

# ENVVEST HSPF Model Status Report –

Prepared by

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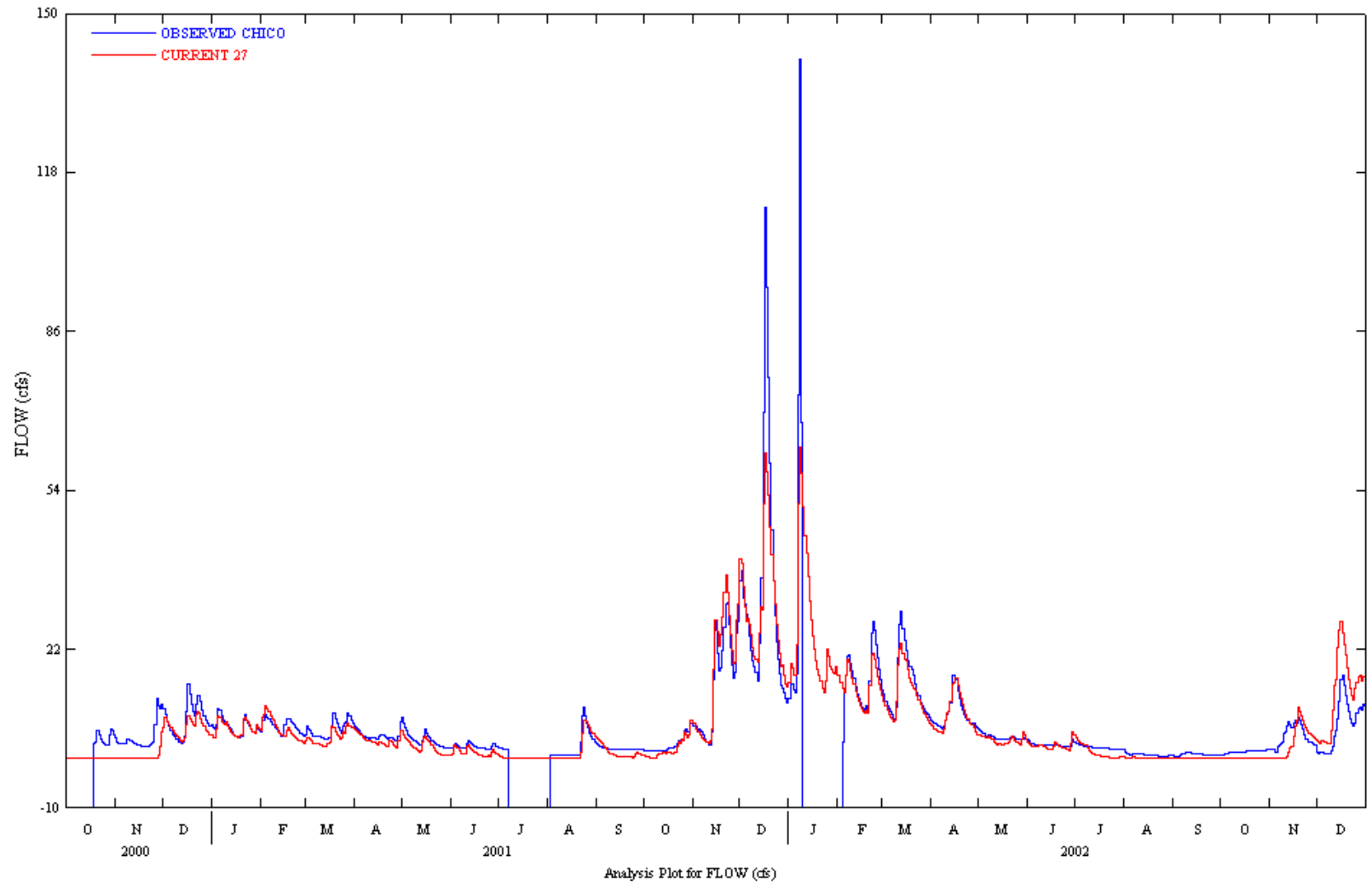
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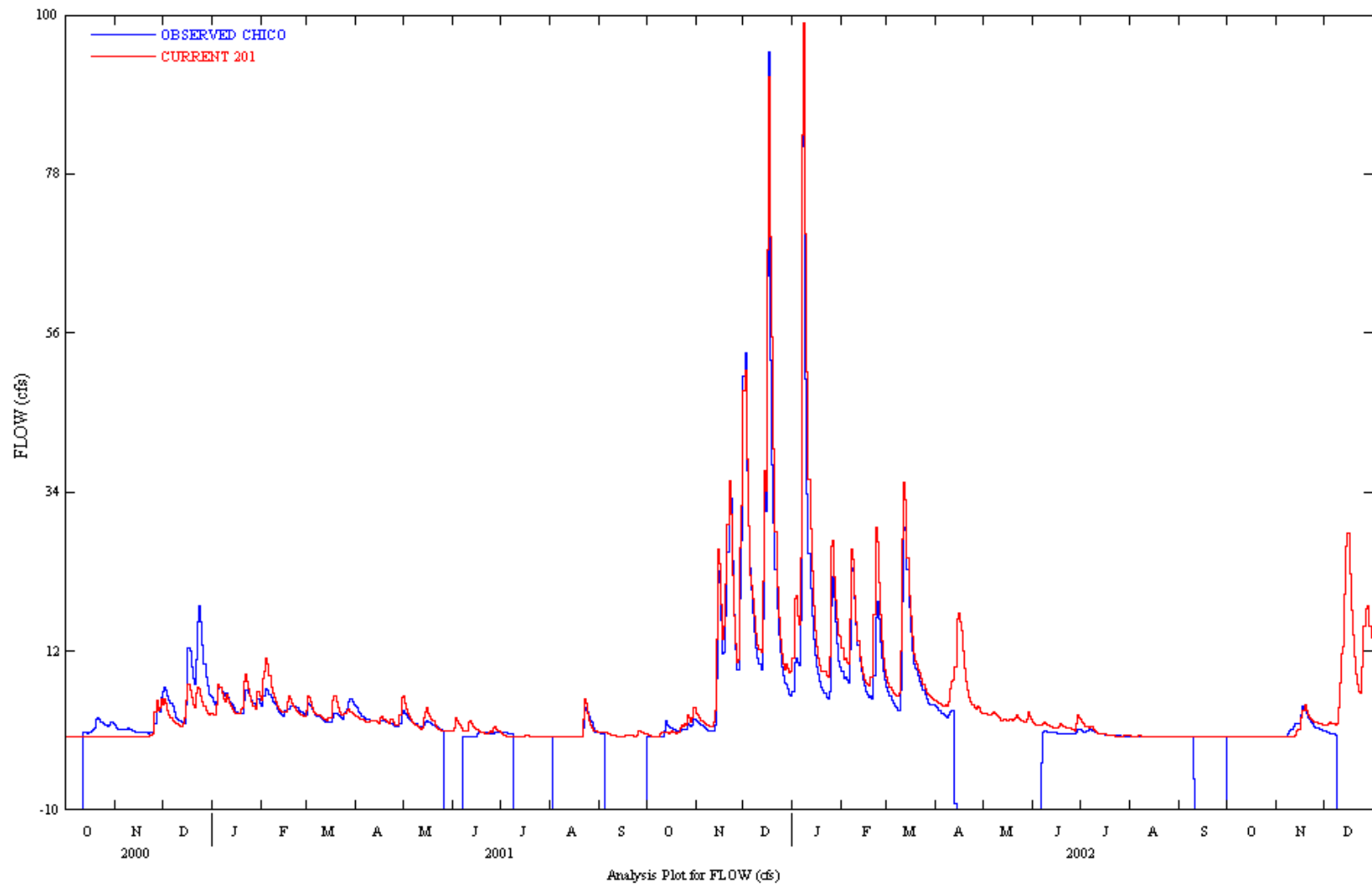
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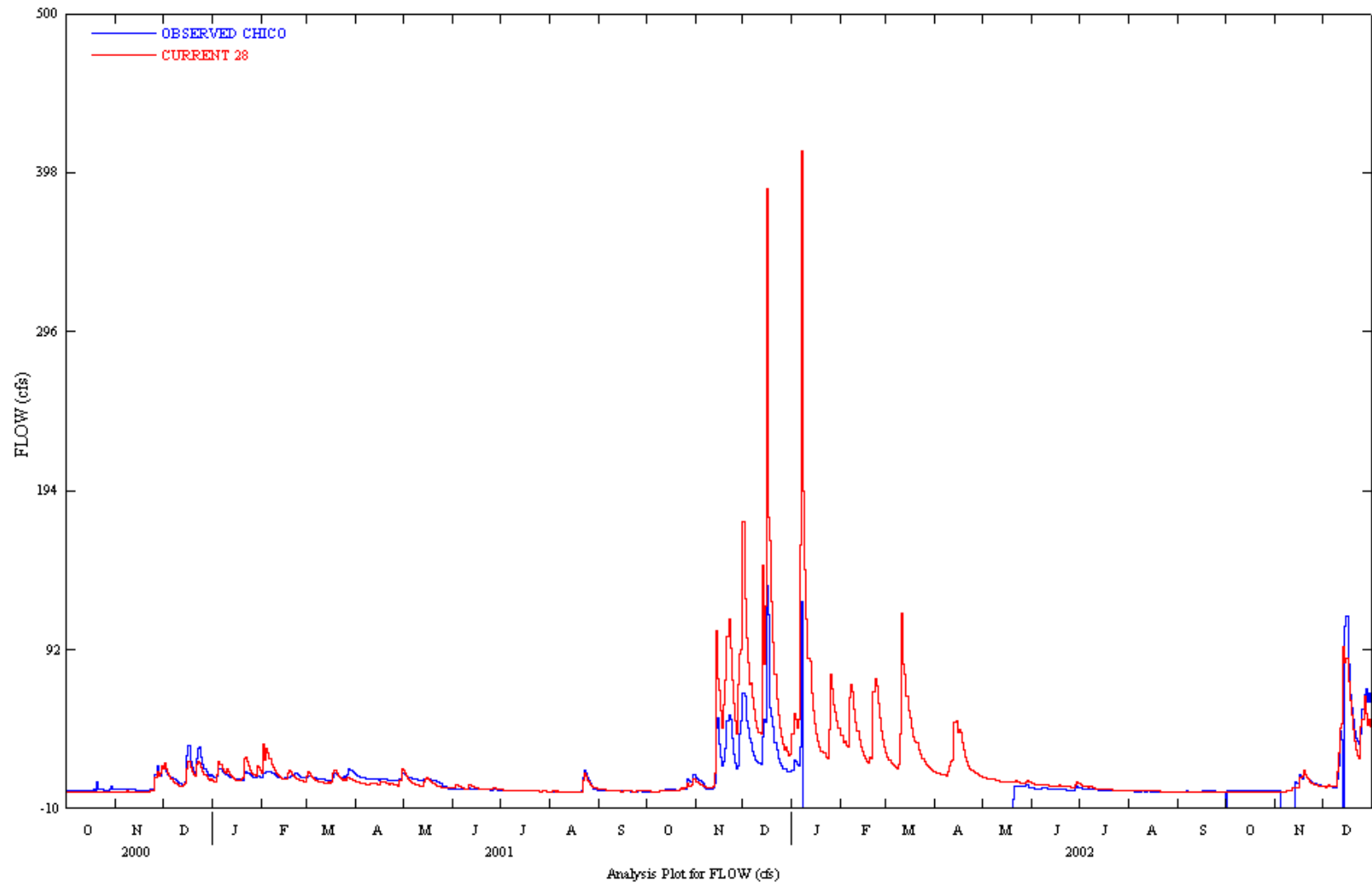
## 1) Chico Creek HSPF Hydrologic Model



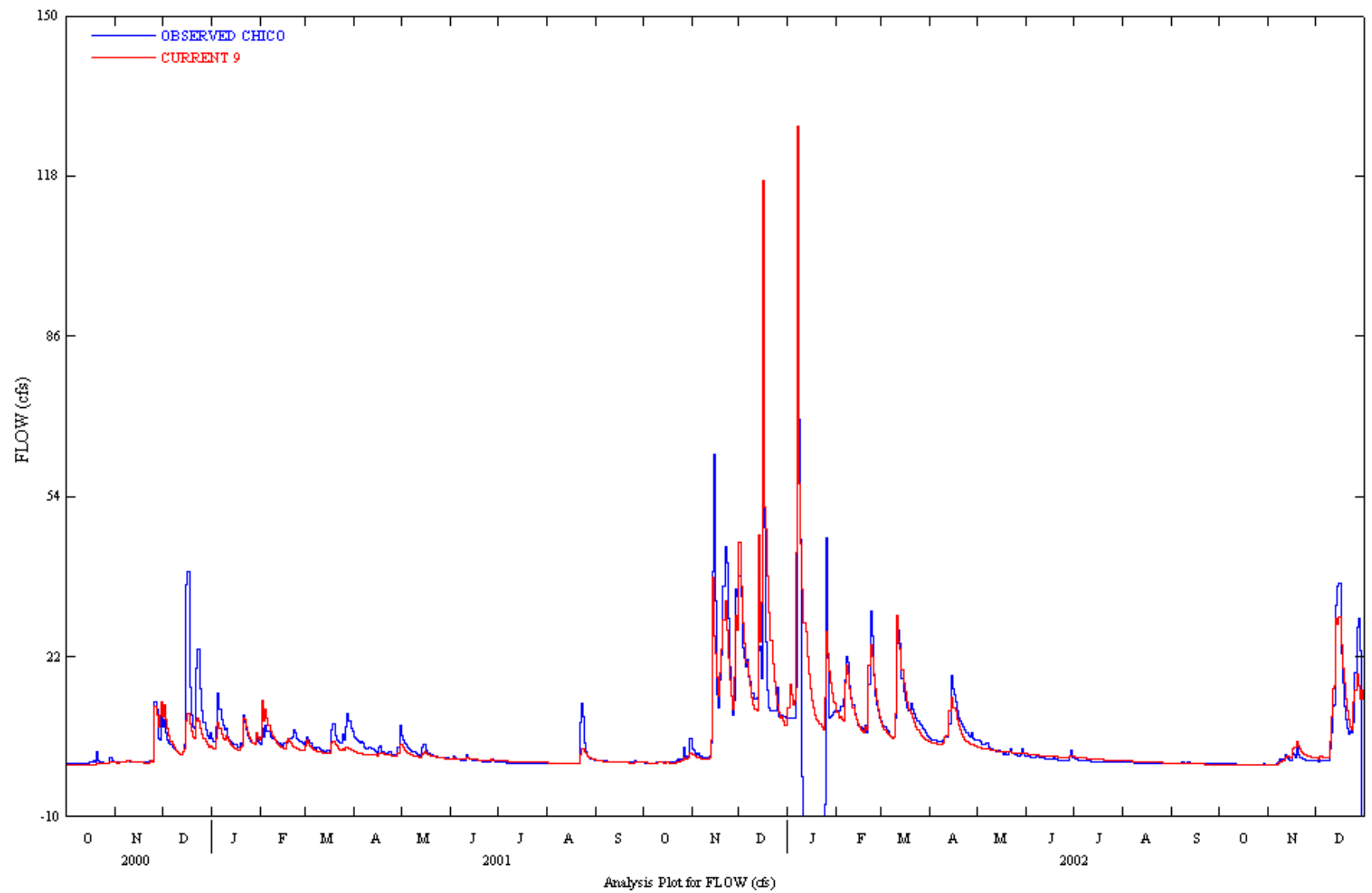
### 1.1. KITSAP CREEK AT LAKE OUTLET – CALIBRATION



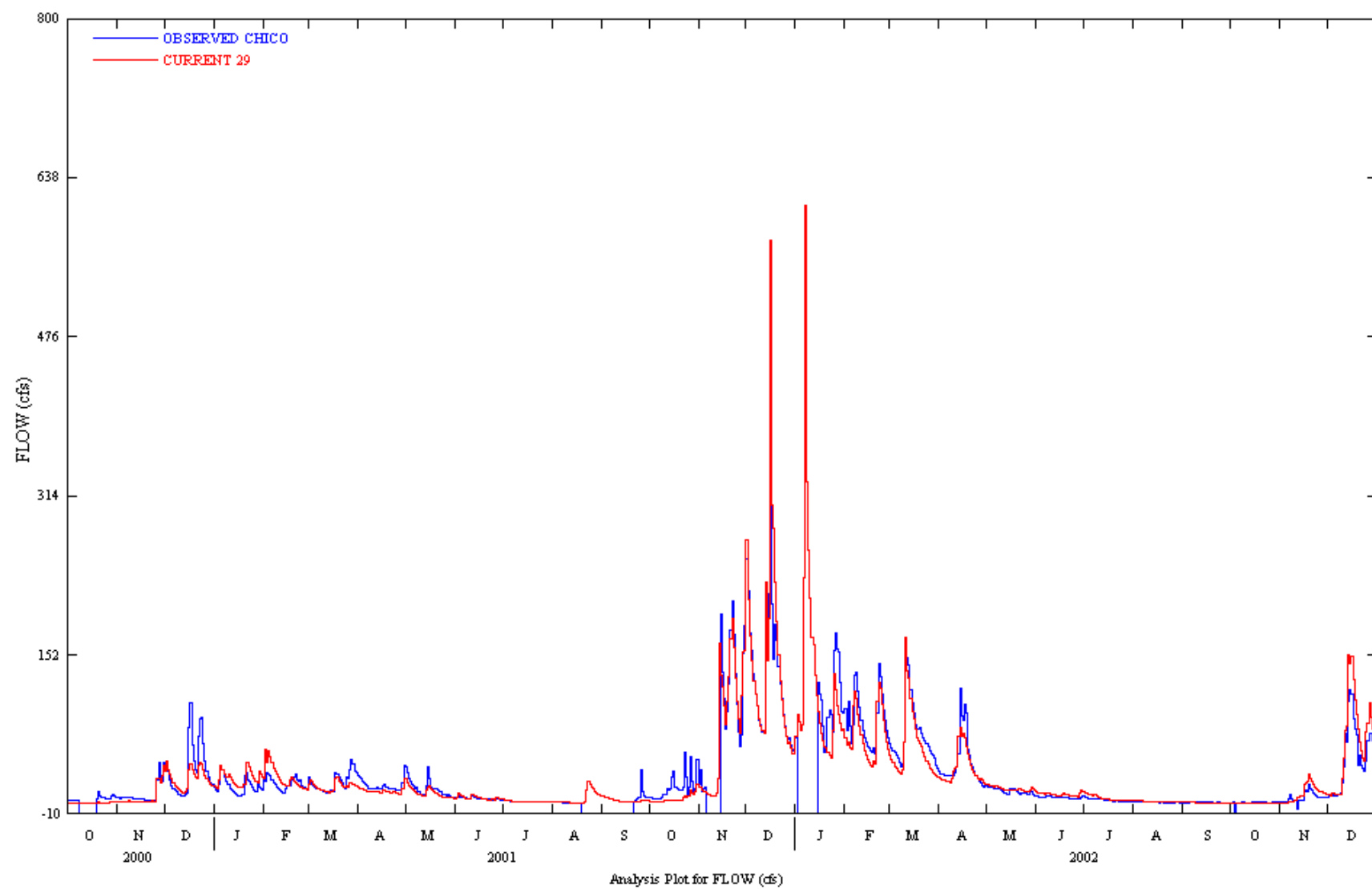
## 1.2. WILDCAT CREEK AT LAKE OUTLET – CALIBRATION



### 1.3. CHICO TRIB. AT TAYLOR ROAD – CALIBRATION



#### 1.4. DICKERSON CREEK – CALIBRATION



### 1.5. CHICO CREEK MAINSTEM – CALIBRATION



## 2. Statistics for Chico Creek System

### 2.1. *KITSAP CREEK AT LAKE OUTLET – CALIBRATION*

C\_TABLE "com\_27\_1" ---->

Observation time series name:	"odf27_1"
Simulation time series name:	"mdf27_1"
Beginning date of series comparison:	01/01/2001
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	07/07/2001
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	188
Nash-Sutcliffe coefficient:	0.5670550

C\_TABLE "com\_27\_2" ---->

Observation time series name:	"odf27_2"
Simulation time series name:	"mdf27_2"
Beginning date of series comparison:	08/03/2001
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	01/08/2002
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	159
Nash-Sutcliffe coefficient:	0.8123289

C\_TABLE "com\_27\_3" ---->

Observation time series name:	"odf27_3"
Simulation time series name:	"mdf27_3"
Beginning date of series comparison:	02/05/2002
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	04/07/2002
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	62
Nash-Sutcliffe coefficient:	0.8604406

C\_TABLE "com\_27\_4" ---->

Observation time series name:	"odf27_4"
Simulation time series name:	"mdf27_4"
Beginning date of series comparison:	04/09/2002
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	12/31/2002
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	267
Nash-Sutcliffe coefficient:	0.3847711

C\_TABLE "com\_27\_1b" ---->

Observation time series name:	"of27_1"
Simulation time series name:	"mf27_1"

Beginning date of series comparison:	01/01/2001
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	07/07/2001
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	18048
Nash-Sutcliffe coefficient:	0.5629082

C\_TABLE "com\_27\_2b" ---->

Observation time series name:	"of27_2"
Simulation time series name:	"mf27_2"
Beginning date of series comparison:	08/03/2001
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	01/08/2002
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	15264
Nash-Sutcliffe coefficient:	0.8051501

C\_TABLE "com\_27\_3b" ---->

Observation time series name:	"of27_3"
Simulation time series name:	"mf27_3"
Beginning date of series comparison:	02/05/2002
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	04/07/2002
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	5952
Nash-Sutcliffe coefficient:	0.8568019

## 2.2. WILDCAT CREEK AT LAKE OUTLET – CALIBRATION

C\_TABLE "com\_7\_1" ---->

Observation time series name:	"odf7_1"
Simulation time series name:	"mdf7_1"
Beginning date of series comparison:	01/01/2001
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	05/26/2001
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	146
Bias:	0.3222992
Nash-Sutcliffe coefficient:	0.4871856

C\_TABLE "com\_7\_2" ---->

Observation time series name:	"odf7_2"
Simulation time series name:	"mdf7_2"
Beginning date of series comparison:	08/03/2001
Beginning time of series comparison:	12:00:00

Finishing date of series comparison: 09/04/2001  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 33  
Nash-Sutcliffe coefficient: 0.8579867

C\_TABLE "com\_7\_3" ---->

Observation time series name: "odf7\_3"  
Simulation time series name: "mdf7\_3"  
Beginning date of series comparison: 10/01/2001  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 04/07/2002  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 189  
Nash-Sutcliffe coefficient: 0.9228575

C\_TABLE "com\_7\_4" ---->

Observation time series name: "odf7\_4"  
Simulation time series name: "mdf7\_4"  
Beginning date of series comparison: 06/07/2002  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 09/09/2002  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 95  
Nash-Sutcliffe coefficient: -2.229053

C\_TABLE "com\_7\_5" ---->

Observation time series name: "odf7\_5"  
Simulation time series name: "mdf7\_5"  
Beginning date of series comparison: 10/01/2002  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 12/08/2002  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 69  
Nash-Sutcliffe coefficient: 0.6625183

C\_TABLE "com\_7\_1b" ---->

Observation time series name: "of7\_1"  
Simulation time series name: "mf7\_1"  
Beginning date of series comparison: 01/01/2001  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 05/26/2001  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 14016  
Nash-Sutcliffe coefficient: 0.4712735

C\_TABLE "com\_7\_2b" ---->  
 Observation time series name: "of7\_2"  
 Simulation time series name: "mf7\_2"  
 Beginning date of series comparison: 08/03/2001  
 Beginning time of series comparison: 00:00:00  
 Finishing date of series comparison: 09/04/2001  
 Finishing time of series comparison: 23:45:00  
 Number of series terms in this interval: 3168  
 Nash-Sutcliffe coefficient: 0.8267335

C\_TABLE "com\_7\_3b" ---->  
 Observation time series name: "of7\_3"  
 Simulation time series name: "mf7\_3"  
 Beginning date of series comparison: 10/01/2001  
 Beginning time of series comparison: 00:00:00  
 Finishing date of series comparison: 04/07/2002  
 Finishing time of series comparison: 23:45:00  
 Number of series terms in this interval: 18144  
 Nash-Sutcliffe coefficient: 0.9154078

C\_TABLE "com\_7\_4b" ---->  
 Observation time series name: "of7\_4"  
 Simulation time series name: "mf7\_4"  
 Beginning date of series comparison: 06/07/2002  
 Beginning time of series comparison: 00:00:00  
 Finishing date of series comparison: 09/09/2002  
 Finishing time of series comparison: 23:45:00  
 Number of series terms in this interval: 9120  
 Nash-Sutcliffe coefficient: -2.266641

C\_TABLE "com\_7\_5b" ---->  
 Observation time series name: "of7\_5"  
 Simulation time series name: "mf7\_5"  
 Beginning date of series comparison: 10/01/2002  
 Beginning time of series comparison: 00:00:00  
 Finishing date of series comparison: 12/08/2002  
 Finishing time of series comparison: 23:45:00  
 Number of series terms in this interval: 6624  
 Nash-Sutcliffe coefficient: 0.6641785

### **2.3. CHICO TRIB. AT TAYLOR ROAD – CALIBRATION**

C\_TABLE "com\_28\_1" ---->  
 Observation time series name: "odf28\_1"  
 Simulation time series name: "mdf28\_1"

Beginning date of series comparison: 01/01/2001  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 12/31/2001  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 365  
Nash-Sutcliffe coefficient: -1.564275

C\_TABLE "com\_28\_2" ---->

Observation time series name: "odf28\_2"  
Simulation time series name: "mdf28\_2"  
Beginning date of series comparison: 05/21/2002  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 09/30/2002  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 133  
Nash-Sutcliffe coefficient: -0.6628845

C\_TABLE "com\_28\_3" ---->

Observation time series name: "odf28\_3"  
Simulation time series name: "mdf28\_3"  
Beginning date of series comparison: 11/14/2002  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 12/13/2002  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 30  
Nash-Sutcliffe coefficient: 0.8910552

C\_TABLE "com\_28\_4" ---->

Observation time series name: "odf28\_4"  
Simulation time series name: "mdf28\_4"  
Beginning date of series comparison: 12/15/2002  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 12/31/2002  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 17  
Nash-Sutcliffe coefficient: 0.6816336

C\_TABLE "com\_28\_1b" ---->

Observation time series name: "of28\_1"  
Simulation time series name: "mf28\_1"  
Beginning date of series comparison: 01/01/2001  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 12/31/2001  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 35040  
Nash-Sutcliffe coefficient: -2.756984

C\_TABLE "com\_28\_2b" ---->  
 Observation time series name: "of28\_2"  
 Simulation time series name: "mf28\_2"  
 Beginning date of series comparison: 05/21/2002  
 Beginning time of series comparison: 00:00:00  
 Finishing date of series comparison: 09/30/2002  
 Finishing time of series comparison: 23:45:00  
 Number of series terms in this interval: 12768  
 Nash-Sutcliffe coefficient: -0.6229878

C\_TABLE "com\_28\_3b" ---->  
 Observation time series name: "of28\_3"  
 Simulation time series name: "mf28\_3"  
 Beginning date of series comparison: 11/14/2002  
 Beginning time of series comparison: 00:00:00  
 Finishing date of series comparison: 12/13/2002  
 Finishing time of series comparison: 23:45:00  
 Number of series terms in this interval: 2880  
 Nash-Sutcliffe coefficient: 0.7969211

C\_TABLE "com\_28\_4b" ---->  
 Observation time series name: "of28\_4"  
 Simulation time series name: "mf28\_4"  
 Beginning date of series comparison: 12/15/2002  
 Beginning time of series comparison: 00:00:00  
 Finishing date of series comparison: 12/31/2002  
 Finishing time of series comparison: 23:30:00  
 Number of series terms in this interval: 1631  
 Nash-Sutcliffe coefficient: 0.5092841

#### **2.4. DICKERSON CREEK – CALIBRATION**

C\_TABLE "com\_9\_1" ---->  
 Observation time series name: "odf9\_1"  
 Simulation time series name: "mdf9\_1"  
 Beginning date of series comparison: 01/01/2001  
 Beginning time of series comparison: 12:00:00  
 Finishing date of series comparison: 12/31/2001  
 Finishing time of series comparison: 12:00:00  
 Number of series terms in this interval: 365  
 Relative standard error: 0.5811109  
 Nash-Sutcliffe coefficient: 0.6623101

C\_TABLE "com\_9\_2" ---->  
 Observation time series name: "odf9\_2"  
 Simulation time series name: "mdf9\_2"  
 Beginning date of series comparison: 01/26/2002  
 Beginning time of series comparison: 12:00:00  
 Finishing date of series comparison: 12/25/2002  
 Finishing time of series comparison: 12:00:00  
 Number of series terms in this interval: 334  
 Nash-Sutcliffe coefficient: 0.9394011

C\_TABLE "com\_9\_1b" ---->  
 Observation time series name: "of9\_1"  
 Simulation time series name: "mf9\_1"  
 Beginning date of series comparison: 01/01/2001  
 Beginning time of series comparison: 00:00:00  
 Finishing date of series comparison: 12/31/2001  
 Finishing time of series comparison: 23:45:00  
 Number of series terms in this interval: 35040  
 Nash-Sutcliffe coefficient: 0.2627388

C\_TABLE "com\_9\_2b" ---->  
 Observation time series name: "of9\_2"  
 Simulation time series name: "mf9\_2"  
 Beginning date of series comparison: 01/26/2002  
 Beginning time of series comparison: 00:00:00  
 Finishing date of series comparison: 12/25/2002  
 Finishing time of series comparison: 23:45:00  
 Number of series terms in this interval: 32064  
 Nash-Sutcliffe coefficient: 0.8523724

## **2.5. CHICO CREEK MAINSTEM – CALIBRATION**

C\_TABLE "com\_29\_1" ---->  
 Observation time series name: "odf29\_1"  
 Simulation time series name: "mdf29\_1"  
 Beginning date of series comparison: 01/01/2001  
 Beginning time of series comparison: 12:00:00  
 Finishing date of series comparison: 08/19/2001  
 Finishing time of series comparison: 12:00:00  
 Number of series terms in this interval: 231  
 Nash-Sutcliffe coefficient: 0.5130141

C\_TABLE "com\_29\_2" ---->  
 Observation time series name: "odf29\_2"  
 Simulation time series name: "mdf29\_2"  
 Beginning date of series comparison: 11/15/2001

Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	01/01/2002
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	48
Nash-Sutcliffe coefficient:	0.2495842

C\_TABLE "com\_29\_3" ---->

Observation time series name:	"odf29_3"
Simulation time series name:	"mdf29_3"
Beginning date of series comparison:	01/15/2002
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	09/30/2002
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	259
Nash-Sutcliffe coefficient:	0.8985426

C\_TABLE "com\_29\_1b" ---->

Observation time series name:	"of29_1"
Simulation time series name:	"mf29_1"
Beginning date of series comparison:	01/01/2001
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	08/19/2001
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	22176
Standard error:	7.591018
Nash-Sutcliffe coefficient:	0.4248655

C\_TABLE "com\_29\_2b" ---->

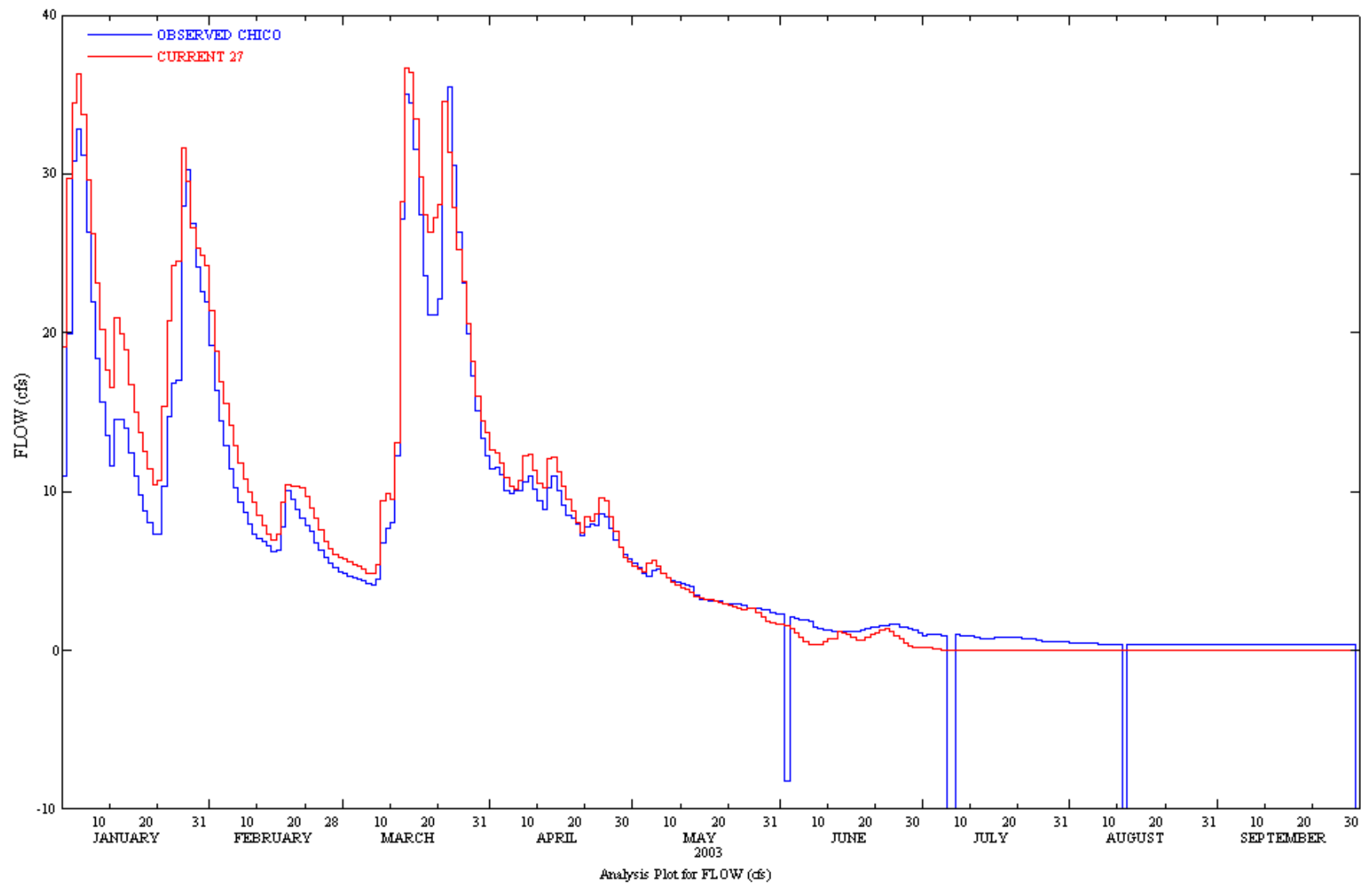
Observation time series name:	"of29_2"
Simulation time series name:	"mf29_2"
Beginning date of series comparison:	11/15/2001
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	01/01/2002
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	4608
Nash-Sutcliffe coefficient:	-0.5567095

C\_TABLE "com\_29\_3b" ---->

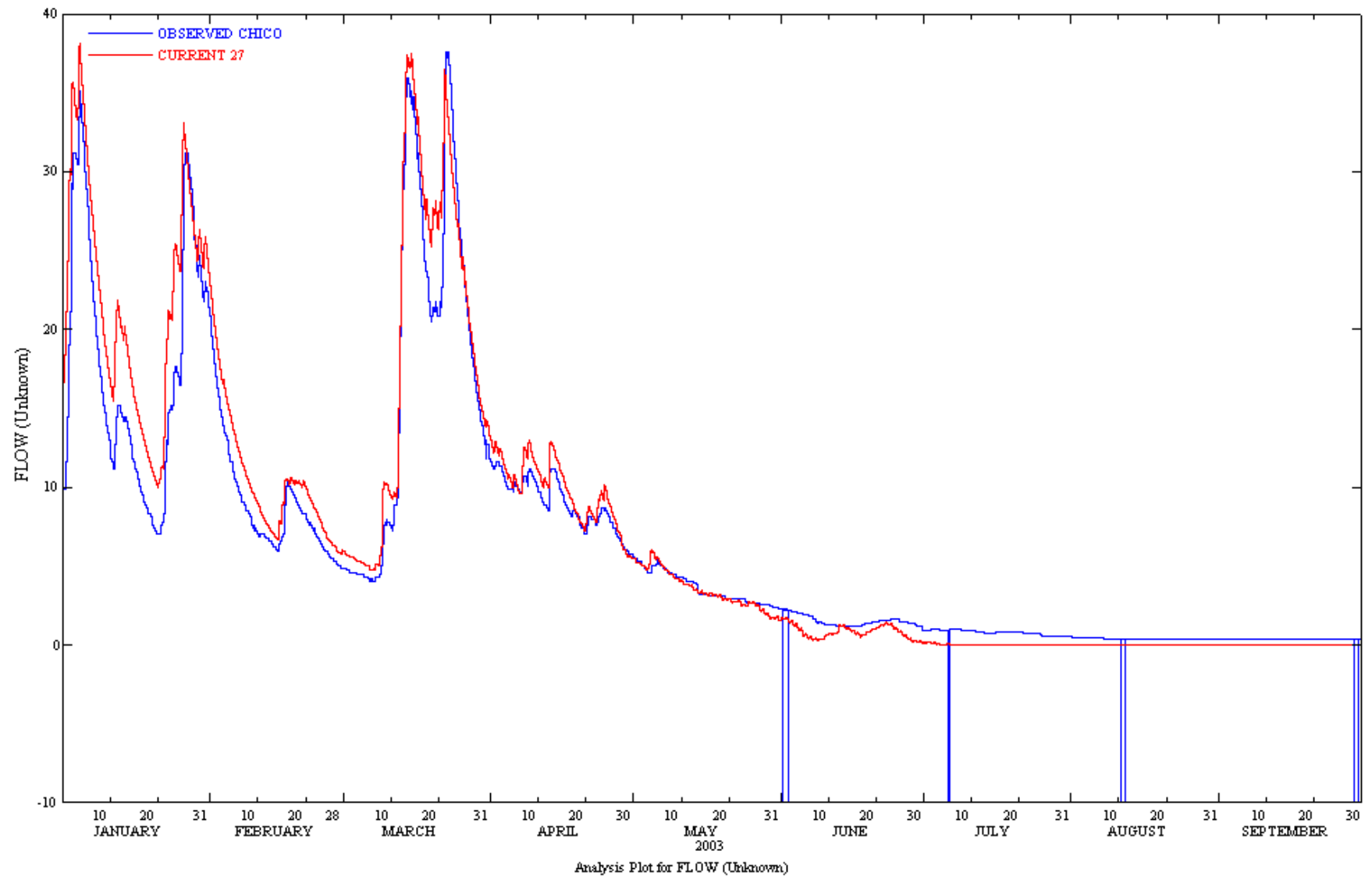
Observation time series name:	"of29_3"
Simulation time series name:	"mf29_3"
Beginning date of series comparison:	01/15/2002
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	09/30/2002
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	24864
Nash-Sutcliffe coefficient:	0.8483712



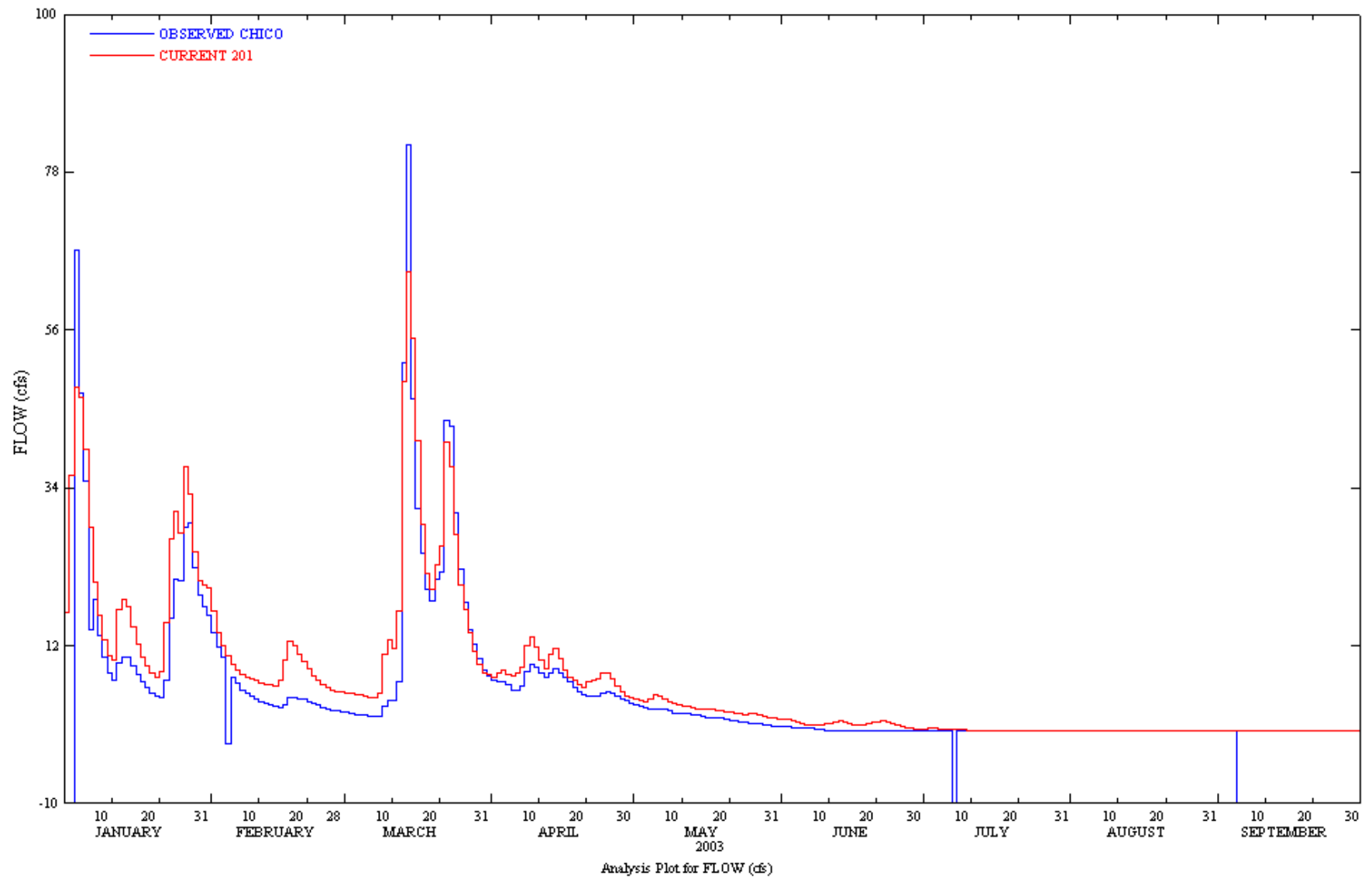
### 3. Chic Creek Basin Verification



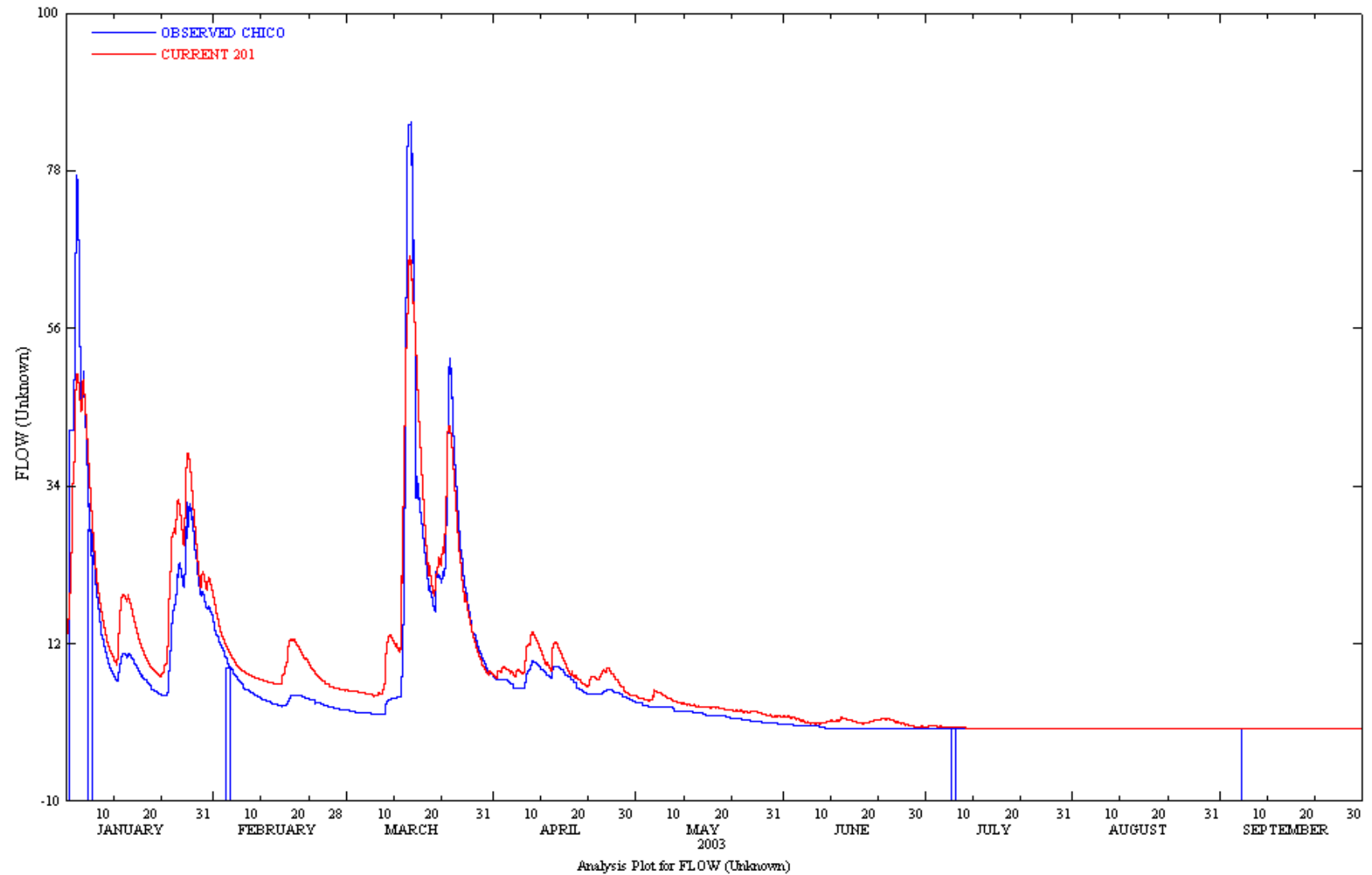
**3.1. KITSAP CREEK AT LAKE OUTLET – Daily – VERIFICATION**



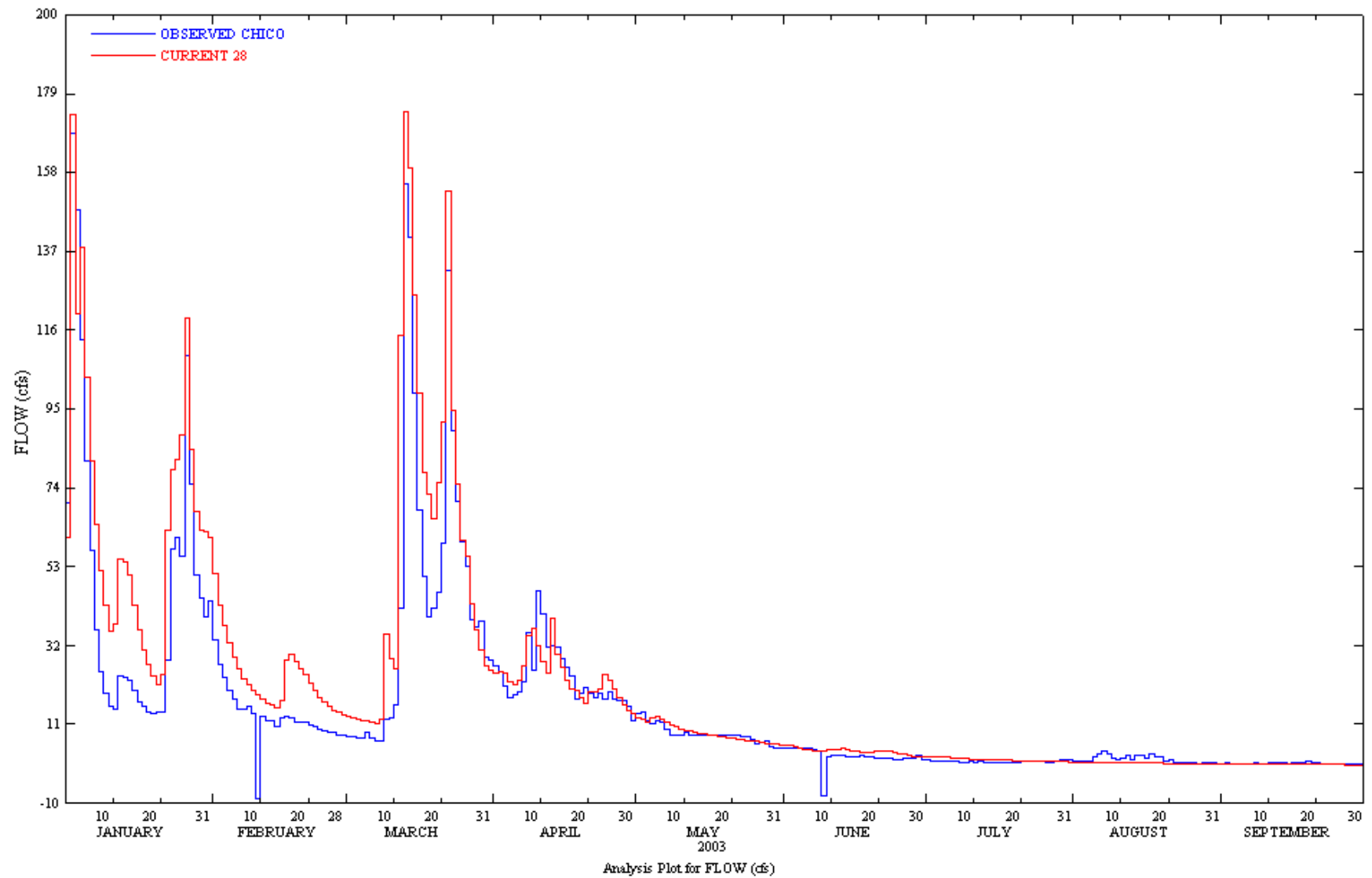
### 3.2. KITSAP CREEK AT LAKE OUTLET – 15 Minute Flows – VERIFICATION



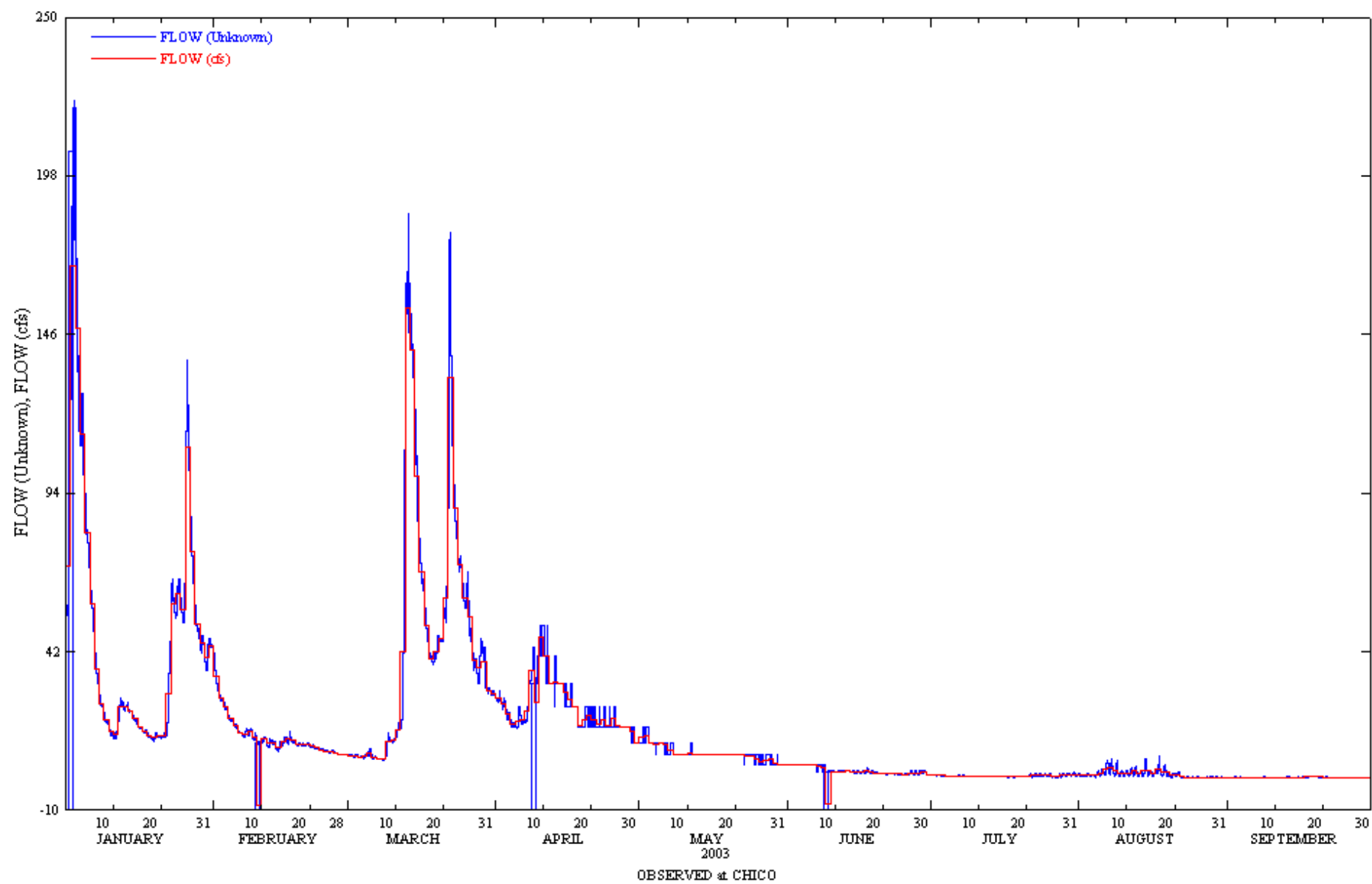
### 3.3. WILDCAT CREEK AT LAKE OUTLET – Daily – VERIFICATION



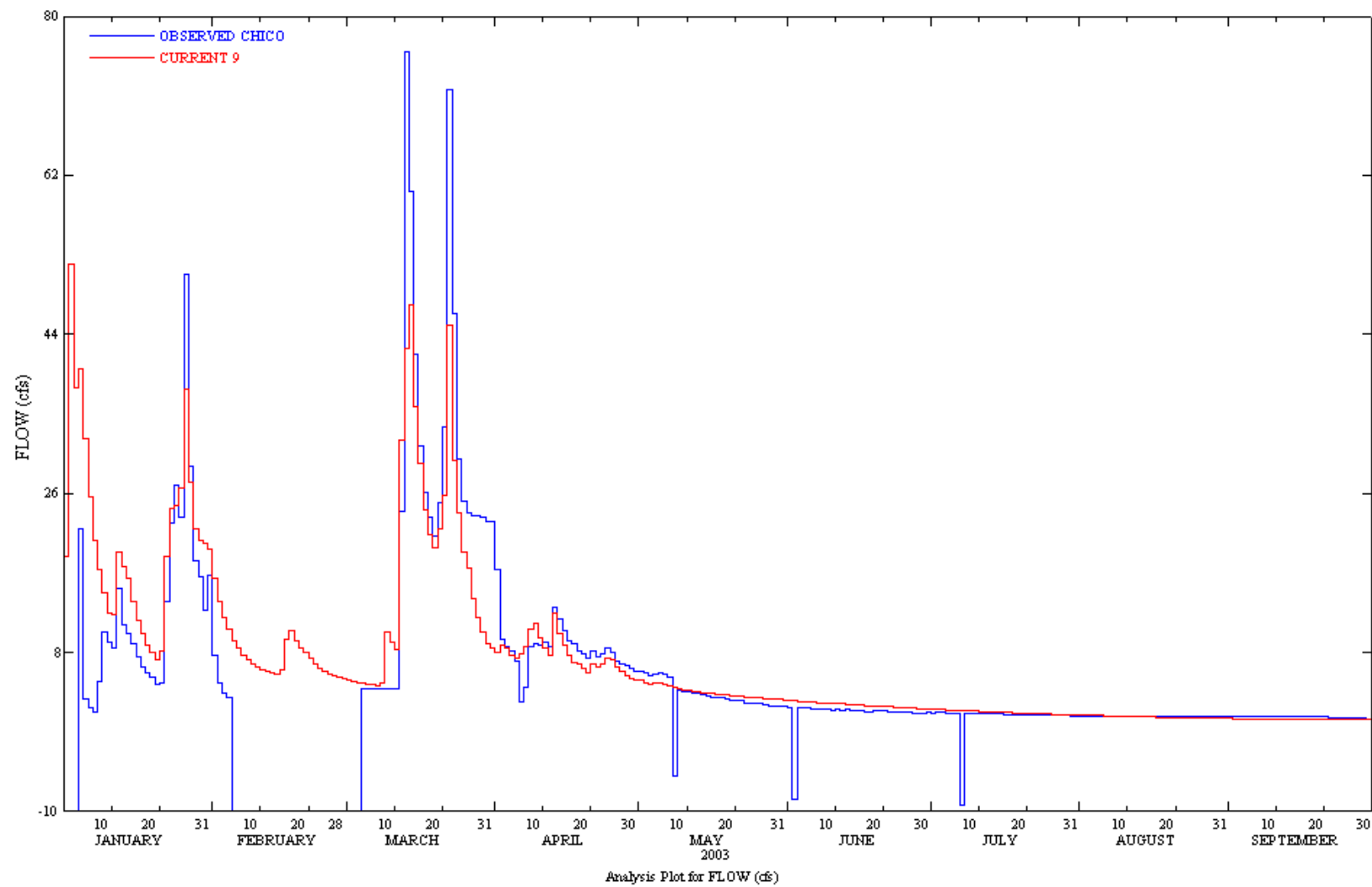
**3.4. WILDCAT CREEK AT LAKE OUTLET - 15 Minute Flows – VERIFICATION**



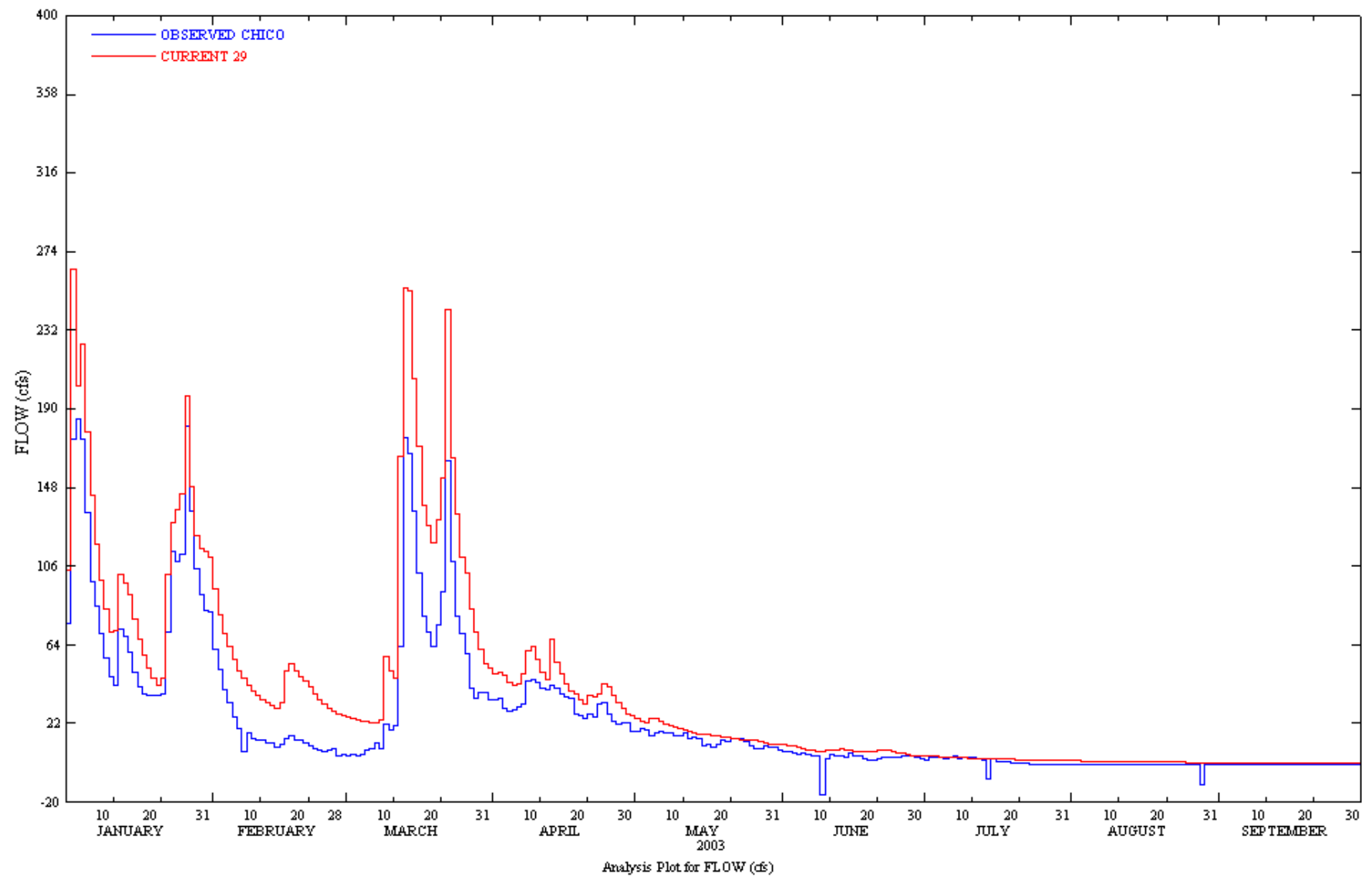
### 3.5. CHICO TRIB. AT TAYLOR ROAD – Daily – VERIFICATION



**3.6. CHICO TRIB. AT TAYLOR ROAD - 15 Minute Flows – VERIFICATION**



### 3.7. DICKERSON CREEK – Daily – VERIFICATION



### 3.8. CHICO CREEK MAINSTEM – Daily – VERIFICATION



#### 4. Chic Creek Basin Verification Statistics

##### 4.1. KITSAP CREEK AT LAKE OUTLET – VERIFICATION

C\_TABLE "com\_27\_5b" ---->  
Observation time series name: "of27\_5"  
Simulation time series name: "mf27\_5"  
Beginning date of series comparison: 01/01/2003  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 06/02/2003  
Finishing time of series comparison: 10:45:00  
Number of series terms in this interval: 14636  
Nash-Sutcliffe coefficient: 0.9047817

C\_TABLE "com\_27\_6b" ---->  
Observation time series name: "of27\_6"  
Simulation time series name: "mf27\_6"  
Beginning date of series comparison: 06/02/2003  
Beginning time of series comparison: 11:15:00  
Finishing date of series comparison: 07/05/2003  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 3219  
Nash-Sutcliffe coefficient: -5.180460

C\_TABLE "com\_27\_7b" ---->  
Observation time series name: "of27\_7"  
Simulation time series name: "mf27\_7"  
Beginning date of series comparison: 07/07/2003  
Beginning time of series comparison: 10:15:00  
Finishing date of series comparison: 08/12/2003  
Finishing time of series comparison: 10:15:00  
Number of series terms in this interval: 3457  
Nash-Sutcliffe coefficient: -11.01874

C\_TABLE "com\_27\_8b" ---->  
Observation time series name: "of27\_8"  
Simulation time series name: "mf27\_8"  
Beginning date of series comparison: 08/12/2003  
Beginning time of series comparison: 10:45:00  
Finishing date of series comparison: 09/30/2003  
Finishing time of series comparison: 11:15:00  
Number of series terms in this interval: 4707  
Nash-Sutcliffe coefficient: -1017.277

#### **4.2. WILDCAT CREEK AT LAKE OUTLET – VERIFICATION**

C\_TABLE "com\_7\_6b" ---->

Observation time series name:	"of7_6"
Simulation time series name:	"mf7_6"
Beginning date of series comparison:	01/02/2003
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	01/06/2003
Finishing time of series comparison:	09:30:00
Number of series terms in this interval:	375
Nash-Sutcliffe coefficient:	0.4010460

C\_TABLE "com\_7\_7b" ---->

Observation time series name:	"of7_7"
Simulation time series name:	"mf7_7"
Beginning date of series comparison:	01/06/2003
Beginning time of series comparison:	10:00:00
Finishing date of series comparison:	02/04/2003
Finishing time of series comparison:	13:45:00
Number of series terms in this interval:	2800
Nash-Sutcliffe coefficient:	0.4394209

C\_TABLE "com\_7\_8b" ---->

Observation time series name:	"of7_8"
Simulation time series name:	"mf7_8"
Beginning date of series comparison:	02/04/2003
Beginning time of series comparison:	14:15:00
Finishing date of series comparison:	07/07/2003
Finishing time of series comparison:	10:15:00
Number of series terms in this interval:	14673
Nash-Sutcliffe coefficient:	0.8926162

#### **4.3. CHICO TRIB. AT TAYLOR ROAD – VERIFICATION**

C\_TABLE "com\_28\_5b" ---->

Observation time series name:	"of28_5"
Simulation time series name:	"mf28_5"
Beginning date of series comparison:	01/01/2003
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	01/02/2003
Finishing time of series comparison:	13:00:00
Number of series terms in this interval:	149
Nash-Sutcliffe coefficient:	0.4112049

C\_TABLE "com\_28\_6b" ---->  
 Observation time series name: "of28\_6"  
 Simulation time series name: "mf28\_6"  
 Beginning date of series comparison: 01/02/2003  
 Beginning time of series comparison: 13:30:00  
 Finishing date of series comparison: 02/10/2003  
 Finishing time of series comparison: 14:45:00  
 Number of series terms in this interval: 3750  
 Nash-Sutcliffe coefficient: 0.2914238

C\_TABLE "com\_28\_7b" ---->  
 Observation time series name: "of28\_7"  
 Simulation time series name: "mf28\_7"  
 Beginning date of series comparison: 02/10/2003  
 Beginning time of series comparison: 15:30:00  
 Finishing date of series comparison: 04/09/2003  
 Finishing time of series comparison: 09:00:00  
 Number of series terms in this interval: 5543  
 Nash-Sutcliffe coefficient: 0.2347101

C\_TABLE "com\_28\_8b" ---->  
 Observation time series name: "of28\_8"  
 Simulation time series name: "mf28\_8"  
 Beginning date of series comparison: 04/09/2003  
 Beginning time of series comparison: 09:30:00  
 Finishing date of series comparison: 06/09/2003  
 Finishing time of series comparison: 10:45:00  
 Number of series terms in this interval: 5862  
 Nash-Sutcliffe coefficient: 0.7192995

C\_TABLE "com\_28\_9b" ---->  
 Observation time series name: "of28\_9"  
 Simulation time series name: "mf28\_9"  
 Beginning date of series comparison: 06/09/2003  
 Beginning time of series comparison: 11:15:00  
 Finishing date of series comparison: 09/30/2003  
 Finishing time of series comparison: 23:30:00  
 Number of series terms in this interval: 10898  
 Nash-Sutcliffe coefficient: -0.4957014

#### **4.4. DICKERSON CREEK – VERIFICATION**

C\_TABLE "com\_9\_3b" ---->  
 Observation time series name: "of9\_3"  
 Simulation time series name: "mf9\_3"

Beginning date of series comparison: 01/03/2003  
Beginning time of series comparison: 11:45:00  
Finishing date of series comparison: 02/05/2003  
Finishing time of series comparison: 11:45:00  
Number of series terms in this interval: 3169  
Nash-Sutcliffe coefficient: 6.5442637E-02

C\_TABLE "com\_9\_4b" ---->

Observation time series name: "of9\_4"  
Simulation time series name: "mf9\_4"  
Beginning date of series comparison: 03/12/2003  
Beginning time of series comparison: 14:00:00  
Finishing date of series comparison: 03/24/2003  
Finishing time of series comparison: 08:45:00  
Number of series terms in this interval: 1132  
Nash-Sutcliffe coefficient: -0.1858637

C\_TABLE "com\_9\_5b" ---->

Observation time series name: "of9\_5"  
Simulation time series name: "mf9\_5"  
Beginning date of series comparison: 04/13/2003  
Beginning time of series comparison: 00:30:00  
Finishing date of series comparison: 05/08/2003  
Finishing time of series comparison: 09:45:00  
Number of series terms in this interval: 2438  
Nash-Sutcliffe coefficient: 0.1635453

C\_TABLE "com\_9\_6b" ---->

Observation time series name: "of9\_6"  
Simulation time series name: "mf9\_6"  
Beginning date of series comparison: 05/08/2003  
Beginning time of series comparison: 10:15:00  
Finishing date of series comparison: 06/02/2003  
Finishing time of series comparison: 11:00:00  
Number of series terms in this interval: 2404  
Nash-Sutcliffe coefficient: 0.3331811

C\_TABLE "com\_9\_7b" ---->

Observation time series name: "of9\_7"  
Simulation time series name: "mf9\_7"  
Beginning date of series comparison: 06/02/2003  
Beginning time of series comparison: 11:30:00  
Finishing date of series comparison: 07/07/2003  
Finishing time of series comparison: 10:00:00  
Number of series terms in this interval: 3355  
Nash-Sutcliffe coefficient: -7.502687

C\_TABLE "com\_9\_8b" ---->  
 Observation time series name: "of9\_8"  
 Simulation time series name: "mf9\_8"  
 Beginning date of series comparison: 07/07/2003  
 Beginning time of series comparison: 10:30:00  
 Finishing date of series comparison: 09/30/2003  
 Finishing time of series comparison: 23:30:00  
 Number of series terms in this interval: 8213  
 Nash-Sutcliffe coefficient: -1.267757

#### 4.5. *CHICO CREEK MAINSTEM – VERIFICATION*

C\_TABLE "com\_29\_4b" ---->  
 Observation time series name: "of29\_4"  
 Simulation time series name: "mf29\_4"  
 Beginning date of series comparison: 01/01/2003  
 Beginning time of series comparison: 00:00:00  
 Finishing date of series comparison: 01/06/2003  
 Finishing time of series comparison: 11:45:00  
 Number of series terms in this interval: 528  
 Nash-Sutcliffe coefficient: -2.268629

C\_TABLE "com\_29\_5b" ---->  
 Observation time series name: "of29\_5"  
 Simulation time series name: "mf29\_5"  
 Beginning date of series comparison: 01/06/2003  
 Beginning time of series comparison: 12:15:00  
 Finishing date of series comparison: 01/24/2003  
 Finishing time of series comparison: 14:45:00  
 Number of series terms in this interval: 1739  
 Nash-Sutcliffe coefficient: -0.3412314

C\_TABLE "com\_29\_6b" ---->  
 Observation time series name: "of29\_6"  
 Simulation time series name: "mf29\_6"  
 Beginning date of series comparison: 01/24/2003  
 Beginning time of series comparison: 15:15:00  
 Finishing date of series comparison: 02/07/2003  
 Finishing time of series comparison: 11:45:00  
 Number of series terms in this interval: 1331  
 Nash-Sutcliffe coefficient: 0.3166862

C\_TABLE "com\_29\_7b" ---->  
 Observation time series name: "of29\_7"

Simulation time series name: "mf29\_7"  
Beginning date of series comparison: 02/07/2003  
Beginning time of series comparison: 12:15:00  
Finishing date of series comparison: 06/09/2003  
Finishing time of series comparison: 10:30:00  
Number of series terms in this interval: 11706  
Nash-Sutcliffe coefficient: -0.1632894

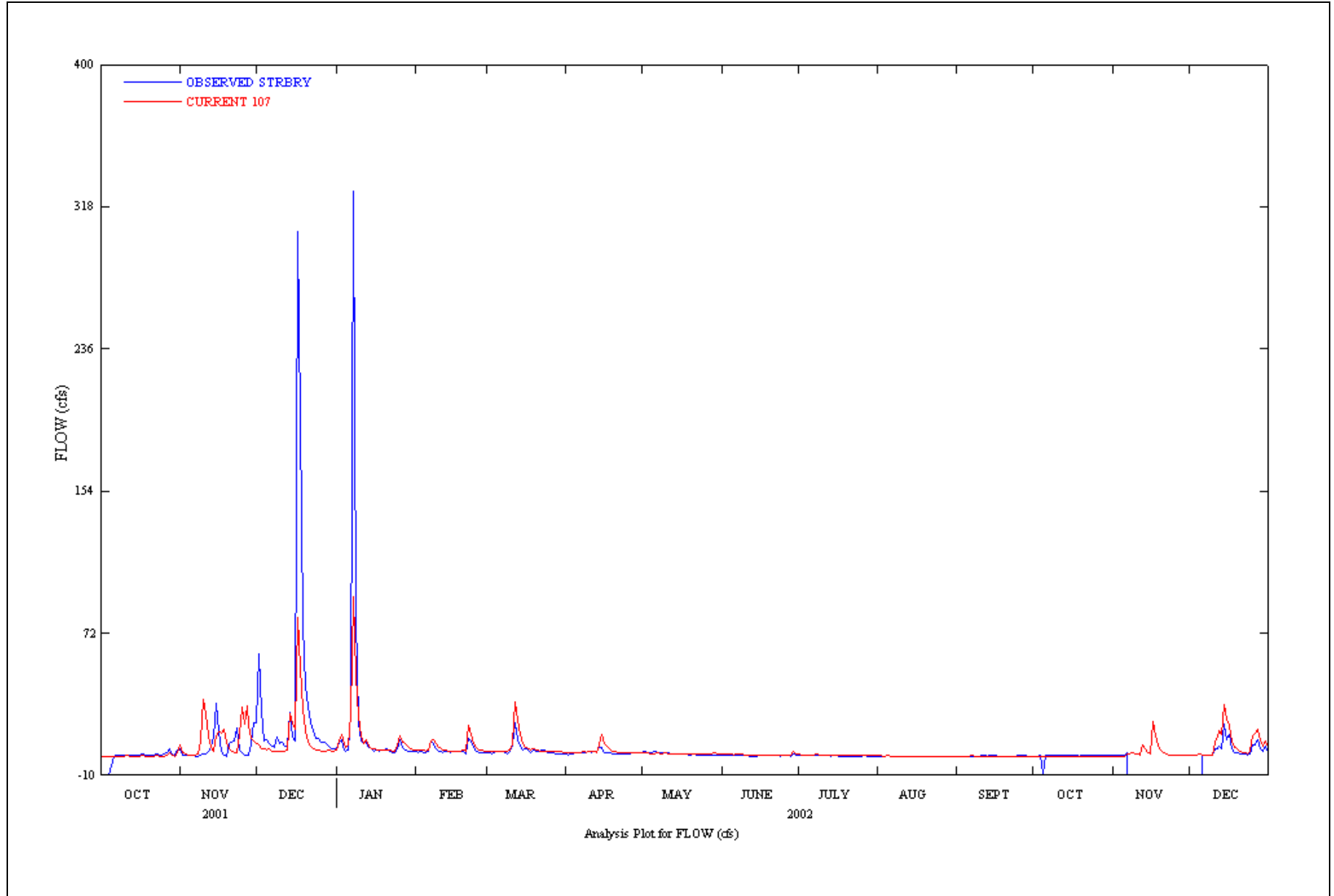
C\_TABLE "com\_29\_8b" ---->

Observation time series name: "of29\_8"  
Simulation time series name: "mf29\_8"  
Beginning date of series comparison: 06/09/2003  
Beginning time of series comparison: 11:15:00  
Finishing date of series comparison: 07/14/2003  
Finishing time of series comparison: 11:45:00  
Number of series terms in this interval: 3363  
Nash-Sutcliffe coefficient: -1.411421

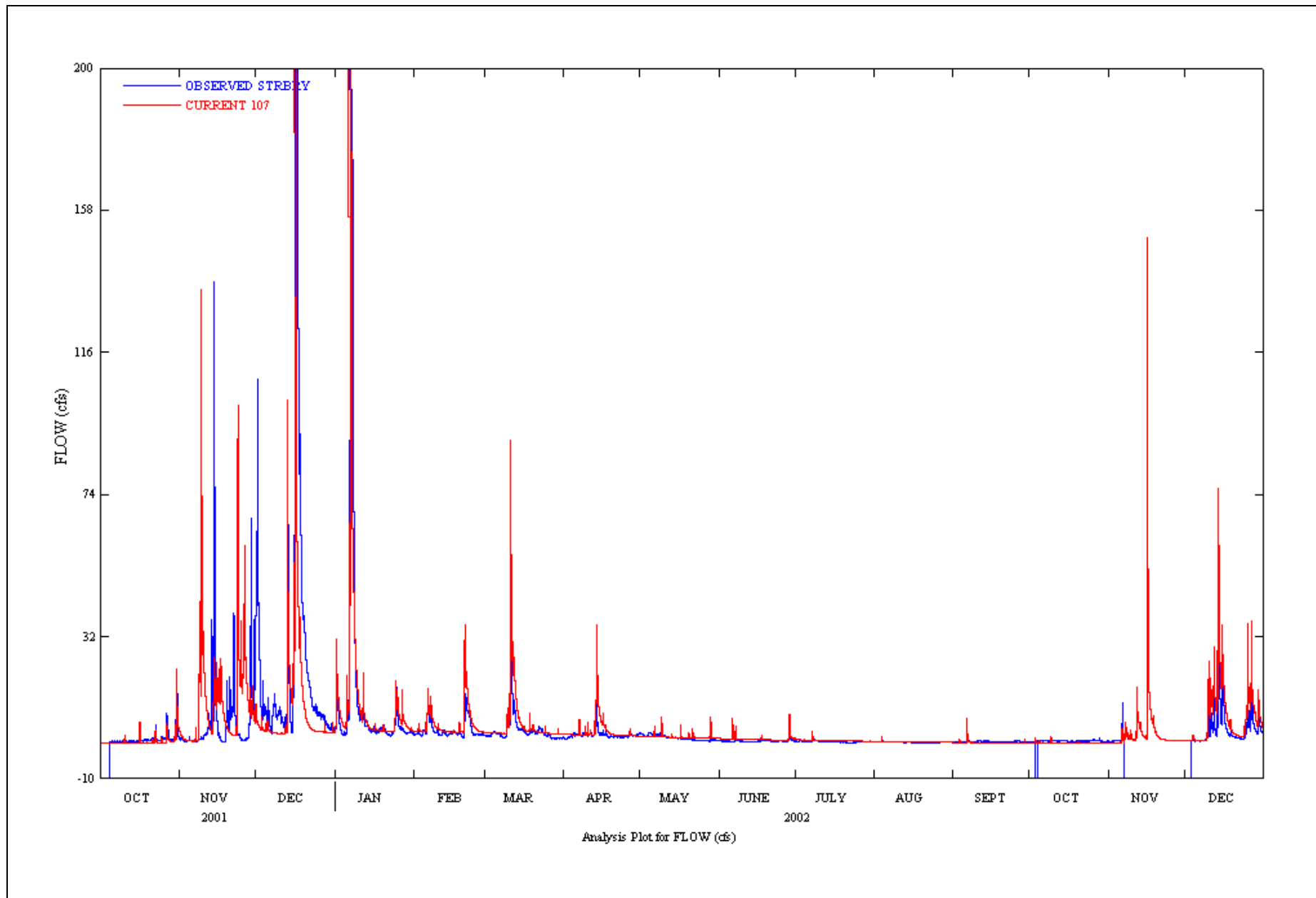
C\_TABLE "com\_29\_9b" ---->

Observation time series name: "of29\_9"  
Simulation time series name: "mf29\_9"  
Beginning date of series comparison: 07/14/2003  
Beginning time of series comparison: 12:15:00  
Finishing date of series comparison: 08/28/2003  
Finishing time of series comparison: 11:00:00  
Number of series terms in this interval: 4316  
Nash-Sutcliffe coefficient: -3.361968

## 5. Strawberry Creek HSPF Hydrologic Model

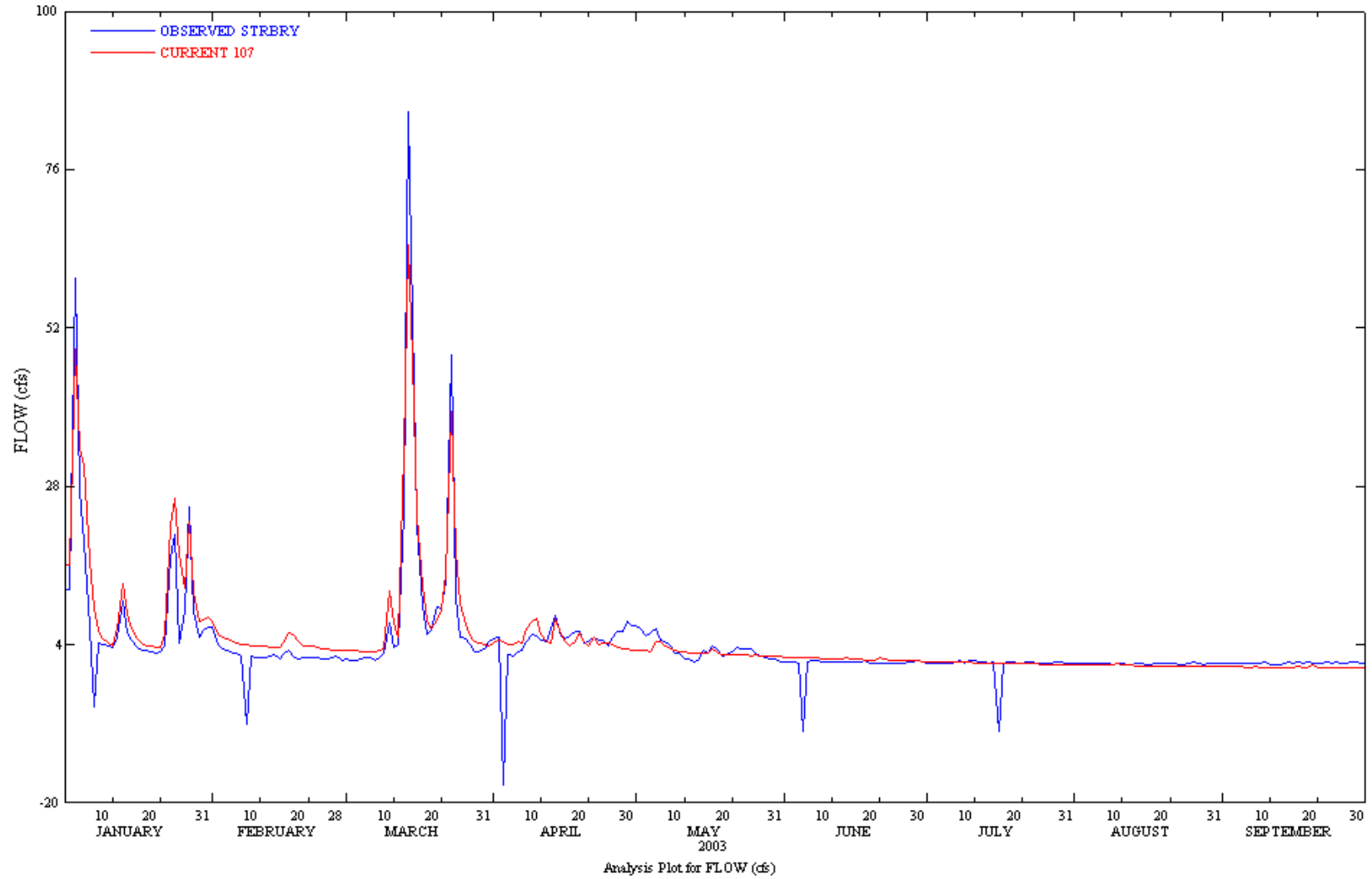


### 5.1. Strawberry Creek Daily – CALIBRATION

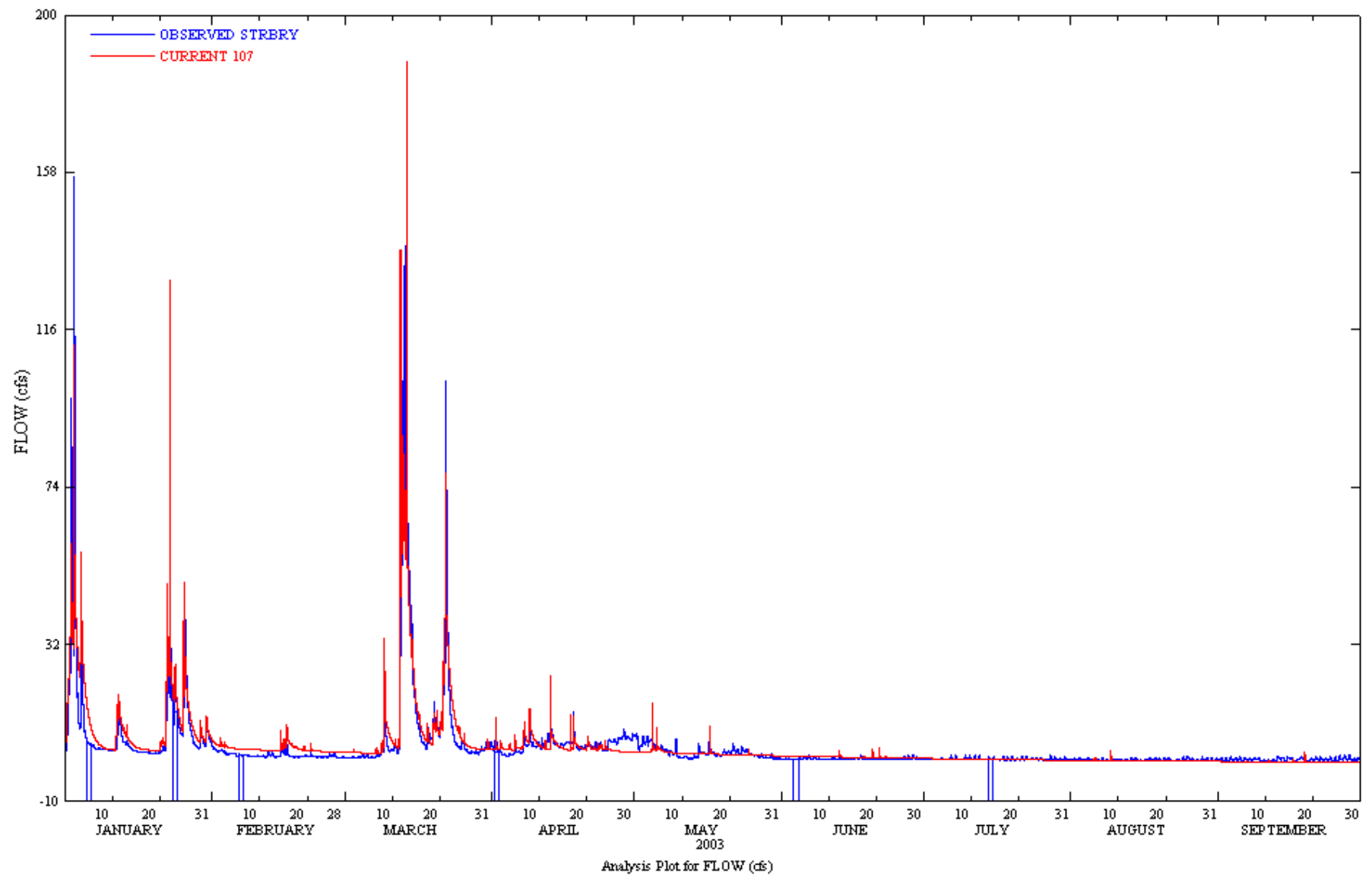


5.2. Strawberry Creek 15 Minute Flows – CALIBRATION





5.3. Strawberry Creek Daily – VERIFICATION



5.4. Strawberry Creek 15 Minute Flows – VERIFICATION

## 5.5. *STRAWBERRY CREEK STATISTICS*

### 5.5.1. CALIBRATION

C\_TABLE "com\_107\_1" ---->  
Observation time series name: "odf107\_1"  
Simulation time series name: "mdf107\_1"  
Beginning date of series comparison: 10/05/2001  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 10/31/2001  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 27  
Nash-Sutcliffe coefficient: 0.3707992

C\_TABLE "com\_107\_2" ---->  
Observation time series name: "odf107\_2"  
Simulation time series name: "mdf107\_2"  
Beginning date of series comparison: 12/10/2001  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 10/03/2002  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 298  
Nash-Sutcliffe coefficient: 0.4677470

C\_TABLE "com\_107\_3" ---->  
Observation time series name: "odf107\_3"  
Simulation time series name: "mdf107\_3"  
Beginning date of series comparison: 12/05/2002  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 12/31/2002  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 27  
Nash-Sutcliffe coefficient: -0.4960574

C\_TABLE "com\_107\_1b" ---->  
Observation time series name: "of107\_1"  
Simulation time series name: "mf107\_1"  
Beginning date of series comparison: 10/05/2001  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 10/31/2001  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 2592  
Nash-Sutcliffe coefficient: 0.5045298

C\_TABLE "com\_107\_2b" ---->  
 Observation time series name: "of107\_2"  
 Simulation time series name: "mf107\_2"  
 Beginning date of series comparison: 12/10/2001  
 Beginning time of series comparison: 00:00:00  
 Finishing date of series comparison: 10/03/2002  
 Finishing time of series comparison: 23:45:00  
 Number of series terms in this interval: 28608  
 Nash-Sutcliffe coefficient: 0.3587457

C\_TABLE "com\_107\_3b" ---->  
 Observation time series name: "of107\_3"  
 Simulation time series name: "mf107\_3"  
 Beginning date of series comparison: 12/05/2002  
 Beginning time of series comparison: 00:00:00  
 Finishing date of series comparison: 12/31/2002  
 Finishing time of series comparison: 23:30:00  
 Number of series terms in this interval: 2591  
 Nash-Sutcliffe coefficient: -0.2424192

### 5.5.2. VERIFICATION

C\_TABLE "com\_107\_4b" ---->  
 Observation time series name: "of107\_4"  
 Simulation time series name: "mf107\_4"  
 Beginning date of series comparison: 01/01/2003  
 Beginning time of series comparison: 00:00:00  
 Finishing date of series comparison: 01/06/2003  
 Finishing time of series comparison: 11:15:00  
 Number of series terms in this interval: 526  
 Nash-Sutcliffe coefficient: 0.6198034

C\_TABLE "com\_107\_5b" ---->  
 Observation time series name: "of107\_5"  
 Simulation time series name: "mf107\_5"  
 Beginning date of series comparison: 01/06/2003  
 Beginning time of series comparison: 11:45:00  
 Finishing date of series comparison: 01/24/2003  
 Finishing time of series comparison: 14:15:00  
 Number of series terms in this interval: 1739  
 Nash-Sutcliffe coefficient: 0.4254594

C\_TABLE "com\_107\_6b" ---->  
 Observation time series name: "of107\_6"  
 Simulation time series name: "mf107\_6"

Beginning date of series comparison: 01/24/2003  
Beginning time of series comparison: 14:45:00  
Finishing date of series comparison: 02/07/2003  
Finishing time of series comparison: 11:00:00  
Number of series terms in this interval: 1330  
Nash-Sutcliffe coefficient: 0.7420214

C\_TABLE "com\_107\_7b" ---->

Observation time series name: "of107\_7"  
Simulation time series name: "mf107\_7"  
Beginning date of series comparison: 02/07/2003  
Beginning time of series comparison: 11:30:00  
Finishing date of series comparison: 04/02/2003  
Finishing time of series comparison: 09:00:00  
Number of series terms in this interval: 5175  
Nash-Sutcliffe coefficient: 0.8127876

C\_TABLE "com\_107\_8b" ---->

Observation time series name: "of107\_8"  
Simulation time series name: "mf107\_8"  
Beginning date of series comparison: 04/02/2003  
Beginning time of series comparison: 09:45:00  
Finishing date of series comparison: 06/04/2003  
Finishing time of series comparison: 12:15:00  
Number of series terms in this interval: 6059  
Nash-Sutcliffe coefficient: 0.2184269

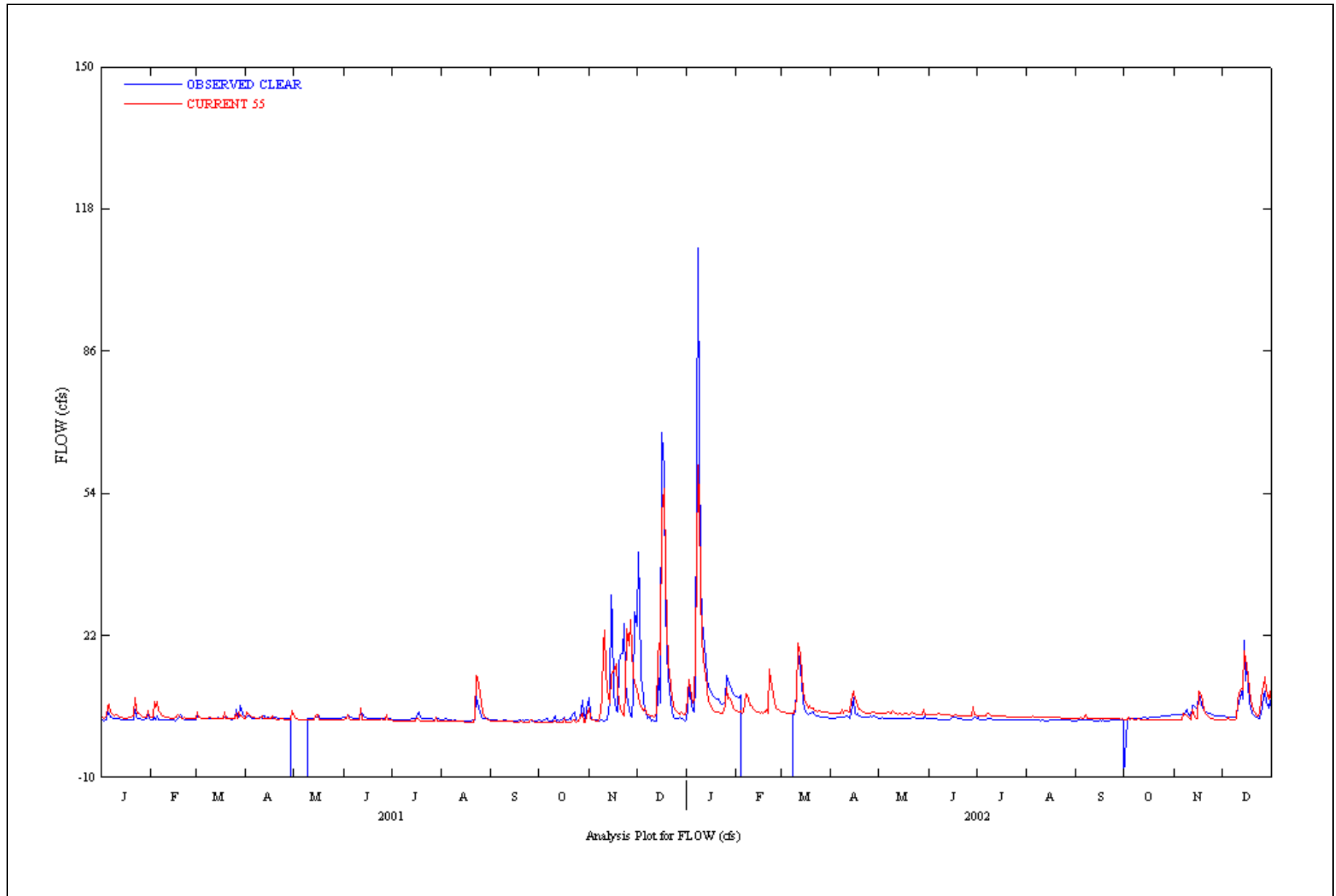
C\_TABLE "com\_107\_9b" ---->

Observation time series name: "of107\_9"  
Simulation time series name: "mf107\_9"  
Beginning date of series comparison: 06/04/2003  
Beginning time of series comparison: 12:45:00  
Finishing date of series comparison: 07/15/2003  
Finishing time of series comparison: 11:00:00  
Number of series terms in this interval: 3930  
Nash-Sutcliffe coefficient: -2.478090

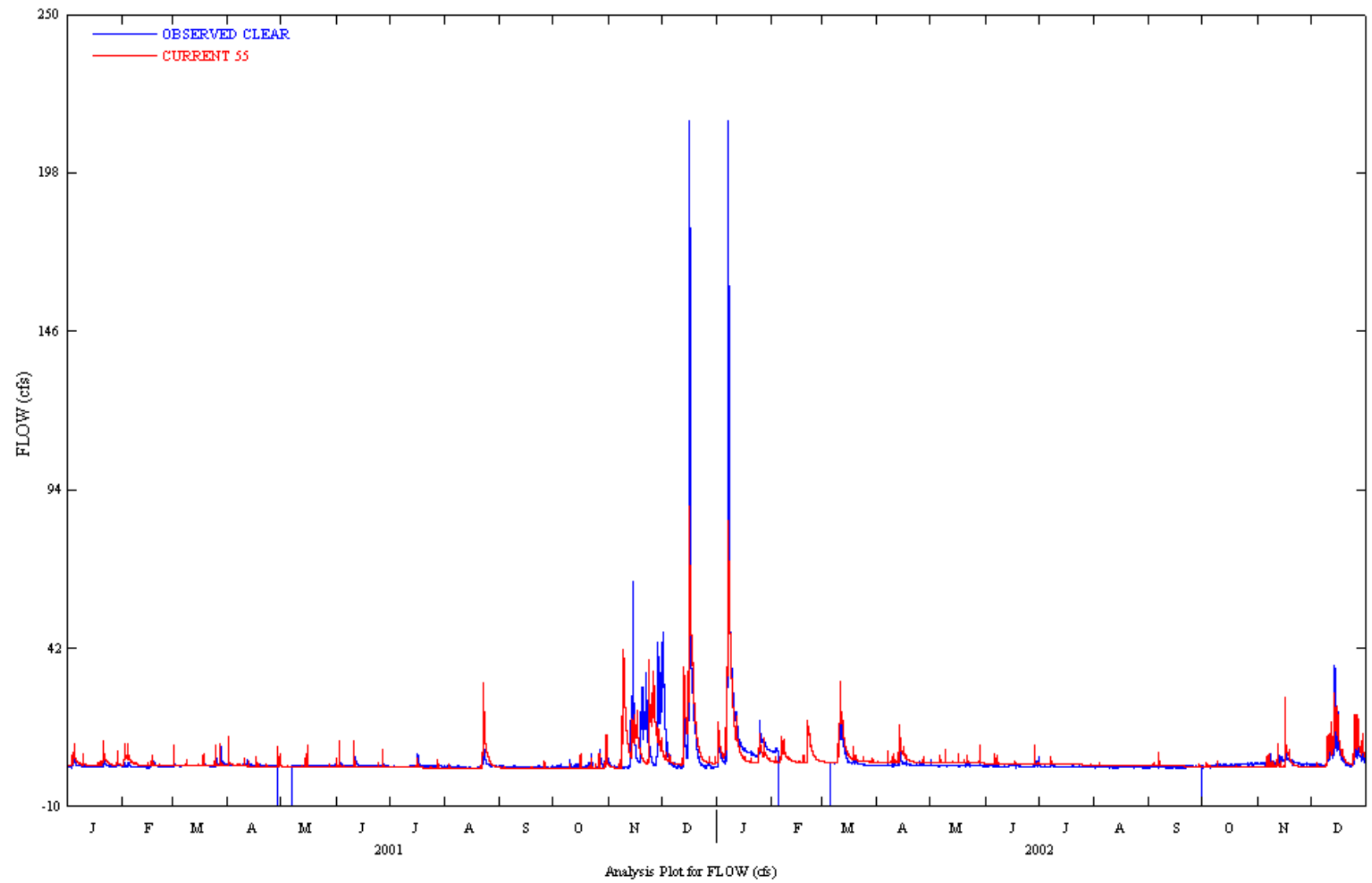
C\_TABLE "com\_107\_10" ---->

Observation time series name: "of107\_10"  
Simulation time series name: "mf107\_10"  
Beginning date of series comparison: 07/15/2003  
Beginning time of series comparison: 11:30:00  
Finishing date of series comparison: 09/30/2003  
Finishing time of series comparison: 23:30:00  
Number of series terms in this interval: 7441  
Nash-Sutcliffe coefficient: -3.917648

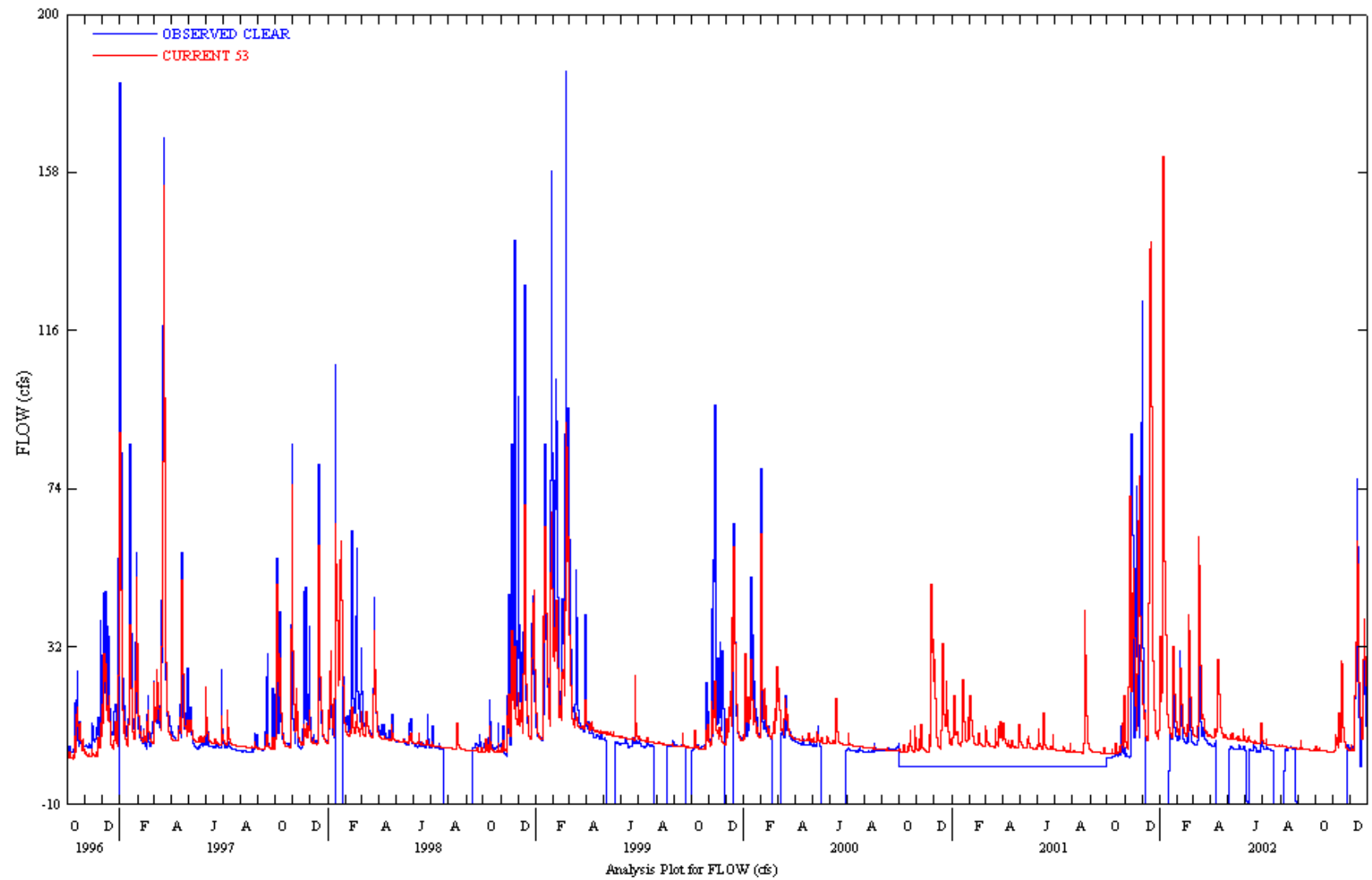
## 6. Clear Creek Basin HSPF Hydrologic Model



6.1. Clear Creek West – Daily – Calibration

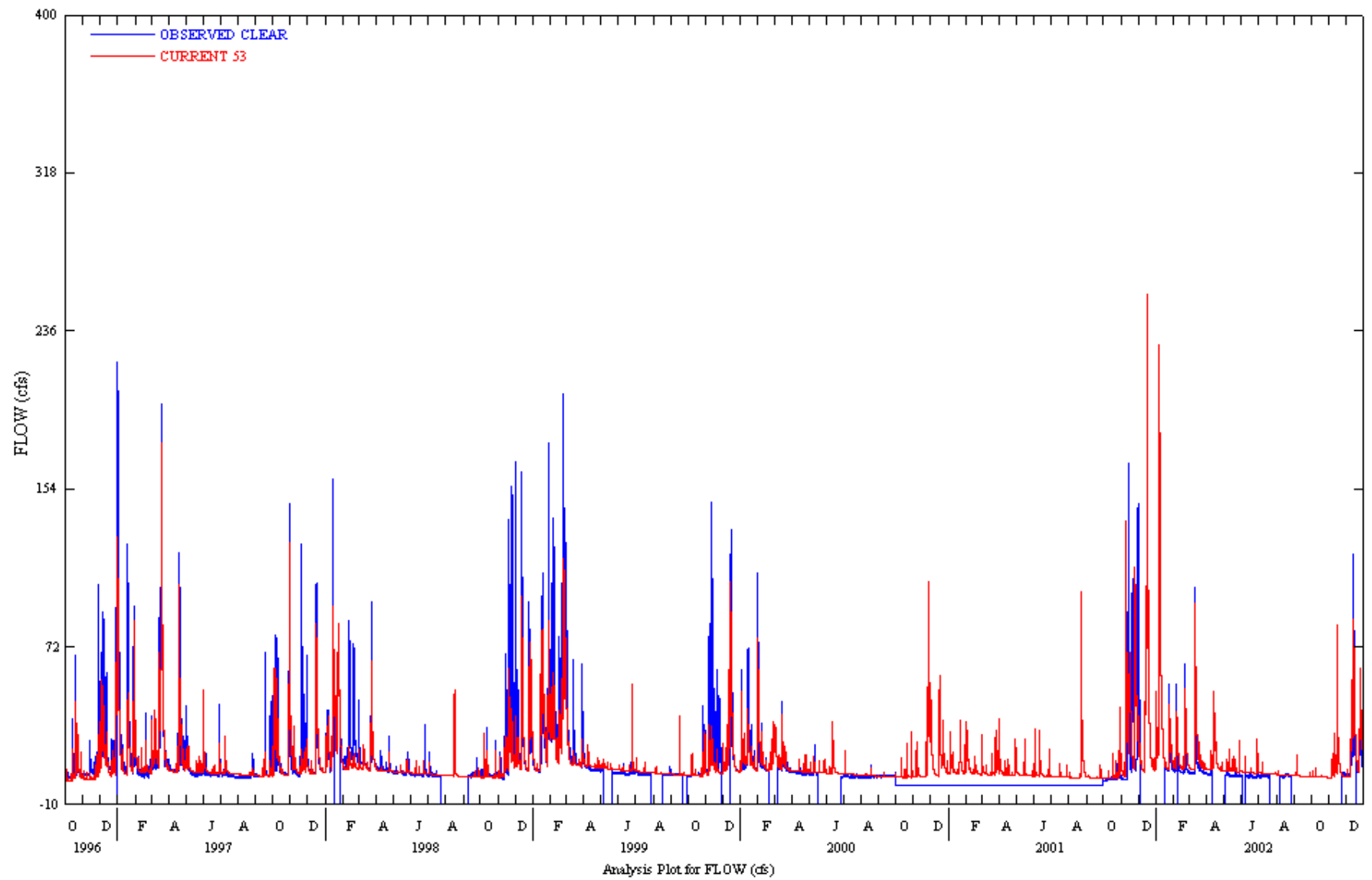


6.2. Clear Creek West – 15 Minute Flows – Calibration



**6.3. Clear Creek – Daily – Calibration**





6.4. Clear Creek – 15 Minute Flows – Calibration

## 7. CLEAR CREEK BASIN STATISTICS

### 7.1. CLEAR CREEK WEST COMPARE STATS - CALIBRATION

C\_TABLE "com\_55\_1b" ---->

Observation time series name:	"of55_1"
Simulation time series name:	"mf55_1"
Beginning date of series comparison:	01/01/2001
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	04/28/2001
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	11328
Nash-Sutcliffe coefficient:	-1.880669

C\_TABLE "com\_55\_2b" ---->

Observation time series name:	"of55_2"
Simulation time series name:	"mf55_2"
Beginning date of series comparison:	05/09/2001
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	11/05/2001
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	17376
Nash-Sutcliffe coefficient:	-0.3020592

C\_TABLE "com\_55\_3b" ---->

Observation time series name:	"of55_3"
Simulation time series name:	"mf55_3"
Beginning date of series comparison:	03/07/2002
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	09/30/2002
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	19968
Nash-Sutcliffe coefficient:	0.5078699

C\_TABLE "com\_55\_4b" ---->

Observation time series name:	"of55_4"
Simulation time series name:	"mf55_4"
Beginning date of series comparison:	10/02/2002
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	12/31/2002
Finishing time of series comparison:	23:30:00
Number of series terms in this interval:	8735
Nash-Sutcliffe coefficient:	0.5826521

C\_TABLE "com\_55\_5b" ---->

Observation time series name:	"of55_5"
Simulation time series name:	"mf55_5"

Beginning date of series comparison:	12/05/2001
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	02/03/2002
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	5856
Nash-Sutcliffe coefficient:	0.6719480

## 7.2. *CLEAR CREEK COMPARE STATS*

C\_TABLE "com\_53\_1b" ---->

Observation time series name:	"of53_1"
Simulation time series name:	"mf53_1"
Beginning date of series comparison:	10/01/2001
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	10/31/2001
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	2976
Nash-Sutcliffe coefficient:	-2.857858

C\_TABLE "com\_53\_2b" ---->

Observation time series name:	"of53_2"
Simulation time series name:	"mf53_2"
Beginning date of series comparison:	01/18/2002
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	02/07/2002
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	2016
Nash-Sutcliffe coefficient:	0.6345308

C\_TABLE "com\_53\_3b" ---->

Observation time series name:	"of53_3"
Simulation time series name:	"mf53_3"
Beginning date of series comparison:	02/09/2002
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	04/09/2002
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	5760
Nash-Sutcliffe coefficient:	0.5126956

C\_TABLE "com\_53\_4b" ---->

Observation time series name:	"of53_4"
Simulation time series name:	"mf53_4"
Beginning date of series comparison:	10/01/1996
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	12/30/1996
Finishing time of series comparison:	23:45:00

Number of series terms in this interval: 8736  
Nash-Sutcliffe coefficient: 0.4973107

C\_TABLE "com\_53\_5b" ---->

Observation time series name: "of53\_5"  
Simulation time series name: "mf53\_5"  
Beginning date of series comparison: 01/01/1997  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 01/15/1997  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 1440  
Nash-Sutcliffe coefficient: 0.6219078

C\_TABLE "com\_53\_6b" ---->

Observation time series name: "of53\_6"  
Simulation time series name: "mf53\_6"  
Beginning date of series comparison: 01/28/1998  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 07/22/1998  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 16896  
Nash-Sutcliffe coefficient: 0.3578682

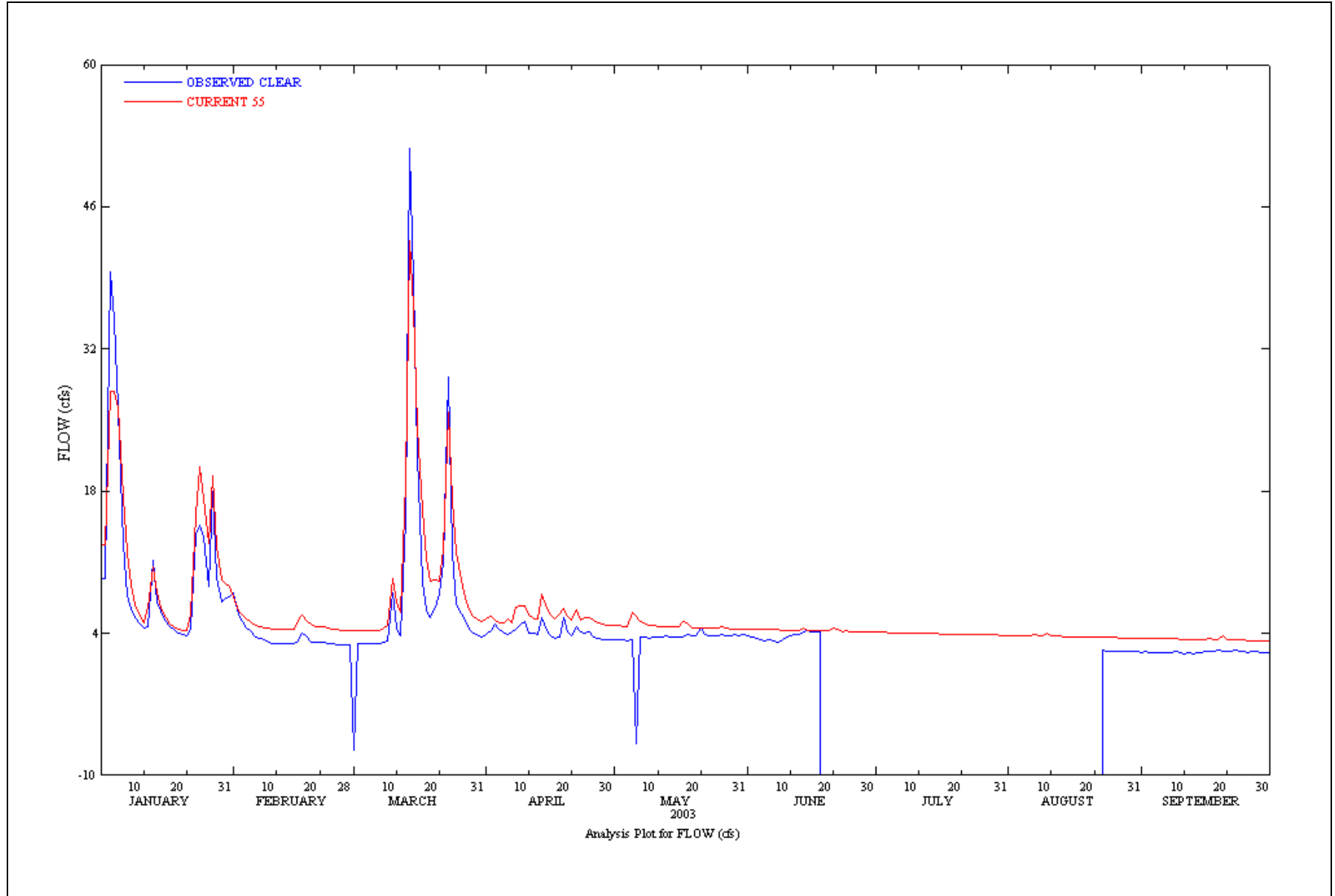
C\_TABLE "com\_53\_7b" ---->

Observation time series name: "of53\_7"  
Simulation time series name: "mf53\_7"  
Beginning date of series comparison: 09/11/1998  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 05/05/1999  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 22752  
Nash-Sutcliffe coefficient: 0.5563172

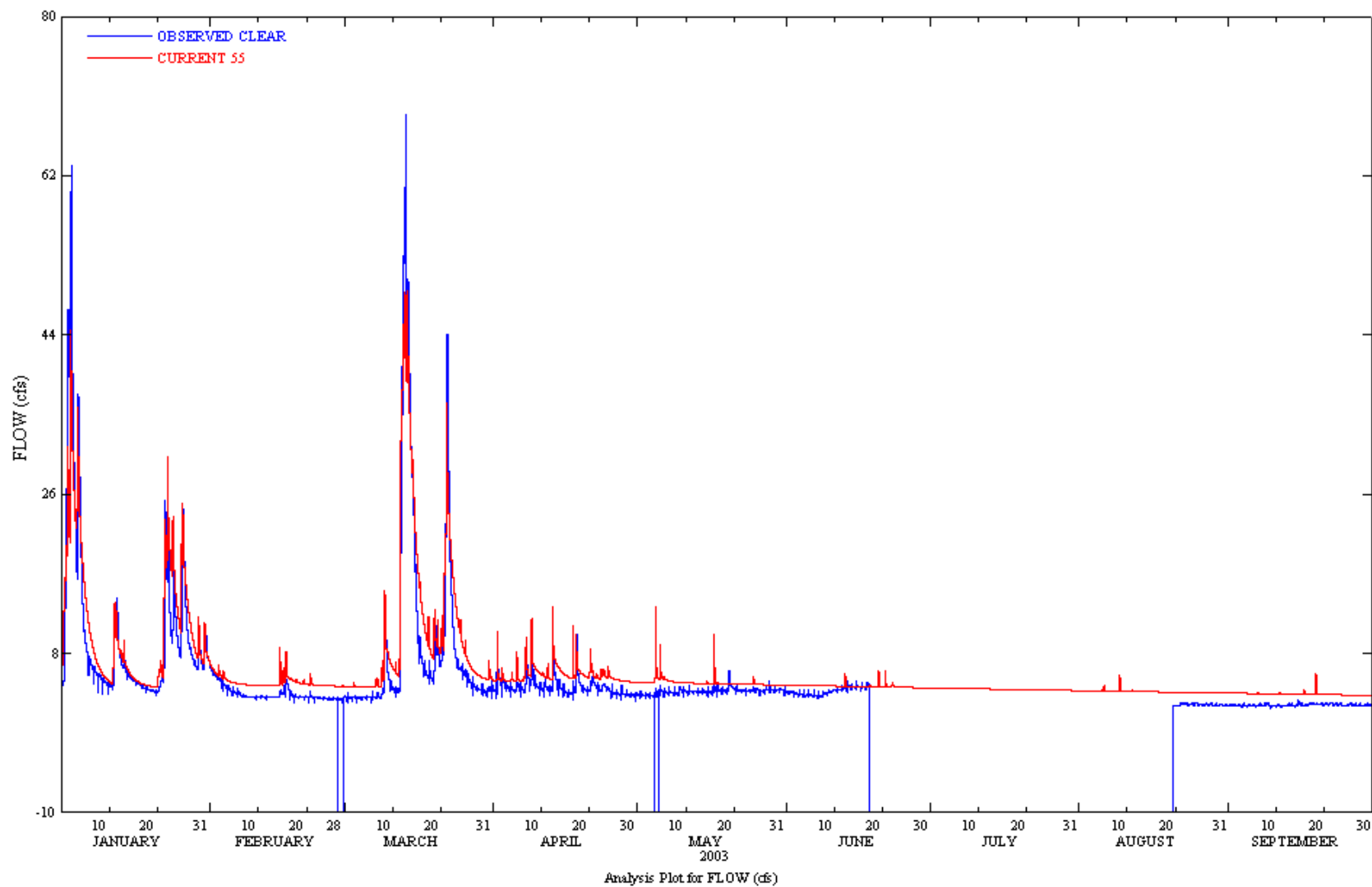
C\_TABLE "com\_53\_8b" ---->

Observation time series name: "of53\_8"  
Simulation time series name: "mf53\_8"  
Beginning date of series comparison: 12/15/1999  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 02/20/2000  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 6528  
Nash-Sutcliffe coefficient: 0.7069158

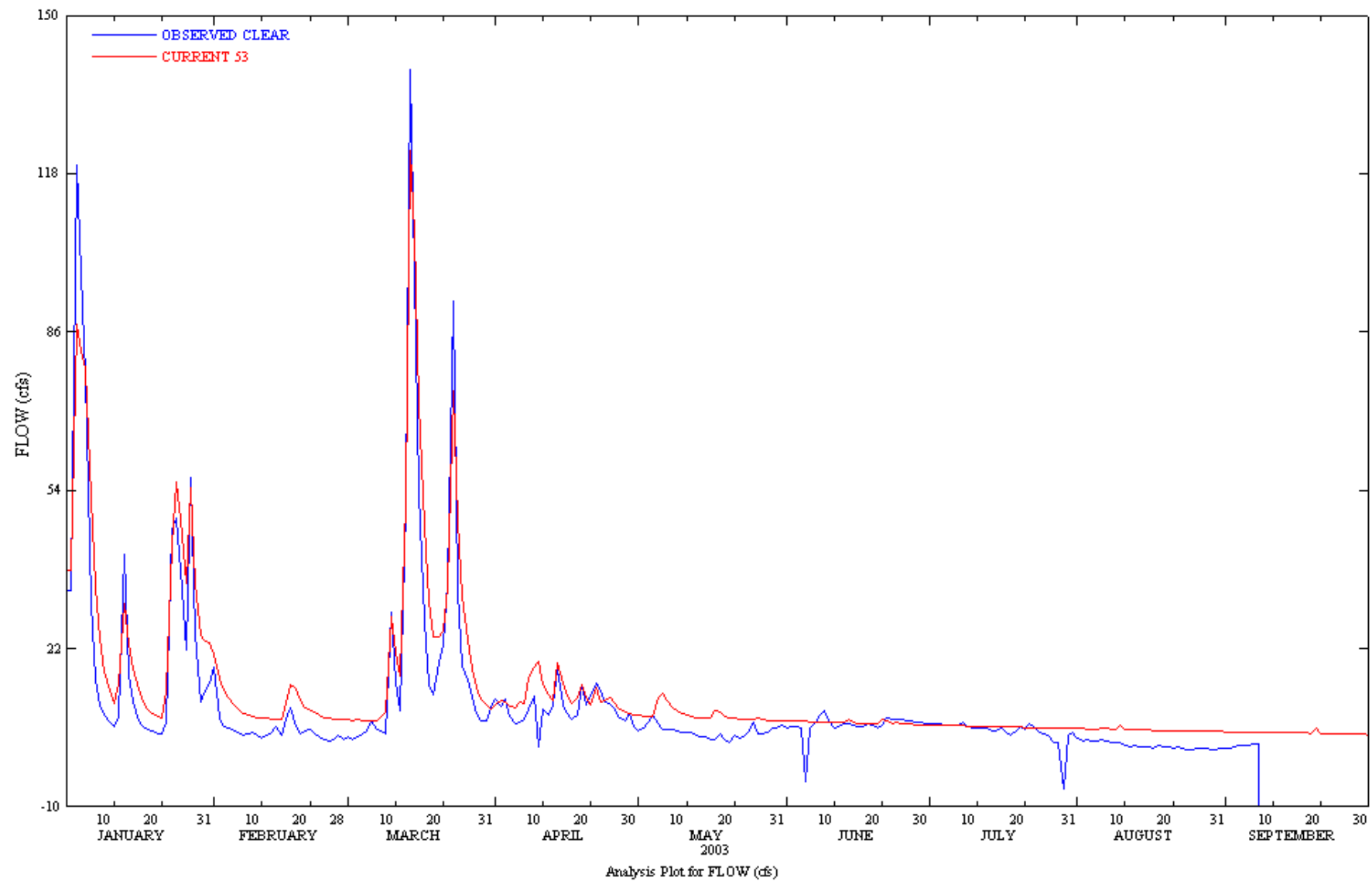
## 8. CLEAR CREEK BASIN VERIFICATION



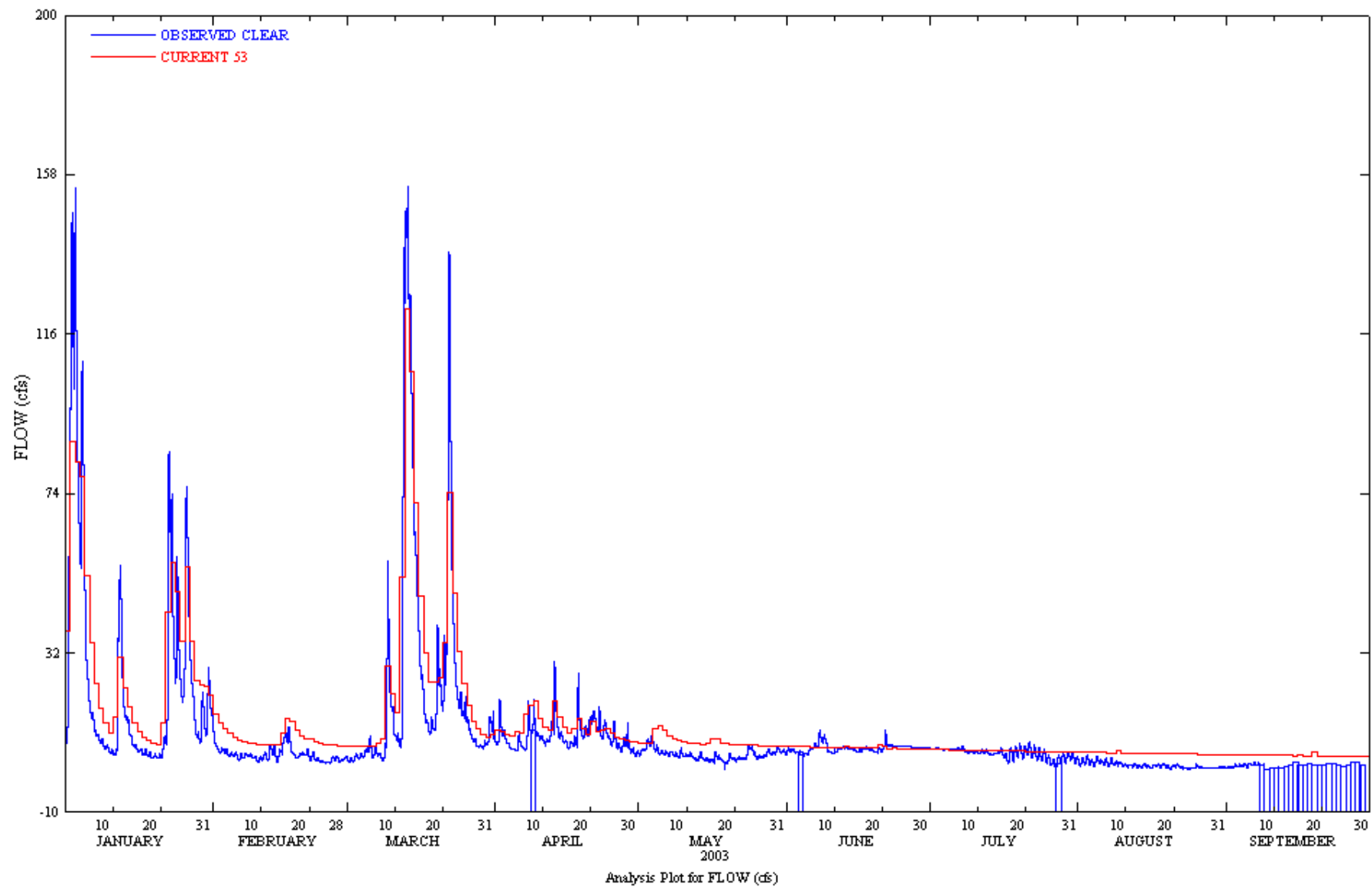
**8.1. Clear Creek West – Daily – Verification**



**8.2. Clear Creek West – 15 Minute Flows – Verification**



**8.3. Clear Creek – Daily – Verification**



**8.4. Clear Creek – 15 Minute Flows – Verification**



## 9. CLEAR CREEK BASIN VERIFICATION STATISTICS

### 9.1. CLEAR CREEK WEST COMPARE STATS - VERIFICATION

C\_TABLE "com\_55\_6b" ---->

Observation time series name:	"of55_6"
Simulation time series name:	"mf55_6"
Beginning date of series comparison:	01/01/2003
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	02/27/2003
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	5568
Nash-Sutcliffe coefficient:	0.8092476

C\_TABLE "com\_55\_7b" ---->

Observation time series name:	"of55_7"
Simulation time series name:	"mf55_7"
Beginning date of series comparison:	03/01/2003
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	05/04/2003
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	6240
Nash-Sutcliffe coefficient:	0.8724863

C\_TABLE "com\_55\_8b" ---->

Observation time series name:	"of55_8"
Simulation time series name:	"mf55_8"
Beginning date of series comparison:	05/06/2003
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	06/16/2003
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	4032
Nash-Sutcliffe coefficient:	-7.539968

C\_TABLE "com\_55\_9b" ---->

Observation time series name:	"of55_9"
Simulation time series name:	"mf55_9"
Beginning date of series comparison:	08/23/2003
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	09/30/2003
Finishing time of series comparison:	23:30:00
Number of series terms in this interval:	3743
Nash-Sutcliffe coefficient:	-127.0414

## 9.2. *CLEAR CREEK COMPARE STATS - VERIFICATION*

C\_TABLE "com\_53\_9b" ---->

Observation time series name:	"of53_9"
Simulation time series name:	"mf53_9"
Beginning date of series comparison:	01/01/2003
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	06/03/2003
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	14784
Nash-Sutcliffe coefficient:	0.7444090

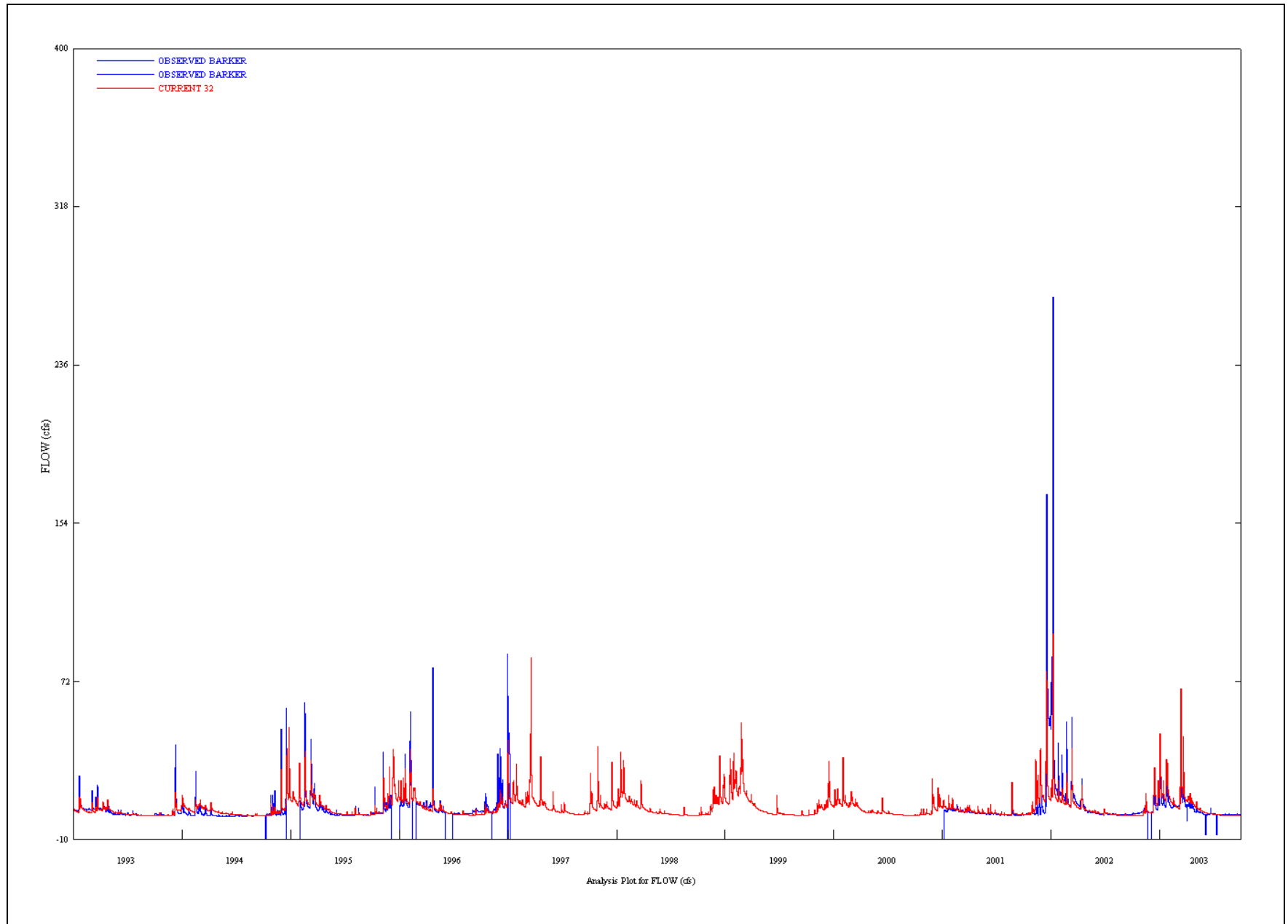
C\_TABLE "com\_53\_10b" ---->

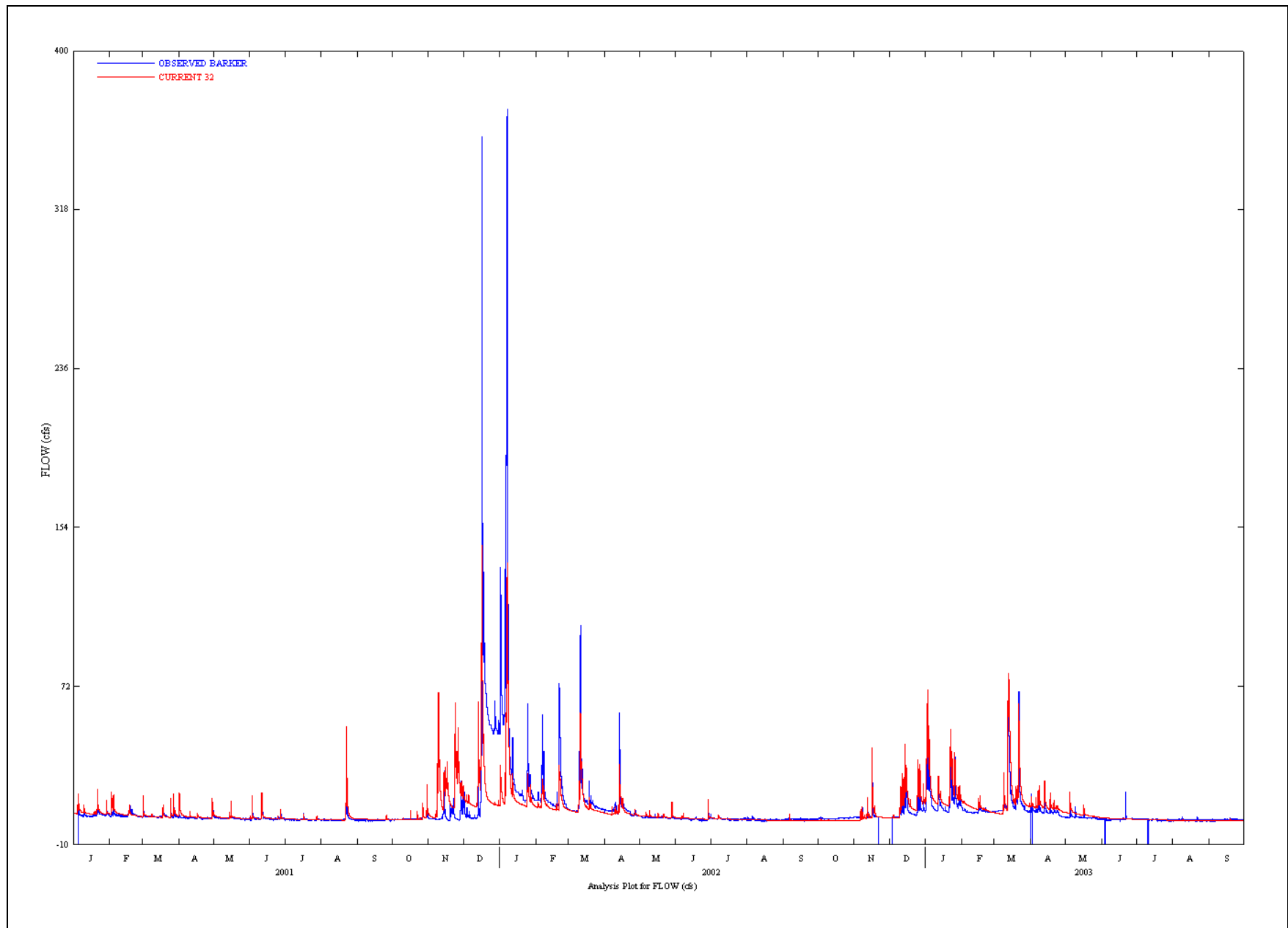
Observation time series name:	"of53_10"
Simulation time series name:	"mf53_10"
Beginning date of series comparison:	06/06/2003
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	07/26/2003
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	4896
Nash-Sutcliffe coefficient:	0.2192504

C\_TABLE "com\_53\_11b" ---->

Observation time series name:	"of53_11"
Simulation time series name:	"mf53_11"
Beginning date of series comparison:	07/30/2003
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	07/30/2003
Finishing time of series comparison:	23:30:00
Number of series terms in this interval:	95
Nash-Sutcliffe coefficient:	-1.295327

## 10. Barker Creek HSPF Hydrologic Model





**10.2. BARKER CREEK 15 MIN. FLOWS – CALIBRATION & VERIFICATION**

### **10.3. BARKER CREEK STATISTICS**

#### **C\_TABLE "com\_32\_1" ---->CALIBRATION**

Observation time series name:	"odf32_1"
Simulation time series name:	"mdf32_1"
Beginning date of series comparison:	01/01/1993
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	10/07/1994
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	645
Nash-Sutcliffe coefficient:	0.5154630

#### **C\_TABLE "com\_32\_2" ---->CALIBRATION**

Observation time series name:	"odf32_2"
Simulation time series name:	"mdf32_2"
Beginning date of series comparison:	10/11/1994
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	12/18/1994
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	69
Nash-Sutcliffe coefficient:	0.7425181

#### **C\_TABLE "com\_32\_3" ---->VERIFICATION**

Observation time series name:	"odf32_3"
Simulation time series name:	"mdf32_3"
Beginning date of series comparison:	02/02/1995
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	12/06/1995
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	308
Nash-Sutcliffe coefficient:	0.7523996

#### **C\_TABLE "com\_32\_4" ---->VERIFICATION**

Observation time series name:	"odf32_4"
Simulation time series name:	"mdf32_4"
Beginning date of series comparison:	01/01/1996
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	02/13/1996
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	44
Nash-Sutcliffe coefficient:	0.7535840

#### **C\_TABLE "com\_32\_5" ---->VERIFICATION**

Observation time series name:	"odf32_5"
Simulation time series name:	"mdf32_5"
Beginning date of series comparison:	02/27/1996
Beginning time of series comparison:	12:00:00

Finishing date of series comparison: 06/02/1996  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 97  
Nash-Sutcliffe coefficient: 0.2541416

C\_TABLE "com\_32\_6" ---->VERIFICATION

Observation time series name: "odf32\_6"  
Simulation time series name: "mdf32\_6"  
Beginning date of series comparison: 06/28/1996  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 11/06/1996  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 132  
Nash-Sutcliffe coefficient: 6.7308404E-02

C\_TABLE "com\_32\_7" ---->VERIFICATION

Observation time series name: "odf32\_7"  
Simulation time series name: "mdf32\_7"  
Beginning date of series comparison: 11/08/1996  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 12/30/1996  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 53  
Nash-Sutcliffe coefficient: 0.3032577

C\_TABLE "com\_32\_8" ---->VERIFICATION

Observation time series name: "odf32\_8"  
Simulation time series name: "mdf32\_8"  
Beginning date of series comparison: 01/02/1997  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 01/07/1997  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 6  
Nash-Sutcliffe coefficient: -5.366984

C\_TABLE "com\_32\_9" ---->CALIBRATION

Observation time series name: "odf32\_9"  
Simulation time series name: "mdf32\_9"  
Beginning date of series comparison: 01/06/2001  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 10/31/2001  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 299  
Nash-Sutcliffe coefficient: 8.8870123E-02

C\_TABLE "com\_32\_10" ---->CALIBRATION

Observation time series name:	"odf32_10"
Simulation time series name:	"mdf32_10"
Beginning date of series comparison:	03/01/2002
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	11/20/2002
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	265
Nash-Sutcliffe coefficient:	0.8915250

C\_TABLE "com\_32\_11" ---->VERIFICATION

Observation time series name:	"odf32_11"
Simulation time series name:	"mdf32_11"
Beginning date of series comparison:	12/05/2002
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	03/31/2003
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	117
Nash-Sutcliffe coefficient:	0.4106332

C\_TABLE "com\_32\_12" ---->VERIFICATION

Observation time series name:	"odf32_12"
Simulation time series name:	"mdf32_12"
Beginning date of series comparison:	04/04/2003
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	05/31/2003
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	58
Nash-Sutcliffe coefficient:	-0.6949813

C\_TABLE "com\_32\_13" ---->VERIFICATION

Observation time series name:	"odf32_13"
Simulation time series name:	"mdf32_13"
Beginning date of series comparison:	06/06/2003
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	07/09/2003
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	34
Nash-Sutcliffe coefficient:	-0.3733891

C\_TABLE "com\_32\_14" ---->VERIFICATION

Observation time series name:	"odf32_14"
Simulation time series name:	"mdf32_14"
Beginning date of series comparison:	07/13/2003
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	09/29/2003

Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 79  
Nash-Sutcliffe coefficient: -1.697219

C\_TABLE "com\_32\_9b" ---->CALIBRATION

Observation time series name: "of32\_9"  
Simulation time series name: "mf32\_9"  
Beginning date of series comparison: 01/06/2001  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 10/31/2001  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 28704  
Nash-Sutcliffe coefficient: -0.2928521

C\_TABLE "com\_32\_10b" ---->CALIBRATION

Observation time series name: "of32\_10"  
Simulation time series name: "mf32\_10"  
Beginning date of series comparison: 03/01/2002  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 11/20/2002  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 25440  
Nash-Sutcliffe coefficient: 0.8132529

C\_TABLE "com\_32\_11b" ---->VERIFICATION

Observation time series name: "of32\_11"  
Simulation time series name: "mf32\_11"  
Beginning date of series comparison: 12/05/2002  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 03/31/2003  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 11232  
Nash-Sutcliffe coefficient: 0.4265865

C\_TABLE "com\_32\_12b" ---->VERIFICATION

Observation time series name: "of32\_12"  
Simulation time series name: "mf32\_12"  
Beginning date of series comparison: 04/04/2003  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 05/31/2003  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 5568  
Nash-Sutcliffe coefficient: -0.5974399

C\_TABLE "com\_32\_13b" ---->VERIFICATION

Observation time series name: "of32\_13"

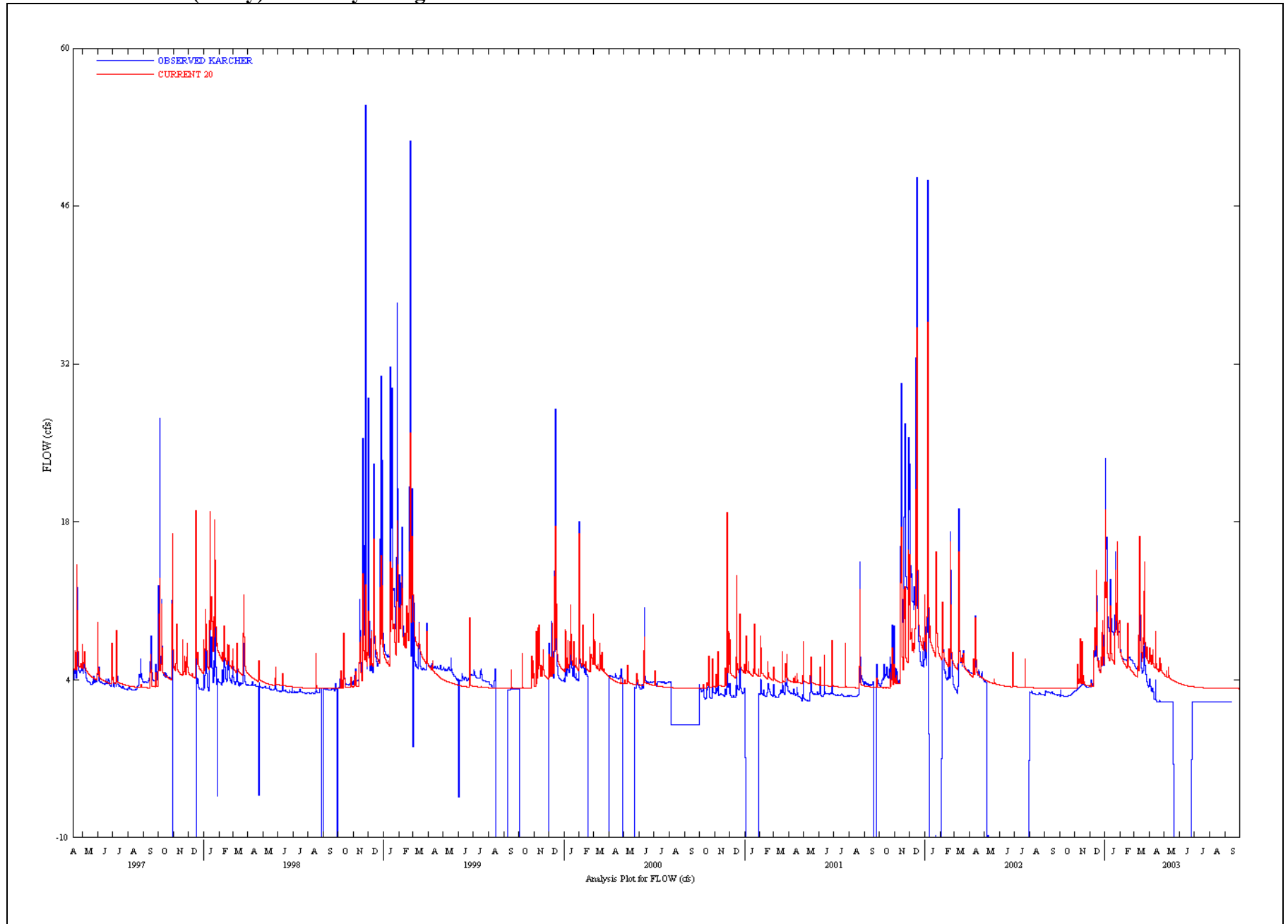


Simulation time series name: "mf32\_13"  
Beginning date of series comparison: 06/06/2003  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 07/09/2003  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 3264  
Nash-Sutcliffe coefficient: -0.1407945

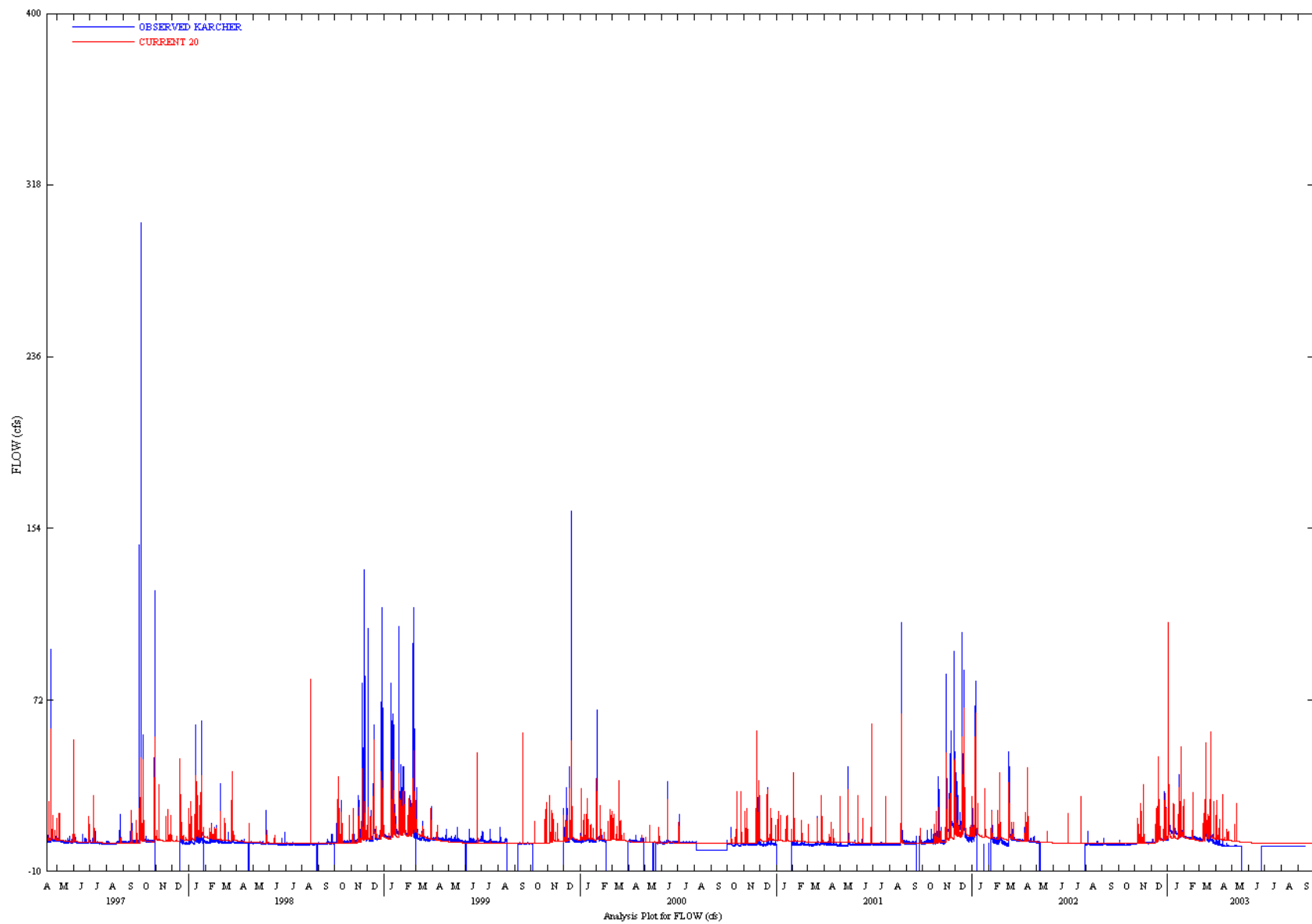
C\_TABLE "com\_32\_14b" ---->VERIFICATION

Observation time series name: "of32\_14"  
Simulation time series name: "mf32\_14"  
Beginning date of series comparison: 07/13/2003  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 09/30/2003  
Finishing time of series comparison: 23:30:00  
Number of series terms in this interval: 7679  
Nash-Sutcliffe coefficient: -0.6836775

## 11. Karcher Creek (Olney) HSPF Hydrologic Model



### 11.1. KARCHER CREEK DAILY FLOWS – CALIBRATION & VERIFICATION



## 11.2. KARCHER CREEK 15 MIN. FLOWS – CALIBRATION & VERIFICATION

### 11.3. Karcher Creek Statistics

C\_TABLE "com\_32\_1" ---->

Observation time series name:	"odf20_1"
Simulation time series name:	"mdf20_1"
Beginning date of series comparison:	04/12/1997
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	10/28/1997
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	200
Nash-Sutcliffe coefficient:	0.6189576

C\_TABLE "com\_32\_2" ---->

Observation time series name:	"odf20_2"
Simulation time series name:	"mdf20_2"
Beginning date of series comparison:	12/18/1997
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	01/27/1998
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	41
Nash-Sutcliffe coefficient:	0.2472431

C\_TABLE "com\_32\_3" ---->

Observation time series name:	"odf20_3"
Simulation time series name:	"mdf20_3"
Beginning date of series comparison:	01/31/1998
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	04/21/1998
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	81
Nash-Sutcliffe coefficient:	-1.751070

C\_TABLE "com\_32\_4" ---->

Observation time series name:	"odf20_4"
Simulation time series name:	"mdf20_4"
Beginning date of series comparison:	04/25/1998
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	08/26/1998
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	124
Nash-Sutcliffe coefficient:	-4.070391

C\_TABLE "com\_32\_5" ---->

Observation time series name:	"odf20_5"
Simulation time series name:	"mdf20_5"
Beginning date of series comparison:	09/02/1998
Beginning time of series comparison:	12:00:00

Finishing date of series comparison: 09/27/1998  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 26  
Nash-Sutcliffe coefficient: -0.4547377

C\_TABLE "com\_32\_6" ---->

Observation time series name: "odf20\_6"  
Simulation time series name: "mdf20\_6"  
Beginning date of series comparison: 10/02/1998  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 02/27/1999  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 149  
Nash-Sutcliffe coefficient: 0.4931779

C\_TABLE "com\_32\_7" ---->

Observation time series name: "odf20\_7"  
Simulation time series name: "mdf20\_7"  
Beginning date of series comparison: 03/03/1999  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 05/31/1999  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 90  
Nash-Sutcliffe coefficient: -6.9505624E-02

C\_TABLE "com\_32\_8" ---->

Observation time series name: "odf20\_8"  
Simulation time series name: "mdf20\_8"  
Beginning date of series comparison: 06/04/1999  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 08/15/1999  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 73  
Nash-Sutcliffe coefficient: -0.5668939

C\_TABLE "com\_32\_9" ---->

Observation time series name: "odf20\_9"  
Simulation time series name: "mdf20\_9"  
Beginning date of series comparison: 12/03/1999  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 02/16/2000  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 76  
Nash-Sutcliffe coefficient: 0.7285934

C\_TABLE "com\_32\_10" ---->

Observation time series name: "odf20\_10"  
Simulation time series name: "mdf20\_10"  
Beginning date of series comparison: 04/02/2000  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 04/27/2000  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 26  
Nash-Sutcliffe coefficient: -4.647082

C\_TABLE "com\_32\_11" ---->

Observation time series name: "odf20\_11"  
Simulation time series name: "mdf20\_11"  
Beginning date of series comparison: 05/24/2000  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 08/04/2000  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 73  
Nash-Sutcliffe coefficient: 0.6163298

C\_TABLE "com\_32\_12" ---->

Observation time series name: "odf20\_12"  
Simulation time series name: "mdf20\_12"  
Beginning date of series comparison: 10/02/2000  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 12/31/2000  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 91  
Nash-Sutcliffe coefficient: -1.765285

C\_TABLE "com\_32\_13" ---->

Observation time series name: "odf20\_13"  
Simulation time series name: "mdf20\_13"  
Beginning date of series comparison: 01/31/2001  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 09/17/2001  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 230  
Nash-Sutcliffe coefficient: -0.5342925

C\_TABLE "com\_32\_14" ---->

Observation time series name: "odf20\_14"  
Simulation time series name: "mdf20\_14"  
Beginning date of series comparison: 10/01/2001  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 12/31/2001  
Finishing time of series comparison: 12:00:00

Number of series terms in this interval: 92  
Nash-Sutcliffe coefficient: 0.6237632

C\_TABLE "com\_32\_15" ---->

Observation time series name: "odf20\_15"  
Simulation time series name: "mdf20\_15"  
Beginning date of series comparison: 02/05/2002  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 05/04/2002  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 89  
Nash-Sutcliffe coefficient: 0.8352854

C\_TABLE "com\_32\_16" ---->

Observation time series name: "odf20\_16"  
Simulation time series name: "mdf20\_16"  
Beginning date of series comparison: 12/01/2002  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 04/13/2003  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 134  
Nash-Sutcliffe coefficient: 0.6651274

C\_TABLE "com\_32\_13b" ---->

Observation time series name: "of20\_13"  
Simulation time series name: "mf20\_13"  
Beginning date of series comparison: 01/31/2001  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 09/17/2001  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 22080  
Nash-Sutcliffe coefficient: -0.5179326

C\_TABLE "com\_32\_14b" ---->

Observation time series name: "of20\_14"  
Simulation time series name: "mf20\_14"  
Beginning date of series comparison: 10/01/2001  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 12/31/2001  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 8832  
Nash-Sutcliffe coefficient: 0.5497471

C\_TABLE "com\_32\_15b" ---->

Observation time series name: "of20\_15"  
Simulation time series name: "mf20\_15"

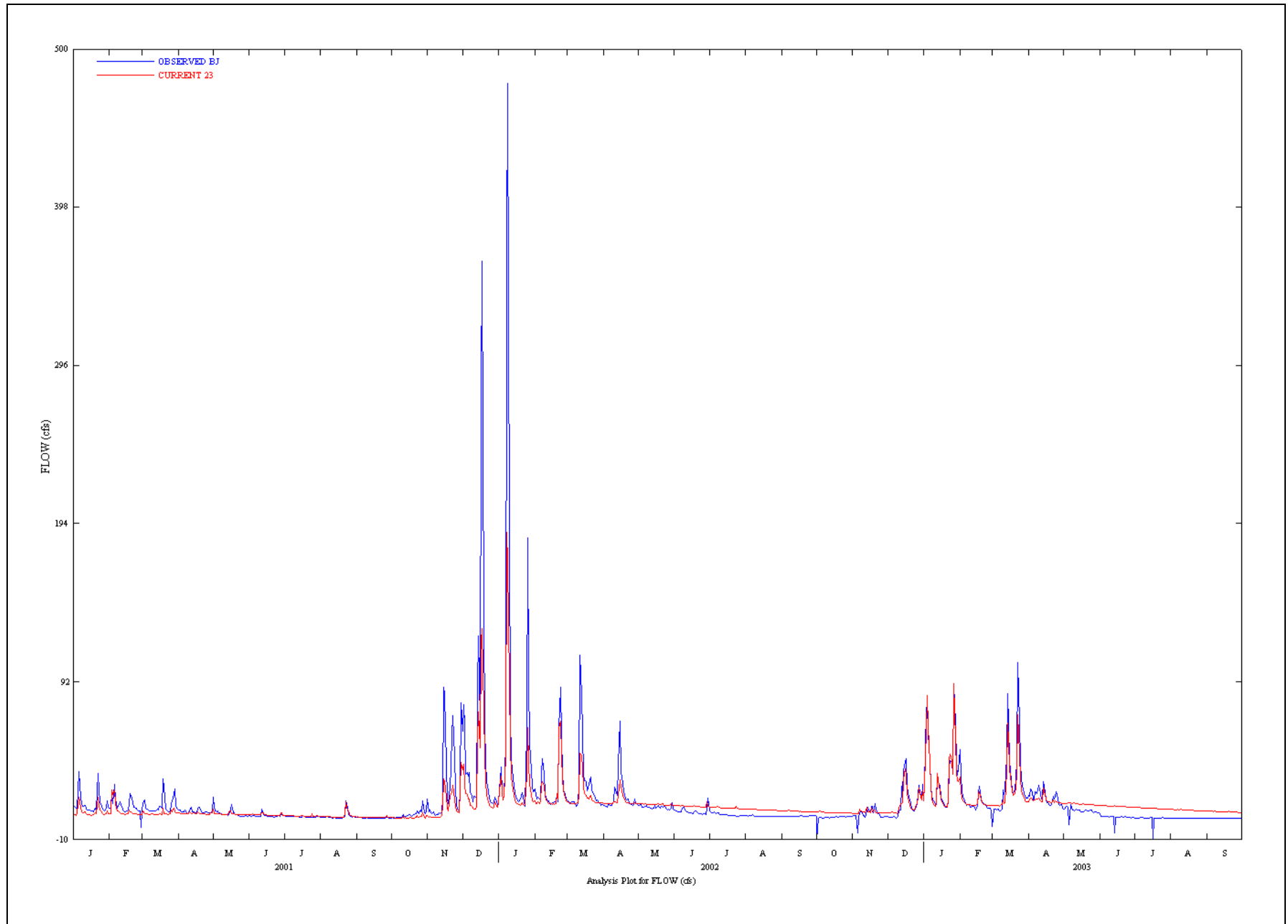
Beginning date of series comparison:	02/05/2002
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	05/04/2002
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	8544
Nash-Sutcliffe coefficient:	0.5683482

C\_TABLE "com\_32\_16b" ---->

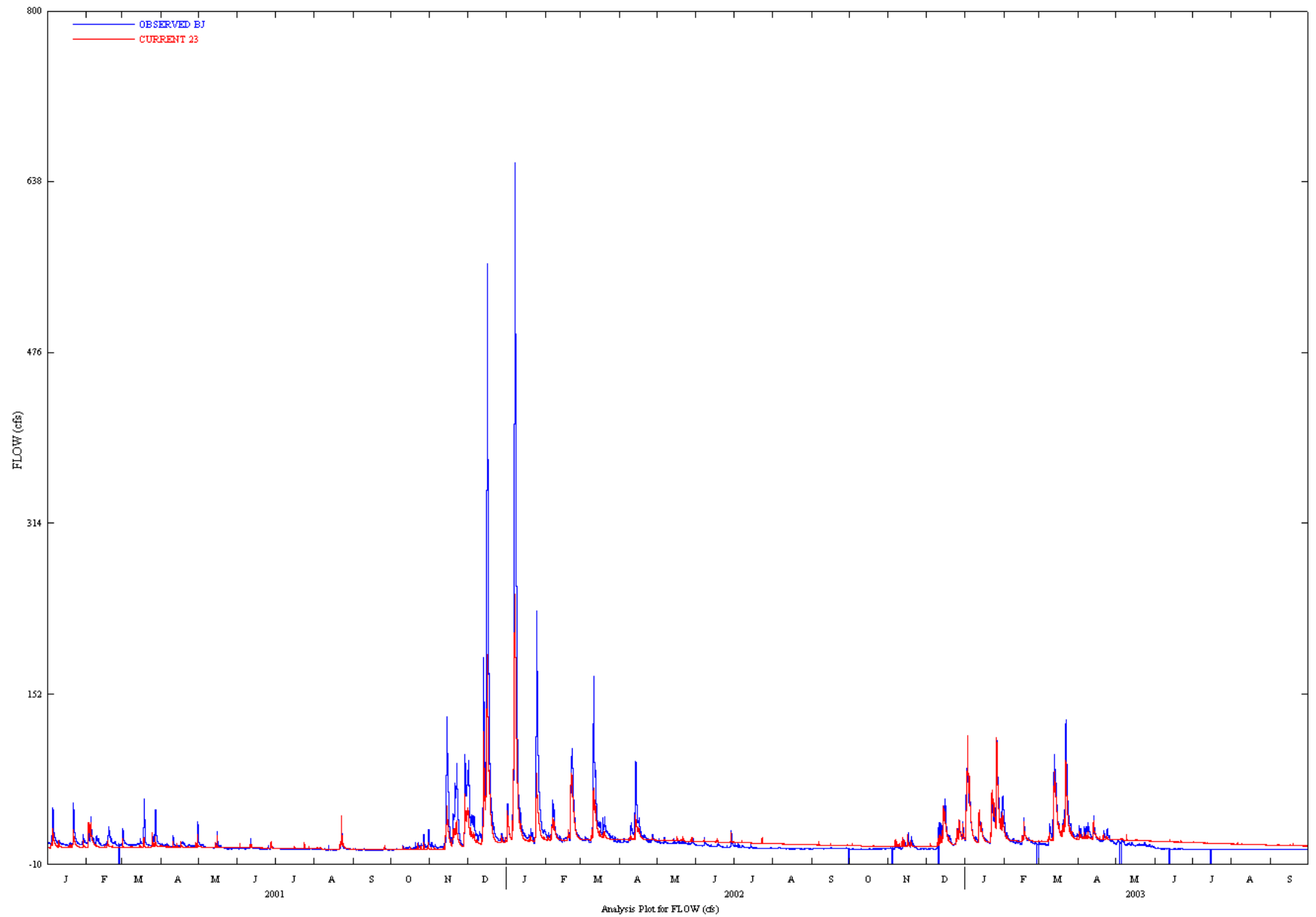
Observation time series name:	"of20_16"
Simulation time series name:	"mf20_16"
Beginning date of series comparison:	12/01/2002
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	04/13/2003
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	12864
Nash-Sutcliffe coefficient:	0.2392844



## 12. Blackjack Creek HSPF Hydrologic Model



### 12.1. BLACKJACK CREEK DAILY FLOWS – CALIBRATION & VERIFICATION



**12.2. BLACKJACK CREEK 15 MIN. FLOWS – CALIBRATION & VERIFICATION**

### 12.3. *Blackjack Creek Statistics*

C\_TABLE "com\_23\_1" ---->

Observation time series name:	"odf23_1"
Simulation time series name:	"mdf23_1"
Beginning date of series comparison:	01/01/2001
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	02/26/2001
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	57
Nash-Sutcliffe coefficient:	2.7029160E-02

C\_TABLE "com\_23\_2" ---->

Observation time series name:	"odf23_2"
Simulation time series name:	"mdf23_2"
Beginning date of series comparison:	03/01/2001
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	09/30/2002
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	579
Nash-Sutcliffe coefficient:	0.6196075

C\_TABLE "com\_23\_1b" ---->

Observation time series name:	"of23_1"
Simulation time series name:	"mf23_1"
Beginning date of series comparison:	01/01/2001
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	02/26/2001
Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	5472
Nash-Sutcliffe coefficient:	5.1791597E-02

C\_TABLE "com\_23\_2b" ---->

Observation time series name:	"of23_2"
Simulation time series name:	"mf23_2"
Beginning date of series comparison:	03/01/2001
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	09/30/2002
Finishing time of series comparison:	23:45:00

Number of series terms in this interval: 55584  
Nash-Sutcliffe coefficient: 0.6028987

C\_TABLE "com\_23\_3b" ---->

Observation time series name: "of23\_3"  
Simulation time series name: "mf23\_3"  
Beginning date of series comparison: 01/01/2003  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 02/26/2003  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 5472  
Nash-Sutcliffe coefficient: 0.9053918

C\_TABLE "com\_23\_4b" ---->

Observation time series name: "of23\_4"  
Simulation time series name: "mf23\_4"  
Beginning date of series comparison: 03/02/2003  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 05/03/2003  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 6048  
Nash-Sutcliffe coefficient: 0.8263698

C\_TABLE "com\_23\_5b" ---->

Observation time series name: "of23\_5"  
Simulation time series name: "mf23\_5"  
Beginning date of series comparison: 05/07/2003  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 06/11/2003  
Finishing time of series comparison: 23:45:00  
Number of series terms in this interval: 3456  
Nash-Sutcliffe coefficient: -6.569969

C\_TABLE "com\_23\_6b" ---->

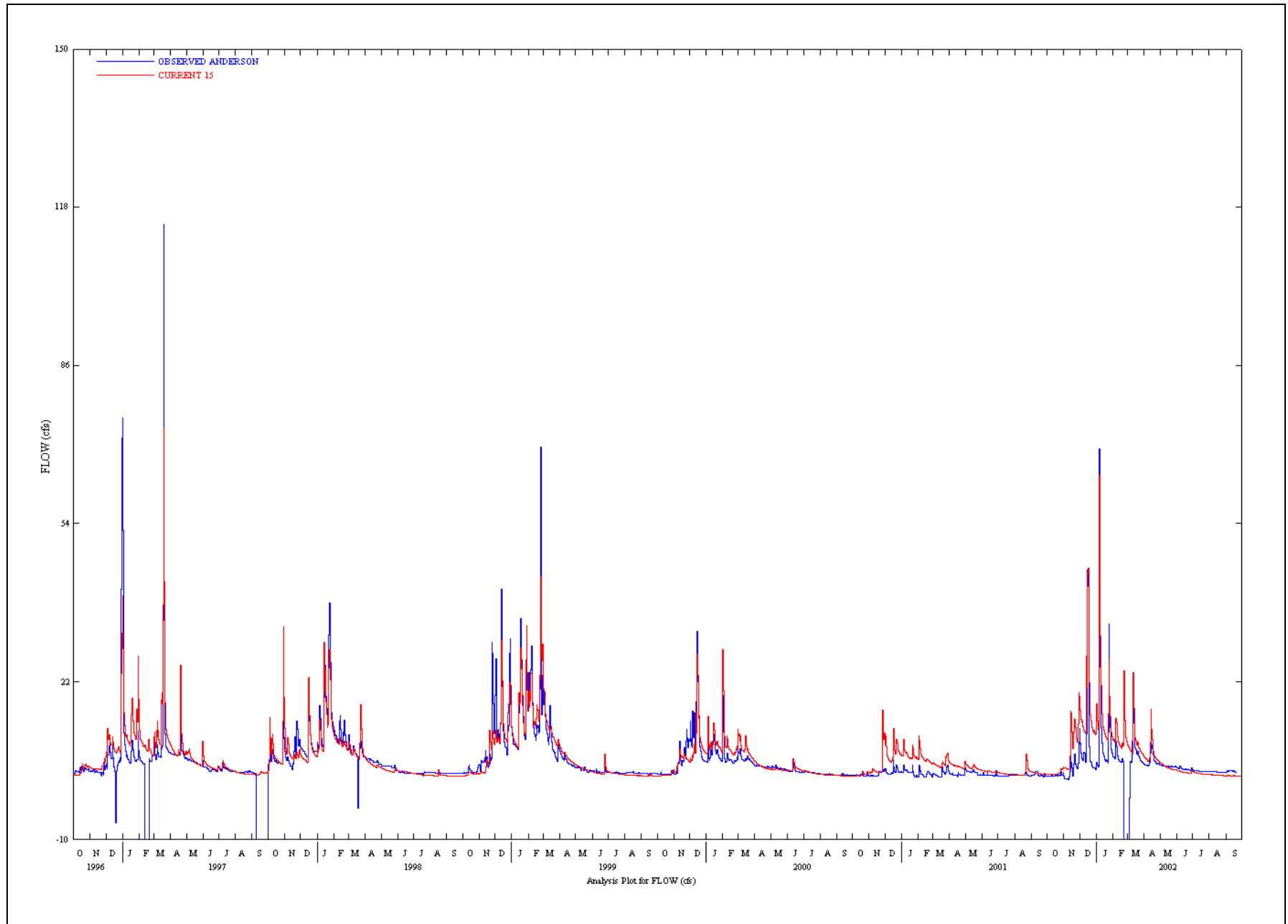
Observation time series name: "of23\_6"  
Simulation time series name: "mf23\_6"  
Beginning date of series comparison: 06/15/2003  
Beginning time of series comparison: 00:00:00  
Finishing date of series comparison: 07/14/2003

Finishing time of series comparison:	23:45:00
Number of series terms in this interval:	2880
Nash-Sutcliffe coefficient:	-546.1852

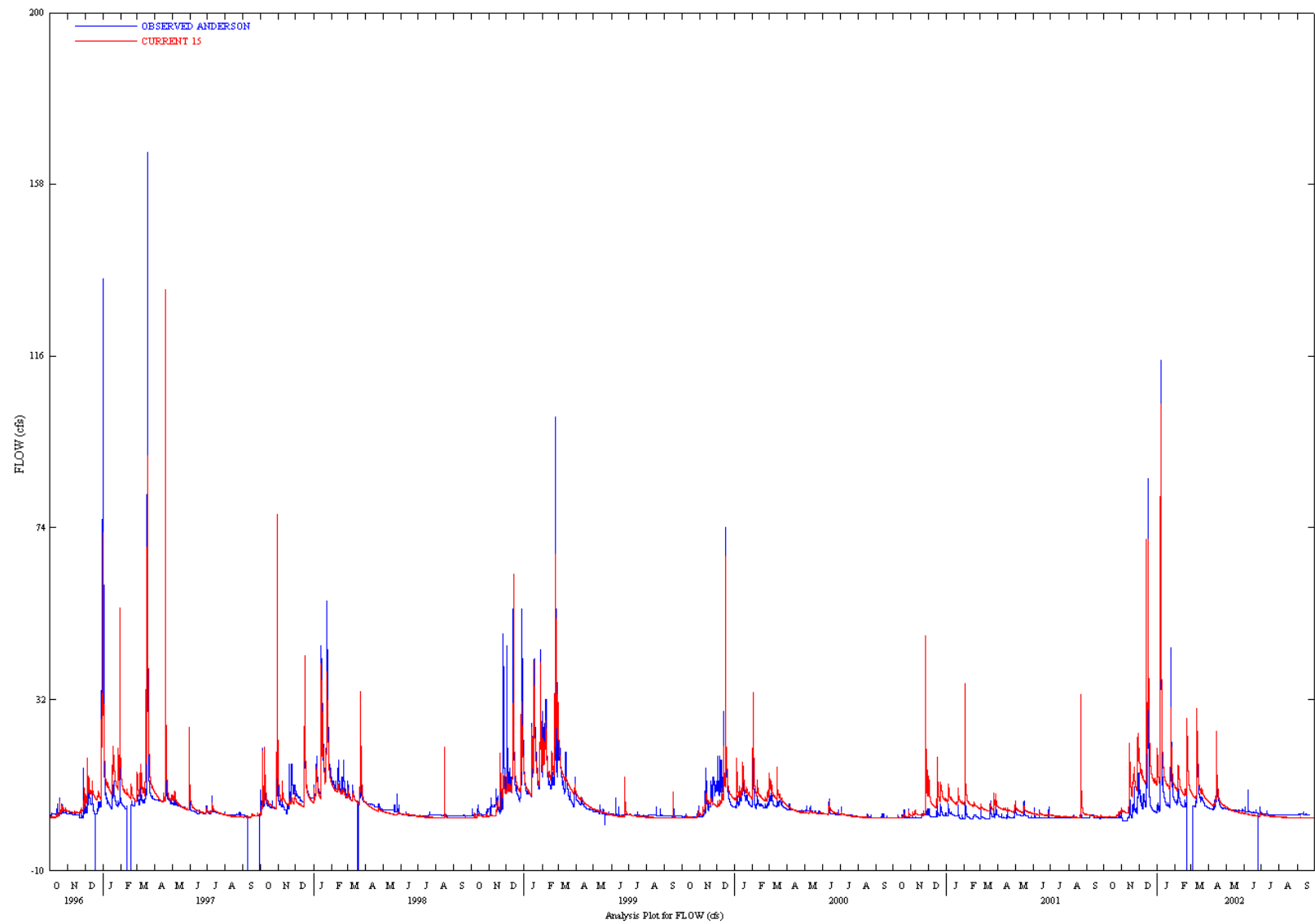
C\_TABLE "com\_23\_7b" ---->

Observation time series name:	"of23_7"
Simulation time series name:	"mf23_7"
Beginning date of series comparison:	07/18/2003
Beginning time of series comparison:	00:00:00
Finishing date of series comparison:	09/30/2003
Finishing time of series comparison:	23:30:00
Number of series terms in this interval:	7199
Nash-Sutcliffe coefficient:	-13924.73

### 13. Anderson Creek HSPF Hydrologic Model



**13.1. ANDERSON CREEK DAILY FLOWS – CALIBRATION & VERIFICATION**



**13.2. ANDERSON CREEK 15 MIN FLOWS – CALIBRATION & VERIFICATION**

### 13.3. *Anderson Creek Statistics*

C\_TABLE "com\_15\_1" ---->

Observation time series name:	"odf15_1"
Simulation time series name:	"mdf15_1"
Beginning date of series comparison:	10/01/1996
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	12/18/1996
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	79
Nash-Sutcliffe coefficient:	-0.3566762

C\_TABLE "com\_15\_2" ---->

Observation time series name:	"odf15_2"
Simulation time series name:	"mdf15_2"
Beginning date of series comparison:	12/20/1996
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	02/11/1997
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	54
Nash-Sutcliffe coefficient:	0.5583411

C\_TABLE "com\_15\_3" ---->

Observation time series name:	"odf15_3"
Simulation time series name:	"mdf15_3"
Beginning date of series comparison:	02/20/1997
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	09/08/1997
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	201
Nash-Sutcliffe coefficient:	0.8058236

C\_TABLE "com\_15\_4" ---->

Observation time series name:	"odf15_4"
Simulation time series name:	"mdf15_4"
Beginning date of series comparison:	10/01/1997
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	03/18/1998
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	169
Nash-Sutcliffe coefficient:	0.8124498

C\_TABLE "com\_15\_5" ---->

Observation time series name:	"odf15_5"
Simulation time series name:	"mdf15_5"
Beginning date of series comparison:	03/20/1998
Beginning time of series comparison:	12:00:00



Finishing date of series comparison: 09/30/2001  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 1291  
Nash-Sutcliffe coefficient: 0.7603830

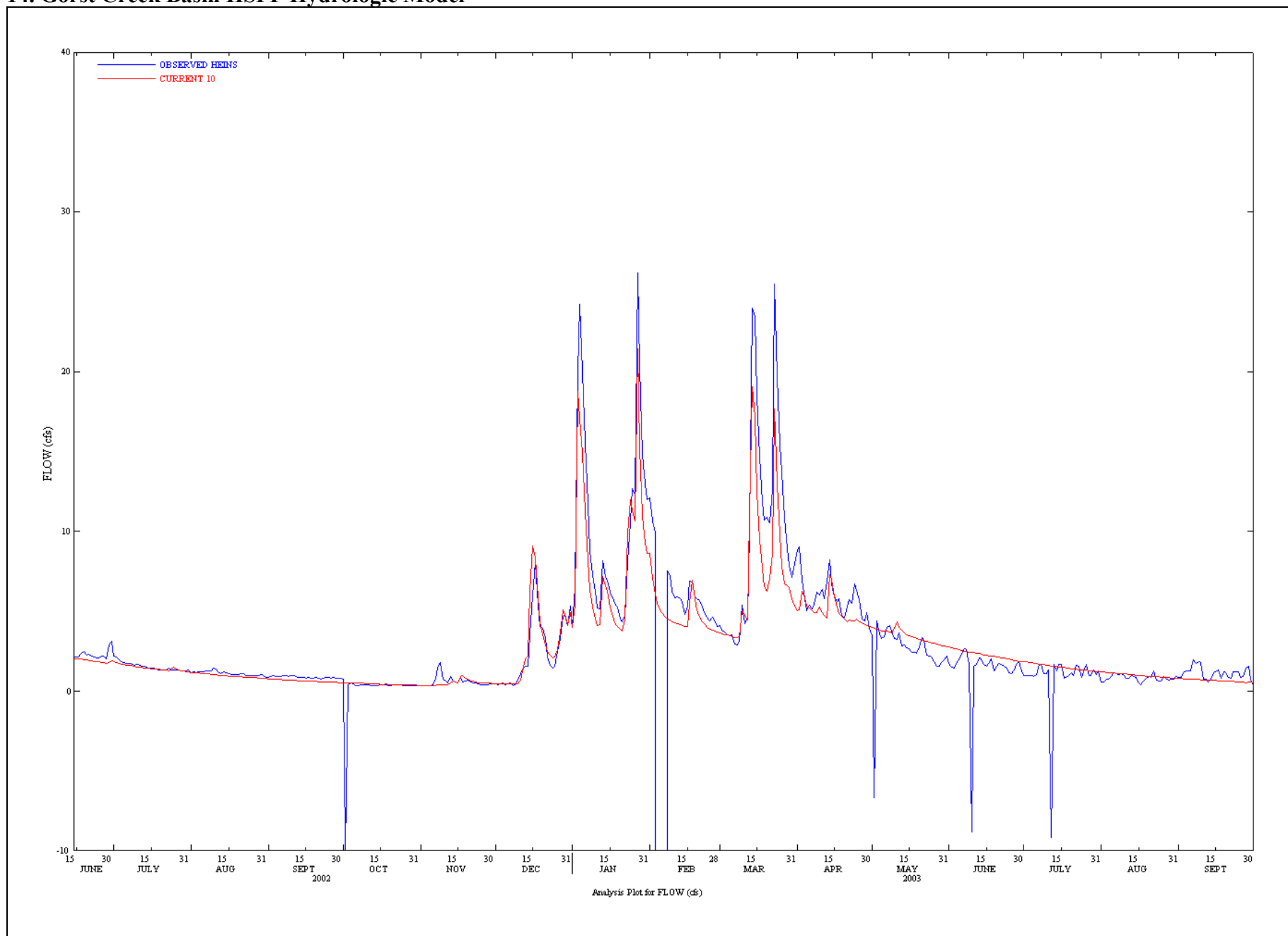
C\_TABLE "com\_15\_6" ---->

Observation time series name: "odf15\_6"  
Simulation time series name: "mdf15\_6"  
Beginning date of series comparison: 10/01/2001  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 02/20/2002  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 143  
Nash-Sutcliffe coefficient: 0.6243212

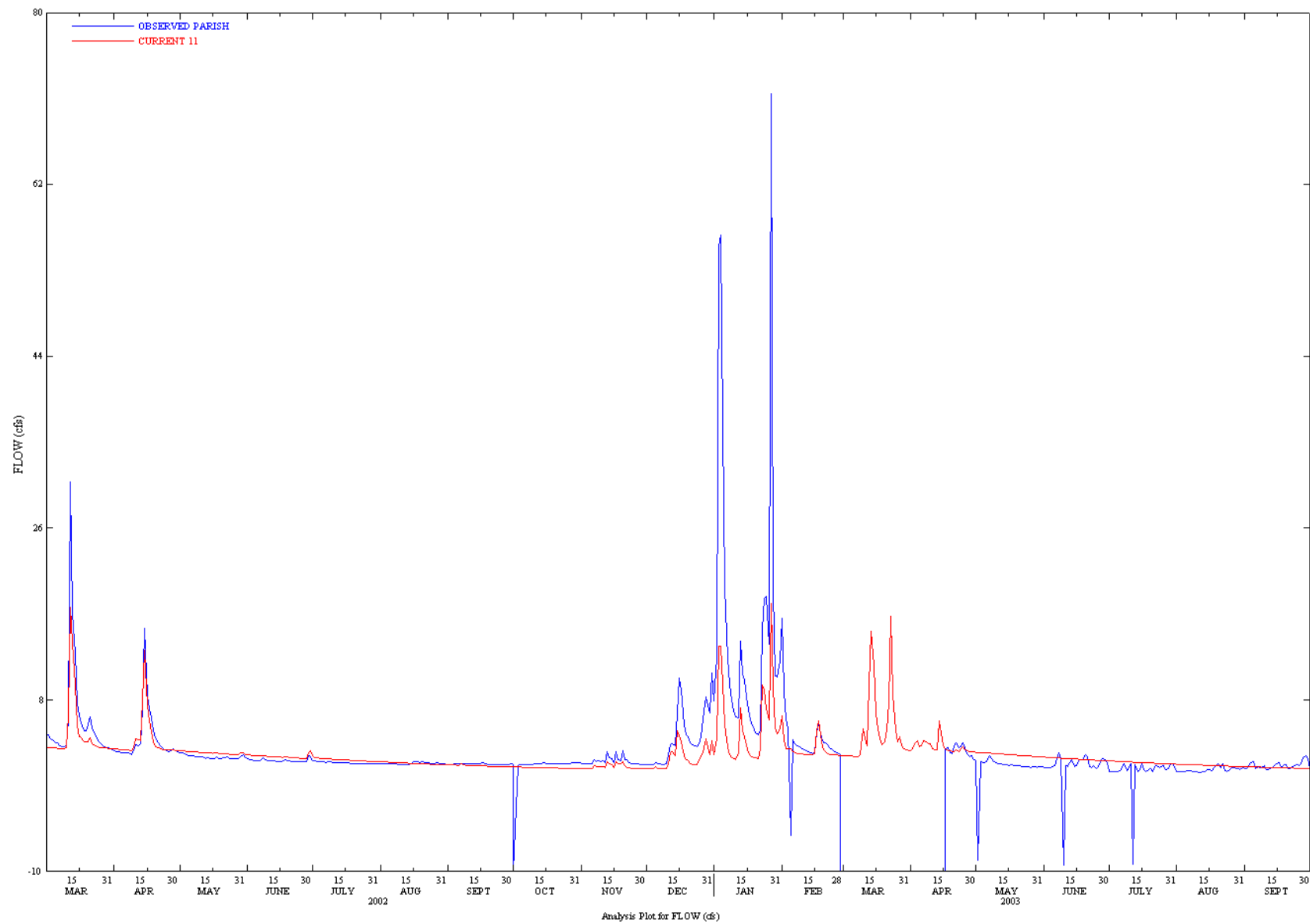
C\_TABLE "com\_15\_7" ---->

Observation time series name: "odf15\_7"  
Simulation time series name: "mdf15\_7"  
Beginning date of series comparison: 03/06/2002  
Beginning time of series comparison: 12:00:00  
Finishing date of series comparison: 09/22/2002  
Finishing time of series comparison: 12:00:00  
Number of series terms in this interval: 201  
Nash-Sutcliffe coefficient: 0.6490752

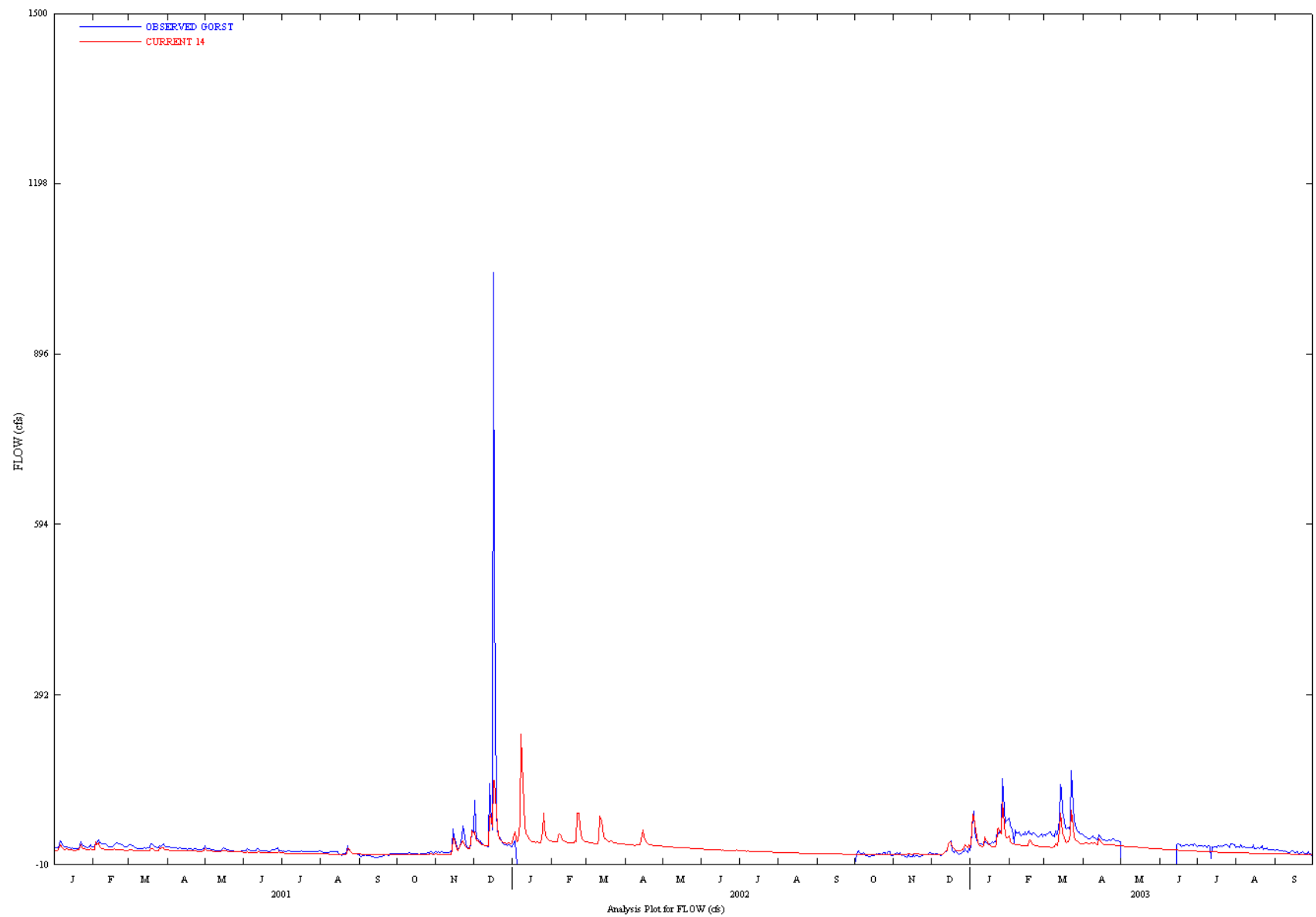
## 14. Gorst Creek Basin HSPF Hydrologic Model



### 14.1. HEINS CK – CALIBRATION AND VERIFICATION



## 14.2. PARISH CK – CALIBRATION AND VERIFICATION



### 14.3. GORST CK – CALIBRATION AND VERIFICATION

#### **14.4. GORST BASIN STATISTICS**

##### **COMPARE STATISTICS – CALIBRATION**

C\_TABLE "com\_10\_1" ---->

Observation time series name:	"odf10_1"
Simulation time series name:	"mdf10_1"
Beginning date of series comparison:	06/15/2002
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	09/30/2002
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	108
Nash-Sutcliffe coefficient:	0.7418306

C\_TABLE "com\_10\_2" ---->

Observation time series name:	"odf10_2"
Simulation time series name:	"mdf10_2"
Beginning date of series comparison:	10/02/2002
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	02/02/2003
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	124
Nash-Sutcliffe coefficient:	0.9159030

C\_TABLE "com\_11\_1" ---->

Observation time series name:	"odf11_1"
Simulation time series name:	"mdf11_1"
Beginning date of series comparison:	03/01/2002
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	09/29/2002
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	213
Bias:	-6.5678135E-02
Nash-Sutcliffe coefficient:	0.8458763

C\_TABLE "com\_14\_1" ---->

Observation time series name:	"odf14_1"
Simulation time series name:	"mdf14_1"
Beginning date of series comparison:	01/01/2001
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	12/31/2001
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	365
Nash-Sutcliffe coefficient:	0.2781800

## COMPARE STATISTICS – VERIFICATION

### C\_TABLE "com\_10\_3" ---->

Observation time series name:	"odf10_3"
Simulation time series name:	"mdf10_3"
Beginning date of series comparison:	02/08/2003
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	04/29/2003
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	81
Nash-Sutcliffe coefficient:	0.7096525

### C\_TABLE "com\_10\_4" ---->

Observation time series name:	"odf10_4"
Simulation time series name:	"mdf10_4"
Beginning date of series comparison:	05/03/2003
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	06/07/2003
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	36
Nash-Sutcliffe coefficient:	-0.1591165

### C\_TABLE "com\_10\_5" ---->

Observation time series name:	"odf10_5"
Simulation time series name:	"mdf10_5"
Beginning date of series comparison:	06/11/2003
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	07/09/2003
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	29
Nash-Sutcliffe coefficient:	-1.867533

### C\_TABLE "com\_10\_6" ---->

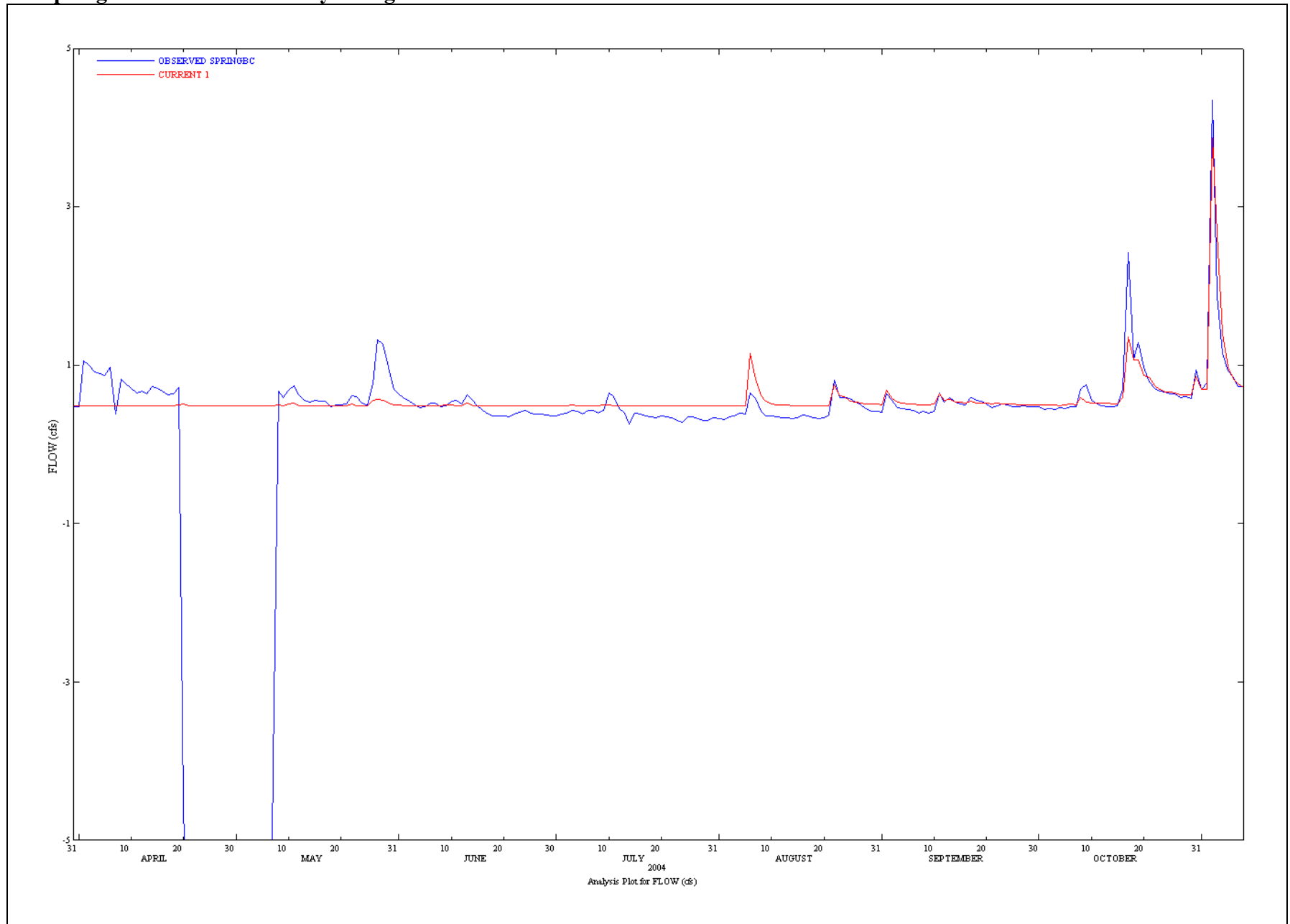
Observation time series name:	"odf10_6"
Simulation time series name:	"mdf10_6"
Beginning date of series comparison:	07/13/2003
Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	09/29/2003
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	79
Nash-Sutcliffe coefficient:	-0.6929781

### C\_TABLE "com\_11\_2" ---->

Observation time series name:	"odf11_2"
Simulation time series name:	"mdf11_2"
Beginning date of series comparison:	10/03/2002

Beginning time of series comparison:	12:00:00
Finishing date of series comparison:	02/02/2003
Finishing time of series comparison:	12:00:00
Number of series terms in this interval:	123
Bias:	-3.666662
Nash-Sutcliffe coefficient:	0.3203343

## 15. Springbrook Creek HSPF Hydrologic Model



### 15.1. Springbrook creek initial calibration