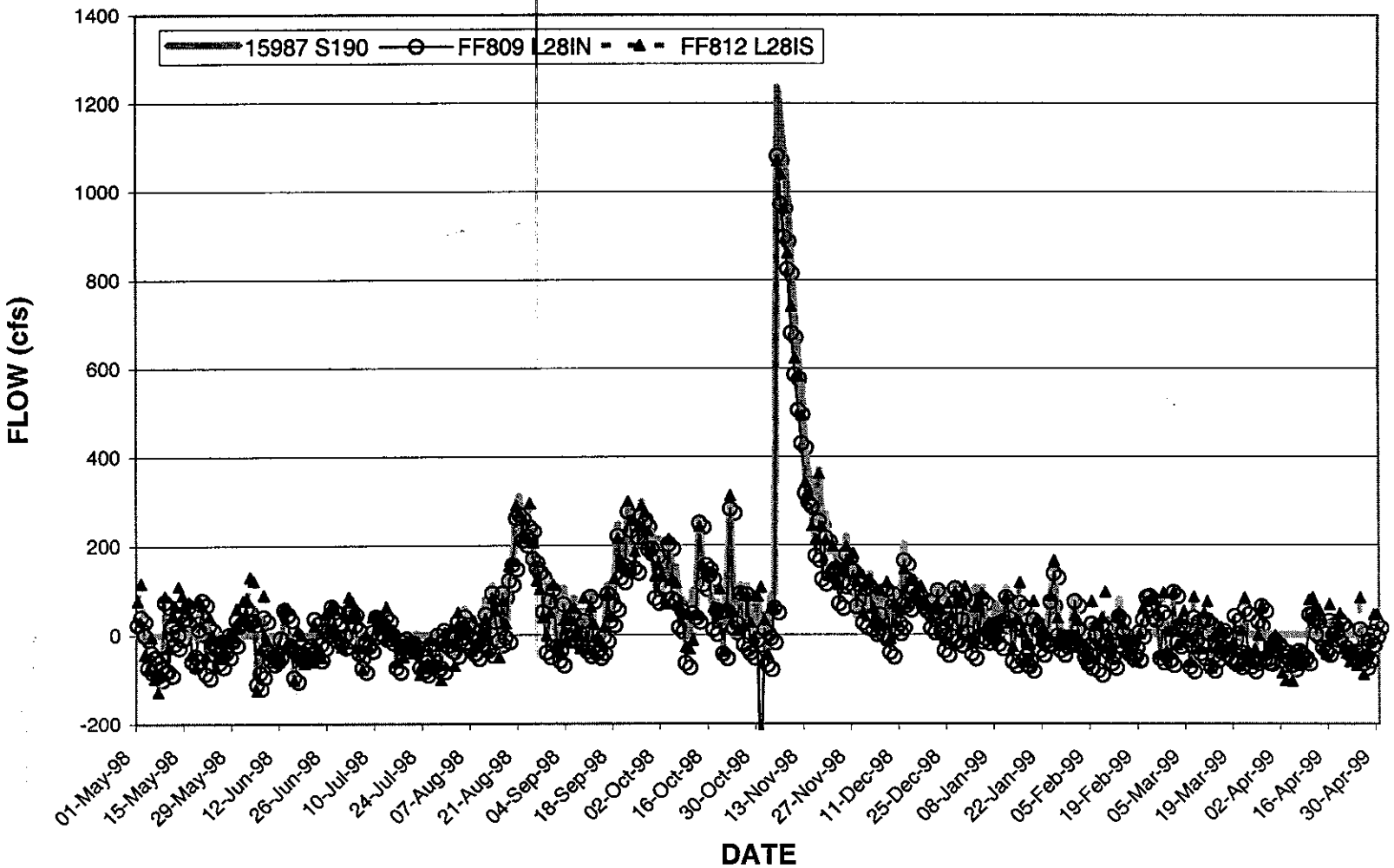


Figure 14. Relationship between L28IN Flow and L28IS Flow.

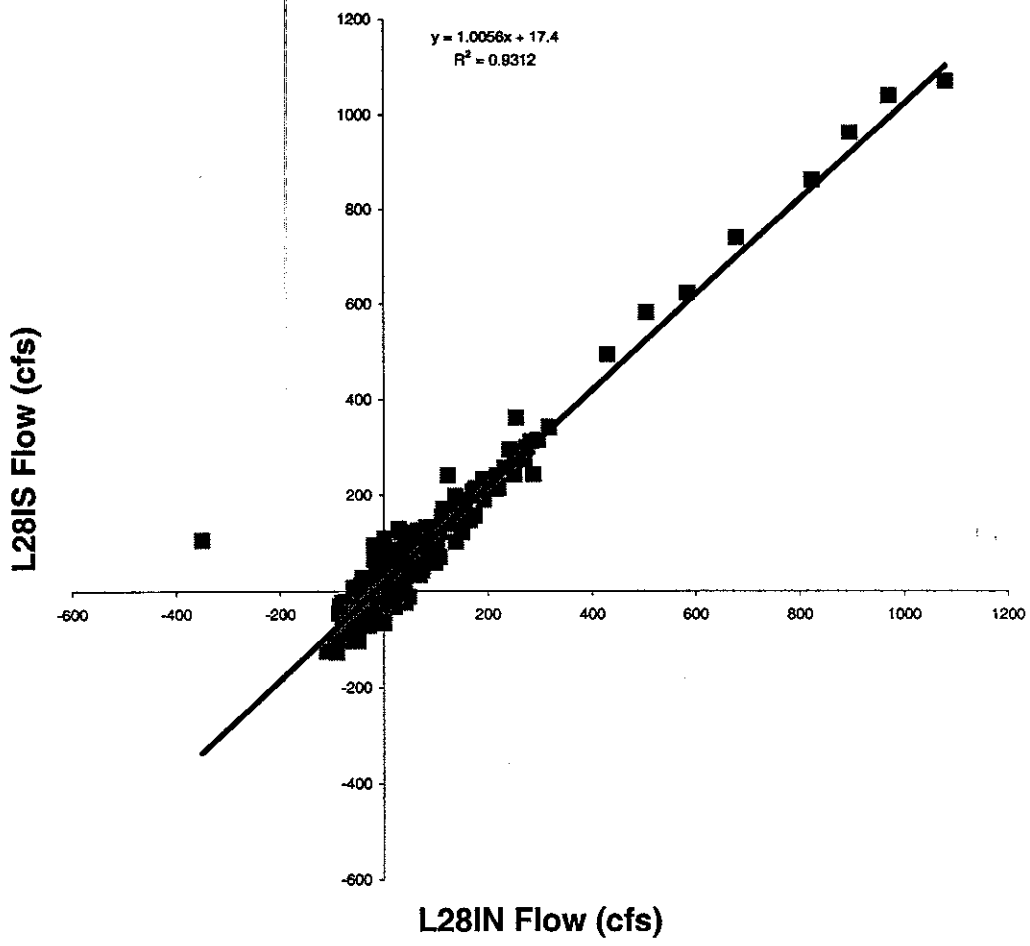
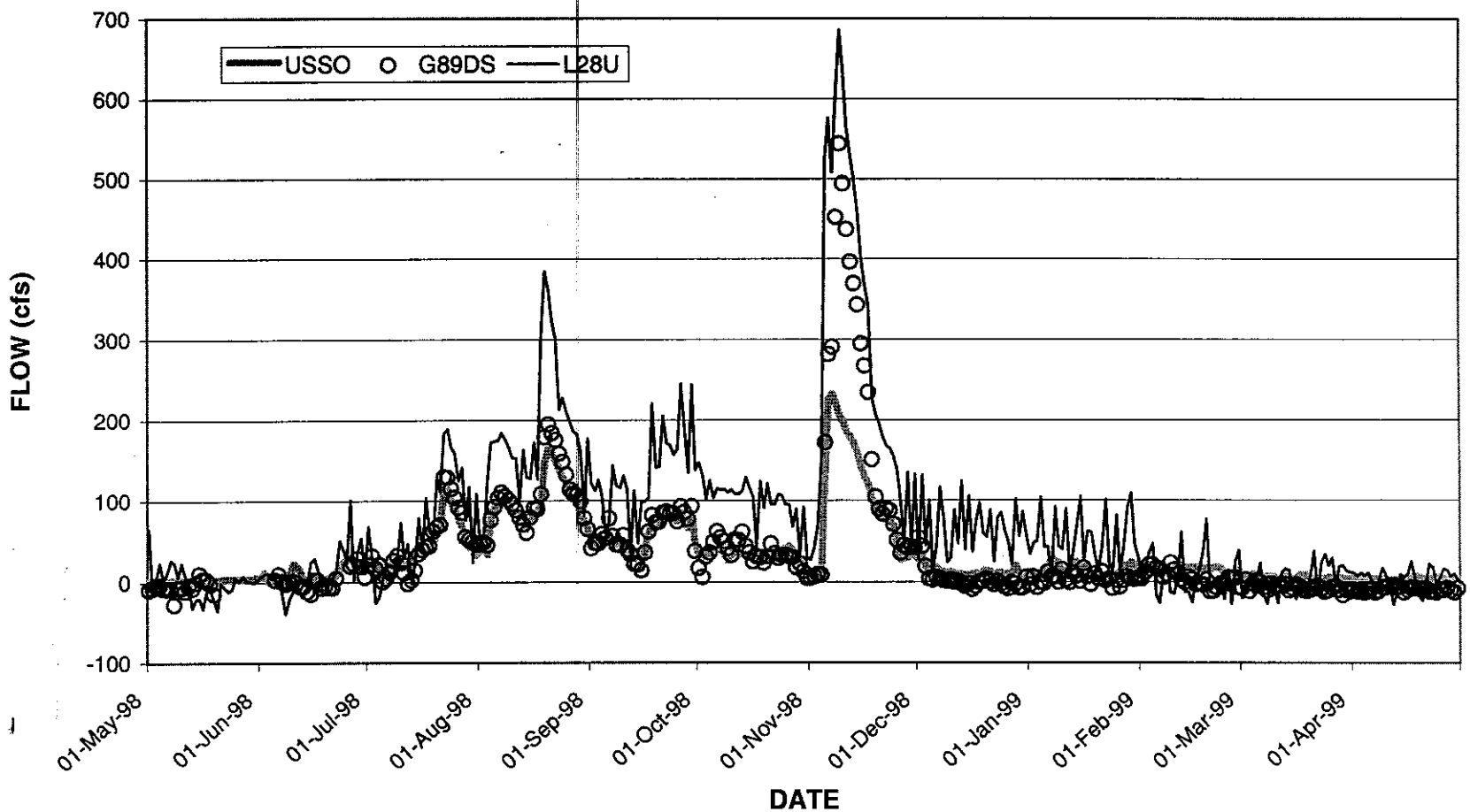


Figure 15. Comparison of L28U Flow with G89(DS) and USSO Flows.



Water Quality Data

All water quality data collected from May 1996 through April 1999 at the nine sites monitored by the District, the Seminole Tribe and the Miccosukee Tribe are summarized by water year in **Tables 4** through **12**. Each water quality parameter measured at the nine sites was compared with the Class III Criteria (Florida Administrative Code 62-302.530, Criteria for Surface Water Quality Classifications) and the Sub-Class 2-B Criteria (Seminole Tribe of Florida, Water Quality Standards for the Big Cypress Indian Reservation) to determine if any criterion were exceeded.

Dissolved oxygen concentrations below the 5.0 mg/L criterion were measured periodically at all sites. This condition is typical of South Florida canals. The minimum pH criterion of 6.0 pH units was exceeded at WWEIR (**Table 8**) and NFEED (**Table 9**) and the maximum pH criterion of 8.5 pH units was exceeded at L28IN (**Table 11**) in Water Year 1999.

Most trace metal measurements were below the method detection limit (MDL). Cadmium, copper and zinc have been detected above the MDL. When the measured concentrations were compared with the Class III criteria, which is a function of water hardness, all concentrations were less than their respective criterion (**Table 13**). Hardness is calculated using the magnesium and calcium concentrations of the same water sample used to measure the trace metals. The hardness equation is: Hardness mg equivalent CaCO3/L = 2.497 [dissolved Ca, mg/L] + 4.118 [dissolved Mg, mg/L] (Standard Method 19th Ed., 2340 B., p2-36, 1995). The total iron concentration measured at L3BRS on October 8, 1998 exceeded the 1 mg/L Class III criterion (**Table 4**).

TP concentration data from grab samples and total nitrogen (TN) data calculated by summing total Kjeldahl nitrogen (TKN) and total nitrite and nitrate (NOX) for the nine sampling sites are presented as notched box plots in **Figures 16** and **17**, respectively. The narrowest part of the notch represents the median concentration. The complete notch represents the approximate upper and lower 95% confidence interval values. If the notches of two sites do not overlap, the respective site medians are considered to be significantly different at about the 95% confidence level. The top and bottom of the box represent the 75th and 25th percentiles, respectively. The whiskers show the range of values falling within 1.5 times the absolute value of the difference between the 75th and 25th percentiles. Values outside the whiskers are plotted with asterisks if they do not exceed 3 times the absolute value of the difference between the 75th and 25th percentiles. Values beyond 3 times the absolute value are plotted with empty circles.

L28IN and L28IS had the lowest median TP concentrations. L3BRS, USSO and NFEED had the highest median concentrations (**Figure 16**). The notched box plots indicate that there is less variation between the sites for TN concentrations than for TP concentrations (**Figure 17**). These results can not be interpreted until the variability of the nitrogen species comprising total nitrogen are evaluated for each site and compared.

Table 4. Summary of Water Quality Parameters Collected at Station L3BRS from May 1, 1996 through April 30, 1999.

PARAMETER	PERIOD	SAMPLE TYPE	SAMPLE N	MINIMUM	MAXIMUM	AVERAGE	STANDARD DEVIATION	CLASS III CRITERIA
PHYSICAL								
Dissolved Oxygen (mg/L)	5/1/96 - 4/30/97	grab	21	0.37	7.69	4.27	1.93	Not be less than 5.0 mg/L
	5/1/97 - 4/30/98	grab	22	1.72	7.73	4.50	1.78	
	5/1/98 - 4/30/99	grab	18	0.22	9.31	3.60	2.53	
Field Specific Conductivity (µmhos/cm)	5/1/96 - 4/30/97	grab	22	321	631	485	95	Not greater than 50% above background or 1,275µmhos/cm
	5/1/97 - 4/30/98	grab	22	404	600	505	66	
	5/1/98 - 4/30/99	grab	18	331	651	508	96	
Field pH (SU)	5/1/96 - 4/30/97	grab	22	6.92	8.15	7.43	0.38	Not less than 6.0 or greater than 8.5
	5/1/97 - 4/30/98	grab	22	6.52	7.62	7.25	0.26	
	5/1/98 - 4/30/99	grab	18	6.72	8.39	7.39	0.40	
Turbidity (NTU)	5/1/96 - 4/30/97	grab	21	0.883	5.190	2.026	1.043	Less than or equal to 29 NTU above background
	5/1/97 - 4/30/98	grab	22	0.925	5.330	1.930	1.151	
	5/1/98 - 4/30/99	grab	15	0.848	13.000	2.971	2.964	
Total Suspended Solids (mg/L)	5/1/96 - 4/30/97	grab	4	<3	7	4	2	Not applicable
	5/1/97 - 4/30/98	grab	4	<3	<3	<3	0	
	5/1/98 - 4/30/99	grab	3	<3	23	10	12	
Hardness (as CaCO3) (mg CaCO3/L)	5/1/96 - 4/30/97	grab	4	152.692	221.205	187.946	35.174	Not applicable
	5/1/97 - 4/30/98	grab	4	98.899	240.290	177.670	58.722	
	5/1/98 - 4/30/99	grab	4	149.086	256.872	181.137	50.829	
Alkalinity (mg/L)	5/1/96 - 4/30/97	grab	21	112.9	220.6	169.4	33.0	Not less than 20 mg/L
	5/1/97 - 4/30/98	grab	22	142.5	213.2	174.9	22.4	
	5/1/98 - 4/30/99	grab	15	114.5	243.5	173.6	44.1	
NUTRIENTS								
Total Nitrogen (mg/L)	5/1/96 - 4/30/97	auto&grab	54	0.781	2.702	1.540	0.335	
	5/1/97 - 4/30/98	auto&grab	66	1.093	4.358	1.748	0.448	
	5/1/98 - 4/30/99	auto&grab	61	1.080	2.283	1.517	0.293	
Nitrate/Nitrite (as N) (mg N/L)	5/1/96 - 4/30/97	auto&grab	56	<0.015	0.213	0.106	0.056	
	5/1/97 - 4/30/98	auto&grab	67	<0.006	0.407	0.138	0.077	
	5/1/98 - 4/30/99	auto&grab	61	<0.004	0.357	0.078	0.087	
Ammonia (as N) (mg N/L)	5/1/96 - 4/30/97	auto&grab	53	<0.015	0.295	0.085	0.059	
	5/1/97 - 4/30/98	auto&grab	65	0.021	0.335	0.122	0.079	
	5/1/98 - 4/30/99	auto&grab	64	<0.009	0.320	0.068	0.063	
Total Phosphorus (mg/L)	5/1/96 - 4/30/97	auto&grab	54	0.019	0.487	0.144	0.109	
	5/1/97 - 4/30/98	auto&grab	66	0.038	0.341	0.127	0.055	
	5/1/98 - 4/30/99	auto&grab	65	0.042	0.344	0.118	0.063	
Ortho-Phosphate (as P) (mg P/L)	5/1/96 - 4/30/97	grab	21	0.004	0.302	0.095	0.078	
	5/1/97 - 4/30/98	grab	18	0.036	0.177	0.101	0.039	
	5/1/98 - 4/30/99	grab	15	0.008	0.166	0.077	0.052	
Dissolved Silica (mg/L)	5/1/96 - 4/30/97	grab	4	3.274	12.583	8.263	3.827	Not applicable
	5/1/97 - 4/30/98	grab	4	4.280	9.821	7.691	2.468	
	5/1/98 - 4/30/99	grab	4	6.837	11.962	8.222	2.499	
MAJOR IONS								
Dissolved Sodium (mg/L)	5/1/96 - 4/30/97	grab	4	21.980	42.900	31.470	10.664	Not applicable
	5/1/97 - 4/30/98	grab	4	16.000	41.400	32.050	11.144	
	5/1/98 - 4/30/99	grab	4	27.000	37.300	33.500	4.618	
Dissolved Potassium (mg/L)	5/1/96 - 4/30/97	grab	4	3.220	6.180	4.165	1.376	Not applicable
	5/1/97 - 4/30/98	grab	4	2.300	4.500	3.156	0.971	
	5/1/98 - 4/30/99	grab	4	2.710	4.820	3.293	1.020	
Dissolved Calcium (mg/L)	5/1/96 - 4/30/97	grab	4	51.750	74.900	64.062	11.756	Not applicable
	5/1/97 - 4/30/98	grab	4	34.000	83.500	60.850	20.505	
	5/1/98 - 4/30/99	grab	4	41.400	87.700	59.600	19.766	
Dissolved Magnesium (mg/L)	5/1/96 - 4/30/97	grab	4	5.410	8.300	6.795	1.453	Not applicable
	5/1/97 - 4/30/98	grab	4	3.400	7.720	6.247	1.944	
	5/1/98 - 4/30/99	grab	4	5.190	11.100	7.848	2.785	
Chlorides (mg/L)	5/1/96 - 4/30/97	grab	21	22.575	69.617	42.835	14.017	Not greater than 10% of background
	5/1/97 - 4/30/98	grab	22	31.096	55.863	42.982	7.818	
	5/1/98 - 4/30/99	grab	15	18.470	64.480	44.255	13.692	
Sulfate (mg/L)	5/1/96 - 4/30/97	grab	4	5.559	16.931	9.900	5.024	Not applicable
	5/1/97 - 4/30/98	grab	4	6.353	10.370	8.778	1.811	
	5/1/98 - 4/30/99	grab	4	7.338	27.821	13.086	9.841	
TRACE ELEMENTS								
Total Mercury (µg/L)	5/1/96 - 4/30/97	grab	1	<0.2	<0.2	<0.2		Less than or equal to 0.012 ug/L
	5/1/97 - 4/30/98	grab	2	<0.2	<0.2	<0.2		
	5/1/98 - 4/30/99	grab	2	<0.2	<0.2	<0.2		
Total Cadmium (µg/L)	5/1/96 - 4/30/97	grab	2	0.354	0.441	0.398		Less than or equal to calculated value using: $e^{(0.7852[\ln(\text{hardness})]-3.49)}$
	5/1/97 - 4/30/98	grab	2	<0.3	0.403	<0.3		
	5/1/98 - 4/30/99	grab	2	<0.3	<0.3	<0.3		
Total Copper (µg/L)	5/1/96 - 4/30/97	grab	2	1.310	2.170	1.740		Less than or equal to calculated value using: $e^{(0.8545[\ln(\text{hardness})]-1.465)}$
	5/1/97 - 4/30/98	grab	2	1.740	2.700	2.220		
	5/1/98 - 4/30/99	grab	2	1.220	3.930	2.575		
Total Zinc (µg/L)	5/1/96 - 4/30/97	grab	2	<4	<4	<4		Less than or equal to calculated value using: $e^{(0.8473[\ln(\text{hardness})]+0.7614)}$
	5/1/97 - 4/30/98	grab	2	<4	<4	<4		
	5/1/98 - 4/30/99	grab	2	<4	5.600	<4		
Total Arsenic (µg/L)	5/1/96 - 4/30/97	grab	1	<1.5	<1.5	<1.5		Less than or equal to 50 ug/L
	5/1/97 - 4/30/98	grab	2	<1.5	<1.5	<1.5		
	5/1/98 - 4/30/99	grab	2	<1.5	<1.5	<1.5		
Total Lead (µg/L)	5/1/96 - 4/30/97	grab	2	<0.8	<0.8	<0.8		Less than or equal to calculated value using: $e^{(1.273[\ln(\text{hardness})]-4.705)}$
	5/1/97 - 4/30/98	grab	2	<0.8	<0.8	<0.8		
	5/1/98 - 4/30/99	grab	2	<0.8	<0.8	<0.8		
Total Iron (µg/L)	5/1/96 - 4/30/97	grab	5	98.300	745.000	318.060	284.145	Less than or equal to 1,000 ug/L
	5/1/97 - 4/30/98	grab	4	313.000	537.000	438.000	92.962	
	5/1/98 - 4/30/99	grab	4	95.100	1110.000	562.275	510.130	

Table 5. Summary of Water Quality Parameters Collected at Station USSO from May 1, 1996 through April 30, 1999.

PARAMETER	PERIOD	SAMPLE TYPE	SAMPLE N	MINIMUM	MAXIMUM	AVERAGE	STANDARD DEVIATION	CLASS III CRITERIA
PHYSICAL								
Dissolved Oxygen (mg/L)	5/1/96 - 4/30/97	grab	21	0.24	6.78	4.32	1.76	Not be less than 5.0 mg/L
	5/1/97 - 4/30/98	grab	20	2.51	8.79	5.12	1.70	
	5/1/98 - 4/30/99	grab	21	0.03	7.04	3.99	1.80	
Field Specific Conductivity (µmhos/cm)	5/1/96 - 4/30/97	grab	22	400	685	516	66	Not greater than 50% above background or 1,275µmhos/cm
	5/1/97 - 4/30/98	grab	20	372	561	500	38	
	5/1/98 - 4/30/99	grab	21	446	618	535	47	
Field pH (SU)	5/1/96 - 4/30/97	grab	22	6.91	7.80	7.20	0.19	Not less than 6.0 or greater than 8.5
	5/1/97 - 4/30/98	grab	20	6.57	7.55	7.09	0.26	
	5/1/98 - 4/30/99	grab	21	6.70	7.57	7.22	0.27	
Turbidity (NTU)	5/1/96 - 4/30/97	grab	21	0.406	2.520	1.178	0.668	Less than or equal to 29 NTU above background
	5/1/97 - 4/30/98	grab	20	0.456	5.480	1.464	1.192	
	5/1/98 - 4/30/99	grab	18	0.669	16.600	3.635	3.640	
Total Suspended Solids (mg/L)	5/1/96 - 4/30/97	grab	4	<3	<3	<3	0	Not applicable
	5/1/97 - 4/30/98	grab	4	<3	4	<3	1	
	5/1/98 - 4/30/99	grab	3	<3	10	4	5	
Hardness (as CaCO3) (mg CaCO3/L)	5/1/96 - 4/30/97	grab	4	193.981	258.456	218.288	28.608	Not applicable
	5/1/97 - 4/30/98	grab	4	211.650	239.299	228.189	13.018	
	5/1/98 - 4/30/99	grab	4	218.581	231.855	223.229	6.172	
Alkalinity (mg/L)	5/1/96 - 4/30/97	grab	21	145.1	257.5	184.3	30.4	Not less than 20 mg/L
	5/1/97 - 4/30/98	grab	20	159.1	202.7	179.7	12.4	
	5/1/98 - 4/30/99	grab	18	148.2	227.4	191.5	23.3	
NUTRIENTS								
Total Nitrogen (mg/L)	5/1/96 - 4/30/97	auto&grab	68	0.728	20.525	2.164	2.535	
	5/1/97 - 4/30/98	auto&grab	56	0.805	6.912	1.624	0.840	
	5/1/98 - 4/30/99	auto&grab	58	1.116	2.750	1.535	0.281	
Nitrate/Nitrite (as N) (mg N/L)	5/1/96 - 4/30/97	auto&grab	70	<0.015	0.168	0.030	0.027	
	5/1/97 - 4/30/98	auto&grab	57	<0.006	0.245	0.026	0.036	
	5/1/98 - 4/30/99	auto&grab	58	0.004	0.148	0.017	0.024	
Ammonia (as N) (mg N/L)	5/1/96 - 4/30/97	auto&grab	65	<0.015	0.798	0.143	0.127	
	5/1/97 - 4/30/98	auto&grab	56	0.009	1.614	0.120	0.213	
	5/1/98 - 4/30/99	auto&grab	60	<0.009	0.630	0.094	0.108	
Total Phosphorus (mg/L)	5/1/96 - 4/30/97	auto&grab	52	0.030	0.973	0.116	0.133	
	5/1/97 - 4/30/98	auto&grab	61	0.017	0.203	0.075	0.035	
	5/1/98 - 4/30/99	auto&grab	65	0.019	0.788	0.102	0.104	
Ortho-Phosphate (as P) (mg P/L)	5/1/96 - 4/30/97	grab	21	0.008	0.169	0.058	0.036	
	5/1/97 - 4/30/98	grab	19	0.021	0.190	0.066	0.045	
	5/1/98 - 4/30/99	grab	18	0.006	0.174	0.060	0.045	
Dissolved Silica (mg/L)	5/1/96 - 4/30/97	grab	4	4.513	7.668	6.648	1.464	Not applicable
	5/1/97 - 4/30/98	grab	4	3.952	8.948	7.189	2.230	
	5/1/98 - 4/30/99	grab	4	3.752	11.263	7.669	3.395	
MAJOR IONS								
Dissolved Sodium (mg/L)	5/1/96 - 4/30/97	grab	4	18.620	27.300	22.105	4.076	Not applicable
	5/1/97 - 4/30/98	grab	4	22.000	33.300	26.375	4.925	
	5/1/98 - 4/30/99	grab	4	24.900	35.100	29.100	4.463	
Dissolved Potassium (mg/L)	5/1/96 - 4/30/97	grab	4	4.220	8.500	5.387	2.078	Not applicable
	5/1/97 - 4/30/98	grab	4	3.020	6.300	4.508	1.381	
	5/1/98 - 4/30/99	grab	4	3.260	7.430	5.378	1.707	
Dissolved Calcium (mg/L)	5/1/96 - 4/30/97	grab	4	70.990	93.800	79.322	10.312	Not applicable
	5/1/97 - 4/30/98	grab	4	78.000	88.100	83.325	5.476	
	5/1/98 - 4/30/99	grab	4	78.400	85.300	80.650	3.234	
Dissolved Magnesium (mg/L)	5/1/96 - 4/30/97	grab	4	4.030	6.150	4.910	1.045	Not applicable
	5/1/97 - 4/30/98	grab	4	4.100	6.360	4.888	1.011	
	5/1/98 - 4/30/99	grab	4	4.420	6.740	5.305	1.064	
Chlorides (mg/L)	5/1/96 - 4/30/97	grab	21	26.230	54.176	36.714	8.989	Not greater than 10% of background
	5/1/97 - 4/30/98	grab	20	31.877	44.711	35.455	3.483	
	5/1/98 - 4/30/99	grab	18	29.265	52.201	38.534	5.988	
Sulfate (mg/L)	5/1/96 - 4/30/97	grab	4	8.517	36.512	22.209	11.497	Not applicable
	5/1/97 - 4/30/98	grab	4	8.221	24.591	18.876	7.353	
	5/1/98 - 4/30/99	grab	4	6.047	23.551	15.236	7.580	
TRACE ELEMENTS								
Total Mercury (µg/L)	5/1/96 - 4/30/97	grab	1	<0.2	<0.2	<0.2		Less than or equal to 0.012 ug/L
	5/1/97 - 4/30/98	grab	2	<0.2	<0.2	<0.2		
	5/1/98 - 4/30/99	grab	2	<0.2	<0.2	<0.2		
Total Cadmium (µg/L)	5/1/96 - 4/30/97	grab	2	<0.3	<0.3	<0.3		Less than or equal to calculated value using: $e^{(0.7852[\ln Hardness]-3.44)}$
	5/1/97 - 4/30/98	grab	2	<0.3	<0.3	<0.3		
	5/1/98 - 4/30/99	grab	2	<0.3	<0.3	<0.3		
Total Copper (µg/L)	5/1/96 - 4/30/97	grab	2	<1.2	<1.2	<1.2		Less than or equal to calculated value using: $e^{(0.8545[\ln Hardness]-1.465)}$
	5/1/97 - 4/30/98	grab	2	<1.2	<1.2	<1.2		
	5/1/98 - 4/30/99	grab	2	<1.2	<1.2	<1.2		
Total Zinc (µg/L)	5/1/96 - 4/30/97	grab	2	<4	<4	<4		Less than or equal to calculated value using: $e^{(0.8473[\ln Hardness]+0.7614)}$
	5/1/97 - 4/30/98	grab	2	<4	<4	<4		
	5/1/98 - 4/30/99	grab	2	<4	<4	<4		
Total Arsenic (µg/L)	5/1/96 - 4/30/97	grab	1	<1.5	<1.5	<1.5		Less than or equal to 50 ug/L
	5/1/97 - 4/30/98	grab	2	<1.5	1.630	<1.5		
	5/1/98 - 4/30/99	grab	2	<1.5	<1.5	<1.5		
Total Lead (µg/L)	5/1/96 - 4/30/97	grab	2	<0.8	<0.8	<0.8		Less than or equal to calculated value using: $e^{(1.273[\ln Hardness]-4.705)}$
	5/1/97 - 4/30/98	grab	2	<0.8	<0.8	<0.8		
	5/1/98 - 4/30/99	grab	2	<0.8	<0.8	<0.8		
Total Iron (µg/L)	5/1/96 - 4/30/97	grab	5	78.800	258.400	150.240	69.285	Less than or equal to 1,000 ug/L
	5/1/97 - 4/30/98	grab	4	55.800	373.000	225.200	147.836	
	5/1/98 - 4/30/99	grab	4	69.400	337.000	214.600	122.886	

Table 6. Summary of Water Quality Parameters Collected at Station L28U from August 1, 1997 through April 30, 1999.

PARAMETER	PERIOD	SAMPLE TYPE	SAMPLE N	MINIMUM	MAXIMUM	AVERAGE	STANDARD DEVIATION	CLASS III
PHYSICAL								
Dissolved Oxygen (mg/L)	8/1/97 - 4/30/98	no data	0					Not be less than 5.0 mg/L
	5/1/98 - 4/30/99	grab	13	0.50	7.20	3.40	2.11	
Field Specific Conductivity (µmhos/cm)	8/1/97 - 4/30/98	grab	6	501	645	578	47	Not greater than 50% above background or 1,275µmhos/cm
	5/1/98 - 4/30/99	grab	21	1	630	497	169	
Field pH (SU)	8/1/97 - 4/30/98	no data	0					Not less than 6.0 or greater than 8.5
	5/1/98 - 4/30/99	grab	14	6.99	8.10	7.53	0.37	
Turbidity (NTU)	8/1/97 - 4/30/98	grab	11	<1	5	2	2	Less than or equal to 29 NTU above background
	5/1/98 - 4/30/99	grab	22	<1	3	<1	1	
Total Suspended Solids (mg/L)	8/1/97 - 4/30/98	grab	2	2	5	4	0	Not applicable
	5/1/98 - 4/30/99	grab	4	2	9	4	3	
Hardness (as CaCO3) (mg CaCO3/L)	8/1/97 - 4/30/98	grab	2	211.624	234.070	222.847		Not applicable
	5/1/98 - 4/30/99	grab	4	205.342	221.121	211.694	7.276	
Alkalinity (mg/L)	8/1/97 - 4/30/98	grab	11	190	240	214	14	Not less than 20 mg/L
	5/1/98 - 4/30/99	grab	23	159	230	207	18	
NUTRIENTS								
Total Nitrogen (mg/L)	8/1/97 - 4/30/98	auto&grab	40	<0.2	2.683	1.569	0.484	
	5/1/98 - 4/30/99	auto&grab	51	<0.2	3.234	1.438	0.511	
Nitrate/Nitrite (as N) (mg N/L)	8/1/97 - 4/30/98	auto&grab	40	0.008	0.116	0.048	0.030	
	5/1/98 - 4/30/99	auto&grab	51	<0.002	0.816	0.044	0.113	
Ammonia (as N) (mg N/L)	8/1/97 - 4/30/98	auto&grab	40	0.036	0.238	0.110	0.053	
	5/1/98 - 4/30/99	auto&grab	50	0.014	0.246	0.106	0.052	
Total Phosphorus (mg/L)	8/1/97 - 4/30/98	auto&grab	41	0.028	0.290	0.111	0.057	
	5/1/98 - 4/30/99	auto&grab	66	<0.002	0.419	0.097	0.070	
Ortho-Phosphate (as P) (mg P/L)	8/1/97 - 4/30/98	grab	11	0.020	0.062	0.037	0.015	
	5/1/98 - 4/30/99	grab	22	<0.001	0.090	0.021	0.022	
Dissolved Silica (mg/L)	8/1/97 - 4/30/98	grab	2	6.200	8.800	7.500		Not applicable
	5/1/98 - 4/30/99	grab	4	0.850	9.000	6.037	3.606	
MAJOR IONS								
Dissolved Sodium (mg/L)	8/1/97 - 4/30/98	grab	2	26.000	27.000	26.500		Not applicable
	5/1/98 - 4/30/99	grab	4	22.000	38.000	28.000	7.118	
Dissolved Potassium (mg/L)	8/1/97 - 4/30/98	grab	2	3.500	3.700	3.600		Not applicable
	5/1/98 - 4/30/99	grab	4	2.300	4.600	3.175	1.021	
Dissolved Calcium (mg/L)	8/1/97 - 4/30/98	grab	2	77.000	85.000	81.000		Not applicable
	5/1/98 - 4/30/99	grab	4	73.000	78.000	75.750	2.217	
Dissolved Magnesium (mg/L)	8/1/97 - 4/30/98	grab	2	4.700	5.300	5.000		Not applicable
	5/1/98 - 4/30/99	grab	4	4.700	6.400	5.475	0.718	
Chlorides (mg/L)	8/1/97 - 4/30/98	grab	11	34.000	52.000	40.545	5.067	Not greater than 10% of background
	5/1/98 - 4/30/99	grab	23	26.000	57.000	38.043	7.980	
Sulfate (mg/L)	8/1/97 - 4/30/98	grab	2	11.000	17.000	14.000		Not applicable
	5/1/98 - 4/30/99	grab	4	1.000	17.000	8.300	6.584	
TRACE ELEMENTS								
Total Mercury (µg/L)	8/1/97 - 4/30/98	grab	1	<0.1	<0.1	<0.1		Less than or equal to 0.012 ug/L
	5/1/98 - 4/30/99	grab	2	<0.1	<0.1	<0.1		
Total Cadmium (µg/L)	8/1/97 - 4/30/98	grab	1	<0.5	<0.5	<0.5		Less than or equal to calculated value using: $e^{(0.7852[\ln Hardness]-3.49)}$
	5/1/98 - 4/30/99	grab	2	<0.5	<0.5	<0.5		
Total Copper (µg/L)	8/1/97 - 4/30/98	grab	1	<1	<1	<1		Less than or equal to calculated value using: $e^{(0.8545[\ln Hardness]-1.465)}$
	5/1/98 - 4/30/99	grab	2	<1	<1	<1		
Total Zinc (µg/L)	8/1/97 - 4/30/98	grab	1	13.000	13.000	13.000		Less than or equal to calculated value using: $e^{(0.8473[\ln Hardness]+0.7614)}$
	5/1/98 - 4/30/99	grab	2	9.000	24.000	16.500		
Total Arsenic (µg/L)	8/1/97 - 4/30/98	grab	1	1.300	1.300	1.300		Less than or equal to 50 ug/L
	5/1/98 - 4/30/99	grab	2	1.100	2.000	1.550		
Total Lead (µg/L)	8/1/97 - 4/30/98	grab	1	<1	<1	<1		Less than or equal to calculated value using: $e^{(1.273[\ln Hardness]-4.705)}$
	5/1/98 - 4/30/99	grab	2	<1	<1	<1		
Total Iron (µg/L)	8/1/97 - 4/30/98	grab	2	220.000	390.000	305.000		Less than or equal to 1,000 ug/L
	5/1/98 - 4/30/99	grab	4	45.000	390.000	183.750	146.366	

Table 7. Summary of Water Quality Parameters Collected at Station S140 from May 1, 1996 through April 30, 1999.

PARAMETER	PERIOD	SAMPLE TYPE	SAMPLE N	MINIMUM	MAXIMUM	AVERAGE	STANDARD DEVIATION	CLASS III CRITERIA
PHYSICAL								
Dissolved Oxygen (mg/L)	5/1/96 - 4/30/97	grab	22	0.75	7.92	3.73	2.16	Not be less than 5.0 mg/L
	5/1/97 - 4/30/98	grab	18	1.59	6.04	3.47	1.55	
	5/1/98 - 4/30/99	grab	15	0.78	7.12	2.97	2.19	
Field Specific Conductivity (µmhos/cm)	5/1/96 - 4/30/97	grab	23	393	608	487	60	Not greater than 50% above background or 1,275µmhos/cm
	5/1/97 - 4/30/98	grab	18	346	594	433	69	
	5/1/98 - 4/30/99	grab	15	353	515	436	50	
Field pH (SU)	5/1/96 - 4/30/97	grab	23	6.98	7.90	7.37	0.29	Not less than 6.0 or greater than 8.5
	5/1/97 - 4/30/98	grab	18	6.42	7.45	7.15	0.24	
	5/1/98 - 4/30/99	grab	15	6.55	7.76	7.38	0.32	
Turbidity (NTU)	5/1/96 - 4/30/97	grab	22	0.702	5.230	1.663	1.043	Less than or equal to 29 NTU above background
	5/1/97 - 4/30/98	grab	18	0.687	3.110	1.093	0.545	
	5/1/98 - 4/30/99	grab	15	0.641	2.440	1.396	0.628	
Total Suspended Solids (mg/L)	5/1/96 - 4/30/97	grab	5	<3	4	<3	1	Not applicable
	5/1/97 - 4/30/98	grab	4	<3	<3	<3	0	
	5/1/98 - 4/30/99	grab	4	<3	<3	<3	0	
Hardness (as CaCO3) (mg CaCO3/L)	5/1/96 - 4/30/97	grab	5	193.283	250.517	220.694	21.231	Not applicable
	5/1/97 - 4/30/98	grab	4	162.560	253.925	205.132	39.302	
	5/1/98 - 4/30/99	grab	4	176.447	202.320	183.457	12.587	
Alkalinity (mg/L)	5/1/96 - 4/30/97	grab	22	148.2	233.7	190.0	21.7	Not less than 20 mg/L
	5/1/97 - 4/30/98	grab	18	141.3	218.2	168.8	21.6	
	5/1/98 - 4/30/99	grab	15	133.6	200.9	171.3	18.0	
NUTRIENTS								
Total Nitrogen (mg/L)	5/1/96 - 4/30/97	grab	20	0.961	2.518	1.322	0.372	
	5/1/97 - 4/30/98	grab	16	0.925	2.731	1.279	0.428	
	5/1/98 - 4/30/99	grab	14	0.777	1.607	1.230	0.268	
Nitrate/Nitrite (as N) (mg N/L)	5/1/96 - 4/30/97	grab	20	<0.015	0.104	0.034	0.029	
	5/1/97 - 4/30/98	grab	16	0.018	0.591	0.081	0.138	
	5/1/98 - 4/30/99	grab	14	<0.004	0.059	0.023	0.018	
Ammonia (as N) (mg N/L)	5/1/96 - 4/30/97	grab	20	<0.009	0.118	0.049	0.029	
	5/1/97 - 4/30/98	grab	16	<0.009	0.191	0.069	0.049	
	5/1/98 - 4/30/99	grab	15	<0.009	0.108	0.051	0.035	
Total Phosphorus (mg/L)	5/1/96 - 4/30/97	grab	19	0.018	0.113	0.042	0.023	
	5/1/97 - 4/30/98	grab	17	0.025	0.053	0.036	0.008	
	5/1/98 - 4/30/99	grab	15	0.015	0.077	0.044	0.021	
Ortho-Phosphate (as P) (mg P/L)	5/1/96 - 4/30/97	grab	22	<0.004	0.044	0.013	0.012	
	5/1/97 - 4/30/98	grab	18	0.009	0.049	0.020	0.010	
	5/1/98 - 4/30/99	grab	15	<0.004	0.066	0.022	0.019	
Dissolved Silica (mg/L)	5/1/96 - 4/30/97	grab	5	2.030	7.512	5.387	2.247	Not applicable
	5/1/97 - 4/30/98	grab	4	4.670	9.398	6.699	1.989	
	5/1/98 - 4/30/99	grab	4	3.737	10.513	7.094	3.379	
MAJOR IONS								
Dissolved Sodium (mg/L)	5/1/96 - 4/30/97	grab	5	16.380	32.600	24.556	6.494	Not applicable
	5/1/97 - 4/30/98	grab	4	17.000	32.100	24.200	6.631	
	5/1/98 - 4/30/99	grab	4	17.300	26.700	21.325	4.435	
Dissolved Potassium (mg/L)	5/1/96 - 4/30/97	grab	5	2.600	6.950	3.942	1.797	Not applicable
	5/1/97 - 4/30/98	grab	4	2.300	2.960	2.472	0.325	
	5/1/98 - 4/30/99	grab	4	1.230	3.690	2.193	1.067	
Dissolved Calcium (mg/L)	5/1/96 - 4/30/97	grab	5	70.760	90.300	79.092	7.153	Not applicable
	5/1/97 - 4/30/98	grab	4	59.000	91.500	74.025	13.907	
	5/1/98 - 4/30/99	grab	4	62.500	72.400	66.000	4.376	
Dissolved Magnesium (mg/L)	5/1/96 - 4/30/97	grab	5	4.030	7.470	5.634	1.347	Not applicable
	5/1/97 - 4/30/98	grab	4	3.700	6.180	4.928	1.130	
	5/1/98 - 4/30/99	grab	4	3.840	5.230	4.530	0.665	
Chlorides (mg/L)	5/1/96 - 4/30/97	grab	22	19.694	55.561	33.525	10.304	Not greater than 10% of background
	5/1/97 - 4/30/98	grab	18	17.707	41.187	26.289	6.226	
	5/1/98 - 4/30/99	grab	15	16.331	44.257	26.957	8.335	
Sulfate (mg/L)	5/1/96 - 4/30/97	grab	5	3.674	29.491	12.317	10.119	Not applicable
	5/1/97 - 4/30/98	grab	4	5.436	10.074	7.428	2.093	
	5/1/98 - 4/30/99	grab	4	2.654	16.687	7.217	6.449	
TRACE ELEMENTS								
Total Mercury (µg/L)	5/1/96 - 4/30/97	grab	1	<0.2	<0.2	<0.2		Less than or equal to 0.012 ug/L
	5/1/97 - 4/30/98	grab	2	<0.2	<0.2	<0.2		
	5/1/98 - 4/30/99	grab	2	<0.2	<0.2	<0.2		
Total Cadmium (µg/L)	5/1/96 - 4/30/97	grab	1	0.316	0.316	0.316		Less than or equal to calculated value using: $e^{(0.7852[\ln Hardness]-3.49)}$
	5/1/97 - 4/30/98	grab	2	<0.3	<0.3	<0.3		
	5/1/98 - 4/30/99	grab	2	<0.3	<0.3	<0.3		
Total Copper (µg/L)	5/1/96 - 4/30/97	grab	1	4.760	4.760	4.760		Less than or equal to calculated value using: $e^{(0.8545[\ln Hardness]-1.465)}$
	5/1/97 - 4/30/98	grab	2	<1.2	1.680	<1.2		
	5/1/98 - 4/30/99	grab	2	<1.2	<1.2	<1.2		
Total Zinc (µg/L)	5/1/96 - 4/30/97	grab	1	6.110	6.110	6.110		Less than or equal to calculated value using: $e^{(0.8473[\ln Hardness]+0.7614)}$
	5/1/97 - 4/30/98	grab	2	<4	<4	<4		
	5/1/98 - 4/30/99	grab	2	6.450	7.700	7.075		
Total Arsenic (µg/L)	5/1/96 - 4/30/97	no data	0					Less than or equal to 50 ug/L
	5/1/97 - 4/30/98	grab	2	<1.5	1.840	<1.5		
	5/1/98 - 4/30/99	grab	2	<1.5	1.690	<1.5		
Total Lead (µg/L)	5/1/96 - 4/30/97	grab	1	<0.8	<0.8	<0.8		Less than or equal to calculated value using: $e^{(1.273[\ln Hardness]-4.705)}$
	5/1/97 - 4/30/98	grab	2	<0.8	<0.8	<0.8		
	5/1/98 - 4/30/99	grab	2	<0.8	<0.8	<0.8		
Total Iron (µg/L)	5/1/96 - 4/30/97	grab	5	98.700	266.400	176.020	65.009	Less than or equal to 1,000 ug/L
	5/1/97 - 4/30/98	grab	4	156.000	383.000	232.250	103.879	
	5/1/98 - 4/30/99	grab	4	77.500	302.000	182.625	96.981	

Table 8. Summary of Water Quality Parameters Collected at Station WWEIR from May 1, 1996 through April 30, 1999.

PARAMETER	PERIOD	SAMPLE TYPE	SAMPLE N	MINIMUM	MAXIMUM	AVERAGE	STANDARD DEVIATION	CLASS III
PHYSICAL								
Dissolved Oxygen	5/1/97 - 4/30/98	grab	61	0.17	5.59	2.43	1.38	Not be less than 5.0 mg/L
(mg/L)	5/1/98 - 4/30/99	grab	54	0.54	7.17	3.44	1.50	
Field Specific Conductivity	5/1/97 - 4/30/98	grab	61	1	772	620	121	Not greater than 50% above background or 1,275µmhos/cm
(µmhos/cm)	5/1/98 - 4/30/99	grab	54	269	810	667	111	
Field pH	5/1/97 - 4/30/98	grab	61	6.52	7.79	7.10	0.26	Not less than 6.0 or greater than 8.5
(SU)	5/1/98 - 4/30/99	grab	54	4.30	7.81	7.27	0.53	
Turbidity	5/1/96 - 4/30/97		0					Less than or equal to 29 NTU above background
(NTU)	5/1/97 - 4/30/98		0					
Total Suspended Solids	5/1/96 - 4/30/97		0					Not applicable
(mg/L)	5/1/97 - 4/30/98		0					
Hardness (as CaCO3)	5/1/96 - 4/30/97		0					Not applicable
(mg CaCO3/L)	5/1/97 - 4/30/98		0					
Alkalinity	5/1/96 - 4/30/97		0					Not less than 20 mg/L
(mg/L)	5/1/97 - 4/30/98		0					
NUTRIENTS								
Total Nitrogen	5/1/97 - 4/30/98	auto&grab	50	0.822	2.224	1.442	0.312	
(mg/L)	5/1/98 - 4/30/99	auto&grab	33	1.021	1.837	1.352	0.227	
Nitrate/Nitrite (as N)	5/1/97 - 4/30/98	auto&grab	51	<0.004	0.052	0.020	0.014	
(mg N/L)	5/1/98 - 4/30/99	auto&grab	33	0.004	0.133	0.031	0.023	
Ammonia (as N)	5/1/97 - 4/30/98	auto&grab	53	<0.009	0.803	0.180	0.149	
(mg N/L)	5/1/98 - 4/30/99	auto&grab	33	0.016	0.589	0.172	0.147	
Total Phosphorus	5/1/97 - 4/30/98	auto&grab	130	0.011	0.112	0.032	0.016	
(mg/L)	5/1/98 - 4/30/99	auto&grab	104	0.015	0.103	0.042	0.018	
Ortho-Phosphate (as P)	5/1/97 - 4/30/98		0					
(mg P/L)	5/1/98 - 4/30/99		0					
Dissolved Silica	5/1/97 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
MAJOR IONS								
Dissolved Sodium	5/1/97 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
Dissolved Potassium	5/1/97 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
Dissolved Calcium	5/1/97 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
Dissolved Magnesium	5/1/97 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
Chlorides	5/1/97 - 4/30/98		0					Not greater than 10% of background
(mg/L)	5/1/98 - 4/30/99		0					
Sulfate	5/1/97 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
TRACE ELEMENTS								
Total Mercury	5/1/97 - 4/30/98		0					Less than or equal to 0.012 ug/L
(µg/L)	5/1/98 - 4/30/99		0					
Total Cadmium	5/1/97 - 4/30/98		0					Less than or equal to calculated value using: $e^{(0.7852[\ln Hardness]-3.49)}$
(µg/L)	5/1/98 - 4/30/99		0					
Total Copper	5/1/97 - 4/30/98		0					Less than or equal to calculated value using: $e^{(0.8545[\ln Hardness]-1.465)}$
(µg/L)	5/1/98 - 4/30/99		0					
Total Zinc	5/1/97 - 4/30/98		0					Less than or equal to calculated value using: $e^{(0.8473[\ln Hardness]+0.7614)}$
(µg/L)	5/1/98 - 4/30/99		0					
Total Arsenic	5/1/97 - 4/30/98		0					Less than or equal to 50 ug/L
(µg/L)	5/1/98 - 4/30/99		0					
Total Lead	5/1/97 - 4/30/98		0					Less than or equal to calculated value using: $e^{(1.273[\ln Hardness]-4.705)}$
(µg/L)	5/1/98 - 4/30/99		0					
Total Iron	5/1/97 - 4/30/98		0					Less than or equal to 1,000 ug/L
(µg/L)	5/1/98 - 4/30/99		0					

Table 9. Summary of Water Quality Parameters Collected at Station NFEED from May 1, 1996 through April 30, 1999.

PARAMETER	PERIOD	SAMPLE TYPE	SAMPLE N	MINIMUM	MAXIMUM	AVERAGE	STANDARD DEVIATION	CLASS III
PHYSICAL								
Dissolved Oxygen	5/1/97 - 4/30/98	grab	47	1.21	7.31	4.42	1.51	Not be less than 5.0 mg/L
(mg/L)	5/1/98 - 4/30/99	grab	52	0.43	9.64	4.49	1.86	
Field Specific Conductivity	5/1/97 - 4/30/98	grab	47	0	512	432	73	Not greater than 50% above background or 1,275µmhos/cm
(µmhos/cm)	5/1/98 - 4/30/99	grab	52	289	619	482	55	
Field pH	5/1/97 - 4/30/98	grab	47	6.51	7.82	7.23	0.27	Not less than 6.0 or greater than 8.5
(SU)	5/1/98 - 4/30/99	grab	52	3.97	8.05	7.34	0.57	
Turbidity	5/1/97 - 4/30/98		0					Less than or equal to 29 NTU above background
(NTU)	5/1/98 - 4/30/99		0					
Total Suspended Solids	5/1/97 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
Hardness (as CaCO3)	5/1/97 - 4/30/98		0					Not applicable
(mg CaCO3/L)	5/1/98 - 4/30/99		0					
Alkalinity	5/1/97 - 4/30/98		0					Not less than 20 mg/L
(mg/L)	5/1/98 - 4/30/99		0					
NUTRIENTS								
Total Nitrogen	5/1/97 - 4/30/98	auto	34	0.698	5.333	1.650	0.968	
(mg/L)	5/1/98 - 4/30/99	auto&grab	37	1.006	3.167	1.526	0.376	
Nitrate/Nitrite (as N)	5/1/97 - 4/30/98	auto&grab	37	<0.004	0.202	0.039	0.041	
(mg N/L)	5/1/98 - 4/30/99	auto	52	<0.004	0.100	0.011	0.013	
Ammonia (as N)	5/1/97 - 4/30/98	auto&grab	36	0.024	0.211	0.084	0.039	
(mg N/L)	5/1/98 - 4/30/99	auto	52	<0.009	0.193	0.044	0.039	
Total Phosphorus	5/1/97 - 4/30/98	auto&grab	86	0.047	0.297	0.126	0.057	
(mg/L)	5/1/98 - 4/30/99	auto&grab	104	0.004	0.309	0.084	0.055	
Ortho-Phosphate (as P)	5/1/97 - 4/30/98		0					
(mg P/L)	5/1/98 - 4/30/99		0					
Dissolved Silica	5/1/97 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
MAJOR IONS								
Dissolved Sodium	5/1/97 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
Dissolved Potassium	5/1/97 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
Dissolved Calcium	5/1/97 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
Dissolved Magnesium	5/1/97 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
Chlorides	5/1/97 - 4/30/98		0					Not greater than 10% of background
(mg/L)	5/1/98 - 4/30/99		0					
Sulfate	5/1/97 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
TRACE ELEMENTS								
Total Mercury	5/1/97 - 4/30/98		0					Less than or equal to 0.012 ug/L
(µg/L)	5/1/98 - 4/30/99		0					
Total Cadmium	5/1/97 - 4/30/98		0					Less than or equal to calculated value
(µg/L)	5/1/98 - 4/30/99		0					using: $e^{(0.7852[\ln Hardness]-3.49)}$
Total Copper	5/1/97 - 4/30/98		0					Less than or equal to calculated value
(µg/L)	5/1/98 - 4/30/99		0					using: $e^{(0.8545[\ln Hardness]-1.465)}$
Total Zinc	5/1/97 - 4/30/98		0					Less than or equal to calculated value
(µg/L)	5/1/98 - 4/30/99		0					using: $e^{(0.8473[\ln Hardness]+0.7614)}$
Total Arsenic	5/1/97 - 4/30/98		0					Less than or equal to 50 ug/L
(µg/L)	5/1/98 - 4/30/99		0					
Total Lead	5/1/97 - 4/30/98		0					Less than or equal to calculated value
(µg/L)	5/1/98 - 4/30/99		0					using: $e^{(1.273[\ln Hardness]-4.705)}$
Total Iron	5/1/97 - 4/30/98		0					Less than or equal to 1,000 ug/L
(µg/L)	5/1/98 - 4/30/99		0					

Table 10. Summary of Water Quality Parameters Collected at Station S190 from May 1, 1996 through April 30, 1999.

PARAMETER	PERIOD	SAMPLE TYPE	SAMPLE N	MINIMUM	MAXIMUM	AVERAGE	STANDARD DEVIATION	CLASS III CRITERIA
PHYSICAL								
Dissolved Oxygen (mg/L)	5/1/96 - 4/30/97	grab	21	2.22	8.95	5.03	1.79	Not be less than 5.0 mg/L
	5/1/97 - 4/30/98	grab	14	0.74	7.26	4.74	1.78	
	5/1/98 - 4/30/99	grab	14	2.31	7.28	4.50	1.56	
Field Specific Conductivity (µmhos/cm)	5/1/96 - 4/30/97	grab	22	360	742	575	105	Not greater than 50% above background or 1,275µmhos/cm
	5/1/97 - 4/30/98	grab	14	495	689	576	63	
	5/1/98 - 4/30/99	grab	14	435	790	596	95	
Field pH (SU)	5/1/96 - 4/30/97	grab	22	7.14	7.78	7.50	0.20	Not less than 6.0 or greater than 8.5
	5/1/97 - 4/30/98	grab	14	6.21	7.65	7.30	0.36	
	5/1/98 - 4/30/99	grab	14	6.92	7.90	7.44	0.27	
Turbidity (NTU)	5/1/96 - 4/30/97	grab	21	1.400	3.950	2.067	0.674	Less than or equal to 29 NTU above background
	5/1/97 - 4/30/98	grab	14	0.797	6.520	1.997	1.399	
	5/1/98 - 4/30/99	grab	14	0.169	30.400	3.643	7.723	
Total Suspended Solids (mg/L)	5/1/96 - 4/30/97	grab	4	<3	4	<3	1	Not applicable
	5/1/97 - 4/30/98	grab	4	<3	14	5	6	
	5/1/98 - 4/30/99	grab	4	<3	3	<3	1	
Hardness (as CaCO3) (mg CaCO3/L)	5/1/96 - 4/30/97	grab	4	182.048	292.838	240.796	50.627	Not applicable
	5/1/97 - 4/30/98	grab	4	221.919	283.906	258.600	27.171	
	5/1/98 - 4/30/99	grab	4	229.907	299.962	266.031	35.361	
Alkalinity (mg/L)	5/1/96 - 4/30/97	grab	21	156.4	270.6	218.5	31.1	Not less than 20 mg/L
	5/1/97 - 4/30/98	grab	14	194.3	258.7	226.8	23.5	
	5/1/98 - 4/30/99	grab	14	176.7	307.4	234.2	39.8	
NUTRIENTS								
Total Nitrogen (mg/L)	5/1/96 - 4/30/97	grab	20	0.746	1.864	1.204	0.260	
	5/1/97 - 4/30/98	grab	12	0.835	1.714	1.262	0.238	
	5/1/98 - 4/30/99	grab	13	0.957	2.628	1.280	0.440	
Nitrate/Nitrite (as N) (mg N/L)	5/1/96 - 4/30/97	grab	21	<0.015	0.102	0.027	0.027	
	5/1/97 - 4/30/98	grab	13	0.010	0.178	0.045	0.046	
	5/1/98 - 4/30/99	grab	13	<0.004	0.226	0.034	0.060	
Ammonia (as N) (mg N/L)	5/1/96 - 4/30/97	grab	19	<0.015	0.096	0.025	0.026	
	5/1/97 - 4/30/98	grab	13	<0.009	0.114	0.034	0.032	
	5/1/98 - 4/30/99	grab	14	<0.009	0.105	0.017	0.027	
Total Phosphorus (mg/L)	5/1/96 - 4/30/97	grab	19	0.020	0.244	0.080	0.056	
	5/1/97 - 4/30/98	grab	13	0.025	0.177	0.078	0.042	
	5/1/98 - 4/30/99	grab	14	0.019	0.139	0.055	0.035	
Ortho-Phosphate (as P) (mg P/L)	5/1/96 - 4/30/97	grab	21	0.005	0.188	0.036	0.046	
	5/1/97 - 4/30/98	grab	13	0.004	0.099	0.034	0.030	
	5/1/98 - 4/30/99	grab	14	0.004	0.072	0.020	0.020	
Dissolved Silica (mg/L)	5/1/96 - 4/30/97	grab	4	7.323	9.197	8.174	0.772	Not applicable
	5/1/97 - 4/30/98	grab	4	6.888	11.233	9.483	1.883	
	5/1/98 - 4/30/99	grab	4	8.603	12.405	10.051	1.725	
MAJOR IONS								
Dissolved Sodium (mg/L)	5/1/96 - 4/30/97	grab	4	17.400	48.000	33.455	15.946	Not applicable
	5/1/97 - 4/30/98	grab	3	29.000	44.600	35.600	8.072	
	5/1/98 - 4/30/99	grab	4	27.300	48.000	35.475	8.816	
Dissolved Potassium (mg/L)	5/1/96 - 4/30/97	grab	4	2.460	4.280	3.595	0.832	Not applicable
	5/1/97 - 4/30/98	grab	4	2.110	3.200	2.670	0.470	
	5/1/98 - 4/30/99	grab	4	1.710	3.100	2.495	0.578	
Dissolved Calcium (mg/L)	5/1/96 - 4/30/97	grab	4	64.100	99.300	82.693	15.395	Not applicable
	5/1/97 - 4/30/98	grab	4	77.000	101.000	90.775	10.090	
	5/1/98 - 4/30/99	grab	4	81.700	104.000	93.450	12.221	
Dissolved Magnesium (mg/L)	5/1/96 - 4/30/97	grab	4	5.340	11.200	8.332	3.148	Not applicable
	5/1/97 - 4/30/98	grab	4	6.800	9.320	7.755	1.106	
	5/1/98 - 4/30/99	grab	4	6.290	9.780	7.938	1.434	
Chlorides (mg/L)	5/1/96 - 4/30/97	grab	21	22.661	73.486	46.188	17.667	Not greater than 10% of background
	5/1/97 - 4/30/98	grab	14	30.155	58.613	39.646	8.406	
	5/1/98 - 4/30/99	grab	14	19.785	70.061	42.112	12.871	
Sulfate (mg/L)	5/1/96 - 4/30/97	grab	4	6.935	13.385	10.528	2.889	Not applicable
	5/1/97 - 4/30/98	grab	4	7.068	11.977	9.501	2.059	
	5/1/98 - 4/30/99	grab	4	10.018	14.035	11.343	1.829	
TRACE ELEMENTS								
Total Mercury (µg/L)	5/1/96 - 4/30/97	grab	1	<0.2	<0.2	<0.2		Less than or equal to 0.012 ug/L
	5/1/97 - 4/30/98	grab	2	<0.2	<0.2	<0.2		
	5/1/98 - 4/30/99	grab	2	<0.2	<0.2	<0.2		
Total Cadmium (µg/L)	5/1/96 - 4/30/97	grab	2	<0.3	0.312	<0.3		Less than or equal to calculated value using: $e^{(0.7852(\ln Hardness)-3.49)}$
	5/1/97 - 4/30/98	grab	2	<0.3	0.391	<0.3		
	5/1/98 - 4/30/99	grab	2	<0.3	<0.3	<0.3		
Total Copper (µg/L)	5/1/96 - 4/30/97	grab	2	<1.2	1.350	<1.2		Less than or equal to calculated value using: $e^{(0.8545(\ln Hardness)-1.465)}$
	5/1/97 - 4/30/98	grab	2	<1.2	1.550	<1.2		
	5/1/98 - 4/30/99	grab	2	<1.2	<1.2	<1.2		
Total Zinc (µg/L)	5/1/96 - 4/30/97	grab	2	<4	<4	<4		Less than or equal to calculated value using: $e^{(0.8473(\ln Hardness)+0.7614)}$
	5/1/97 - 4/30/98	grab	2	<4	<4	<4		
	5/1/98 - 4/30/99	grab	2	<4	<4	<4		
Total Arsenic (µg/L)	5/1/96 - 4/30/97	grab	1	<1.5	<1.5	<1.5		Less than or equal to 50 ug/L
	5/1/97 - 4/30/98	grab	2	<1.5	<1.5	<1.5		
	5/1/98 - 4/30/99	grab	2	<1.5	<1.5	<1.5		
Total Lead (µg/L)	5/1/96 - 4/30/97	grab	2	<0.8	<0.8	<0.8		Less than or equal to calculated value using: $e^{(1.273(\ln Hardness)-4.705)}$
	5/1/97 - 4/30/98	grab	2	<0.8	<0.8	<0.8		
	5/1/98 - 4/30/99	grab	2	<0.8	<0.8	<0.8		
Total Iron (µg/L)	5/1/96 - 4/30/97	grab	5	72.200	432.500	200.920	170.460	Less than or equal to 1,000 ug/L
	5/1/97 - 4/30/98	grab	4	119.000	841.000	354.000	329.878	
	5/1/98 - 4/30/99	grab	4	50.200	249.000	139.550	82.035	

Table 11. Summary of Water Quality Parameters Collected at Station L28IN from August 1, 1997 through April 30, 1999.

PARAMETER	PERIOD	SAMPLE TYPE	SAMPLE N	MINIMUM	MAXIMUM	AVERAGE	STANDARD DEVIATION	CLASS III
PHYSICAL								
Dissolved Oxygen	8/1/97 - 4/30/98	no data	0					Not be less than 5.0 mg/L
(mg/L)	5/1/98 - 4/30/99	grab	14	1.80	8.20	5.49	2.20	
Field Specific Conductivity	8/1/97 - 4/30/98	grab	6	590	696	646	41	Not greater than 50% above background or 1,275µmhos/cm
(µmhos/cm)	5/1/98 - 4/30/99	grab	19	399	732	621	83	
Field pH	8/1/97 - 4/30/98	no data	0					Not less than 6.0 or greater than 8.5
(SU)	5/1/98 - 4/30/99	grab	14	7.00	8.68	7.74	0.47	
Turbidity	8/1/97 - 4/30/98	grab	9	<1	3.000	1.944	0.635	Less than or equal to 29 NTU above background
(NTU)	5/1/98 - 4/30/99	grab	20	<1	3.000	1.355	0.684	
Total Suspended Solids	8/1/97 - 4/30/98	grab	1	<1	<1	<1		Not applicable
(mg/L)	5/1/98 - 4/30/99	grab	3	2	8	4	3	
Hardness (as CaCO3)	8/1/97 - 4/30/98	grab	1	261.897	261.897	261.897		Not applicable
(mg CaCO3/L)	5/1/98 - 4/30/99	grab	4	201.557	260.995	238.581	26.529	
Alkalinity	8/1/97 - 4/30/98	grab	9	200.0	280.0	244.4	26.0	Not less than 20 mg/L
(mg/L)	5/1/98 - 4/30/99	grab	20	162.0	285.0	247.7	32.5	
NUTRIENTS								
Total Nitrogen	8/1/97 - 4/30/98	auto&grab	35	<0.2	2.388	1.376	0.420	
(mg/L)	5/1/98 - 4/30/99	auto&grab	42	<0.2	2.486	1.297	0.488	
Nitrate/Nitrite (as N)	8/1/97 - 4/30/98	auto&grab	35	<0.002	0.288	0.076	0.061	
(mg N/L)	5/1/98 - 4/30/99	auto&grab	43	<0.002	0.110	0.040	0.032	
Ammonia (as N)	8/1/97 - 4/30/98	auto&grab	30	0.020	0.162	0.060	0.027	
(mg N/L)	5/1/98 - 4/30/99	auto&grab	42	0.008	0.196	0.065	0.038	
Total Phosphorus	8/1/97 - 4/30/98	auto&grab	35	0.014	0.231	0.099	0.046	
(mg/L)	5/1/98 - 4/30/99	auto&grab	59	0.008	0.258	0.097	0.064	
Ortho-Phosphate (as P)	8/1/97 - 4/30/98	grab	7	0.008	0.040	0.020	0.010	
(mg P/L)	5/1/98 - 4/30/99	grab	20	<0.001	0.072	0.009	0.016	
Dissolved Silica	8/1/97 - 4/30/98	grab	1	6.400	6.400	6.400		Not applicable
(mg/L)	5/1/98 - 4/30/99	grab	4	2.800	10.000	7.350	3.164	
MAJOR IONS								
Dissolved Sodium	8/1/97 - 4/30/98	grab	1	26.000	26.000	26.000		Not applicable
(mg/L)	5/1/98 - 4/30/99	grab	4	26.000	35.000	28.500	4.359	
Dissolved Potassium	8/1/97 - 4/30/98	grab	1	2.500	2.500	2.500		Not applicable
(mg/L)	5/1/98 - 4/30/99	grab	4	1.600	2.500	2.000	0.392	
Dissolved Calcium	8/1/97 - 4/30/98	grab	1	94.000	94.000	94.000		Not applicable
(mg/L)	5/1/98 - 4/30/99	grab	4	70.000	91.000	84.250	9.912	
Dissolved Magnesium	8/1/97 - 4/30/98	grab	1	6.600	6.600	6.600		Not applicable
(mg/L)	5/1/98 - 4/30/99	grab	4	6.200	8.200	6.850	0.911	
Chlorides	8/1/97 - 4/30/98	grab	9	0.400	52.000	37.489	14.783	Not greater than 10% of background
(mg/L)	5/1/98 - 4/30/99	grab	20	20.000	54.000	42.250	8.284	
Sulfate	8/1/97 - 4/30/98	grab	1	10.000	10.000	10.000		Not applicable
(mg/L)	5/1/98 - 4/30/99	grab	4	7.000	9.300	8.000	1.134	
TRACE ELEMENTS								
Total Mercury	8/1/97 - 4/30/98	grab	1	<0.1	<0.1	<0.1		Less than or equal to 0.012 ug/L
(µg/L)	5/1/98 - 4/30/99	grab	2	<0.1	<0.1	<0.1		
Total Cadmium	8/1/97 - 4/30/98	grab	1	<0.5	<0.5	<0.5		Less than or equal to calculated value
(µg/L)	5/1/98 - 4/30/99	grab	2	<0.5	<0.5	<0.5		using:$e^{(0.7852[\ln Hardness]-3.49)}$
Total Copper	8/1/97 - 4/30/98	grab	1	<1	<1	<1		Less than or equal to calculated value
(µg/L)	5/1/98 - 4/30/99	grab	1	1.400	1.400	1.400		using:$e^{(0.8545[\ln Hardness]-1.465)}$
Total Zinc	8/1/97 - 4/30/98	no data	0					Less than or equal to calculated value
(µg/L)	5/1/98 - 4/30/99	grab	1	17.000	17.000	17.000		using:$e^{(0.8473[\ln Hardness]+0.7614)}$
Total Arsenic	8/1/97 - 4/30/98	grab	1	2.000	2.000	2.000		Less than or equal to 50 ug/L
(µg/L)	5/1/98 - 4/30/99	grab	2	1.300	2.000	1.650		
Total Lead	8/1/97 - 4/30/98	grab	1	<1	<1	<1		Less than or equal to calculated value
(µg/L)	5/1/98 - 4/30/99	grab	1	<1	<1	<1		using:$e^{(1.273[\ln Hardness]-4.705)}$
Total Iron	8/1/97 - 4/30/98	grab	1	240.000	240.000	240.000		Less than or equal to 1,000 ug/L
(µg/L)	5/1/98 - 4/30/99	grab	3	50.000	370.000	186.667	165.025	

Table 12. Summary of Water Quality Parameters Collected at Station L28IS from March 1998 through April 1999.

PARAMETER	PERIOD	SAMPLE TYPE	SAMPLE N	MINIMUM	MAXIMUM	AVERAGE	STANDARD DEVIATION	CLASS III
PHYSICAL								
Dissolved Oxygen	3/1/98 - 4/30/98	no data	0					Not be less than 5.0 mg/L
(mg/L)	5/1/98 - 4/30/99	no data	0					
Field Specific Conductivity	3/1/98 - 4/30/98	grab	7	542	596	574	21	Not greater than 50% above background or 1,275µmhos/cm
(µmhos/cm)	5/1/98 - 4/30/99	grab	45	301	636	541	72	
Field pH	3/1/98 - 4/30/98	no data	0					Not less than 6.0 or greater than 8.5
(SU)	5/1/98 - 4/30/99	grab	45	6.00	8.20	7.06	0.53	
Turbidity	3/1/98 - 4/30/98	no data	0					Less than or equal to 29 NTU above background
(NTU)	5/1/98 - 4/30/99	c&g	48	0.810	3.900	2.339	0.695	
Total Suspended Solids	3/1/98 - 4/30/98	no data	0					Not applicable
(mg/L)	5/1/98 - 4/30/99	no data	0					
Hardness (as CaCO3)	3/1/98 - 4/30/98	no data	0					Not applicable
(mg CaCO3/L)	5/1/98 - 4/30/99	no data	0					
Alkalinity	3/1/98 - 4/30/98	no data	0					Not less than 20 mg/L
(mg/L)	5/1/98 - 4/30/99	no data	0					
NUTRIENTS								
Total Nitrogen	3/1/98 - 4/30/98	no data	0					
(mg/L)	5/1/98 - 4/30/99	no data	0					
Nitrate/Nitrite (as N)	3/1/98 - 4/30/98	no data	0					
(mg N/L)	5/1/98 - 4/30/99	no data	0					
Ammonia (as N)	3/1/98 - 4/30/98	no data	0					
(mg N/L)	5/1/98 - 4/30/99	no data	0					
Total Phosphorus	3/1/98 - 4/30/98	comp	7	0.041	0.095	0.056	0.020	
(mg/L)	5/1/98 - 4/30/99	c&g	82	0.001	0.420	0.059	0.064	
Ortho-Phosphate (as P)	3/1/98 - 4/30/98	grab	6	0.002	0.009	0.004	0.003	
(mg P/L)	5/1/98 - 4/30/99	grab	40	0.001	0.057	0.010	0.013	
Dissolved Silica	3/1/98 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
MAJOR IONS								
Dissolved Sodium	3/1/98 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
Dissolved Potassium	3/1/98 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
Dissolved Calcium	3/1/98 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
Dissolved Magnesium	3/1/98 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
Total Chlorides	3/1/98 - 4/30/98		0					Not greater than 10% of background
(mg/L)	5/1/98 - 4/30/99		0					
Total Sulfate	3/1/98 - 4/30/98		0					Not applicable
(mg/L)	5/1/98 - 4/30/99		0					
TRACE ELEMENTS								
Total Mercury	3/1/98 - 4/30/98		0					Less than or equal to 0.012 ug/L
(µg/L)	5/1/98 - 4/30/99		0					
Total Cadmium	3/1/98 - 4/30/98		0					Less than or equal to calculated value using: $e^{(0.7852[\ln(\text{Hardness})]-3.49)}$
(µg/L)	5/1/98 - 4/30/99		0					
Total Copper	3/1/98 - 4/30/98		0					Less than or equal to calculated value using: $e^{(0.8545[\ln(\text{Hardness})]-1.465)}$
(µg/L)	5/1/98 - 4/30/99		0					
Total Zinc	3/1/98 - 4/30/98		0					Less than or equal to calculated value using: $e^{(0.8473[\ln(\text{Hardness})]+0.7614)}$
(µg/L)	5/1/98 - 4/30/99		0					
Total Arsenic	3/1/98 - 4/30/98		0					Less than or equal to 50 ug/L
(µg/L)	5/1/98 - 4/30/99		0					
Total Lead	3/1/98 - 4/30/98		0					Less than or equal to calculated value using: $e^{(1.273[\ln(\text{Hardness})]-4.705)}$
(µg/L)	5/1/98 - 4/30/99		0					
Total Iron	3/1/98 - 4/30/98		0					Less than or equal to 1,000 ug/L
(µg/L)	5/1/98 - 4/30/99		0					

Table 13. Trace Metal Concentrations above the Method Detection Limit and Compared with Class III Standard from May 1, 1996 through April 30, 1999.

STATION	PARAMETER	DATE	CONCENTRATION µg/L	WATER HARDNESS mg/L	CLASS III
S190	TOTAL CADMIUM	06-Feb-97	0.312	No Data	
		10-Jul-97	0.391	221.919	2.121
	TOTAL COPPER	06-Feb-97	1.350	No Data	
		15-Jan-98	1.550	283.906	28.840
S140	TOTAL CADMIUM	23-Jan-97	0.316	224.303	2.139
	TOTAL COPPER	23-Jan-97	4.760	224.303	23.580
		29-Jan-98	1.680	253.925	26.217
	TOTAL ZINC	23-Jan-97	6.110	224.303	210.153
		30-Jul-98	7.700	202.320	192.565
		28-Jan-99	6.450	177.691	172.509
L3BRS	TOTAL CADMIUM	23-Jan-97	0.441	215.027	2.069
		06-Feb-97	0.354	No Data	
		10-Jul-97	0.403	98.899	1.124
	TOTAL COPPER	23-Jan-97	1.310	215.027	22.744
		06-Feb-97	2.170	No Data	
		10-Jul-97	1.740	98.899	11.713
		15-Jan-98	2.700	240.290	25.009
		16-Jul-98	3.930	163.379	17.986
		28-Jan-99	1.220	256.872	26.477
	TOTAL ZINC	16-Jul-98	5.600	163.379	160.662
L28U	TOTAL ZINC	08-Jan-98	13.000	234.070	217.881
		01-Jul-98	9.000	221.121	207.624
		06-Jan-99	24.000	213.683	201.690
L28IN	TOTAL CADMIUM	06-Jan-99	0.500	253.994	2.358
	TOTAL COPPER	06-Jan-99	1.400	253.994	26.223
	TOTAL ZINC	06-Jan-99	17.000	253.994	233.496

Figure 16. Comparison of TP Concentrations and Median Values.

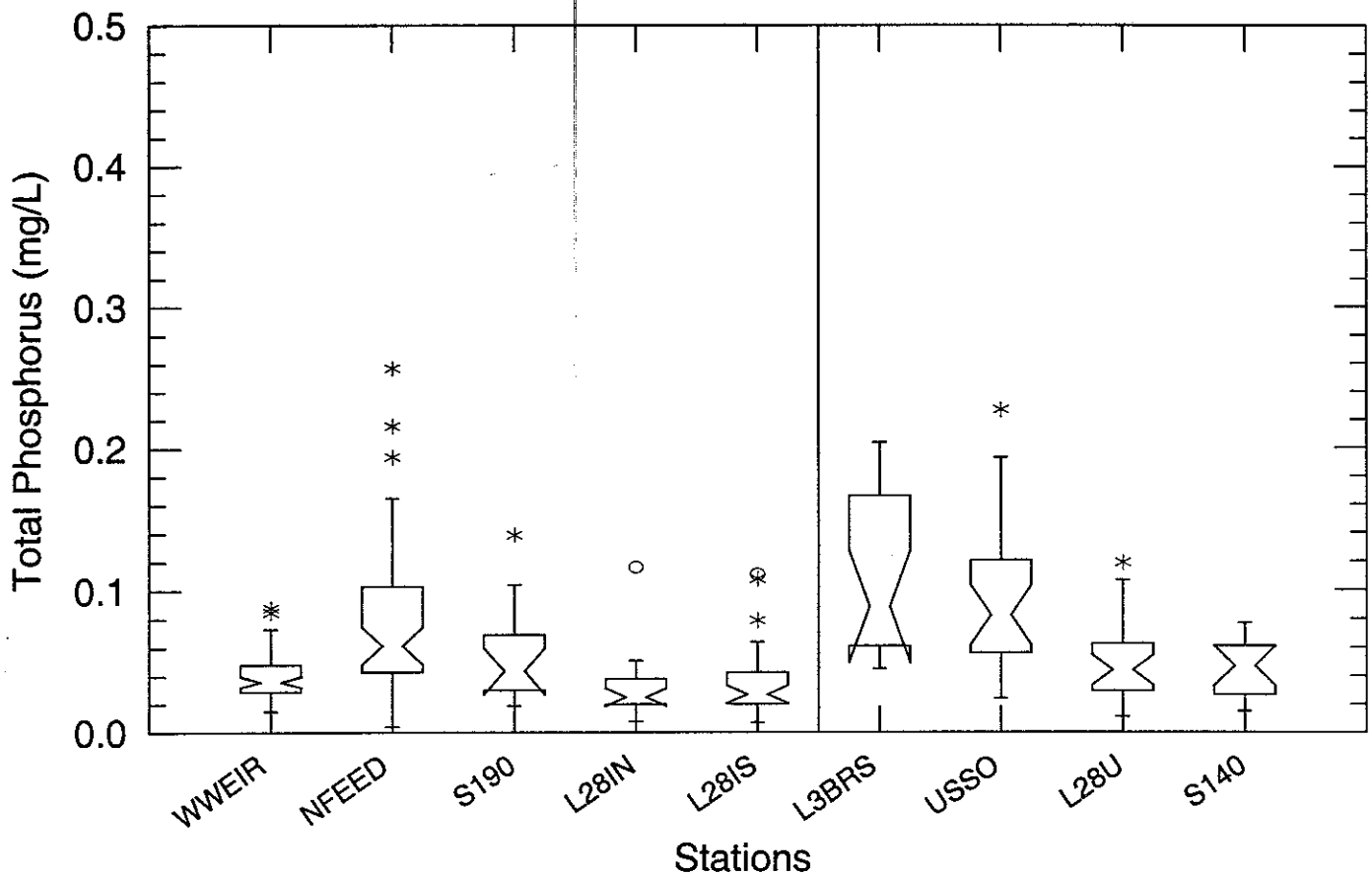
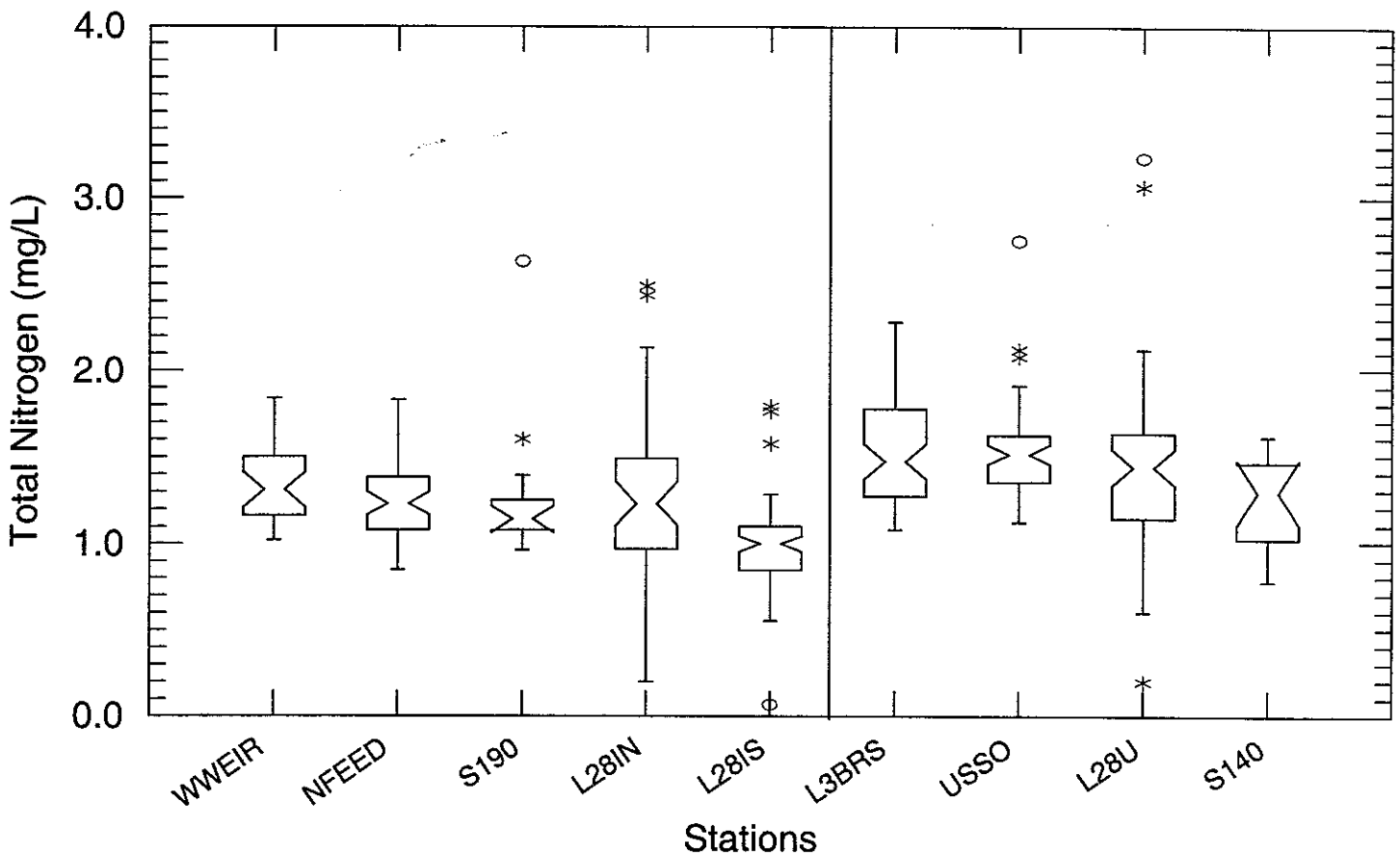
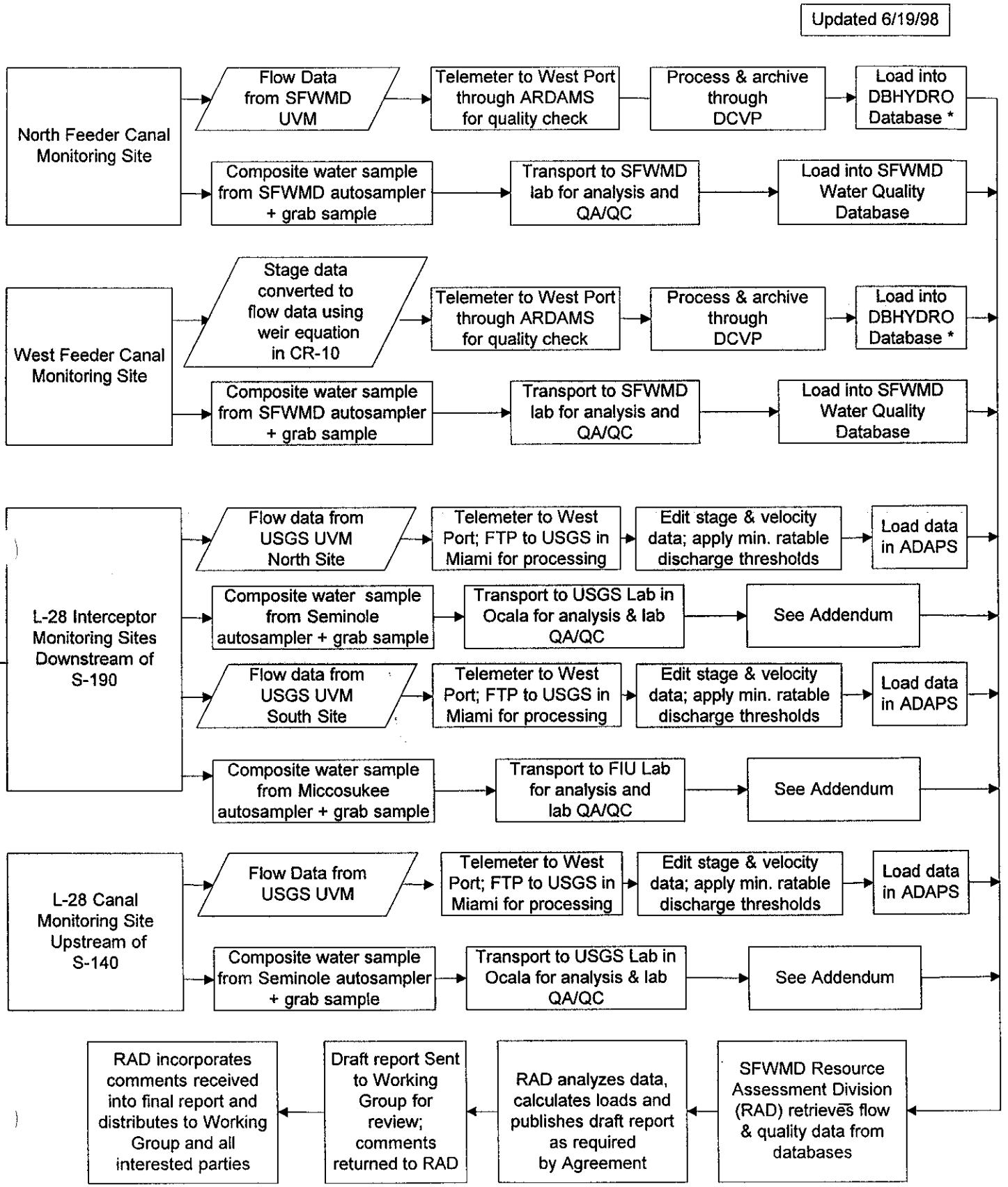


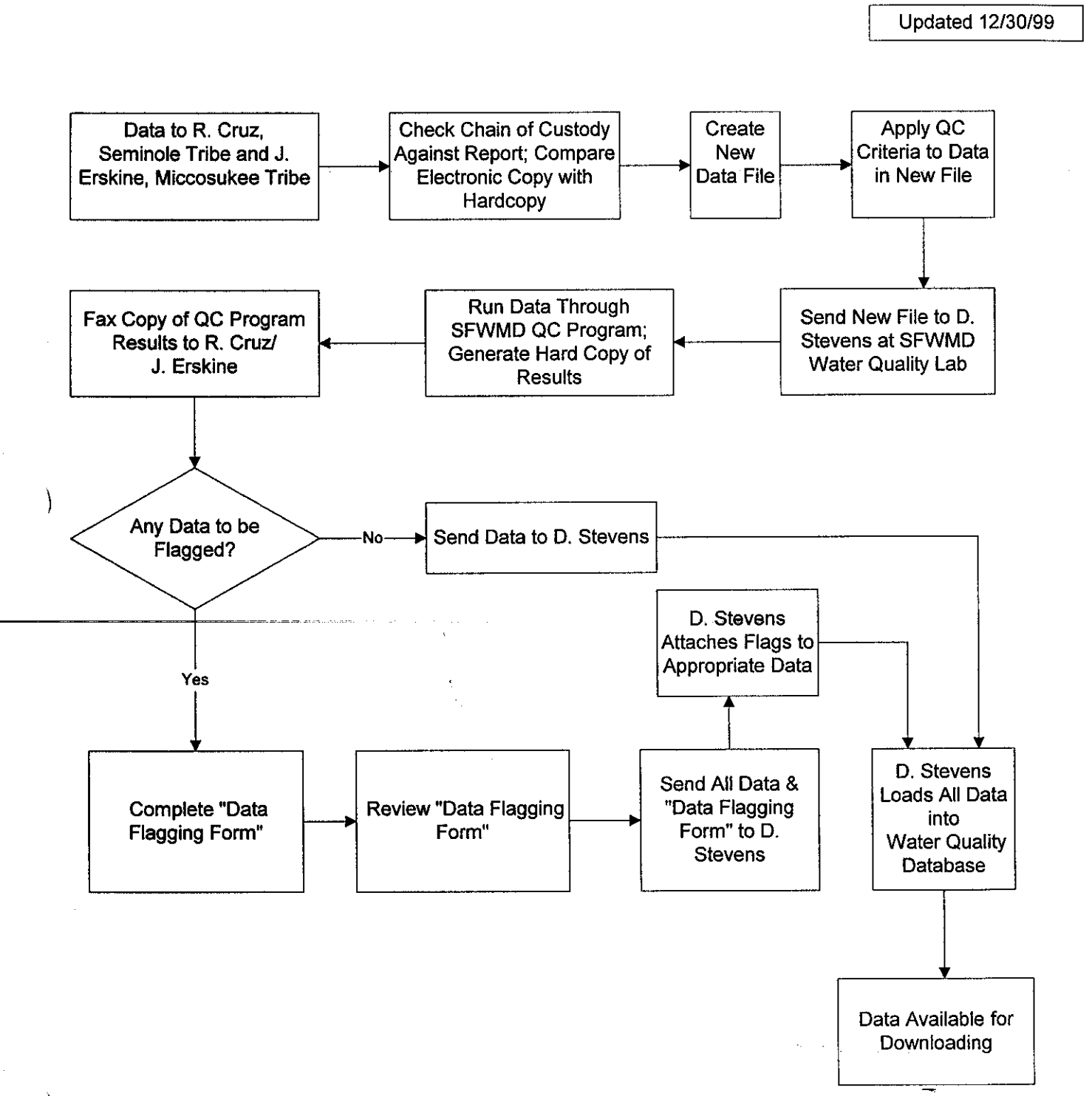
Figure 17. Comparison of TN Concentrations and Median Values.



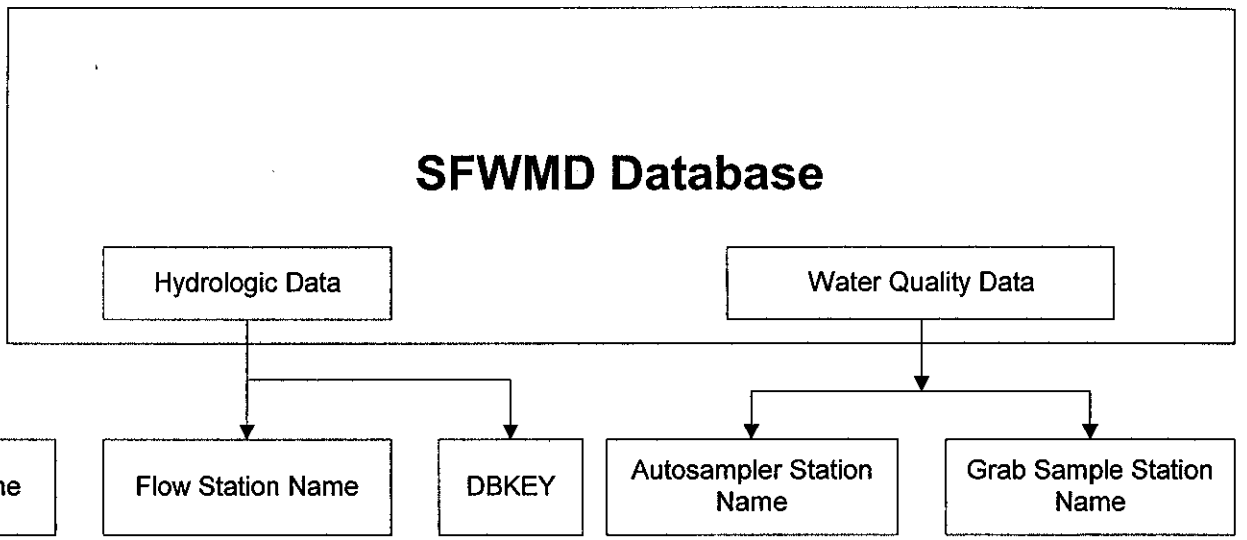
APPENDIX I. Flow Chart for Water Flow and Water Quality Data Collected for the SFWMD/Seminole Cooperative Agreement



Addendum to Appendix I. Flow Chart for Water Flow and Water Quality Data Collected for the Seminole/SFWMD Cooperative Agreement



APPENDIX II. SFWMD/Seminole Agreement Sampling Station Names



Site Name	Flow Station Name	DBKEY	Autosampler Station Name	Grab Sample Station Name
NFEED	NFEED_O	16754	NFEED	NFEED
WFEED	WFEED_O	16752	WFEED	WFEED
WWEIR	WFEED_O	16752	WWEIR	WWEIR
L3BRS	L3BRS_O	16245	USL3BRS	L3BRS
USSO	USSO_O	16749	USSO	USSO
S190	S190_S	15987	None	S190
S140	S140_TOT	06754	None	S140
L28U	L28U_O	FF808 (FF811 USGS Preferred)	L28U	L28U (Seminole BCS7)
L28IN	L28IN_O	FF809 (FF810 USGS Preferred)	L28IN	L28IN (Seminole BCS5)
L28IS	L28IS_O	FF812 (FF813 USGS Preferred)	L28IS	L28IS (Miccosukee L28I @ I75)

Appendix III. Total phosphorus (TP) concentration data for the period of May 1, 1998 through April 30, 1999.

For L3BRS/USL3BRS:

(1) Grab sample TP concentration data.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
L3BRS	CAMB	19980521	0	0.045	60535	L10152-7	SFWMD
USL3BRS	CAMB	19980521	0	0.061	60527	L10153-7	SFWMD
L3BRS	CAMB	19980701	0	0.132	60604	L10409-7	SFWMD
USL3BRS	CAMB	19980709	0	0.094	60634	L10446-7	SFWMD
L3BRS	CAMB	19980716	0	0.192	60653	L10493-10	SFWMD
L3BRS	CAMB	19980812	0	0.204	60700	L10648-10	SFWMD
L3BRS	CAMB	19980827	0	0.194	60729	L10759-10	SFWMD
L3BRS	CAMB	19980909	0	0.156	60753	L10831-7	SFWMD
L3BRS	CAMB	19980930	0	0.166	60781	L10973-7	SFWMD
L3BRS	CAMB	19981008	0	0.161	60821	L11020-10	SFWMD
L3BRS	CAMB	19981022	0	0.083	60839	L11116-7	SFWMD
L3BRS	CAMB	19981119	0	0.176	60893	L11299-4	SFWMD
USL3BRS	CAMB	19981217	0	0.078	60963	L11463-6	SFWMD
L3BRS	CAMB	19981229	0	0.059	60981	L11522-5	SFWMD
L3BRS	CAMB	19990128	0	0.053	61032	L11715-10	SFWMD
L3BRS	CAMB	19990225	0	0.063	61084	L11911-4	SFWMD
L3BRS	CAMB	19990325	0	0.045	61143	L12086-7	SFWMD
L3BRS	CAMB	19990422	0	0.065	61200	L12265-10	SFWMD
L3BRS	CAMB	19990520	0	0.055	P1216-8	L12424-8	SFWMD

(2) Automatic sampler flow proportional composite TP concentration data.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
USL3BRS	CAMB	19980507	24	0.082	60512	L10061-6	SFWMD
USL3BRS	CAMB	19980514	24	0.076	60517	L10106-4	SFWMD
USL3BRS	CAMB	19980528	24	0.077	60546	L10200-4	SFWMD
USL3BRS	CAMB	19980603	24	0.042	60551	L10238-4	SFWMD
USL3BRS	CAMB	19980611	24	0.063	60572	L10287-4	SFWMD
USL3BRS	CAMB	19980618	24	0.049	60593	L10333-3	SFWMD
USL3BRS	CAMB	19980625	24	0.133	60615	L10378-4	SFWMD
USL3BRS	CAMB	19980702	24	0.143	60622	L10414-3	SFWMD
USL3BRS	CAMB	19980716	24	0.085	60641	L10492-6	SFWMD
USL3BRS	CAMB	19980723	24	0.142	60738	L10532-6	SFWMD
USL3BRS	CAMB	19980730	24	0.173	60675	L10575-6	SFWMD
USL3BRS	CAMB	19980813	24	0.208	60689	L10662-6	SFWMD
USL3BRS	CAMB	19980820	24	0.181	60709	L10720-5	SFWMD
USL3BRS	CAMB	19980827	24	0.213	60716	L10761-4	SFWMD
USL3BRS	CAMB	19980903	24	0.154	60745	L10805-6	SFWMD
USL3BRS	CAMB	19980910	24	0.152	60764	L10841-4	SFWMD
USL3BRS	CAMB	19980917	24	0.113	60773	L10892-6	SFWMD
USL3BRS	CAMB	19980922	24	0.192	60792	L10921-4	SFWMD
USL3BRS	CAMB	19981001	24	0.199	60801	L10980-4	SFWMD
USL3BRS	CAMB	19981008	24	0.132	60808	L11021-4	SFWMD
USL3BRS	CAMB	19981015	24	0.176	60831	L11071-6	SFWMD
USL3BRS	CAMB	19981022	24	0.122	60850	L11118-4	SFWMD
USL3BRS	CAMB	19981028	24	0.090	60859	L11155-6	SFWMD
USL3BRS	CAMB	19981104	24	0.078	60881	L11194-6	SFWMD

USL3BRS	CAMB	19981112	24	0.317	60888	L11248-6	SFWMD
USL3BRS	CAMB	19981119	24	0.344	60909	L11301-6	SFWMD
USL3BRS	CAMB	19981125	24	0.130	60916	L11338-6	SFWMD
USL3BRS	CAMB	19981203	24	0.097	60937	L11378-6	SFWMD
USL3BRS	CAMB	19981209	24	0.099	60942	L11429-4	SFWMD
USL3BRS	CAMB	19981222	24	0.087	60968	L11496-4	SFWMD
USL3BRS	CAMB	19981230	24	0.086	60973	L11537-4	SFWMD
USL3BRS	CAMB	19990107	24	0.087	60992	L11578-6	SFWMD
USL3BRS	CAMB	19990113	24	0.064	60999	L11619-6	SFWMD
USL3BRS	CAMB	19990121	24	0.055	61016	L11675-2	SFWMD
USL3BRS	CAMB	19990128	24	0.050	61044	L11716-6	SFWMD
USL3BRS	CAMB	19990203	24	0.064	61051	L11755-6	SFWMD
USL3BRS	CAMB	19990211	24	0.050	61069	L11801-3	SFWMD
USL3BRS	CAMB	19990218	24	0.073	61080	L11859-7	SFWMD
USL3BRS	CAMB	19990225	24	0.135	61100	L11909-6	SFWMD
USL3BRS	CAMB	19990304	24	0.080	61107	L11953-6	SFWMD
USL3BRS	CAMB	19990311	24	0.079	61128	L12000-6	SFWMD
USL3BRS	CAMB	19990318	24	0.132	61135	L12045-6	SFWMD
USL3BRS	CAMB	19990325	24	0.083	61156	L12087-6	SFWMD
USL3BRS	CAMB	19990401	24	0.106	61163	L12129-6	SFWMD
USL3BRS	CAMB	19990408	24	0.196	61170	L12173-6	SFWMD
USL3BRS	CAMB	19990422	24	0.066	61209	L12268-4	SFWMD
USL3BRS	CAMB	19990429	24	0.063	P1047-4	L12310-4	SFWMD
USL3BRS	CAMB	19990506	24	0.112	P1070-4	L12343-4	SFWMD

Appendix III. (continued)

For USSO:

(1) Grab sample TP concentration data.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
USSO	CAMB	19980521	0	0.063	60536	L10152-8	SFWMD
USSO	CAMB	19980603	0	0.049	60553	L10238-6	SFWMD
USSO	CAMB	19980603	0	0.053	60559	L10234-5	SFWMD
USSO	CAMB	19980611	0	0.089	60576	L10287-8	SFWMD
USSO	CAMB	19980618	0	0.033	60591	L10333-1	SFWMD
USSO	CAMB	19980625	0	0.788*	60616	L10378-5	SFWMD
USSO	CAMB	19980701	0	0.227	60605	L10409-8	SFWMD
USSO	CAMB	19980702	0	0.193	60621	L10414-2	SFWMD
USSO	CAMB	19980716	0	0.077	60654	L10493-11	SFWMD
USSO	CAMB	19980805	0	0.059	60683	L10611-7	SFWMD
USSO	CAMB	19980812	0	0.145	60701	L10648-11	SFWMD
USSO	CAMB	19980827	0	0.120	60730	L10759-11	SFWMD
USSO	CAMB	19980909	0	0.090	60754	L10831-8	SFWMD
USSO	CAMB	19980930	0	0.089	60782	L10973-8	SFWMD
USSO	CAMB	19981008	0	0.174	60822	L11020-11	SFWMD
USSO	CAMB	19981022	0	0.075	60843	L11116-11	SFWMD
USSO	CAMB	19981119	0	0.121	60894	L11299-5	SFWMD
USSO	CAMB	19981202	0	0.088	60925	L11368-8	SFWMD
USSO	CAMB	19981217	0	0.090	60950	L11461-7	SFWMD
USSO	CAMB	19990128	0	0.034	61033	L11715-11	SFWMD
USSO	CAMB	19990210	0	0.076	61057	L11796-5	SFWMD
USSO	CAMB	19990218	0	0.035	61079	L11859-6	SFWMD
USSO	CAMB	19990225	0	0.137	61088	L11911-8	SFWMD
USSO	CAMB	19990325	0	0.024	61144	L12086-8	SFWMD
USSO	CAMB	19990422	0	0.066	61201	L12265-11	SFWMD
USSO	CAMB	19990520	0	0.106	P1216-9	L12424-9	SFWMD

Note: * denotes a sample deemed to be an outlier and not included in the statistics or load calculation.

(2) Automatic sampler flow proportional composite TP concentration data.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
USSO	CAMB	19980507	24	0.078	60513	L10061-7	SFWMD
USSO	CAMB	19980514	24	0.060	60518	L10106-5	SFWMD
USSO	CAMB	19980521	24	0.047	60528	L10153-8	SFWMD
USSO	CAMB	19980702	24	0.343	60620	L10414-1	SFWMD
USSO	CAMB	19980709	24	0.243	60635	L10446-8	SFWMD
USSO	CAMB	19980716	24	0.078	60642	L10492-7	SFWMD
USSO	CAMB	19980723	24	0.087	60739	L10532-7	SFWMD
USSO	CAMB	19980730	24	0.079	60676	L10575-7	SFWMD
USSO	CAMB	19980813	24	0.095	60690	L10662-7	SFWMD
USSO	CAMB	19980820	24	0.112	60712	L10720-8	SFWMD
USSO	CAMB	19980827	24	0.102	60713	L10761-1	SFWMD
USSO	CAMB	19980903	24	0.105	60746	L10805-7	SFWMD
USSO	CAMB	19980917	24	0.122	60774	L10892-7	SFWMD
USSO	CAMB	19980922	24	0.094	60789	L10921-1	SFWMD
USSO	CAMB	19981008	24	0.153	60805	L11021-1	SFWMD
USSO	CAMB	19981015	24	0.140	60830	L11071-5	SFWMD

USSO	CAMB	19981028	24	0.081	60856	L11155-3	SFWMD
USSO	CAMB	19981104	24	0.082	60882	L11194-7	SFWMD
USSO	CAMB	19981112	24	0.102	60889	L11248-7	SFWMD
USSO	CAMB	19981125	24	0.095	60917	L11338-7	SFWMD
USSO	CAMB	19981203	24	0.109	60934	L11378-3	SFWMD
USSO	CAMB	19981209	24	0.165	60941	L11429-3	SFWMD
USSO	CAMB	19981217	24	0.170	60960	L11463-3	SFWMD
USSO	CAMB	19981222	24	0.135	60967	L11496-3	SFWMD
USSO	CAMB	19981230	24	0.116	60972	L11537-3	SFWMD
USSO	CAMB	19990107	24	0.082	60993	L11578-7	SFWMD
USSO	CAMB	19990113	24	0.041	60998	L11619-5	SFWMD
USSO	CAMB	19990121	24	0.036	61015	L11675-1	SFWMD
USSO	CAMB	19990128	24	0.038	61043	L11716-5	SFWMD
USSO	CAMB	19990203	24	0.042	61048	L11755-3	SFWMD
USSO	CAMB	19990210	24	0.054	61055	L11796-3	SFWMD
USSO	CAMB	19990225	24	0.034	61099	L11909-5	SFWMD
USSO	CAMB	19990304	24	0.031	61106	L11953-5	SFWMD
USSO	CAMB	19990311	24	0.042	61127	L12000-5	SFWMD
USSO	CAMB	19990318	24	0.020	61134	L12045-5	SFWMD
USSO	CAMB	19990325	24	0.019	61155	L12087-5	SFWMD
USSO	CAMB	19990401	24	0.020	61162	L12129-5	SFWMD
USSO	CAMB	19990408	24	0.065	61169	L12173-5	SFWMD
USSO	CAMB	19990422	24	0.037	61208	L12268-3	SFWMD
USSO	CAMB	19990429	24	0.087	P1047-5	L12310-5	SFWMD
USSO	CAMB	19990506	24	0.193	P1070-5	L12343-5	SFWMD

Appendix III. (continued)

For L28U:

(1) Grab sample TP concentration data.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
L28U	BCSB	19980513	0	0.031	231	9806602	U.S.G.S.
L28U	BCSB	19980603	0	0.045	249	9807287	U.S.G.S.
L28U	BCSB	19980603	0	0.047	254	9807289	U.S.G.S.
L28U	BCSB	19980701	0	0.067	281	9808379	U.S.G.S.
L28U	BCSB	19980805	0	0.058	312	9809434	U.S.G.S.
L28U	BCSB	19980902	0	0.095	341	9810629	U.S.G.S.
L28U	BCSB	19980902	0	0.107	342	9810638	U.S.G.S.
L28U	BCSB	19981001	0	0.061	369	9900322	U.S.G.S.
L28U	BCSB	19981007	0	0.069	380	9900494	U.S.G.S.
L28U	BCSB	19981021	0	0.049	390	9900795	U.S.G.S.
L28U	BSCB	19981104	0	0.011	412		U.S.G.S.
L28U	BSCB	19981118	0	0.119	422		U.S.G.S.
L28U	BSCB	19981209	0	0.064	448		U.S.G.S.
L28U	BSCB	19981223	0	0.052	461		U.S.G.S.
L28U	BSCB	19990106	0	0.040	479		U.S.G.S.
L28U	BSCB	19990120	0	0.043	491		U.S.G.S.
L28U	BSCB	19990203	0	0.030	500		U.S.G.S.
L28U	BSCB	19990217	0	0.038	507		U.S.G.S.
L28U	BSCB	19990303	0	0.036	524		U.S.G.S.
L28U	BSCB	19990310	0	0.019	528		U.S.G.S.
L28U	BSCB	19990317	0	0.029	543		U.S.G.S.
L28U	BSCB	19990331	0	0.022	555		U.S.G.S.
L28U	BSCB	19990407	0	0.018	560		U.S.G.S.
L28U	BSCB	19990421	0	0.029	568		U.S.G.S.
L28U	BSCB	19990505	0	0.027	577		U.S.G.S.

(2) Automatic sampler flow proportional composite TP concentration data.

Note: The validity of these automatic sampler data is very questionable and not used in load calculation.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
L28U	BCSB	19980506	24	0.165	223	9806440	U.S.G.S.
L28U	BCSB	19980513	24	0.070	233	9806606	U.S.G.S.
L28U	BCSB	19980520	24	0.083	237	9806926	U.S.G.S.
L28U	BCSB	19980527	24	0.077	242	9806931	U.S.G.S.
L28U	BCSB	19980603	24	0.068	252	9807284	U.S.G.S.
L28U	BCSB	19980610	24	0.045	258	9807666	U.S.G.S.
L28U	BCSB	19980617	24	0.106	261	9807923	U.S.G.S.
L28U	BCSB	19980624	24	0.082	270	9808384	U.S.G.S.
L28U	BCSB	19980701	24	0.077	279	9808376	U.S.G.S.
L28U	BCSB	19980708	24	0.103	284	9808728	U.S.G.S.
L28U	BCSB	19980715	24	0.135	291	9808908	U.S.G.S.
L28U	BCSB	19980722	24	0.157	294	9808911	U.S.G.S.
L28U	BCSB	19980729	24	0.097	301	9809438	U.S.G.S.
L28U	BCSB	19980805	24	0.073	310	9809441	U.S.G.S.
L28U	BCSB	19980812	24	0.075	315	9809821	U.S.G.S.
L28U	BCSB	19980819	24	0.128	320	9810048	U.S.G.S.
L28U	BCSB	19980902	24	0.093	339	9810634	U.S.G.S.

L28U	BCSB	19980909	24	0.137	345	9811212	U.S.G.S.
L28U	BCSB	19980916	24	0.149	352	9900226	U.S.G.S.
L28U	BCSB	19980923	24	0.126	357	9900231	U.S.G.S.
L28U	BCSB	19981001	24	0.129	367	9900328	U.S.G.S.
L28U	BCSB	19981007	24	0.122	378	9900499	U.S.G.S.
L28U	BCSB	19981014	24	0.136	383	9900621	U.S.G.S.
L28U	BCSB	19981021	24	0.139	388	9900800	U.S.G.S.
L28U	BCSB	19981028	24	0.104	399	9901022	U.S.G.S.
L28U	BSCB	19981104	24	0.110	410		U.S.G.S.
L28U	BSCB	19981111	24	0.316	417		U.S.G.S.
L28U	BSCB	19981118	24	0.419	420		U.S.G.S.
L28U	BSCB	19981125	24	0.253	432		U.S.G.S.
L28U	BSCB	19981202	24	0.121	438		U.S.G.S.
L28U	BSCB	19981209	24	0.133	446		U.S.G.S.
L28U	BSCB	19981216	24	0.114	451		U.S.G.S.
L28U	BSCB	19981223	24	0.078	460		U.S.G.S.
L28U	BSCB	19981230	24	0.095	464		U.S.G.S.
L28U	BSCB	19990224	24	0.062	510		U.S.G.S.
L28U	BSCB	19990317	24	0.127	541		U.S.G.S.
L28U	BSCB	19990324	24	0.122	546		U.S.G.S.
L28U	BSCB	19990331	24	0.104	553		U.S.G.S.
L28U	BSCB	19990407	24	0.146	559		U.S.G.S.
L28U	BSCB	19990414	24	0.240	565		U.S.G.S.
L28U	BSCB	19990421	24	0.135	569		U.S.G.S.
L28U	BSCB	19990428	24	-0.002	573		U.S.G.S.
L28U	BSCB	19990505	24	0.122	578		U.S.G.S.

Appendix III. (continued)

For S140:

Grab sample TP concentration data.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
S140	CAMB	19980521	0	0.052	60542	L10152-14	SFWMD
S140	CAMB	19980701	0	0.054	60610	L10409-13	SFWMD
S140	CAMB	19980730	0	0.068	60669	L10570-4	SFWMD
S140	CAMB	19980827	0	0.077	60733	L10759-14	SFWMD
S140	CAMB	19980909	0	0.068	60760	L10831-14	SFWMD
S140	CAMB	19980930	0	0.036	60785	L10973-11	SFWMD
S140	CAMB	19981008	0	0.051	60825	L11020-14	SFWMD
S140	CAMB	19981022	0	0.030	60846	L11116-14	SFWMD
S140	CAMB	19981104	0	0.047	60872	L11193-11	SFWMD
S140	CAMB	19981119	0	0.068	60903	L11299-14	SFWMD
S140	CAMB	19981202	0	0.038	60931	L11368-14	SFWMD
S140	CAMB	19990128	0	0.023	61036	L11715-14	SFWMD
S140	CAMB	19990225	0	0.018	61091	L11911-11	SFWMD
S140	CAMB	19990325	0	0.015	61147	L12086-11	SFWMD
S140	CAMB	19990422	0	0.019	61204	L12265-14	SFWMD
S140	CAMB	19990520	0	0.021	P1216-12	L12424-12	SFWMD

Appendix III. (continued)

For WWEIR:

(1) Grab sample TP concentration data.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
WWEIR	SEMI	19980507	0	0.044	1423	L10062-5	SFWMD
WWEIR	SEMI	19980514	0	0.034	1429	L10107-5	SFWMD
WWEIR	SEMI	19980521	0	0.055	1437	L10154-7	SFWMD
WWEIR	SEMI	19980528	0	0.073	1446	L10201-8	SFWMD
WWEIR	SEMI	19980603	0	0.044	1453	L10239-7	SFWMD
WWEIR	SEMI	19980611	0	0.039	1459	L10288-5	SFWMD
WWEIR	SEMI	19980618	0	0.050	1464	L10334-4	SFWMD
WWEIR	SEMI	19980625	0	0.055	1473	L10379-6	SFWMD
WWEIR	SEMI	19980702	0	0.052	1477	L10415-4	SFWMD
WWEIR	SEMI	19980709	0	0.052	1485	L10447-5	SFWMD
WWEIR	SEMI	19980716	0	0.047	1491	L10491-5	SFWMD
WWEIR	SEMI	19980723	0	0.020	1497	L10533-5	SFWMD
WWEIR	SEMI	19980730	0	0.020	1503	L10576-5	SFWMD
WWEIR	SEMI	19980805	0	0.016	1509	L10613-5	SFWMD
WWEIR	SEMI	19980813	0	0.015	1515	L10663-5	SFWMD
WWEIR	SEMI	19980820	0	0.028	1521	L10721-5	SFWMD
WWEIR	SEMI	19980827	0	0.050	1526	L10760-4	SFWMD
WWEIR	SEMI	19980903	0	0.044	1532	L10806-3	SFWMD
WWEIR	SEMI	19980910	0	0.028	1537	L10842-4	SFWMD
WWEIR	SEMI	19980917	0	0.022	1541	L10891-4	SFWMD
WWEIR	SEMI	19980922	0	0.085	1543	L10920-2	SFWMD
WWEIR	SEMI	19981001	0	0.088	1550	L10981-4	SFWMD
WWEIR	SEMI	19981008	0	0.062	1555	L11022-5	SFWMD
WWEIR	SEMI	19981015	0	0.071	1557	L11070-2	SFWMD
WWEIR	SEMI	19981022	0	0.050	1561	L11117-2	SFWMD
WWEIR	SEMI	19981028	0	0.034	1565	L11156-2	SFWMD
WWEIR	SEMI	19981104	0	0.050	1571	L11195-4	SFWMD
WWEIR	SEMI	19981112	0	0.064	1575	L11247-4	SFWMD
WWEIR	SEMI	19981125	0	0.047	1583	L11339-4	SFWMD
WWEIR	SEMI	19981203	0	0.035	1585	L11379-2	SFWMD
WWEIR	SEMI	19981209	0	0.032	1589	L11428-2	SFWMD
WWEIR	SEMI	19981217	0	0.031	1595	L11464-2	SFWMD
WWEIR	SEMI	19981222	0	0.029	1599	L11495-2	SFWMD
WWEIR	SEMI	19981230	0	0.024	1607	L11536-4	SFWMD
WWEIR	SEMI	19990107	0	0.021	1613	L11579-4	SFWMD
WWEIR	SEMI	19990113	0	0.017	1615	L11620-2	SFWMD
WWEIR	SEMI	19990121	0	0.022	1620	L11674-3	SFWMD
WWEIR	SEMI	19990128	0	0.022	1626	L11717-2	SFWMD
WWEIR	SEMI	19990203	0	0.023	1630	L11754-2	SFWMD
WWEIR	SEMI	19990210	0	0.027	1636	L11797-4	SFWMD
WWEIR	SEMI	19990218	0	0.022	1638	L11860-2	SFWMD
WWEIR	SEMI	19990219	0	0.020	1642	L11865-2	SFWMD
WWEIR	SEMI	19990222	0	0.030	1644	L11875-1	SFWMD
WWEIR	SEMI	19990225	0	0.033	1646	L11910-2	SFWMD
WWEIR	SEMI	19990225	0	0.037	1647	L11910-3	SFWMD
WWEIR	SEMI	19990304	0	0.036	1651	L11954-2	SFWMD
WWEIR	SEMI	19990304	0	0.036	1652	L11954-3	SFWMD
WWEIR	SEMI	19990311	0	0.048	1655	L12001-1	SFWMD

WWEIR	SEMI	19990318	0	0.035	1660	L12046-2	SFWMD
WWEIR	SEMI	19990325	0	0.034	1664	L12088-2	SFWMD
WWEIR	SEMI	19990401	0	0.046	1668	L12130-2	SFWMD
WWEIR	SEMI	19990408	0	0.046	1671	L12164-1	SFWMD
WWEIR	SEMI	19990415	0	0.050	1676	L12221-2	SFWMD
WWEIR	SEMI	19990422	0	0.047	1682	L12267-2	SFWMD
WWEIR	SEMI	19990520	0	0.066	P1202-11	L12425-11	SFWMD

(2) Automatic sampler flow proportional composite TP concentration data.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
WWEIR	SEMI	19980723	24	0.033	1498	L10533-6	SFWMD
WWEIR	SEMI	19980730	24	0.040	1504	L10576-6	SFWMD
WWEIR	SEMI	19980820	24	0.019	1522	L10721-6	SFWMD
WWEIR	SEMI	19980827	24	0.040	1527	L10760-5	SFWMD
WWEIR	SEMI	19980903	24	0.043	1533	L10806-4	SFWMD
WWEIR	SEMI	19980910	24	0.050	1536	L10842-3	SFWMD
WWEIR	SEMI	19980917	24	0.030	1540	L10891-3	SFWMD
WWEIR	SEMI	19980922	24	0.052	1544	L10920-3	SFWMD
WWEIR	SEMI	19981001	24	0.098	1549	L10981-3	SFWMD
WWEIR	SEMI	19981008	24	0.078	1554	L11022-4	SFWMD
WWEIR	SEMI	19981015	24	0.058	1556	L11070-1	SFWMD
WWEIR	SEMI	19981022	24	0.041	1560	L11117-1	SFWMD
WWEIR	SEMI	19981028	24	0.042	1564	L11156-1	SFWMD
WWEIR	SEMI	19981104	24	0.042	1570	L11195-3	SFWMD
WWEIR	SEMI	19981112	24	0.103	1574	L11247-3	SFWMD
WWEIR	SEMI	19981119	24	0.057	1577	L11300-2	SFWMD
WWEIR	SEMI	19981119	24	0.088	1576	L11300-1	SFWMD
WWEIR	SEMI	19981125	24	0.053	1582	L11339-3	SFWMD
WWEIR	SEMI	19981203	24	0.043	1584	L11379-1	SFWMD
WWEIR	SEMI	19981209	24	0.038	1588	L11428-1	SFWMD
WWEIR	SEMI	19981222	24	0.049	1598	L11495-1	SFWMD
WWEIR	SEMI	19981230	24	0.029	1604	L11536-1	SFWMD
WWEIR	SEMI	19990107	24	0.028	1612	L11579-3	SFWMD
WWEIR	SEMI	19990128	24	0.038	1625	L11717-1	SFWMD
WWEIR	SEMI	19990203	24	0.029	1629	L11754-1	SFWMD
WWEIR	SEMI	19990210	24	0.042	1635	L11797-3	SFWMD
WWEIR	SEMI	19990218	24	0.029	1637	L11860-1	SFWMD
WWEIR	SEMI	19990225	24	0.045	1645	L11910-1	SFWMD
WWEIR	SEMI	19990304	24	0.040	1650	L11954-1	SFWMD
WWEIR	SEMI	19990311	24	0.048	1656	L12001-2	SFWMD

Appendix III. (continued)

For NFEED:

(1) Grab sample TP concentration data.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
NFEED	SEMI	19980507	0	0.054	1420	L10062-2	SFWMD
NFEED	SEMI	19980514	0	0.067	1426	L10107-2	SFWMD
NFEED	SEMI	19980521	0	0.051	1434	L10154-4	SFWMD
NFEED	SEMI	19980528	0	0.064	1442	L10201-4	SFWMD
NFEED	SEMI	19980603	0	0.041	1450	L10239-4	SFWMD
NFEED	SEMI	19980611	0	0.031	1456	L10288-2	SFWMD
NFEED	SEMI	19980618	0	0.044	1467	L10334-7	SFWMD
NFEED	SEMI	19980625	0	0.043	1469	L10379-2	SFWMD
NFEED	SEMI	19980702	0	0.044	1480	L10415-7	SFWMD
NFEED	SEMI	19980709	0	0.043	1482	L10447-2	SFWMD
NFEED	SEMI	19980716	0	0.042	1488	L10491-2	SFWMD
NFEED	SEMI	19980723	0	0.057	1494	L10533-2	SFWMD
NFEED	SEMI	19980730	0	0.050	1500	L10576-2	SFWMD
NFEED	SEMI	19980805	0	0.042	1506	L10613-2	SFWMD
NFEED	SEMI	19980813	0	0.035	1511	L10663-1	SFWMD
NFEED	SEMI	19980820	0	0.046	1518	L10721-2	SFWMD
NFEED	SEMI	19980827	0	0.194	1529	L10760-7	SFWMD
NFEED	SEMI	19980903	0	0.159	1531	L10806-2	SFWMD
NFEED	SEMI	19980910	0	0.149	1535	L10842-2	SFWMD
NFEED	SEMI	19980917	0	0.112	1539	L10891-2	SFWMD
NFEED	SEMI	19980922	0	0.102	1545	L10920-4	SFWMD
NFEED	SEMI	19981001	0	0.129	1548	L10981-2	SFWMD
NFEED	SEMI	19981008	0	0.163	1553	L11022-3	SFWMD
NFEED	SEMI	19981015	0	0.163	1559	L11070-4	SFWMD
NFEED	SEMI	19981022	0	0.139	1563	L11117-4	SFWMD
NFEED	SEMI	19981028	0	0.095	1567	L11156-4	SFWMD
~~NFEED~~	~~SEMI~~	~~19981104~~	0	0.092	1569	L11195-2	SFWMD
NFEED	SEMI	19981112	0	0.004	1573	L11247-2	SFWMD
NFEED	SEMI	19981119	0	0.257	1579	L11300-4	SFWMD
NFEED	SEMI	19981125	0	0.216	1581	L11339-2	SFWMD
NFEED	SEMI	19981203	0	0.165	1587	L11379-4	SFWMD
NFEED	SEMI	19981209	0	0.124	1593	L11428-6	SFWMD
NFEED	SEMI	19981217	0	0.082	1597	L11464-4	SFWMD
NFEED	SEMI	19981222	0	0.067	1603	L11495-6	SFWMD
NFEED	SEMI	19981230	0	0.064	1609	L11536-6	SFWMD
NFEED	SEMI	19990107	0	0.046	1611	L11579-2	SFWMD
NFEED	SEMI	19990113	0	0.034	1617	L11620-4	SFWMD
NFEED	SEMI	19990121	0	0.042	1624	L11674-7	SFWMD
NFEED	SEMI	19990128	0	0.056	1628	L11717-4	SFWMD
NFEED	SEMI	19990203	0	0.054	1632	L11754-4	SFWMD
NFEED	SEMI	19990210	0	0.064	1634	L11797-2	SFWMD
NFEED	SEMI	19990218	0	0.044	1640	L11860-4	SFWMD
NFEED	SEMI	19990225	0	0.033	1649	L11910-5	SFWMD
NFEED	SEMI	19990304	0	0.035	1654	L11954-5	SFWMD
NFEED	SEMI	19990311	0	0.037	1658	L12001-4	SFWMD
NFEED	SEMI	19990318	0	0.031	1662	L12046-4	SFWMD
NFEED	SEMI	19990325	0	0.076	1666	L12088-4	SFWMD
NFEED	SEMI	19990401	0	0.059	1670	L12130-4	SFWMD
NFEED	SEMI	19990408	0	0.067	1673	L12164-3	SFWMD

NFEED	SEMI	19990415	0	0.092	1680	L12221-6	SFWMD
NFEED	SEMI	19990422	0	0.071	1686	L12267-6	SFWMD
NFEED	SEMI	19990429	0	0.104	P1047-9	L12310-9	SFWMD
NFEED	SEMI	19990506	0	0.092	P1070-9	L12343-9	SFWMD

(2) Automatic sampler flow proportional composite TP concentration data.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
NFEED	SEMI	19980507	24	0.068	1419	L10062-1	SFWMD
NFEED	SEMI	19980514	24	0.056	1425	L10107-1	SFWMD
NFEED	SEMI	19980521	24	0.062	1431	L10154-1	SFWMD
NFEED	SEMI	19980528	24	0.033	1439	L10201-1	SFWMD
NFEED	SEMI	19980603	24	0.050	1447	L10239-1	SFWMD
NFEED	SEMI	19980611	24	0.038	1455	L10288-1	SFWMD
NFEED	SEMI	19980618	24	0.041	1466	L10334-6	SFWMD
NFEED	SEMI	19980625	24	0.051	1468	L10379-1	SFWMD
NFEED	SEMI	19980702	24	0.060	1479	L10415-6	SFWMD
NFEED	SEMI	19980709	24	0.067	1481	L10447-1	SFWMD
NFEED	SEMI	19980716	24	0.061	1487	L10491-1	SFWMD
NFEED	SEMI	19980723	24	0.067	1493	L10533-1	SFWMD
NFEED	SEMI	19980730	24	0.056	1499	L10576-1	SFWMD
NFEED	SEMI	19980805	24	0.055	1505	L10613-1	SFWMD
NFEED	SEMI	19980813	24	0.045	1512	L10663-2	SFWMD
NFEED	SEMI	19980820	24	0.052	1517	L10721-1	SFWMD
NFEED	SEMI	19980827	24	0.187	1528	L10760-6	SFWMD
NFEED	SEMI	19980903	24	0.166	1530	L10806-1	SFWMD
NFEED	SEMI	19980910	24	0.153	1534	L10842-1	SFWMD
NFEED	SEMI	19980917	24	0.127	1538	L10891-1	SFWMD
NFEED	SEMI	19980922	24	0.117	1546	L10920-5	SFWMD
NFEED	SEMI	19981001	24	0.133	1547	L10981-1	SFWMD
NFEED	SEMI	19981008	24	0.116	1552	L11022-2	SFWMD
NFEED	SEMI	19981015	24	0.143	1558	L11070-3	SFWMD
NFEED	SEMI	19981022	24	0.143	1562	L11117-3	SFWMD
NFEED	SEMI	19981028	24	0.104	1566	L11156-3	SFWMD
~~NFEED~~	~~SEMI~~	~~19981104~~	24	0.091	1568	L11195-1	SFWMD
NFEED	SEMI	19981112	24	0.181	1572	L11247-1	SFWMD
NFEED	SEMI	19981119	24	0.309	1578	L11300-3	SFWMD
NFEED	SEMI	19981125	24	0.222	1580	L11339-1	SFWMD
NFEED	SEMI	19981203	24	0.192	1586	L11379-3	SFWMD
NFEED	SEMI	19981209	24	0.143	1590	L11428-3	SFWMD
NFEED	SEMI	19981217	24	0.121	1596	L11464-3	SFWMD
NFEED	SEMI	19981222	24	0.072	1600	L11495-3	SFWMD
NFEED	SEMI	19981230	24	0.077	1608	L11536-5	SFWMD
NFEED	SEMI	19990107	24	0.061	1610	L11579-1	SFWMD
NFEED	SEMI	19990113	24	0.049	1616	L11620-3	SFWMD
NFEED	SEMI	19990121	24	0.039	1621	L11674-4	SFWMD
NFEED	SEMI	19990128	24	0.043	1627	L11717-3	SFWMD
NFEED	SEMI	19990203	24	0.078	1631	L11754-3	SFWMD
NFEED	SEMI	19990210	24	0.055	1633	L11797-1	SFWMD
NFEED	SEMI	19990218	24	0.054	1639	L11860-3	SFWMD
NFEED	SEMI	19990225	24	0.038	1648	L11910-4	SFWMD
NFEED	SEMI	19990304	24	0.037	1653	L11954-4	SFWMD
NFEED	SEMI	19990311	24	0.035	1657	L12001-3	SFWMD
NFEED	SEMI	19990318	24	0.038	1661	L12046-3	SFWMD
NFEED	SEMI	19990325	24	0.048	1665	L12088-3	SFWMD
NFEED	SEMI	19990401	24	0.045	1669	L12130-3	SFWMD

NFEED	SEMI	19990408	24	0.060	1674	L12164-4	SFWMD
NFEED	SEMI	19990415	24	0.081	1677	L12221-3	SFWMD
NFEED	SEMI	19990422	24	0.099	1683	L12267-3	SFWMD
NFEED	SEMI	19990429	24	0.087	P1047-8	L12310-8	SFWMD
NFEED	SEMI	19990506	24	0.103	P1070-8	L12343-8	SFWMD

Appendix III. (continued)

For S190:

Grab sample TP concentration data.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
S190	CAMB	19980521	0	0.139	60537	L10152-9	SFWMD
S190	CAMB	19980701	0	0.030	60609	L10409-12	SFWMD
S190	CAMB	19980730	0	0.022	60666	L10570-1	SFWMD
S190	CAMB	19980827	0	0.062	60731	L10759-12	SFWMD
S190	CAMB	19980909	0	0.047	60755	L10831-9	SFWMD
S190	CAMB	19980930	0	0.056	60783	L10973-9	SFWMD
S190	CAMB	19981008	0	0.085	60823	L11020-12	SFWMD
S190	CAMB	19981119	0	0.104	60901	L11299-12	SFWMD
S190	CAMB	19981202	0	0.069	60926	L11368-9	SFWMD
S190	CAMB	19981217	0	0.040	60952	L11461-9	SFWMD
S190	CAMB	19990128	0	0.031	61034	L11715-12	SFWMD
S190	CAMB	19990225	0	0.028	61089	L11911-9	SFWMD
S190	CAMB	19990325	0	0.019	61145	L12086-9	SFWMD
S190	CAMB	19990422	0	0.034	61202	L12265-12	SFWMD
S190	CAMB	19990520	0	0.037	P1216-10	L12424-10	SFWMD

Appendix III. (continued)

For L28IN:

(1) Grab sample TP concentration data.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
L28IN	BCSB	19980513	0	0.038	228	9806600	U.S.G.S.
L28IN	BCSB	19980701	0	0.040	275	9808372	U.S.G.S.
L28IN	BCSB	19980805	0	0.027	306	9809432	U.S.G.S.
L28IN	BCSB	19981007	0	0.051	374	9900492	U.S.G.S.
L28IN	BCSB	19981021	0	0.046	396	9900797	U.S.G.S.
L28IN	BSCB	19981104	0	0.008	406		U.S.G.S.
L28IN	BSCB	19981118	0	0.116	427		U.S.G.S.
L28IN	BSCB	19981209	0	0.032	443		U.S.G.S.
L28IN	BSCB	19981223	0	0.038	458		U.S.G.S.
L28IN	BSCB	19990106	0	0.029	475		U.S.G.S.
L28IN	BSCB	19990120	0	0.025	488		U.S.G.S.
L28IN	BSCB	19990203	0	0.024	503		U.S.G.S.
L28IN	BSCB	19990217	0	0.022	506		U.S.G.S.
L28IN	BSCB	19990224	0	0.021	514		U.S.G.S.
L28IN	BSCB	19990303	0	0.018	520		U.S.G.S.
L28IN	BSCB	19990310	0	0.016	532		U.S.G.S.
L28IN	BSCB	19990317	0	0.020	537		U.S.G.S.
L28IN	BSCB	19990331	0	0.025	550		U.S.G.S.
L28IN	BSCB	19990407	0	0.020	563		U.S.G.S.
L28IN	BSCB	19990421	0	0.020	571		U.S.G.S.
L28IN	BSCB	19990505	0	0.018	579		U.S.G.S.

(2) Automatic sampler flow proportional composite TP concentration data.

Note: The validity of these automatic sampler data is very questionable and not used in load calculation.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
L28IN	BCSB	19980506	24	0.206	222	9806439	U.S.G.S.
L28IN	BCSB	19980513	24	0.174	226	9806605	U.S.G.S.
L28IN	BCSB	19980520	24	0.135	239	9806928	U.S.G.S.
L28IN	BCSB	19980527	24	0.084	244	9806933	U.S.G.S.
L28IN	BCSB	19980603	24	0.163	247	9807283	U.S.G.S.
L28IN	BCSB	19980610	24	0.071	257	9807665	U.S.G.S.
L28IN	BCSB	19980617	24	0.193	263	9807925	U.S.G.S.
L28IN	BCSB	19980624	24	0.150	268	9808382	U.S.G.S.
L28IN	BCSB	19980701	24	0.172	273	9808374	U.S.G.S.
L28IN	BCSB	19980708	24	0.150	286	9808730	U.S.G.S.
L28IN	BCSB	19980715	24	0.128	289	9808906	U.S.G.S.
L28IN	BCSB	19980722	24	0.085	296	9808913	U.S.G.S.
L28IN	BCSB	19980812	24	0.221	317	9809823	U.S.G.S.
L28IN	BCSB	19980819	24	0.154	322	9810050	U.S.G.S.
L28IN	BCSB	19980902	24	0.127	330	9810632	U.S.G.S.
L28IN	BCSB	19980909	24	0.155	347	9811214	U.S.G.S.
L28IN	BCSB	19980916	24	0.154	350	9900224	U.S.G.S.
L28IN	BCSB	19980923	24	0.088	355	9900229	U.S.G.S.
L28IN	BCSB	19980930	24	0.077	360	9900325	U.S.G.S.
L28IN	BCSB	19981007	24	0.095	372	9900497	U.S.G.S.
L28IN	BCSB	19981014	24	0.125	385	9900623	U.S.G.S.

L28IN	BCSB	19981021	24	0.125	394	9900802	U.S.G.S.
L28IN	BCSB	19981028	24	0.097	401	9901024	U.S.G.S.
L28IN	BSCB	19981111	24	0.083	415		U.S.G.S.
L28IN	BSCB	19981118	24	0.118	425		U.S.G.S.
L28IN	BSCB	19981209	24	0.258	441		U.S.G.S.
L28IN	BSCB	19981216	24	0.154	452		U.S.G.S.
L28IN	BSCB	19981223	24	0.176	455		U.S.G.S.
L28IN	BSCB	19981230	24	0.124	467		U.S.G.S.
L28IN	BSCB	19990106	24	0.127	472		U.S.G.S.
L28IN	BSCB	19990113	24	0.111	484		U.S.G.S.
L28IN	BSCB	19990120	24	0.080	487		U.S.G.S.
L28IN	BSCB	19990127	24	0.102	497		U.S.G.S.
L28IN	BSCB	19990203	24	0.052	502		U.S.G.S.
L28IN	BSCB	19990224	24	0.255	512		U.S.G.S.
L28IN	BSCB	19990303	24	0.101	516		U.S.G.S.
L28IN	BSCB	19990310	24	0.064	530		U.S.G.S.
L28IN	BSCB	19990317	24	0.049	534		U.S.G.S.
L28IN	BSCB	19990324	24	0.085	548		U.S.G.S.

Appendix III. (continued)

For L28IS:

(1) Grab sample TP concentration data.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
L28IS	MICC	19980807	0	0.026	00059		SERP,FIU-MICC
L28IS	MICC	19980814	0	0.017	00062		SERP,FIU-MICC
L28IS	MICC	19980821	0	0.017	00065		SERP,FIU-MICC
L28IS	MICC	19980904	0	0.020	00068		SERP,FIU-MICC
L28IS	MICC	19980911	0	0.027	00071		SERP,FIU-MICC
L28IS	MICC	19980918	0	0.064	00074		SERP,FIU-MICC
L28IS	MICC	19981001	0	0.039	00077		SERP,FIU-MICC
L28IS	MICC	19981008	0	0.036	00080		SERP,FIU-MICC
L28IS	MICC	19981016	0	0.046	00083		SERP,FIU-MICC
L28IS	MICC	19981030	0	0.037	00086		SERP,FIU-MICC
L28IS	MICC	19981105	0	0.029	00089		SERP,FIU-MICC
L28IS	MICC	19981113	0	0.111	00092		SERP,FIU-MICC
L28IS	MICC	19981119	0	0.079	00095		SERP,FIU-MICC
L28IS	MICC	19981126	0	0.108	00098		SERP,FIU-MICC
L28IS	MICC	19981204	0	0.055	00101		SERP,FIU-MICC
L28IS	MICC	19981211	0	0.420*	00104		SERP,FIU-MICC
L28IS	MICC	19981218	0	0.047	00107		SERP,FIU-MICC
L28IS	MICC	19981231	0	0.021	00110		SERP,FIU-MICC
L28IS	MICC	19990108	0	0.020	00113		SERP,FIU-MICC
L28IS	MICC	19990115	0	0.030	00116		SERP,FIU-MICC
L28IS	MICC	19990122	0	0.019	00119		SERP,FIU-MICC
L28IS	MICC	19990129	0	0.023	00122		SERP,FIU-MICC
L28IS	MICC	19990205	0	0.022	00125		SERP,FIU-MICC
L28IS	MICC	19990212	0	0.010	00128		SERP,FIU-MICC
L28IS	MICC	19990219	0	0.007	00131		SERP,FIU-MICC
L28IS	MICC	19990226	0	0.009	00134		SERP,FIU-MICC
~~L28IS~~	~~MICC~~	~~19990305~~	0	0.020	00137		SERP,FIU-MICC
L28IS	MICC	19990312	0	0.017	00140		SERP,FIU-MICC
L28IS	MICC	19990319	0	0.050	00143		SERP,FIU-MICC
L28IS	MICC	19990326	0	0.021	00146		SERP,FIU-MICC
L28IS	MICC	19990401	0	0.033	00149		SERP,FIU-MICC
L28IS	MICC	19990408	0	0.022	00152		SERP,FIU-MICC
L28IS	MICC	19990423	0	0.028	00155		SERP,FIU-MICC

Note: * denotes a sample deemed to be an outlier and not included in the statistics or load calculation.

(2) Automatic sampler flow proportional composite TP concentration data.

Note: The validity of these automatic sampler data is not resolved yet and not used in load calculation.

Station	Project	Date	Type	Conc.(mg/L)	Sample_ID	LIMS no.	Source
L28IS	MICC	19980501	24	0.052	00024		SERP,FIU-MICC
L28IS	MICC	19980508	24	0.052	00027		SERP,FIU-MICC
L28IS	MICC	19980522	24	0.030	00033		SERP,FIU-MICC
L28IS	MICC	19980529	24	0.066	00036		SERP,FIU-MICC
L28IS	MICC	19980605	24	0.028	00039		SERP,FIU-MICC
L28IS	MICC	19980612	24	0.048	00042		SERP,FIU-MICC
L28IS	MICC	19980619	24	0.069	00045		SERP,FIU-MICC

L28IS	MICC	19980807	24	0.069	00060	SERP,FIU-MICC
L28IS	MICC	19980814	24	0.046	00063	SERP,FIU-MICC
L28IS	MICC	19980821	24	0.026	00066	SERP,FIU-MICC
L28IS	MICC	19980904	24	0.072	00069	SERP,FIU-MICC
L28IS	MICC	19980911	24	0.064	00072	SERP,FIU-MICC
L28IS	MICC	19980918	24	0.081	00075	SERP,FIU-MICC
L28IS	MICC	19981001	24	0.106	00078	SERP,FIU-MICC
L28IS	MICC	19981030	24	0.081	00087	SERP,FIU-MICC
L28IS	MICC	19981105	24	0.052	00090	SERP,FIU-MICC
L28IS	MICC	19981113	24	0.073	00093	SERP,FIU-MICC
L28IS	MICC	19981126	24	0.128	00099	SERP,FIU-MICC
L28IS	MICC	19981204	24	0.091	00102	SERP,FIU-MICC
L28IS	MICC	19981211	24	0.042	00105	SERP,FIU-MICC
L28IS	MICC	19981218	24	0.075	00108	SERP,FIU-MICC
L28IS	MICC	19981231	24	0.066	00111	SERP,FIU-MICC
L28IS	MICC	19990108	24	0.050	00114	SERP,FIU-MICC
L28IS	MICC	19990115	24	0.064	00117	SERP,FIU-MICC
L28IS	MICC	19990122	24	0.038	00120	SERP,FIU-MICC
L28IS	MICC	19990129	24	0.053	00123	SERP,FIU-MICC
L28IS	MICC	19990205	24	0.055	00126	SERP,FIU-MICC
L28IS	MICC	19990212	24	0.065	00129	SERP,FIU-MICC
L28IS	MICC	19990219	24	0.056	00132	SERP,FIU-MICC
L28IS	MICC	19990226	24	0.035	00135	SERP,FIU-MICC
L28IS	MICC	19990305	24	0.046	00138	SERP,FIU-MICC
L28IS	MICC	19990319	24	0.045	00144	SERP,FIU-MICC
L28IS	MICC	19990326	24	0.032	00147	SERP,FIU-MICC
L28IS	MICC	19990401	24	0.083	00150	SERP,FIU-MICC
L28IS	MICC	19990408	24	0.092	00153	SERP,FIU-MICC
L28IS	MICC	19990423	24	0.059	00156	SERP,FIU-MICC