

# **DSM2-DB**

**DSM2 Users Group  
July 26, 2005**

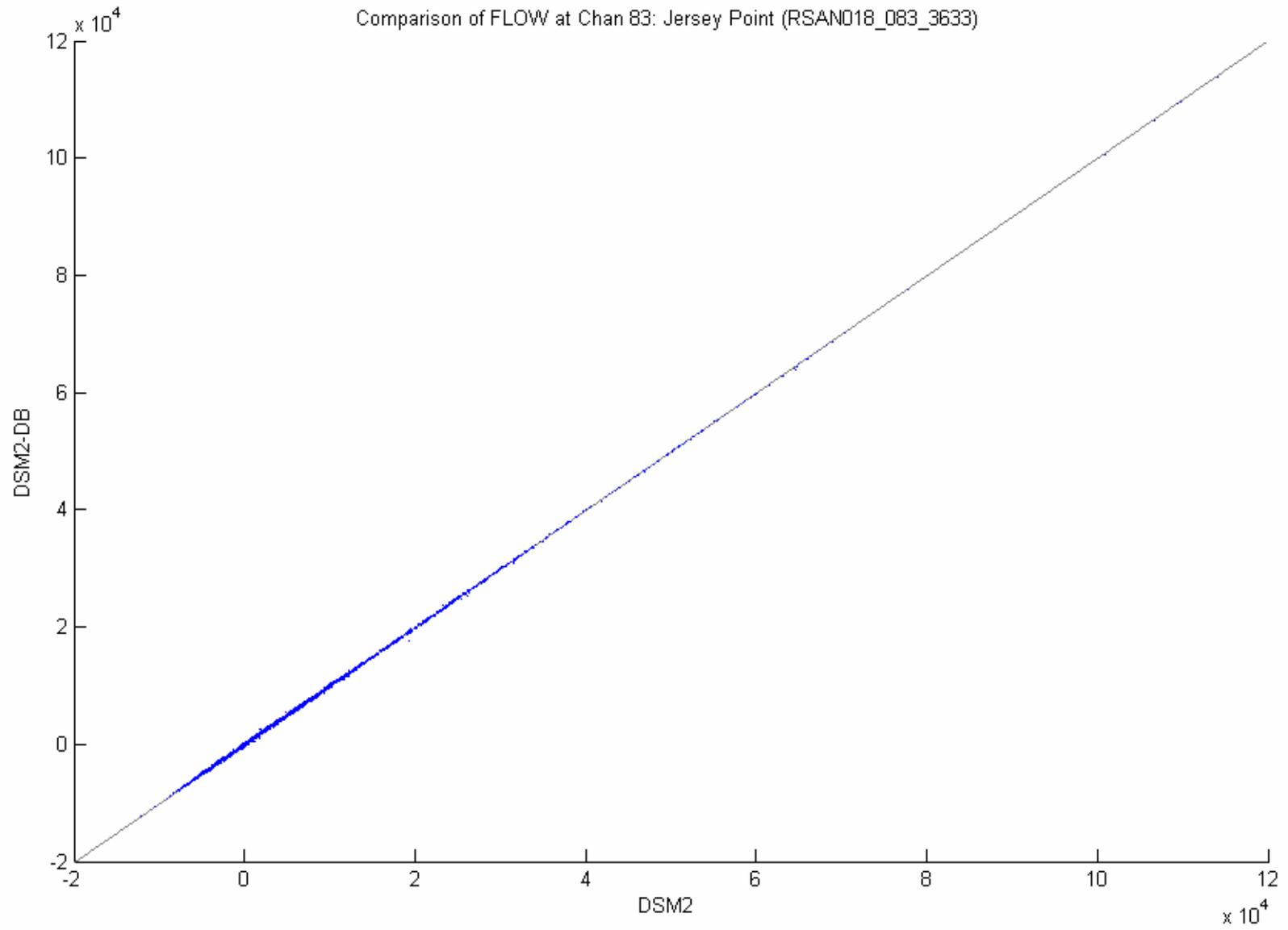
# Changes from the previous version

- 1) Model inputs from database
- 2) Graphical interface
- 3) Robust reservoir calculations
- 4) Cross-section calculations
  - eliminated area/width precision problems
- 5) Robust gate behavior + multiple devices
- 6) Operating rules
- 7) HDF5

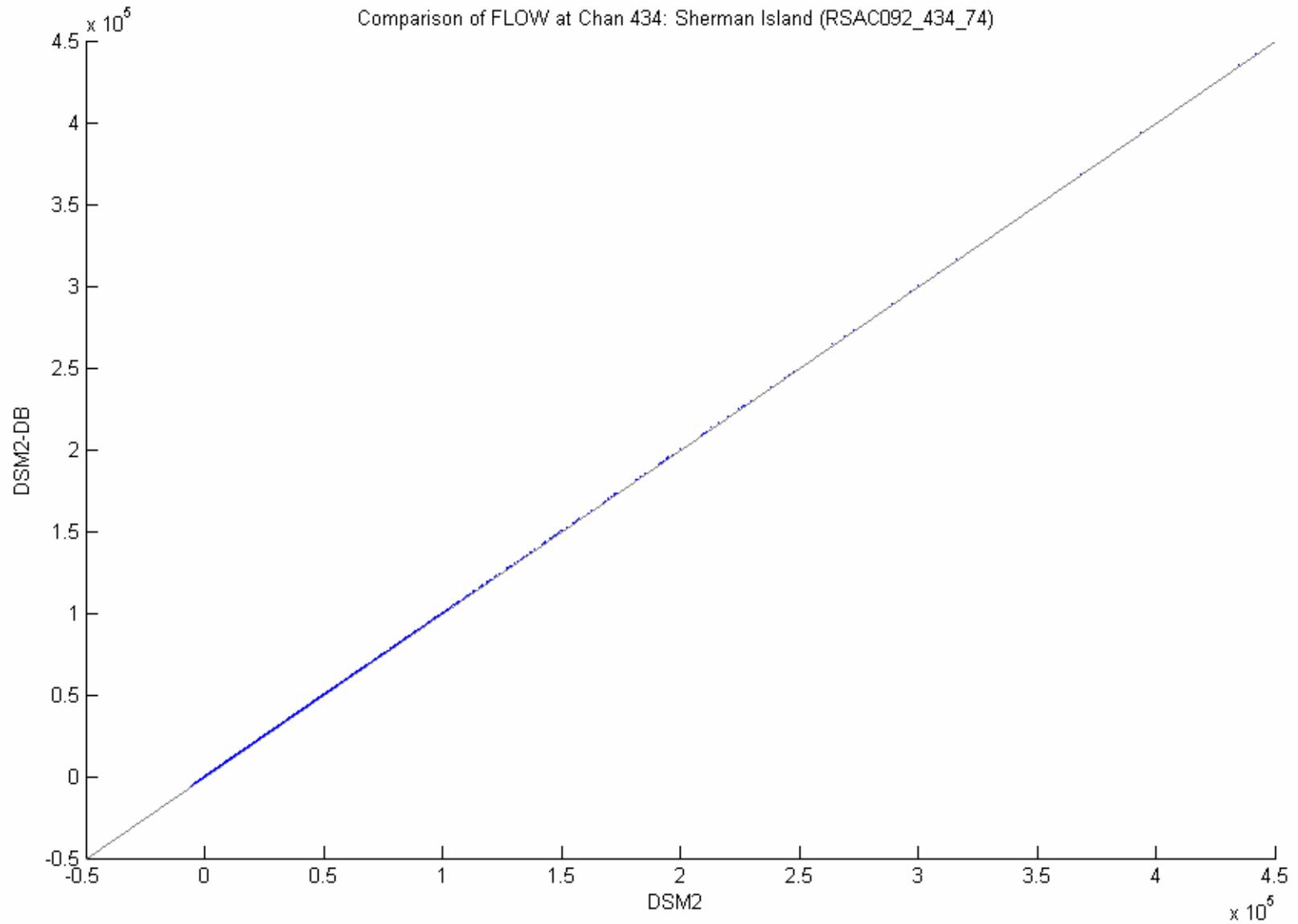
# Mini-Verification

- **Hydro is matching well to text version**
- **Minor differences explainable due to revised gate and operating rule behavior**

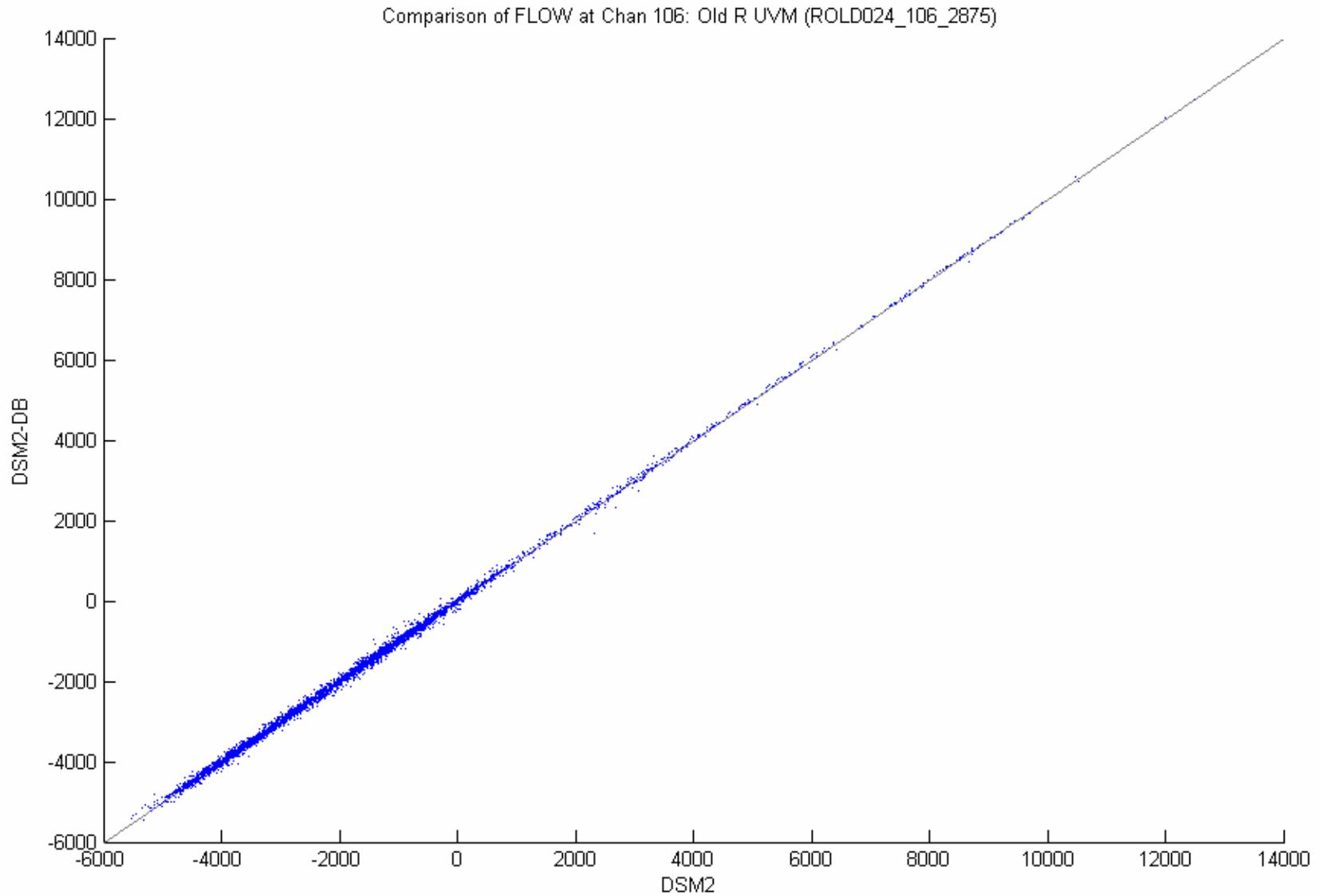
# Jersey Point



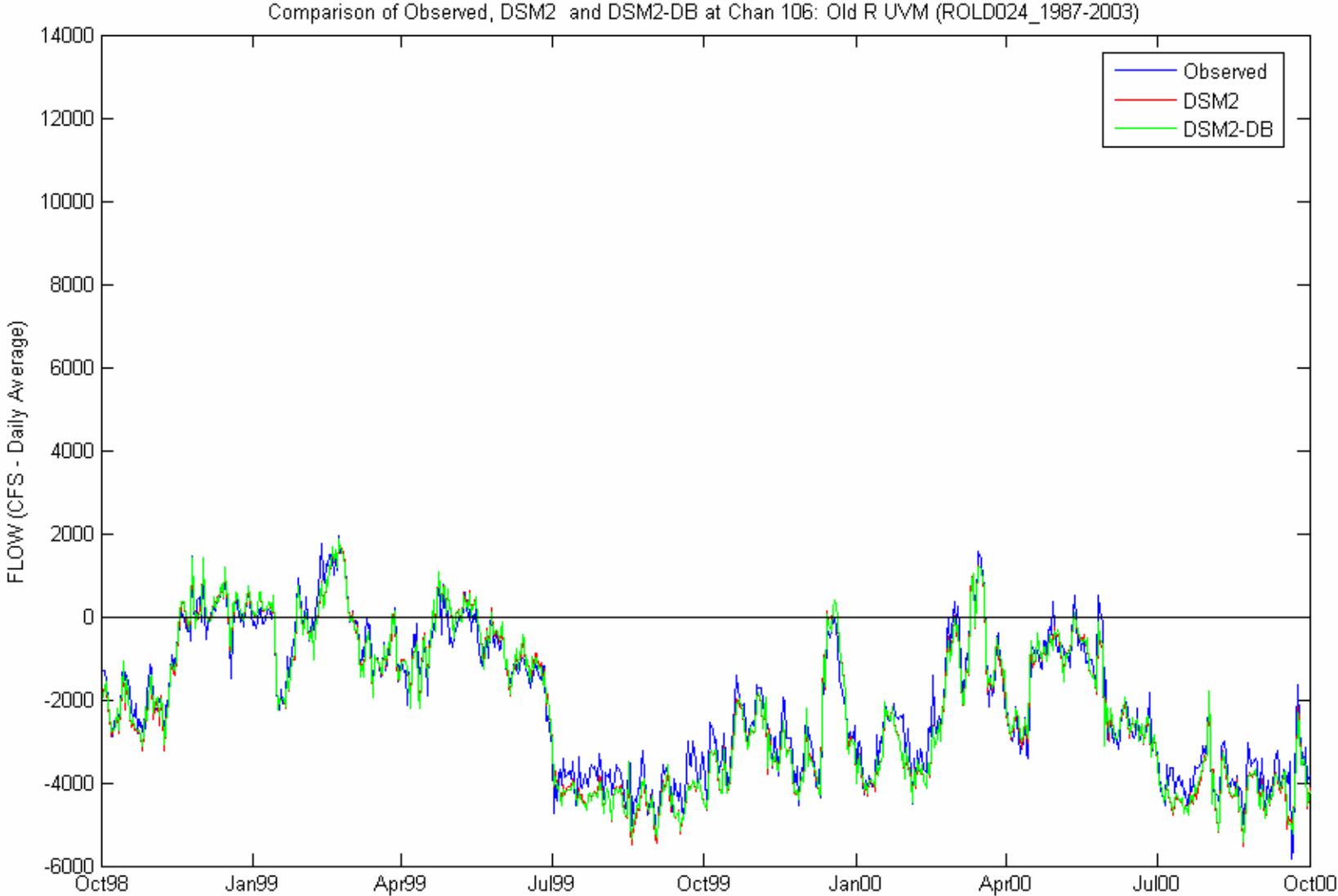
# Emmaton



# Old River @ Rock Slough

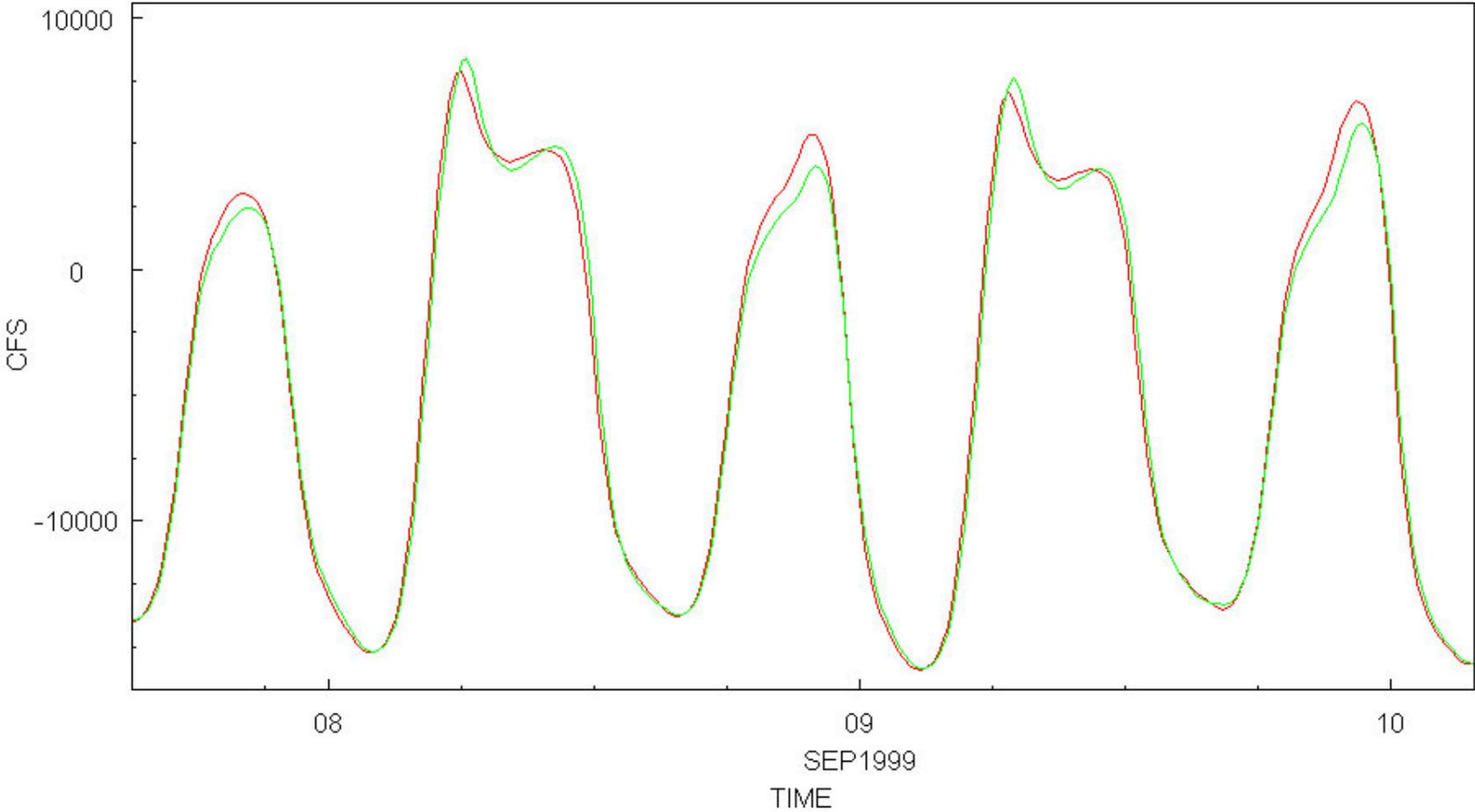


# Old River @ Rock Slough



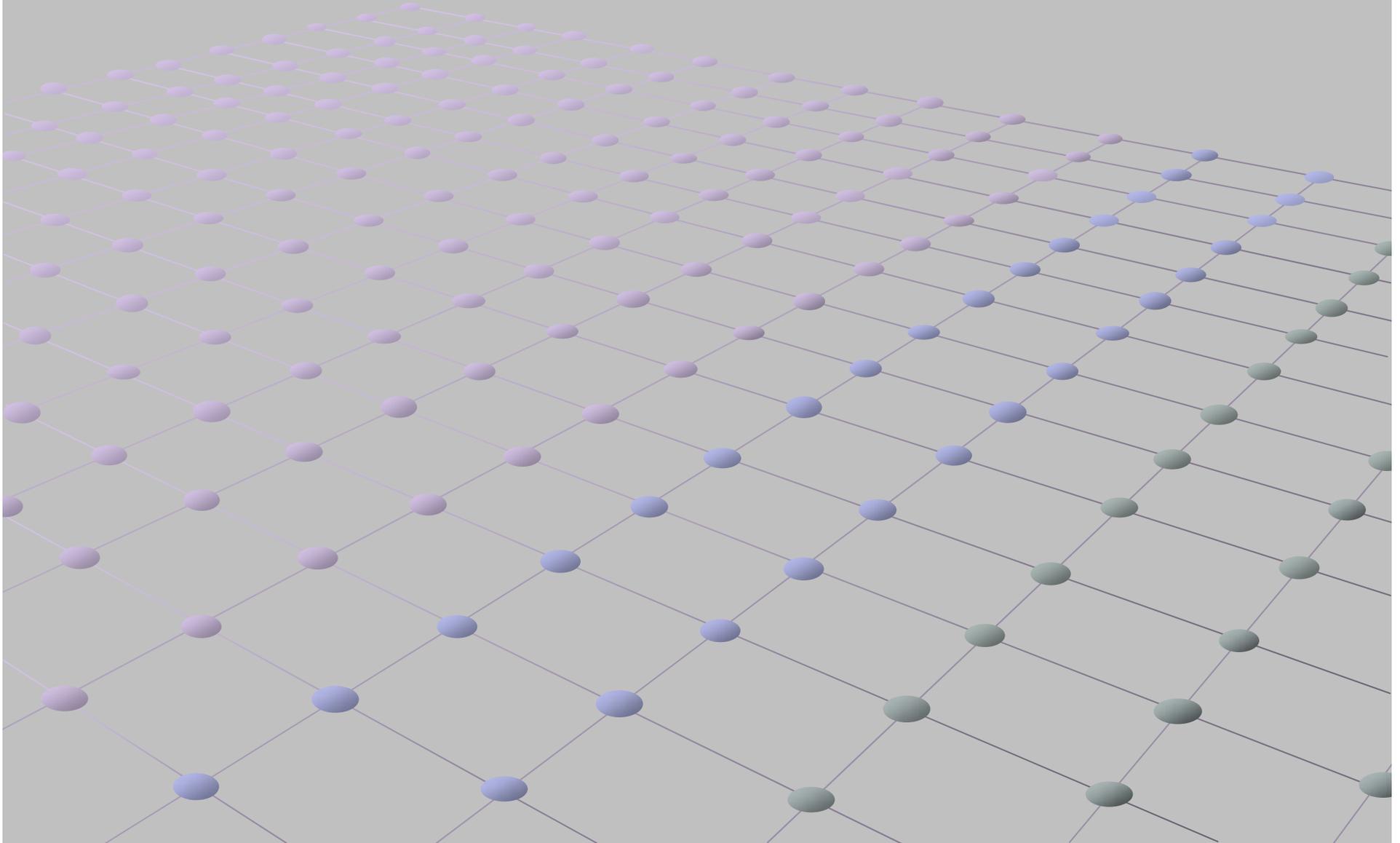
# Old River @ Rock Slough

Graph (DSM2-HYDRO-7.20+CHAN)

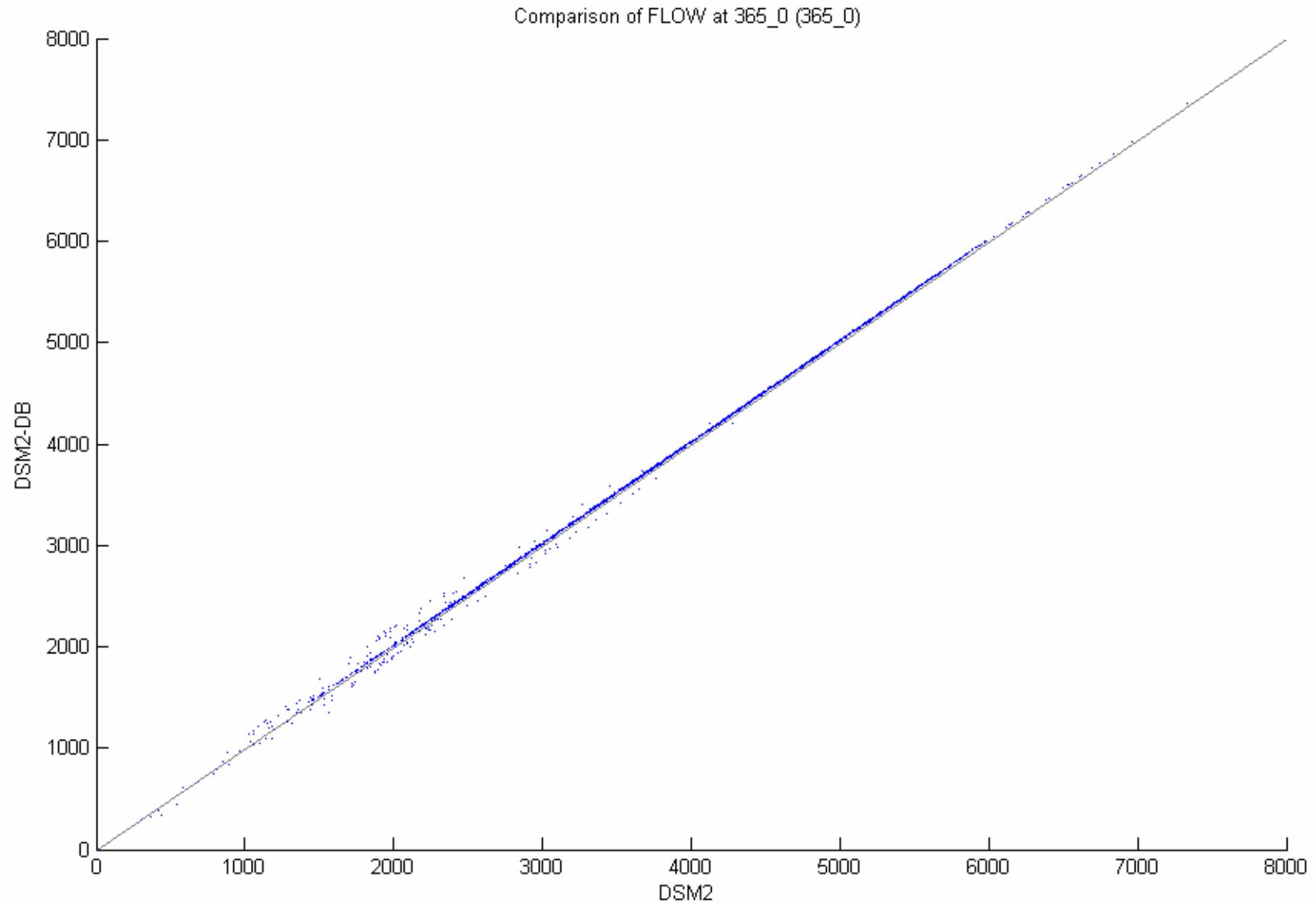


— FLOW at ROLD024\_106\_2875 (DWR+HIST\_RECAL\_DB\_0)  
— FLOW at ROLD024\_106\_2875 (+DSM2\_HIST\_CAL)

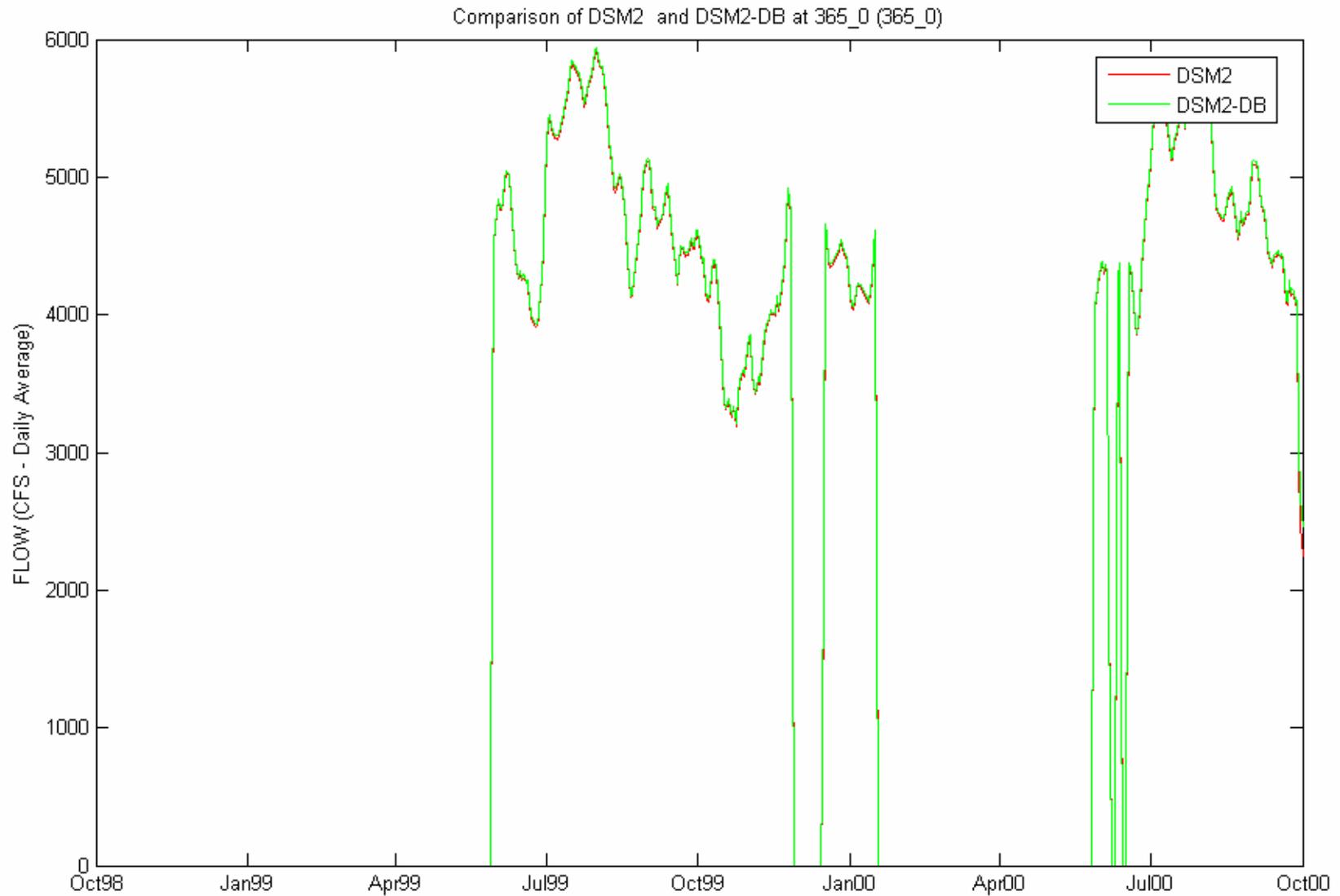
# Delta Cross Channel



# Delta Cross Channel

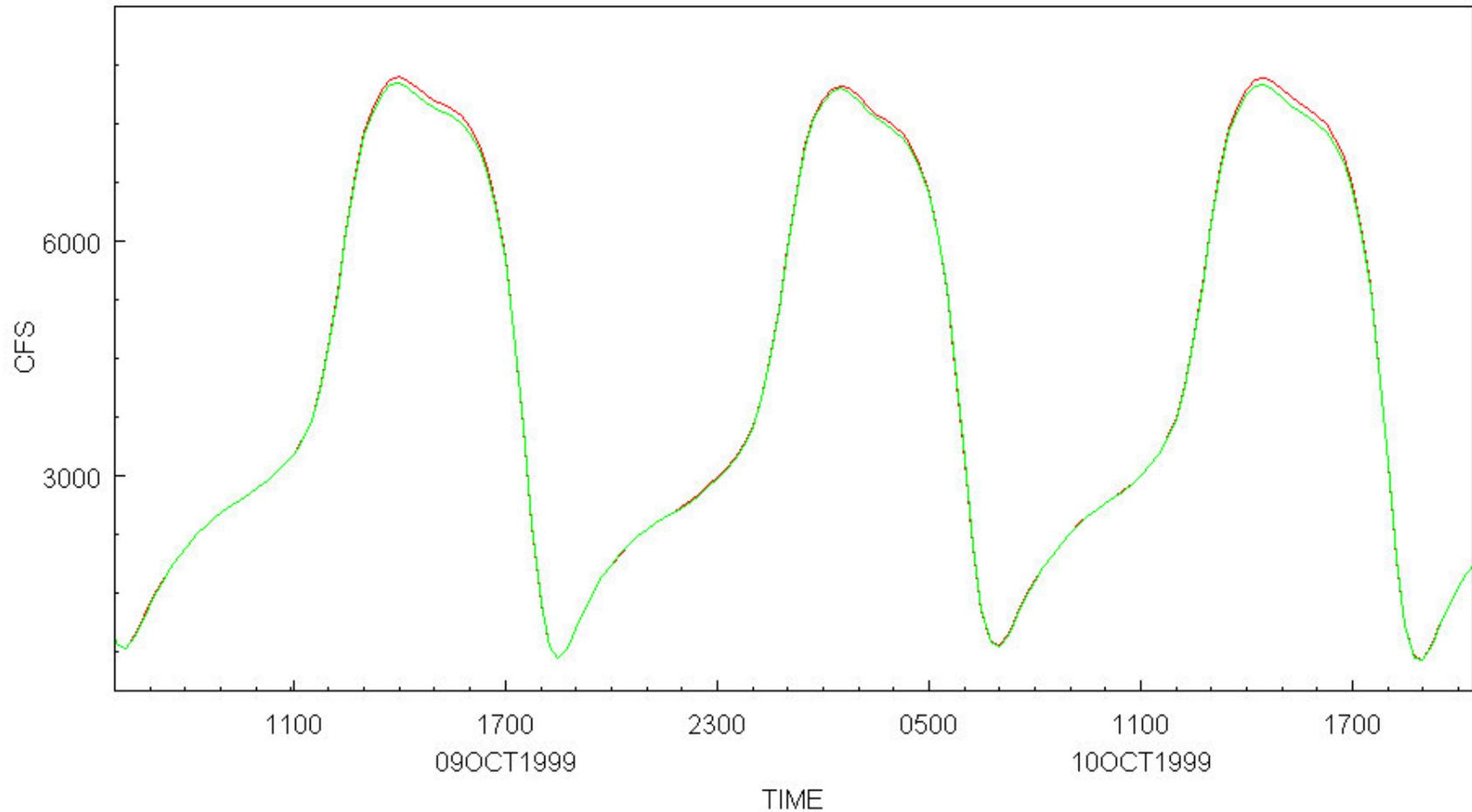


# Delta Cross Channel



# Delta Cross Channel

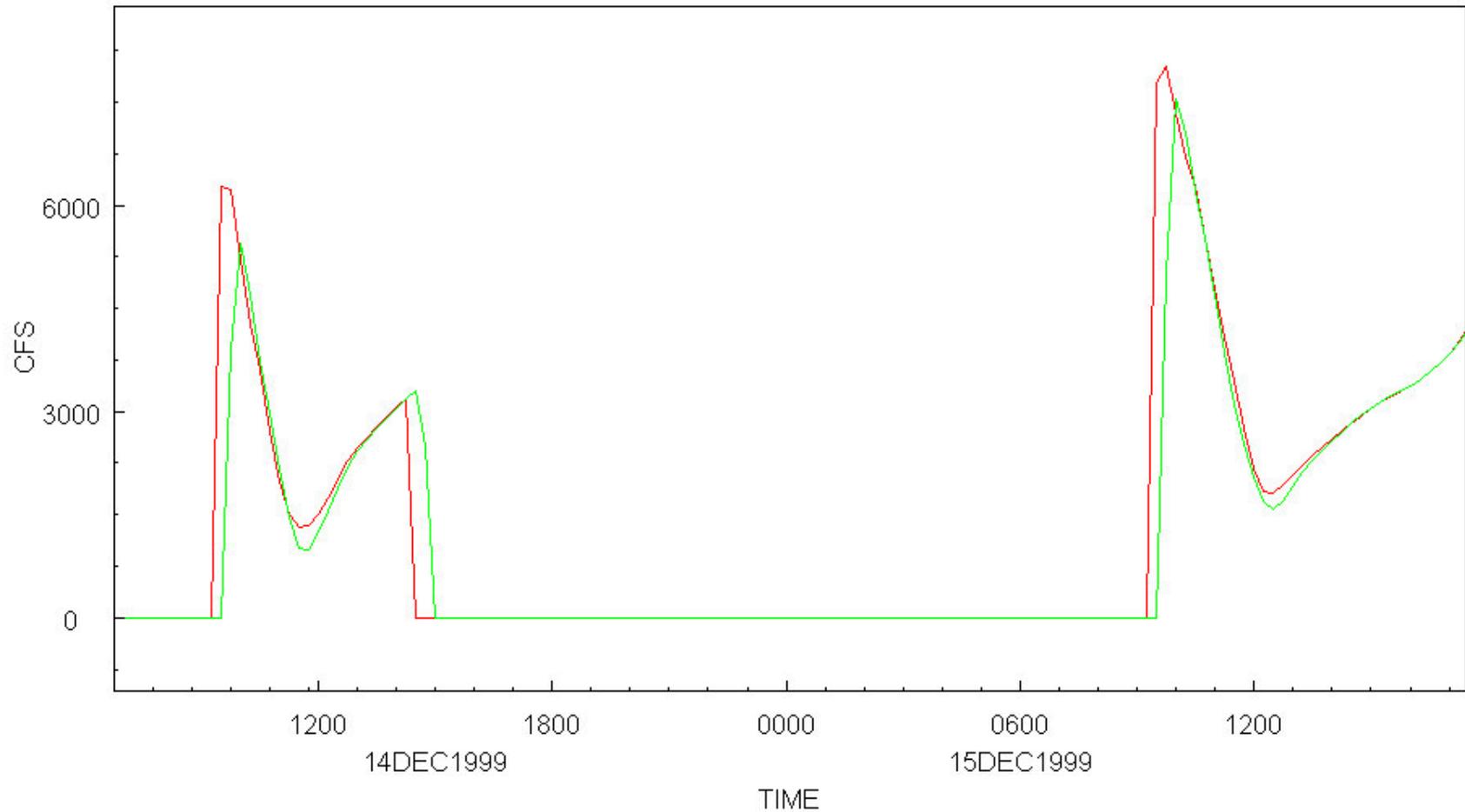
Graph (DSM2-HYDRO-7.20+CHAN)



- FLOW at 365\_0 (DWR+HIST\_RECAL\_DB\_01A)
- FLOW at 365\_0 (+DSM2\_HIST\_CAL)

# Delta Cross Channel

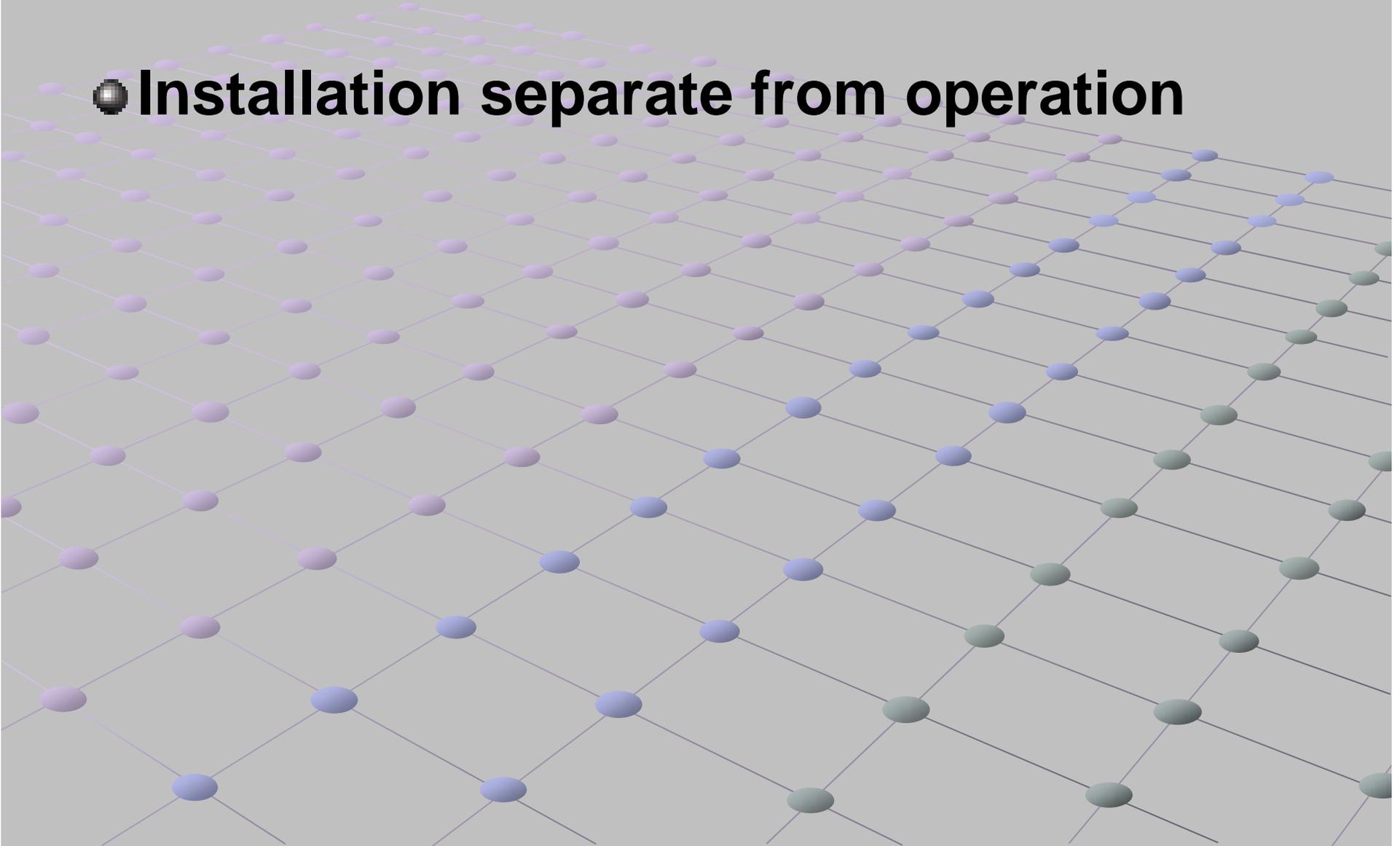
Graph (DSM2-HYDRO-7.20+CHAN)



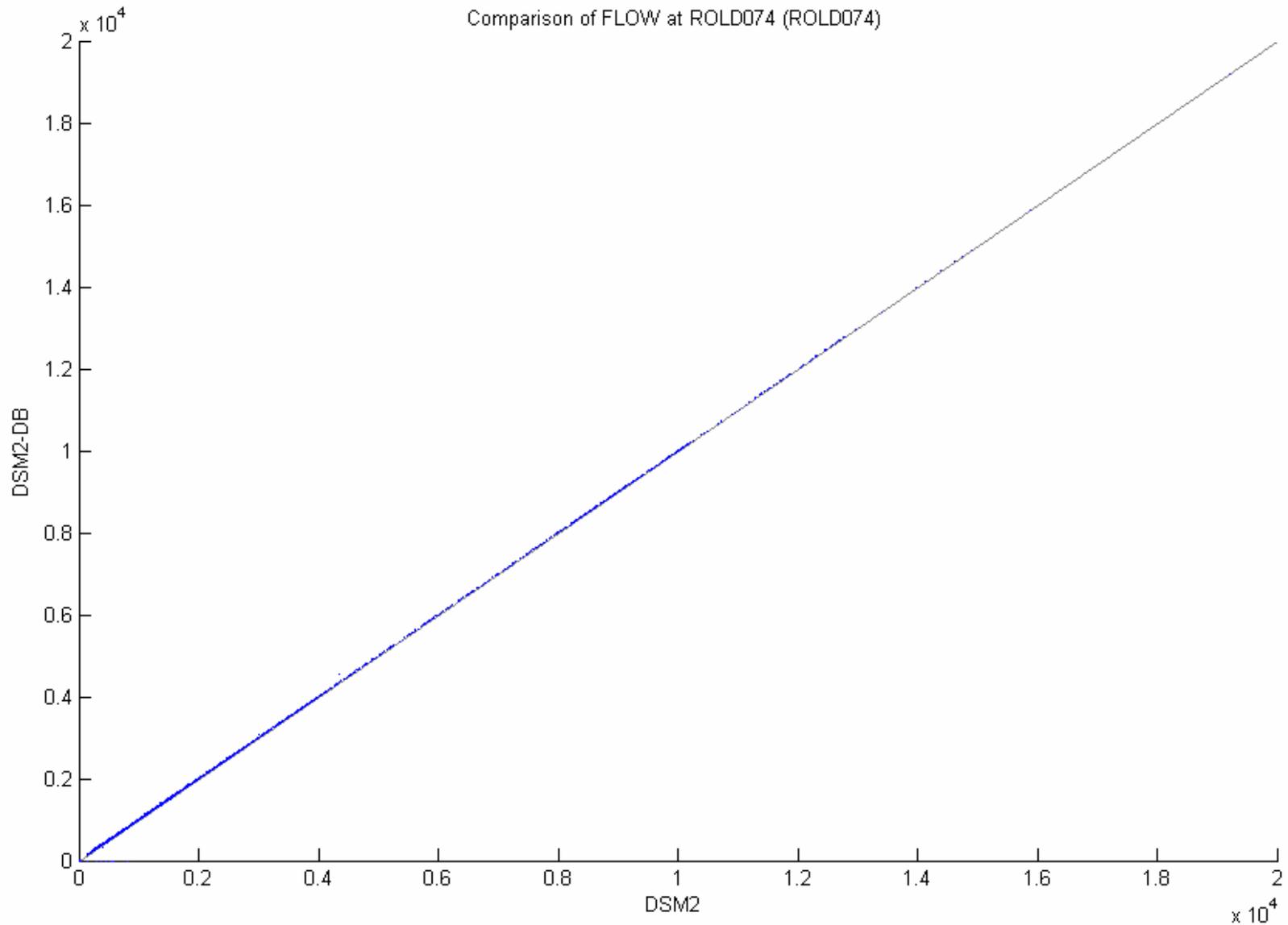
- FLOW at 365\_0 (DWR+HIST\_RECAL\_DB\_01A)
- FLOW at 365\_0 (+DSM2\_HIST\_CAL)

# Temporary Barriers

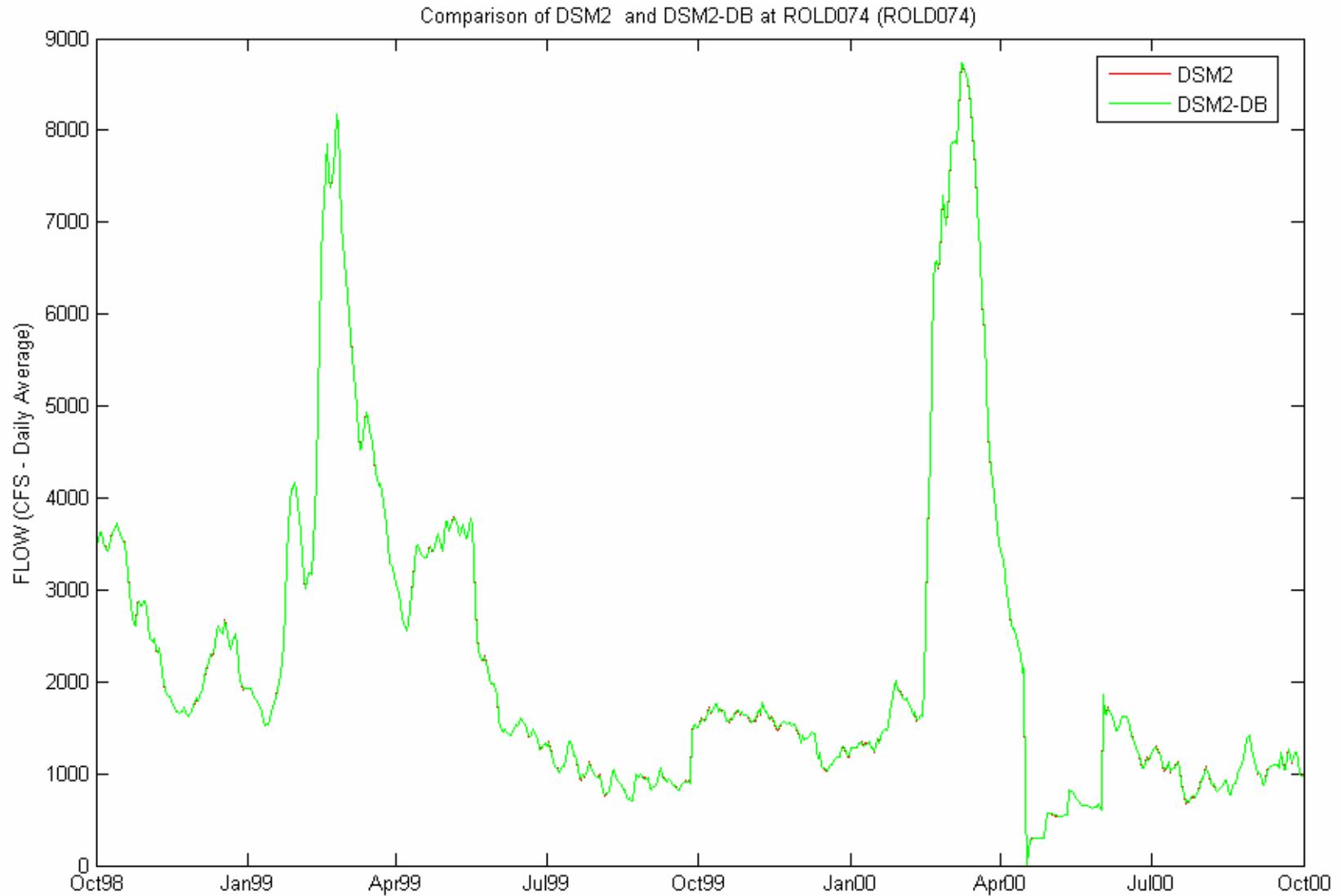
- Installation separate from operation



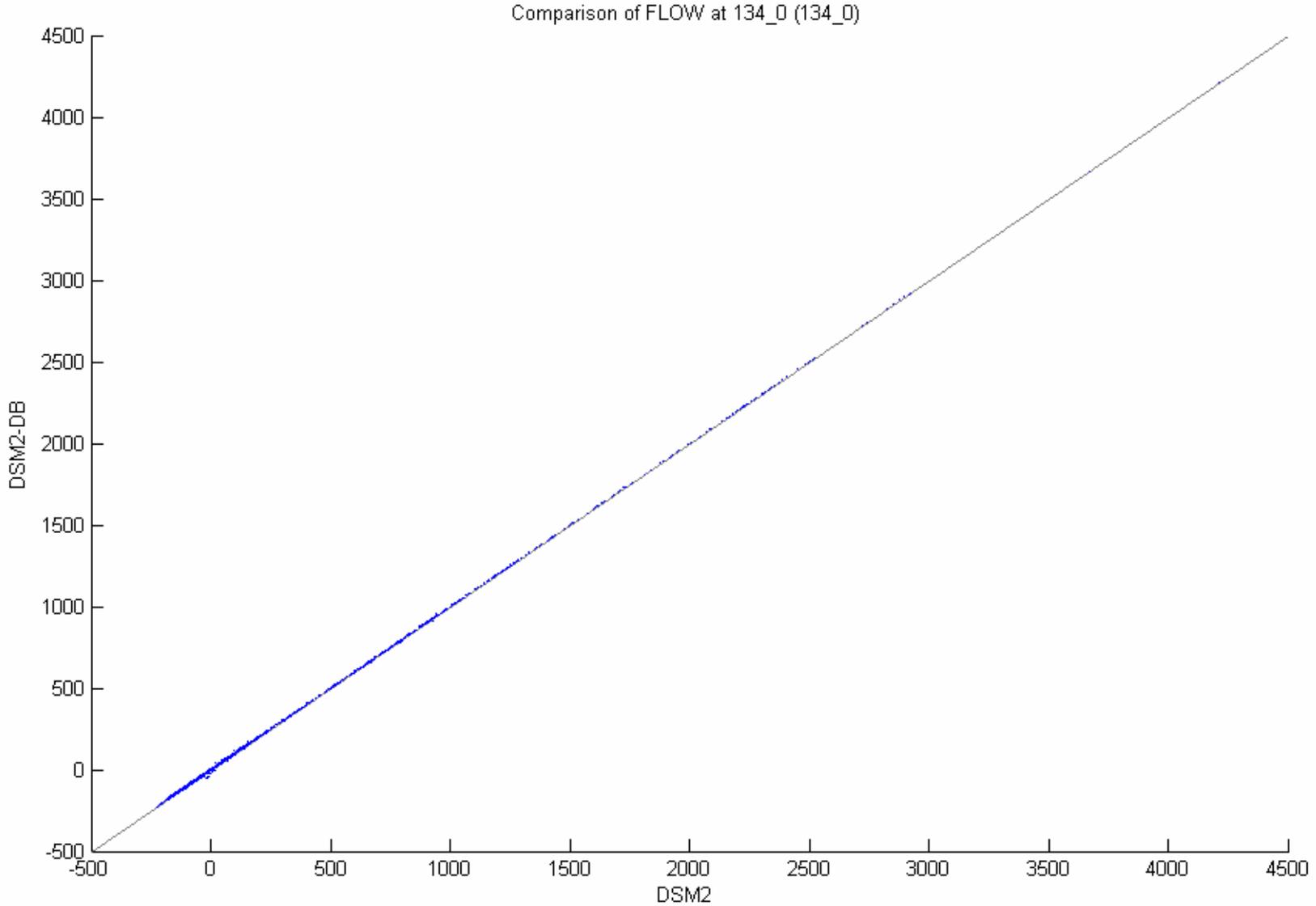
# Head of Old River



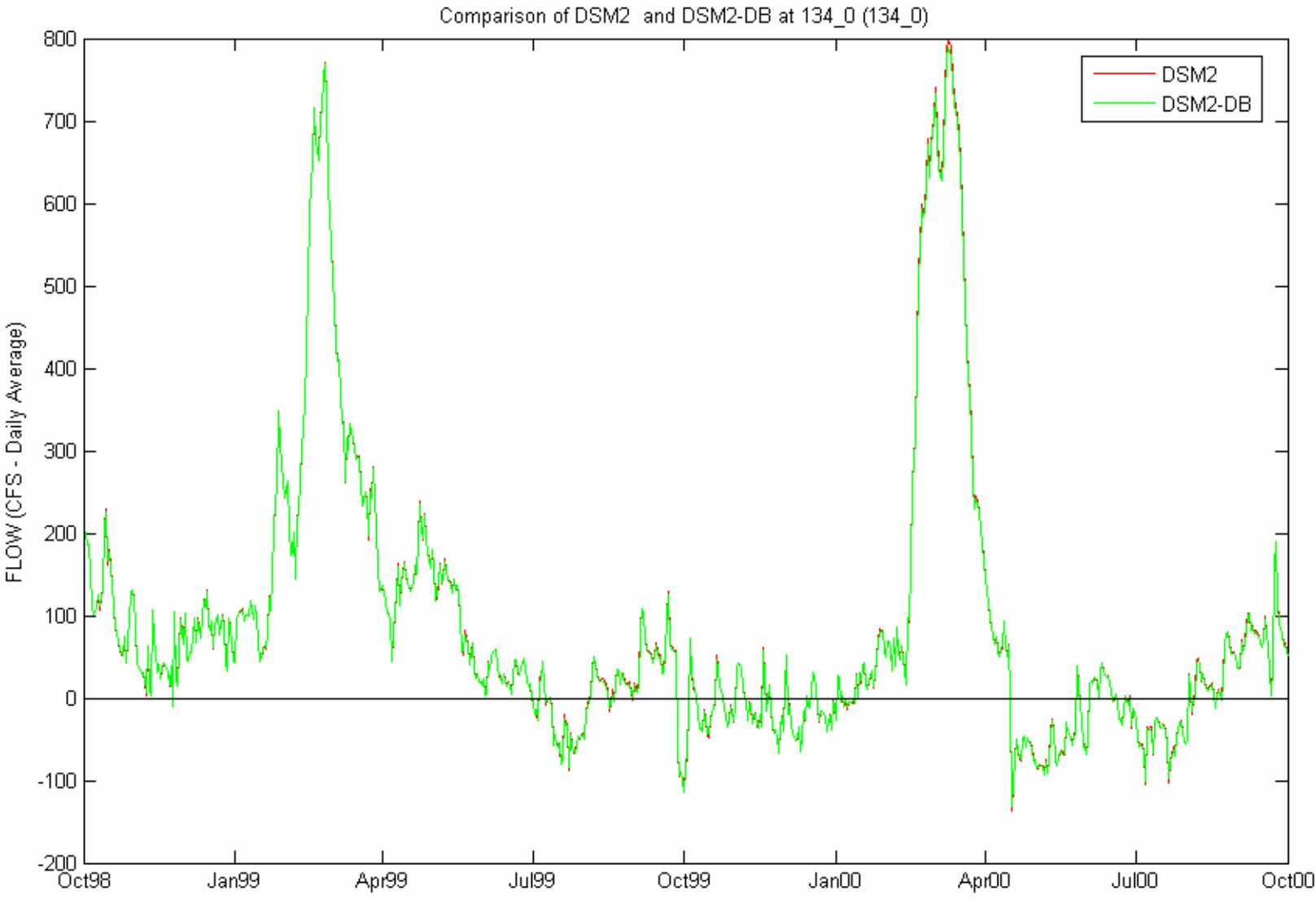
# Head of Old River



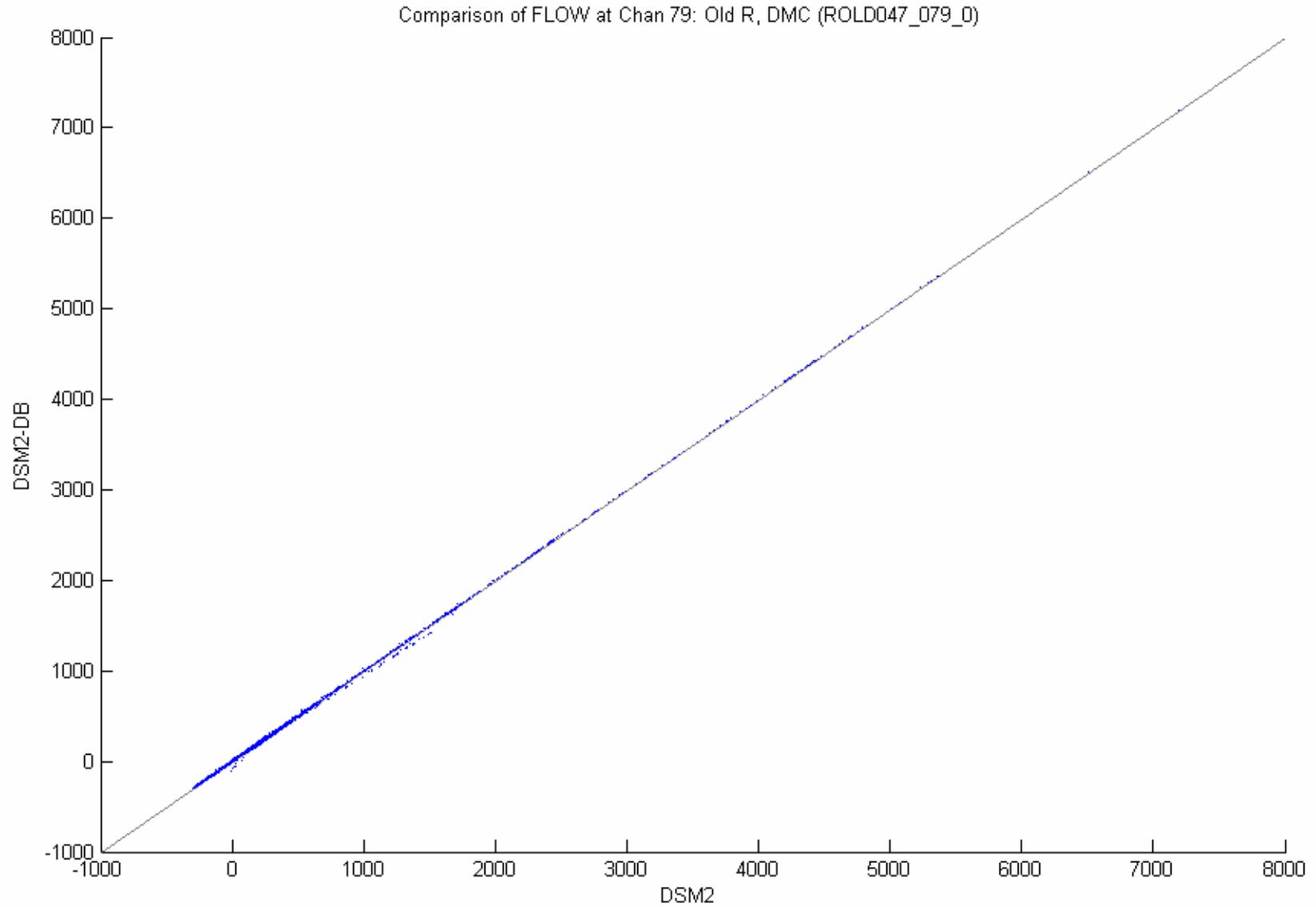
# Middle River



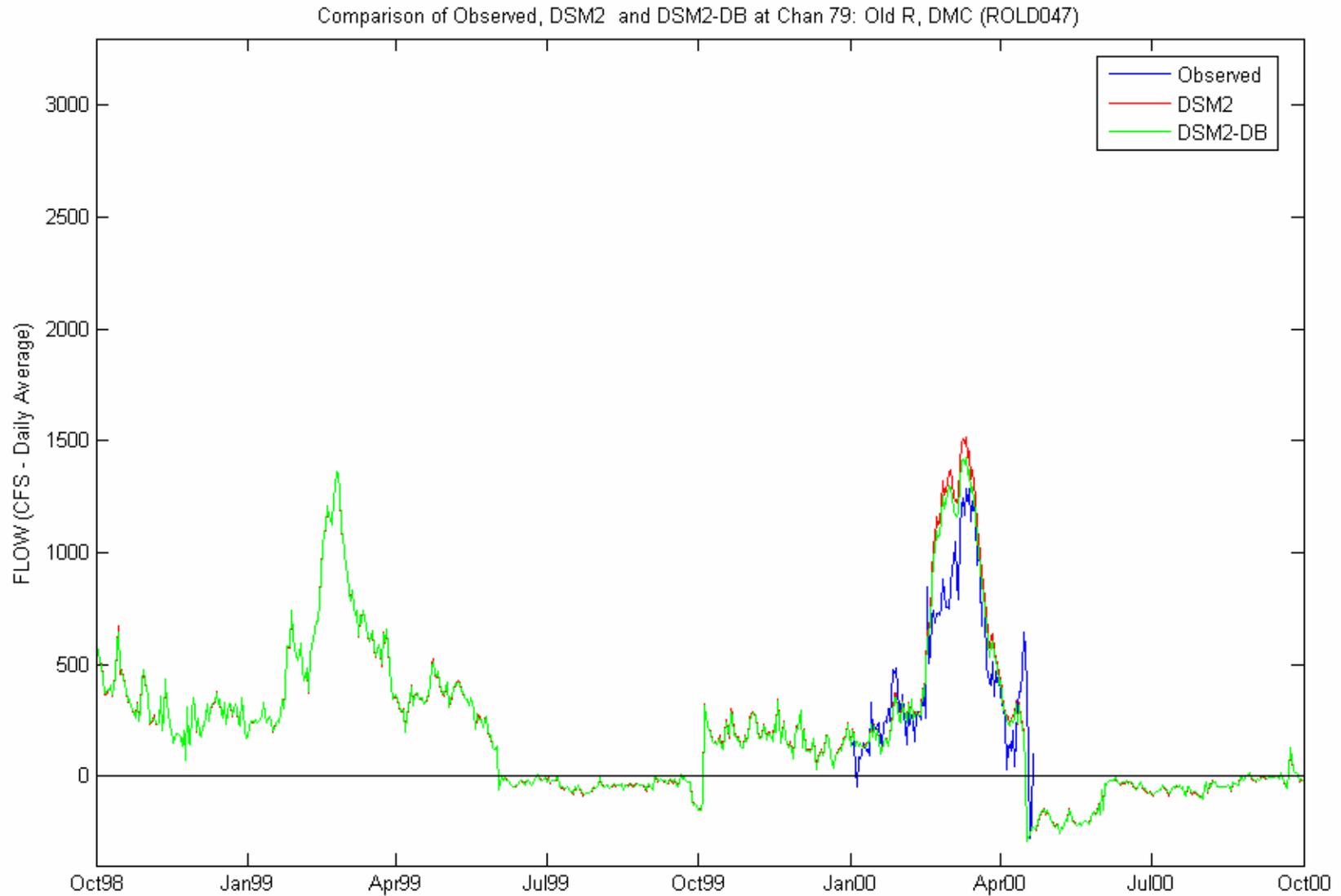
# Middle River



# Old River @ Tracy

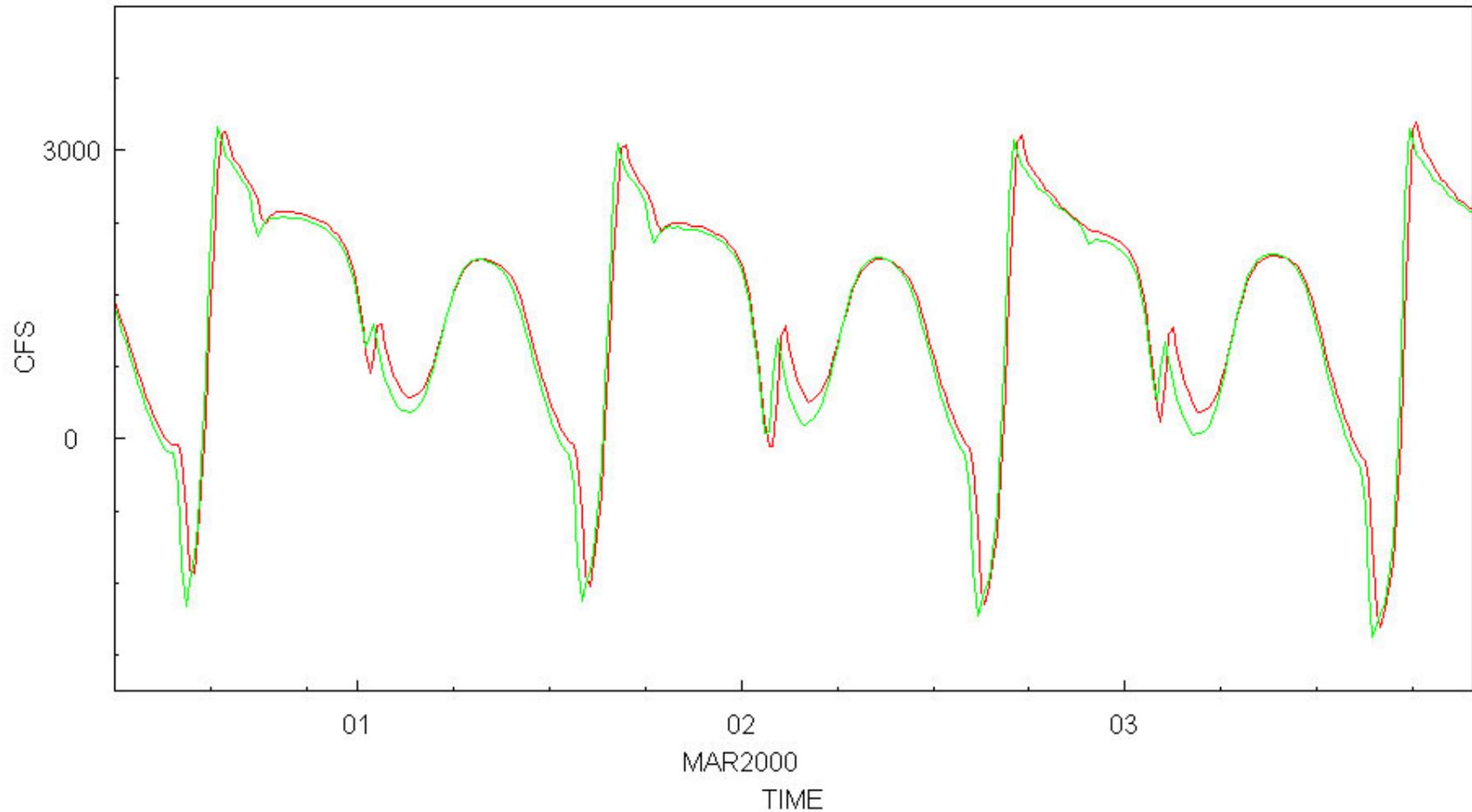


# Old River @ Tracy



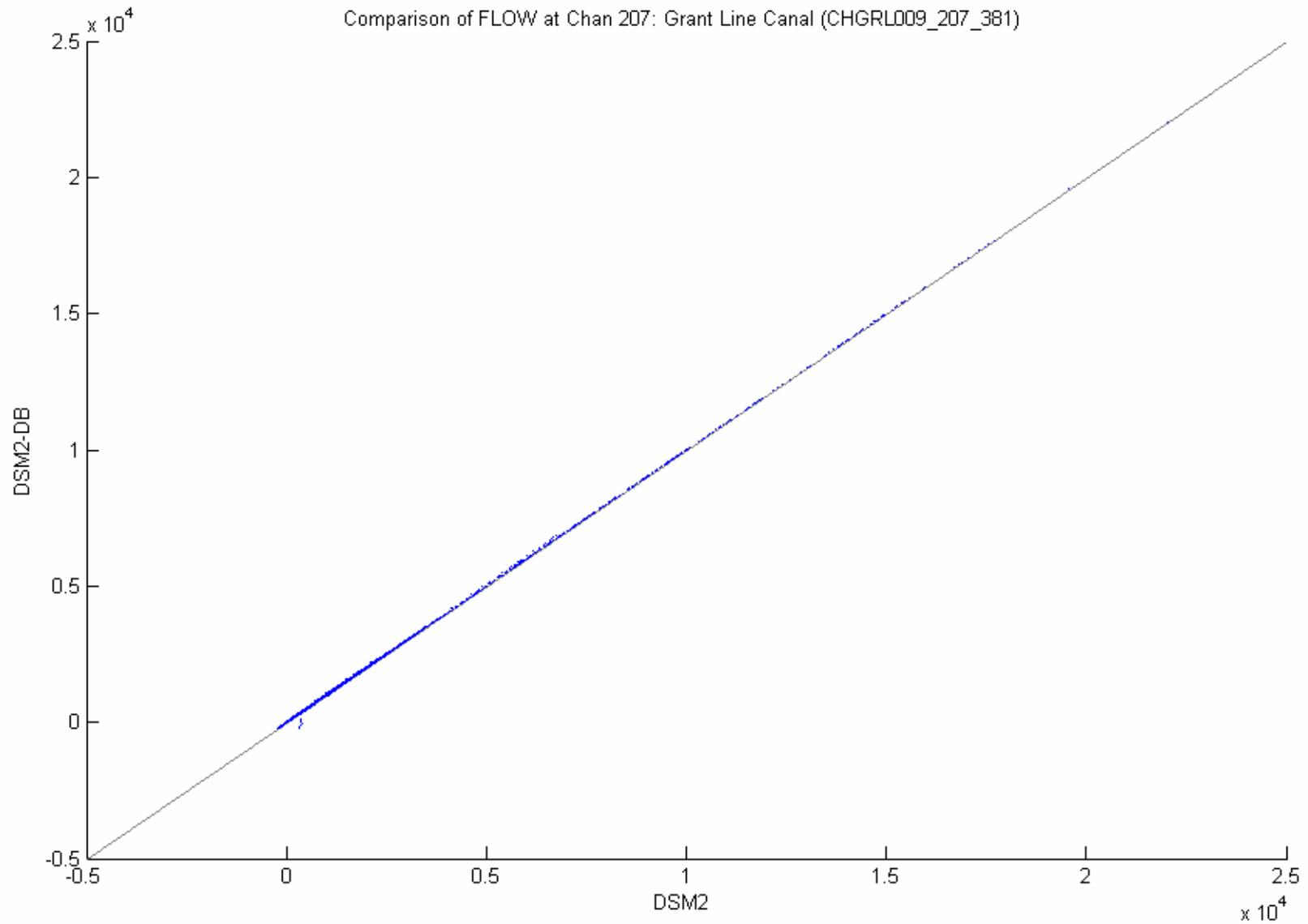
# Old River @ Tracy

Graph (DSM2-HYDRO-6.2+CHAN)

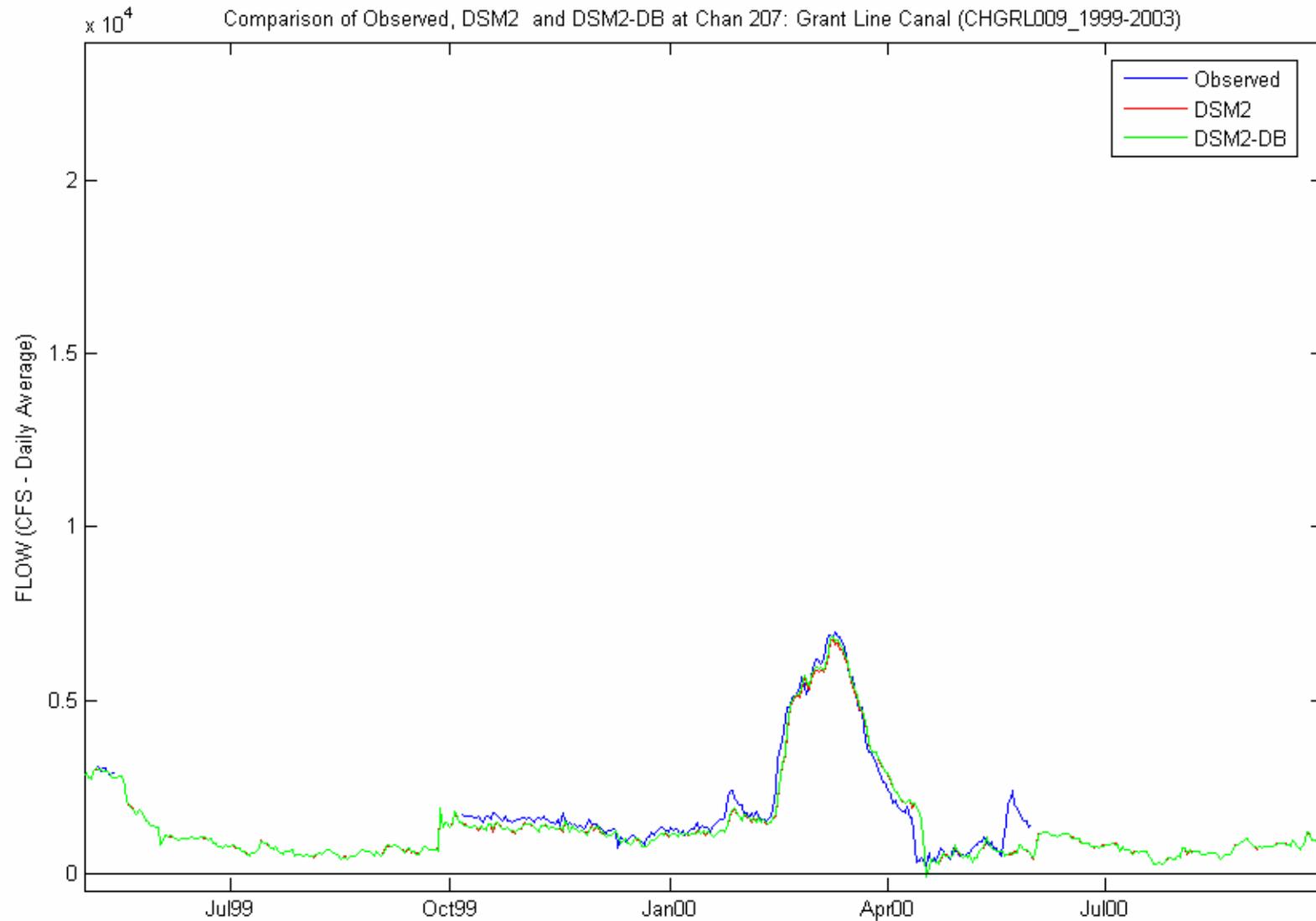


- FLOW at ROLD047\_079\_0 (+DSM2\_HIST\_CAL)
- FLOW at ROLD047\_079\_0 (DWR+HIST\_RECAL\_DB\_01A)

# Grant Line Canal



# Grant Line Canal



# Montezuma Slough Salinity Control Gates

## Controlled by operating rules

- `mscs_velclose :=`

  - `chan_flow(channel=513,dist=0) < 0.1`

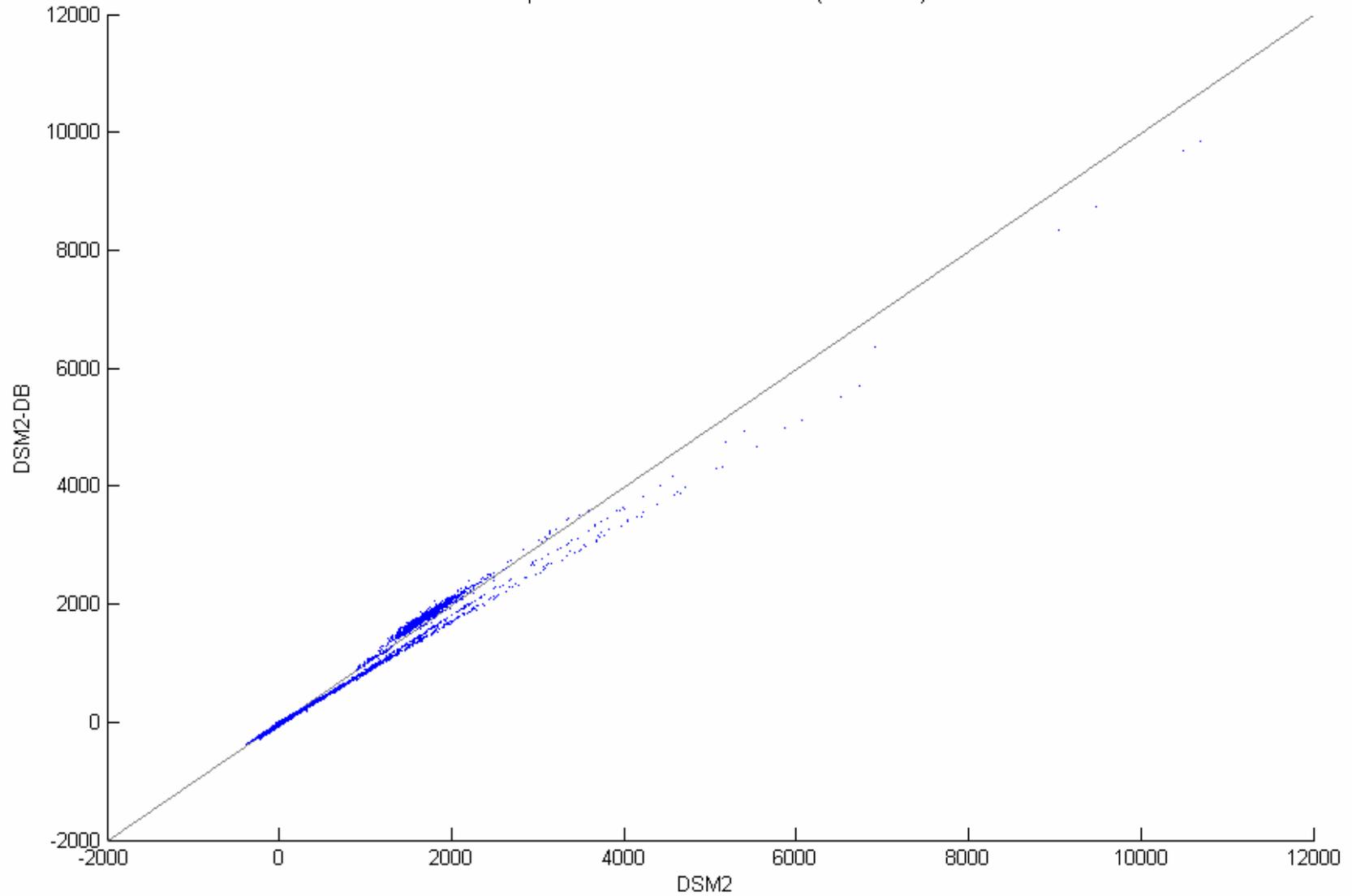
- `mscs_dhopen :=`

  - `(chan_stage(channel=512,dist=6038) -`

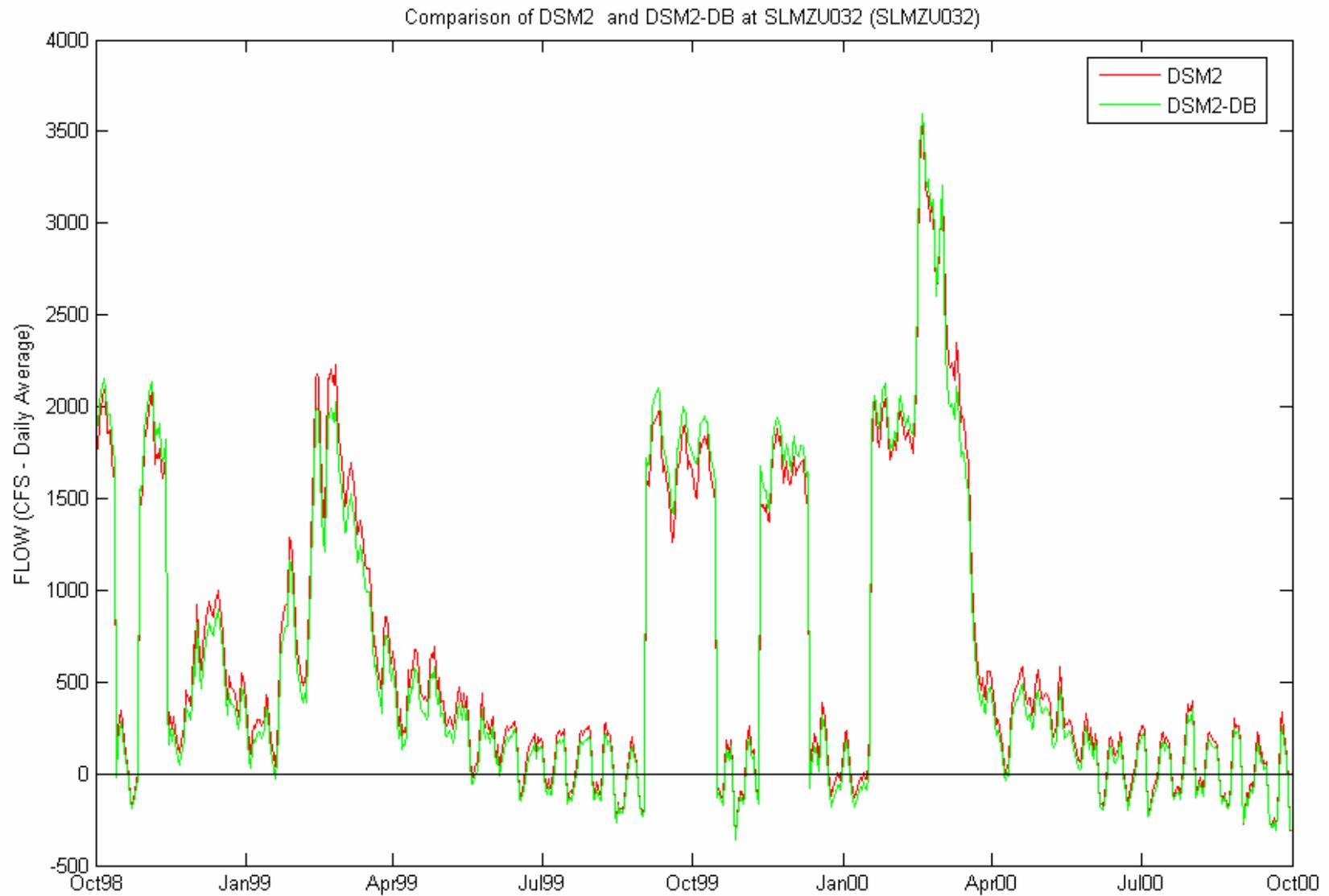
  - `chan_stage(channel=513,dist=0)) > 0.3`

# Montezuma Slough

Comparison of FLOW at SLMZU032 (SLMZU032)

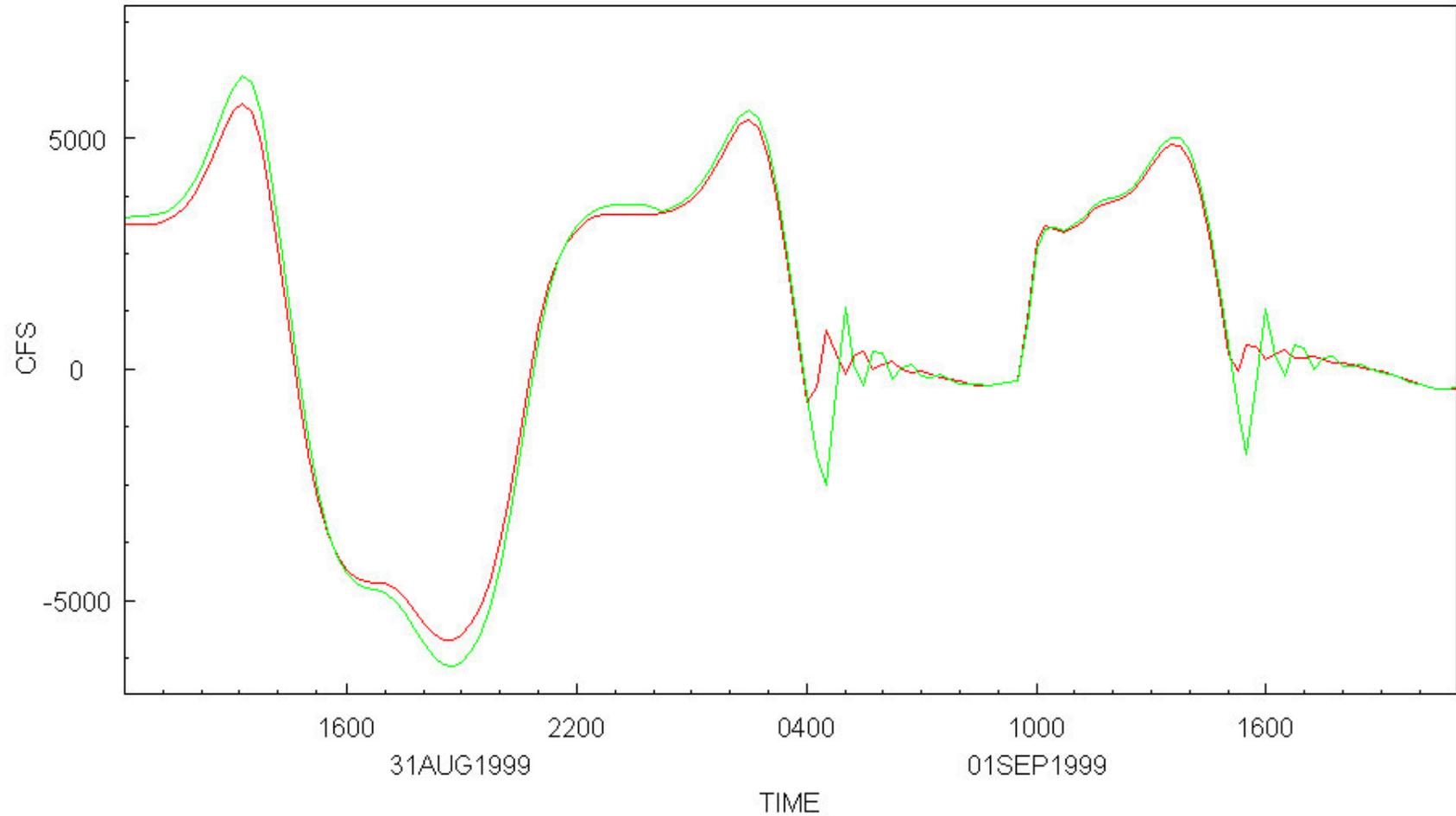


# Montezuma Slough



# Montezuma Slough

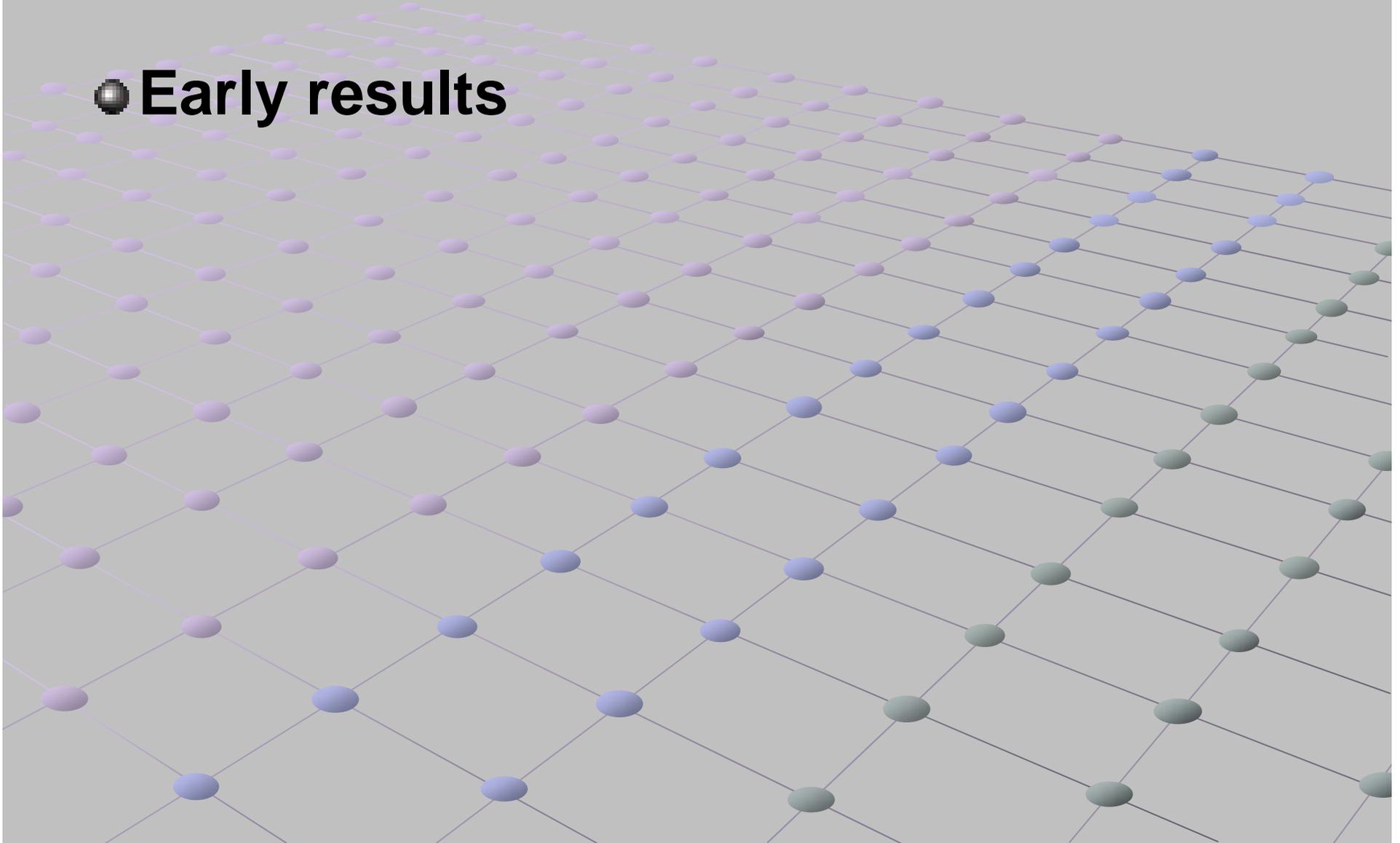
Graph (DSM2-HYDRO-7.20+CHAN)



- FLOW at SLMZU032 (DWR+HIST\_RECAL\_DB\_01A)
- FLOW at SLMZU032 (+DSM2\_HIST\_CAL)

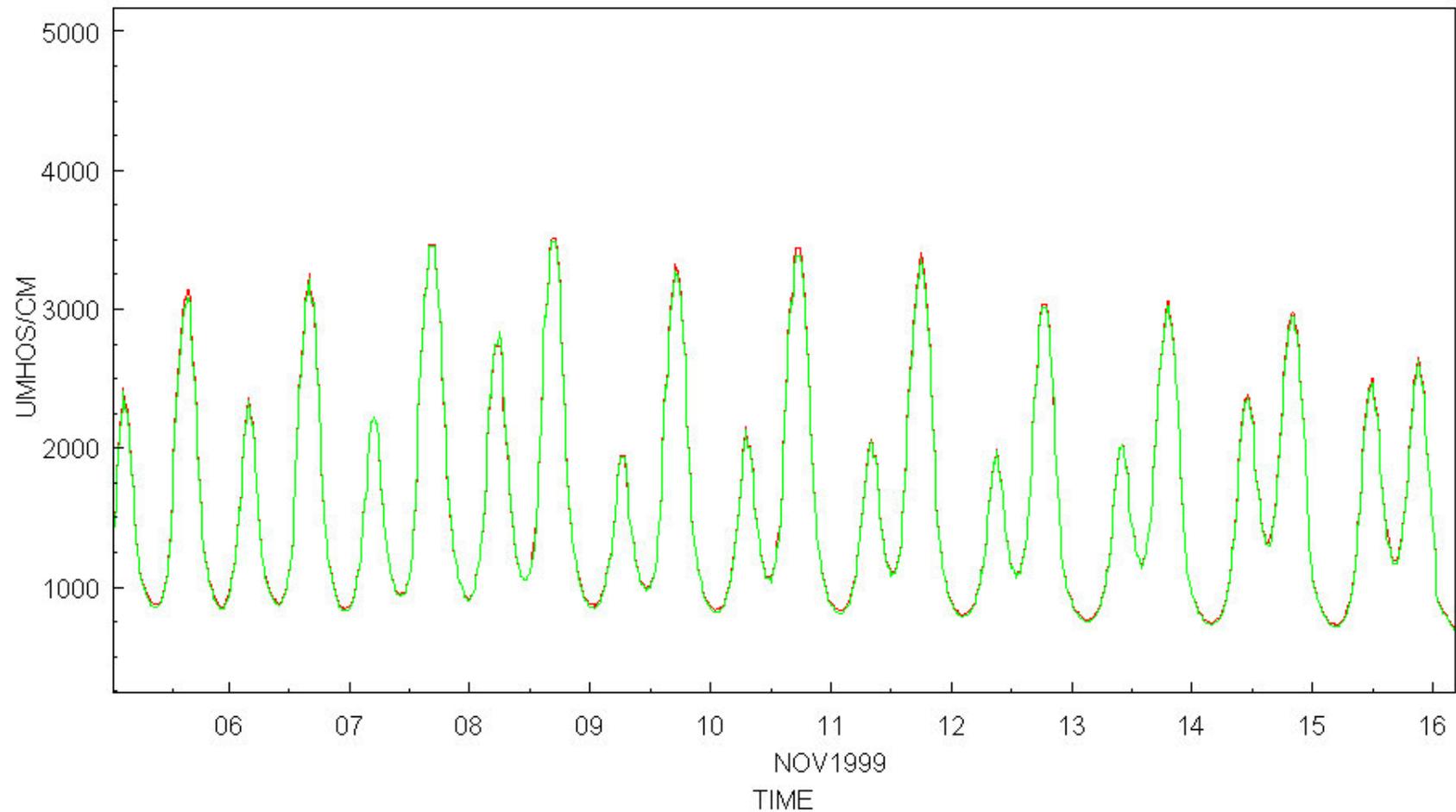
# Qual

● Early results



# Jersey Point

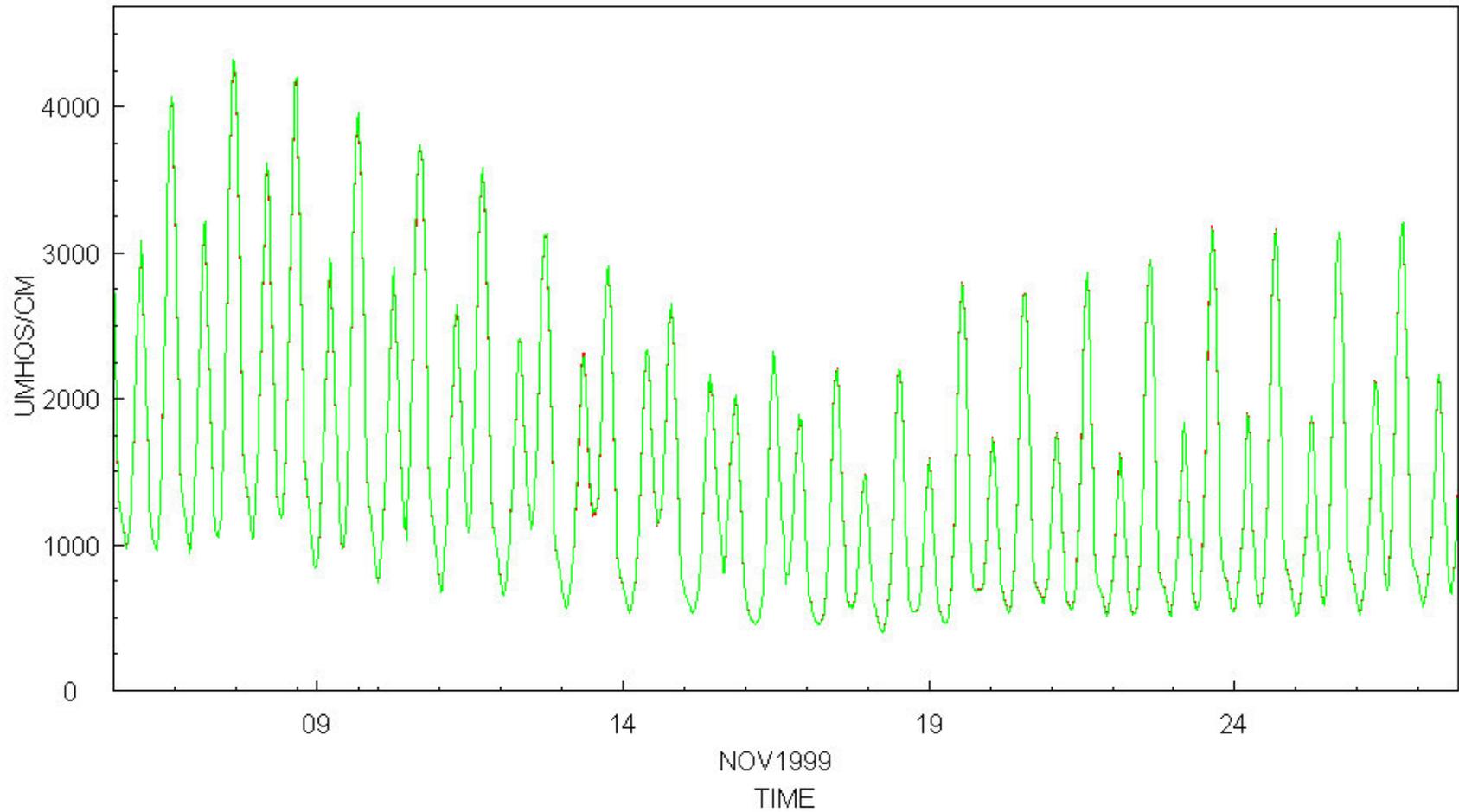
Graph (DSM2-QUAL-7.30+CHAN)



- EC at RSAN018 (DWR+HIST\_RECAL\_DB\_01A+FROM-ALL\_)
- EC at RSAN018 (+DSM2\_HIST\_CAL+FROM-ALL)

# Emmaton

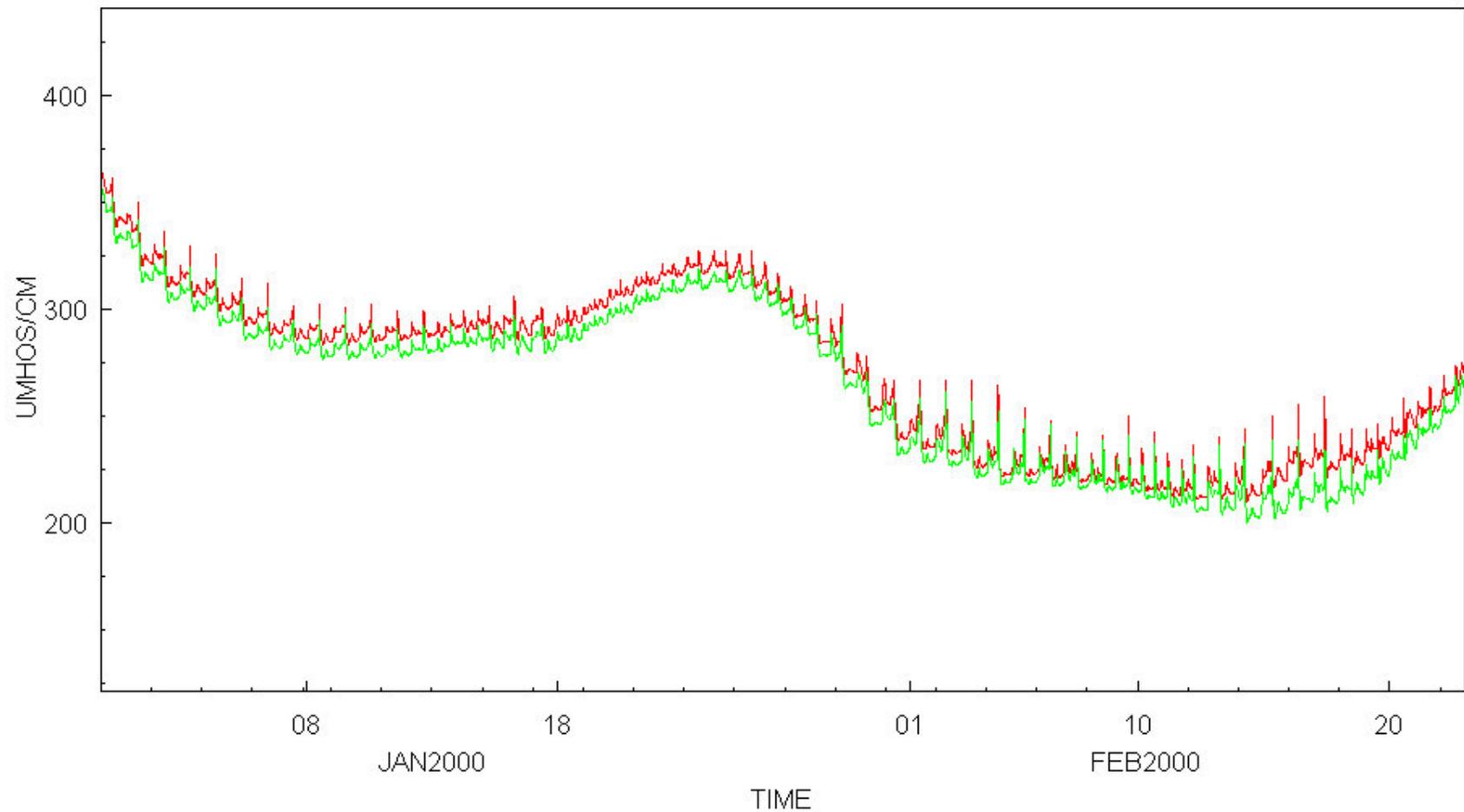
Graph (DSM2-QUAL-7.30+CHAN)



- EC at RSAC092 (DWR+HIST\_RECAL\_DB\_01A+FROM-ALL\_)
- EC at RSAC092 (+DSM2\_HIST\_CAL+FROM-ALL)

# Old River @ Rock Slough

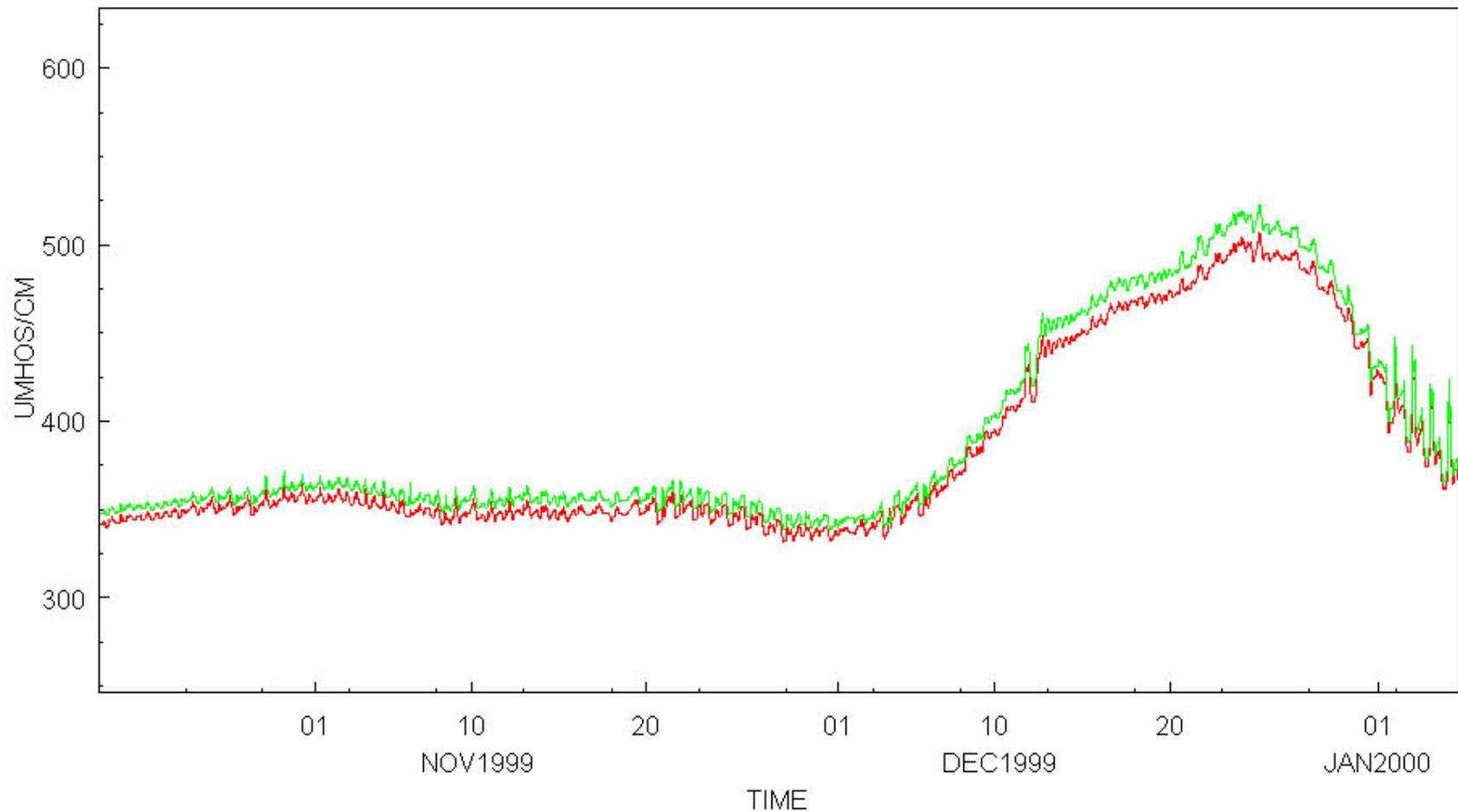
Graph (DSM2-QUAL-7.30+CHAN)



- EC at ROLD024 (DWR+HIST\_RECAL\_DB\_01A+FROM-ALL\_)
- EC at ROLD024 (+DSM2\_HIST\_CAL+FROM-ALL)

# Middle River

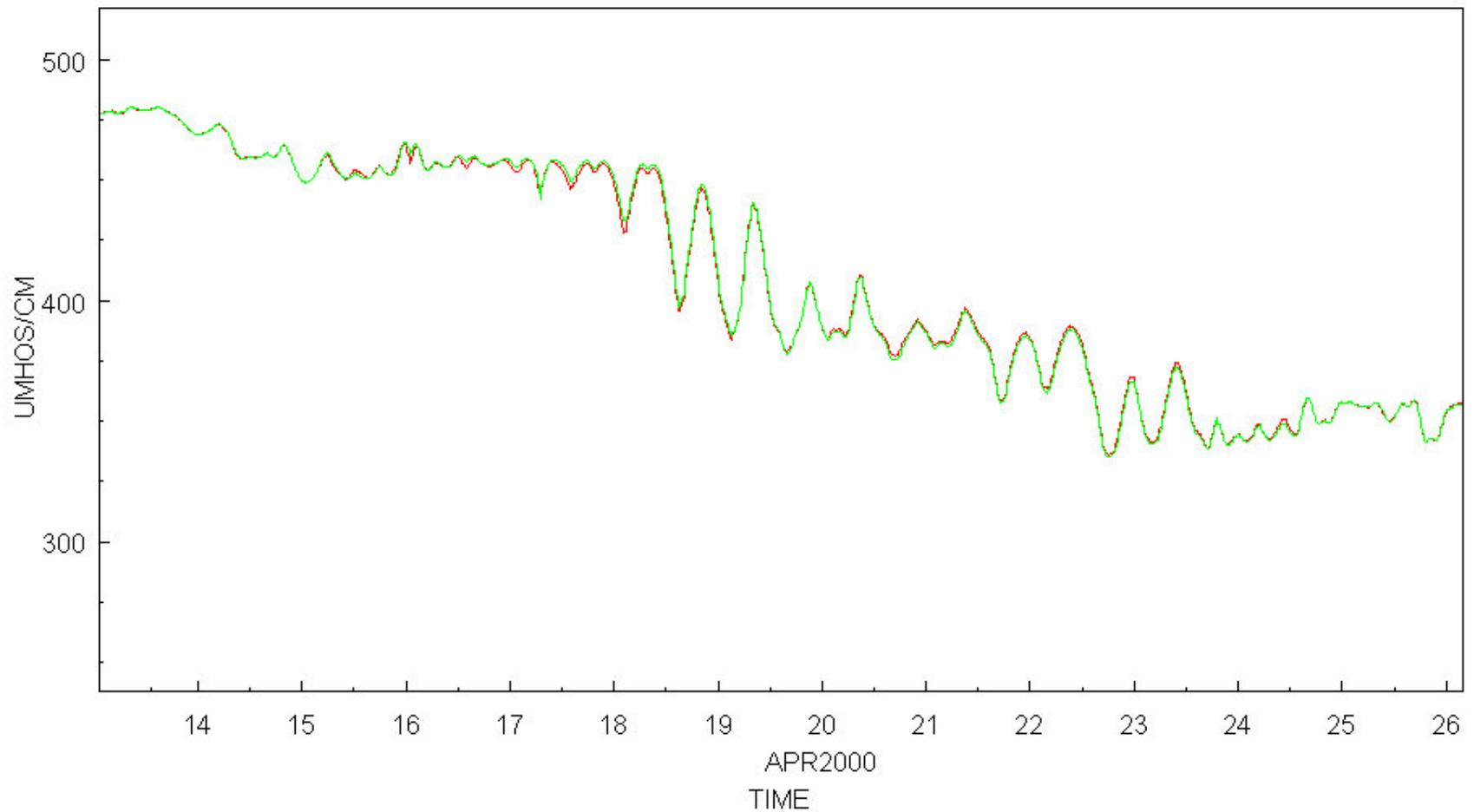
Graph (DSM2-QUAL-6.2+CHAN)



- EC at RMID023 (+DSM2\_HIST\_CAL+FROM-ALL)
- EC at RMID023 (DWR+HIST\_RECAL\_DB\_01A+FROM-ALL\_)

# Grant Line Canal

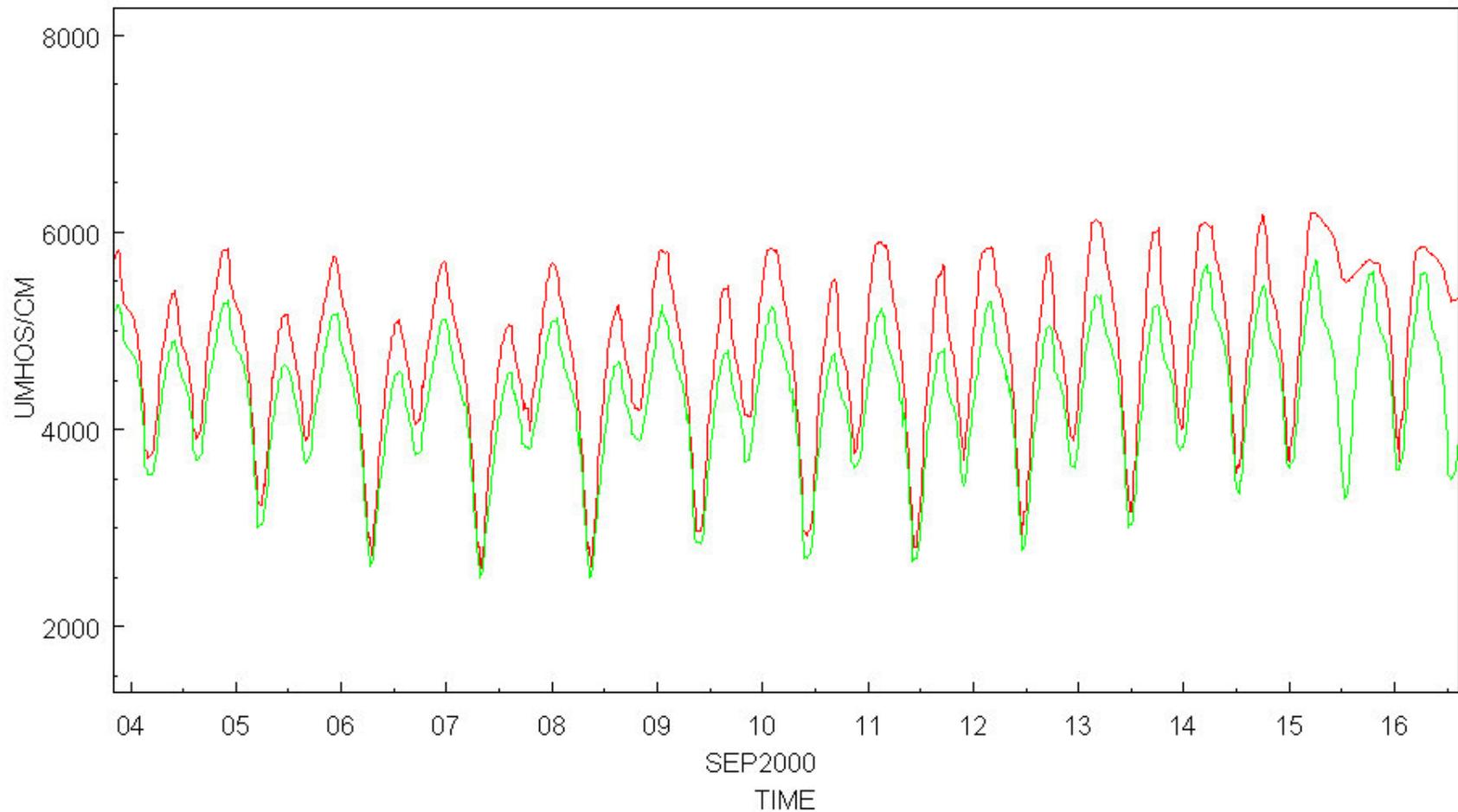
Graph (DSM2-QUAL-7.30+CHAN)



- EC at CHGRL009 (DWR+HIST\_RECAL\_DB\_01A+FROM-ALL)
- EC at CHGRL009 (+DSM2\_HIST\_CAL+FROM-ALL)

# Montezuma Slough

Graph (DSM2-QUAL-7.30+CHAN)



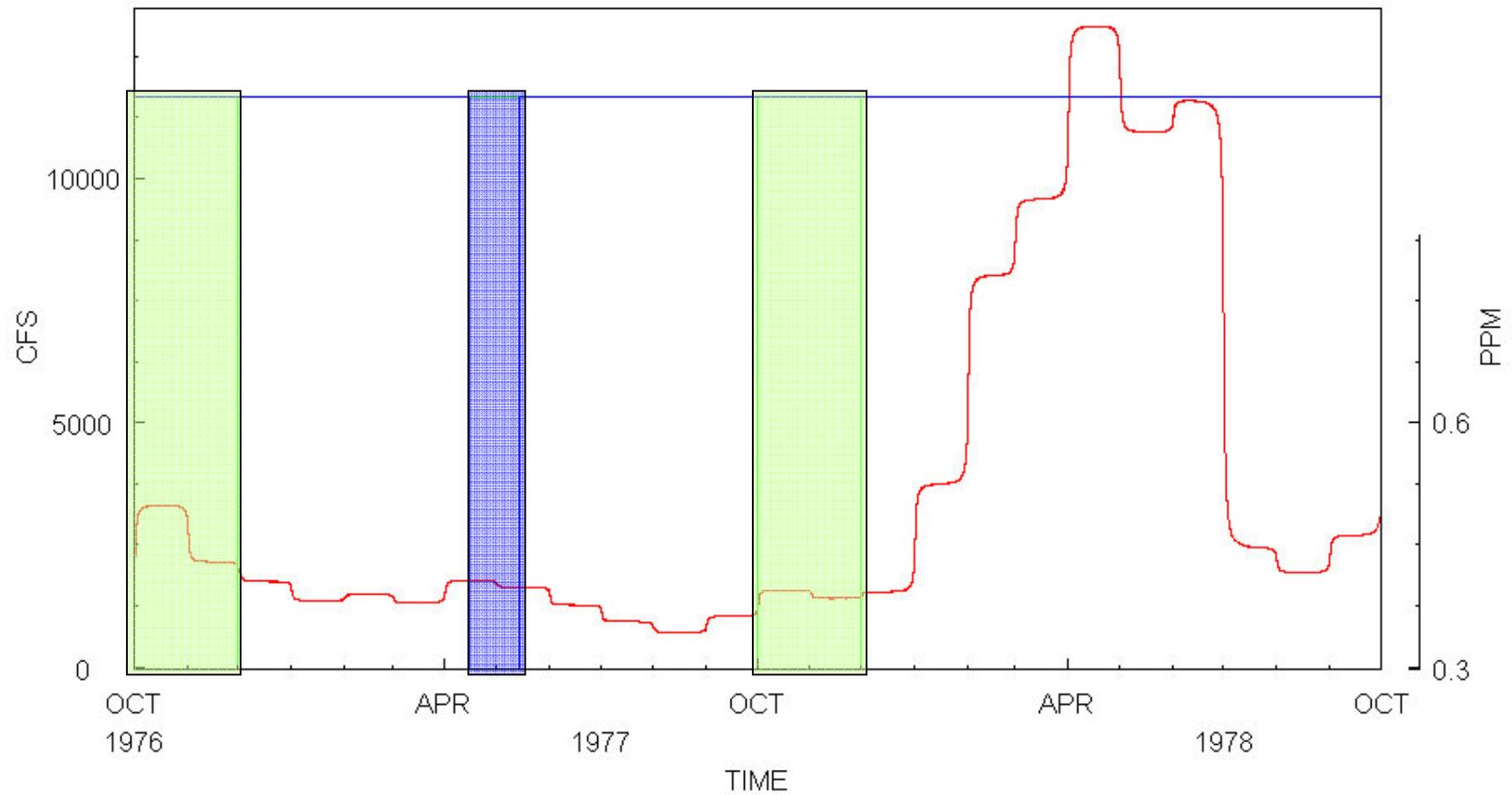
- EC at SLMZU029 (DWR+HIST\_RECAL\_DB\_01A+FROM-ALL)
- EC at SLMZU029 (+DSM2\_HIST\_CAL+FROM-ALL)

# Permanent Barriers Scenario

- **Planning run**
- **Gate operations determined by operating rules**
- **Early results**

# Head of Old River Barrier

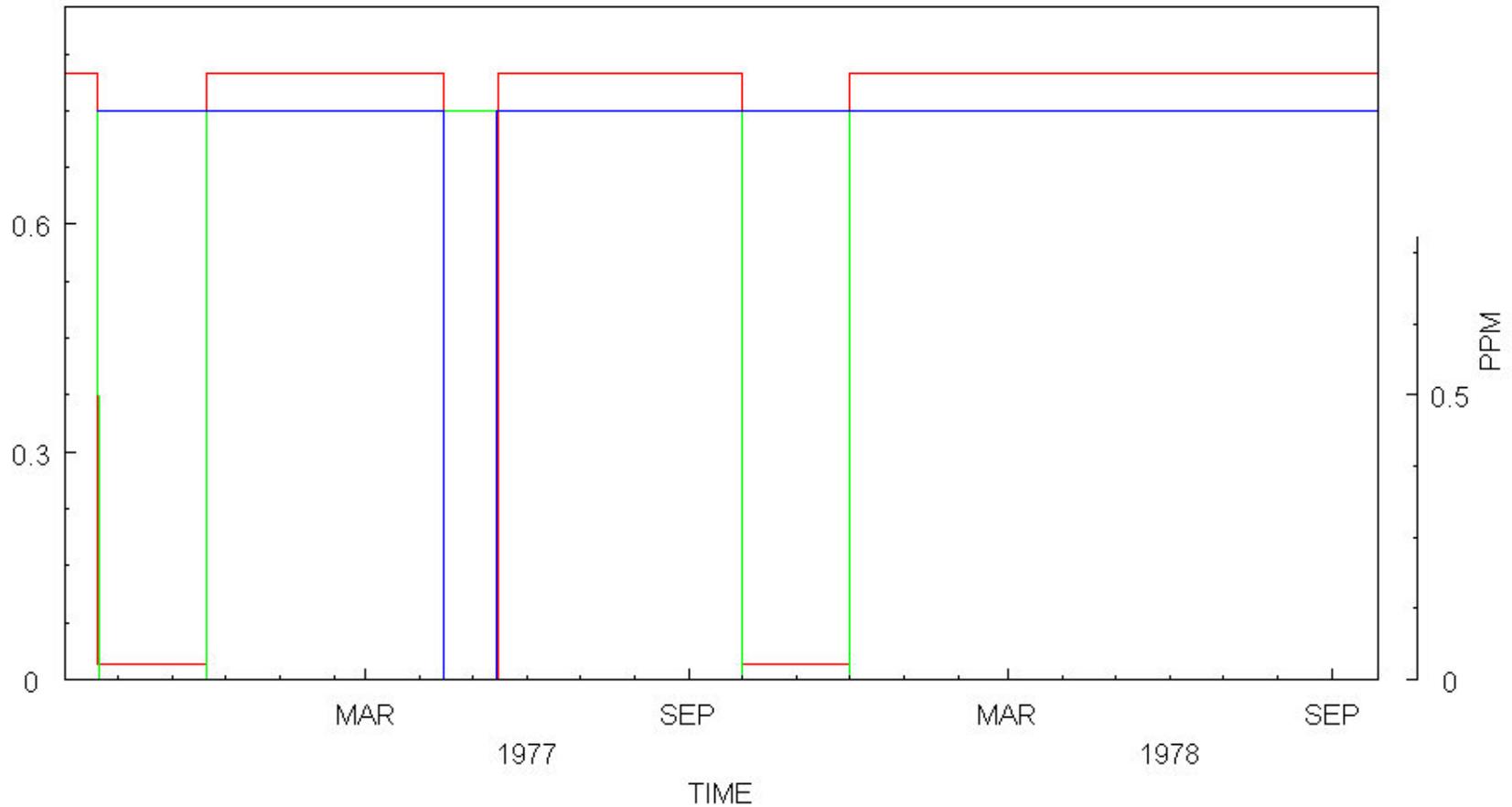
Graph (DSM2-HYDRO-7.30+CHAN)



- FLOW at SJR\_VERN (DWR+PERM-PLAN-PBGOPS)
- OP-TO-NODE at ORHRB-LEAKY-OP (DWR+PERM-PLAN-P)
- OP-TO-NODE at ORHRB-OP (DWR+PERM-PLAN-PBGOPS)

# Head of Old River Barrier

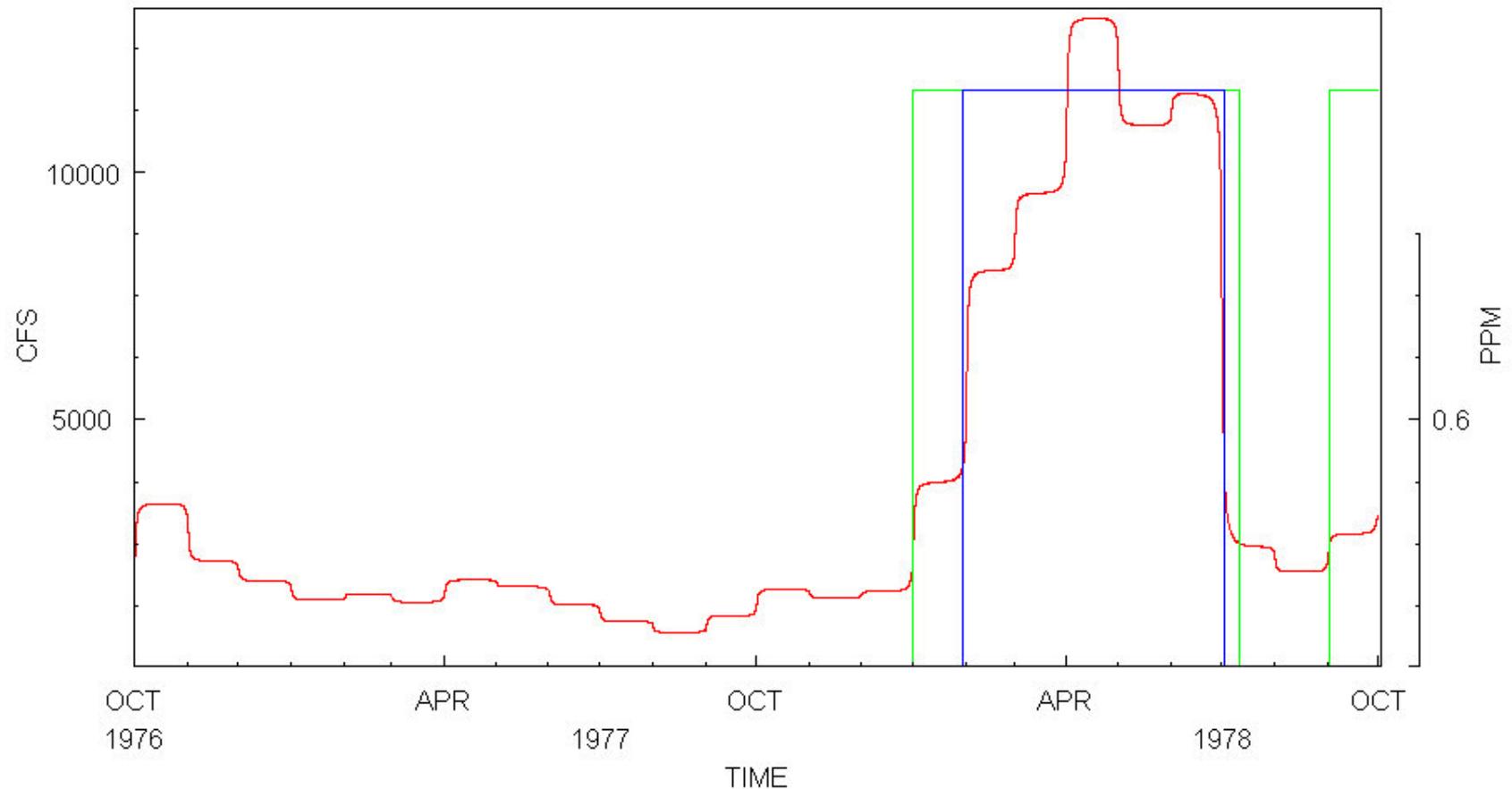
Graph (PLANNING+GATE)



- CFWEIRDOWN at ROLD074 (2020INTEGRATED)
- OP-TO-NODE at ORHRB-LEAKY-OP (DWR+PERM-PLAN-P)
- OP-TO-NODE at ORHRB-OP (DWR+PERM-PLAN-PBGOPS)

# Middle River and Old River Barriers

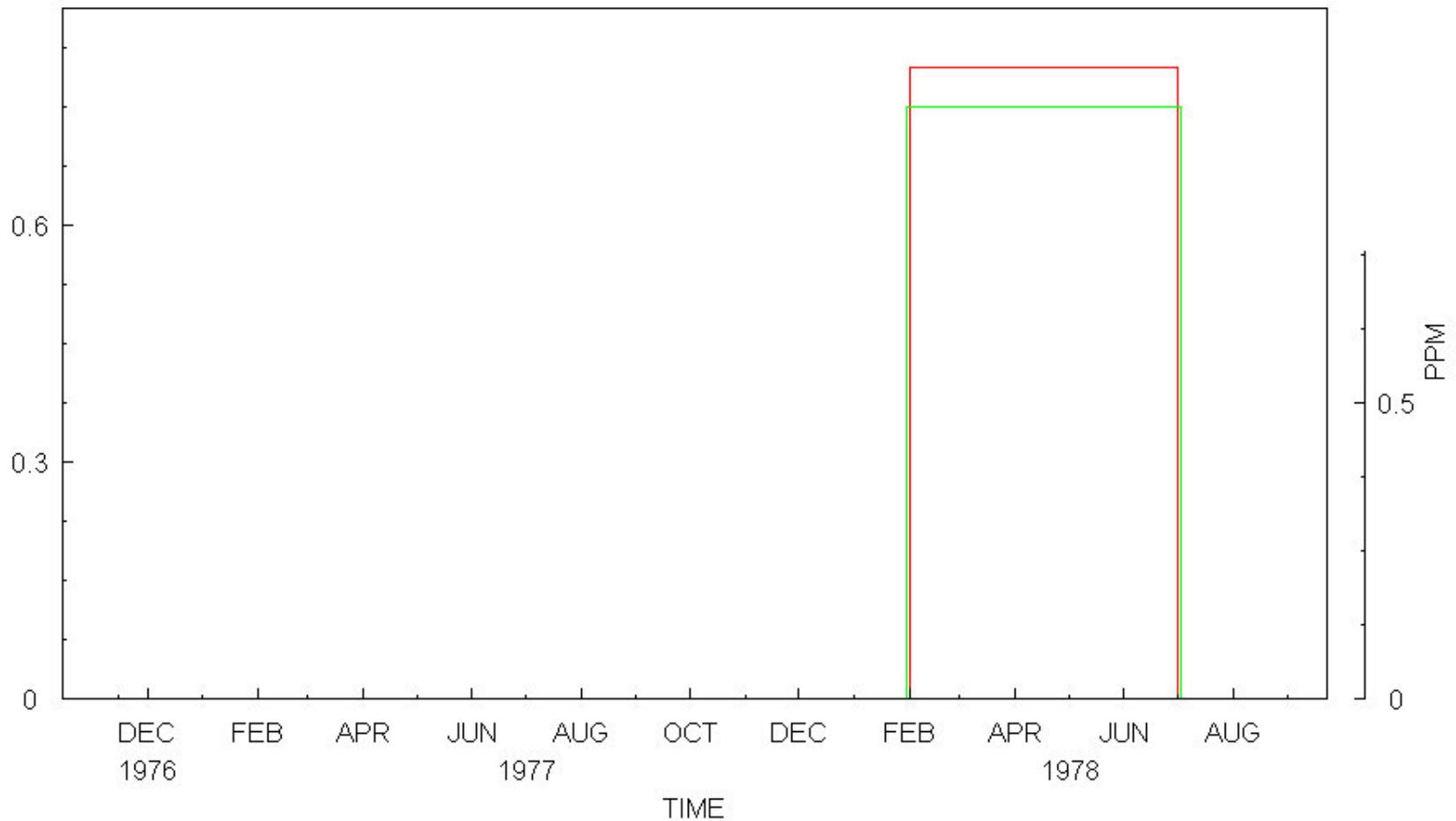
Graph (DSM2-HYDRO-7.30+CHAN)



- FLOW at SJR\_VERN (DWR+PERM-PLAN-PBGOPS)
- OP-FROM-NODE at MIDR-OP (DWR+PERM-PLAN-PBGOPS)
- OP-TO-NODE at OLDR-OP (DWR+PERM-PLAN-PBGOPS)

# Old River Barrier

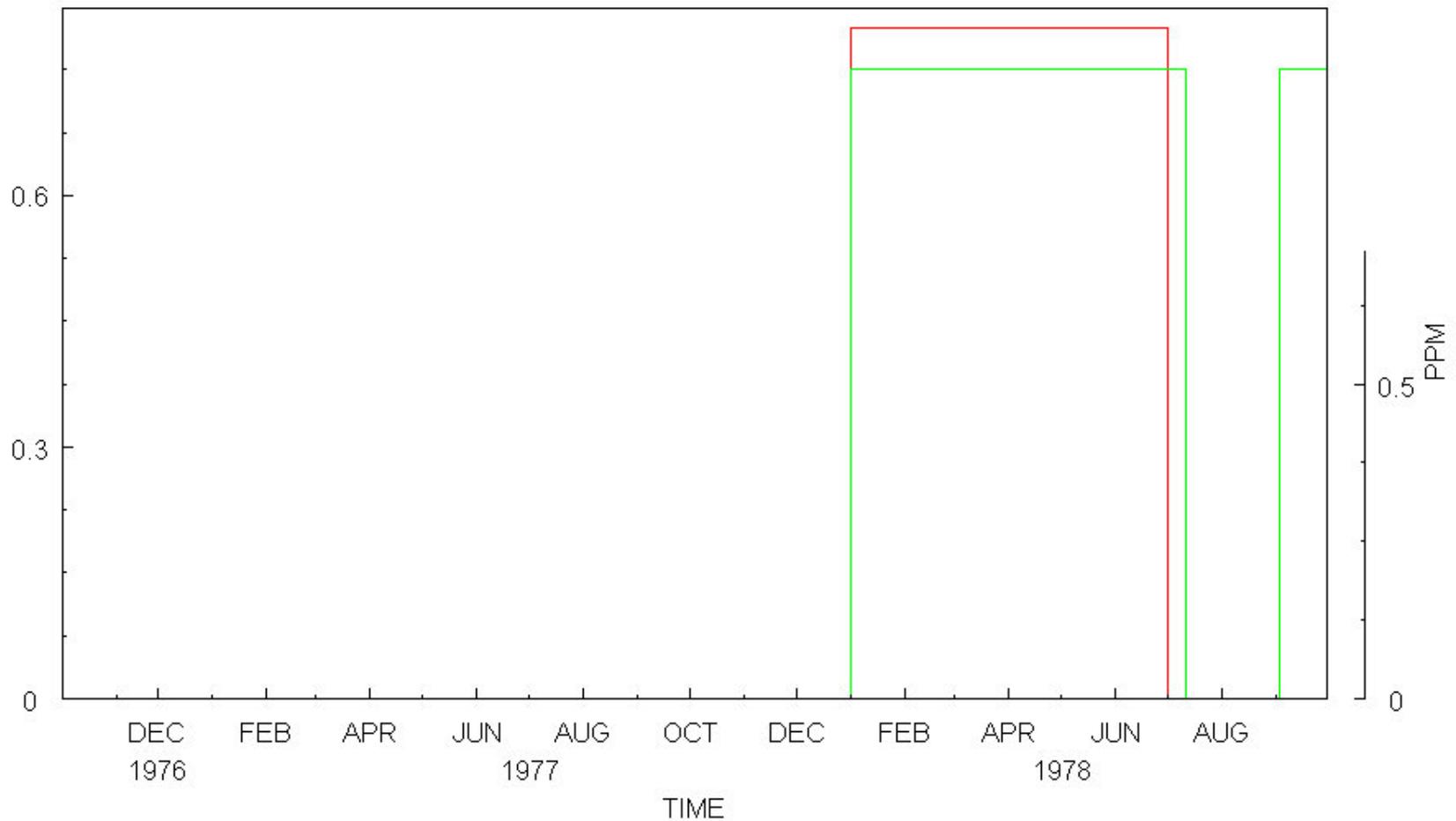
Graph (PLANNING+GATE)



- CFWEIRDOWN at ROLD046 (2020INTEGRATED)
- OP-TO-NODE at OLDR-OP (DWR+PERM-PLAN-PBGOPS)

# Middle River Barrier

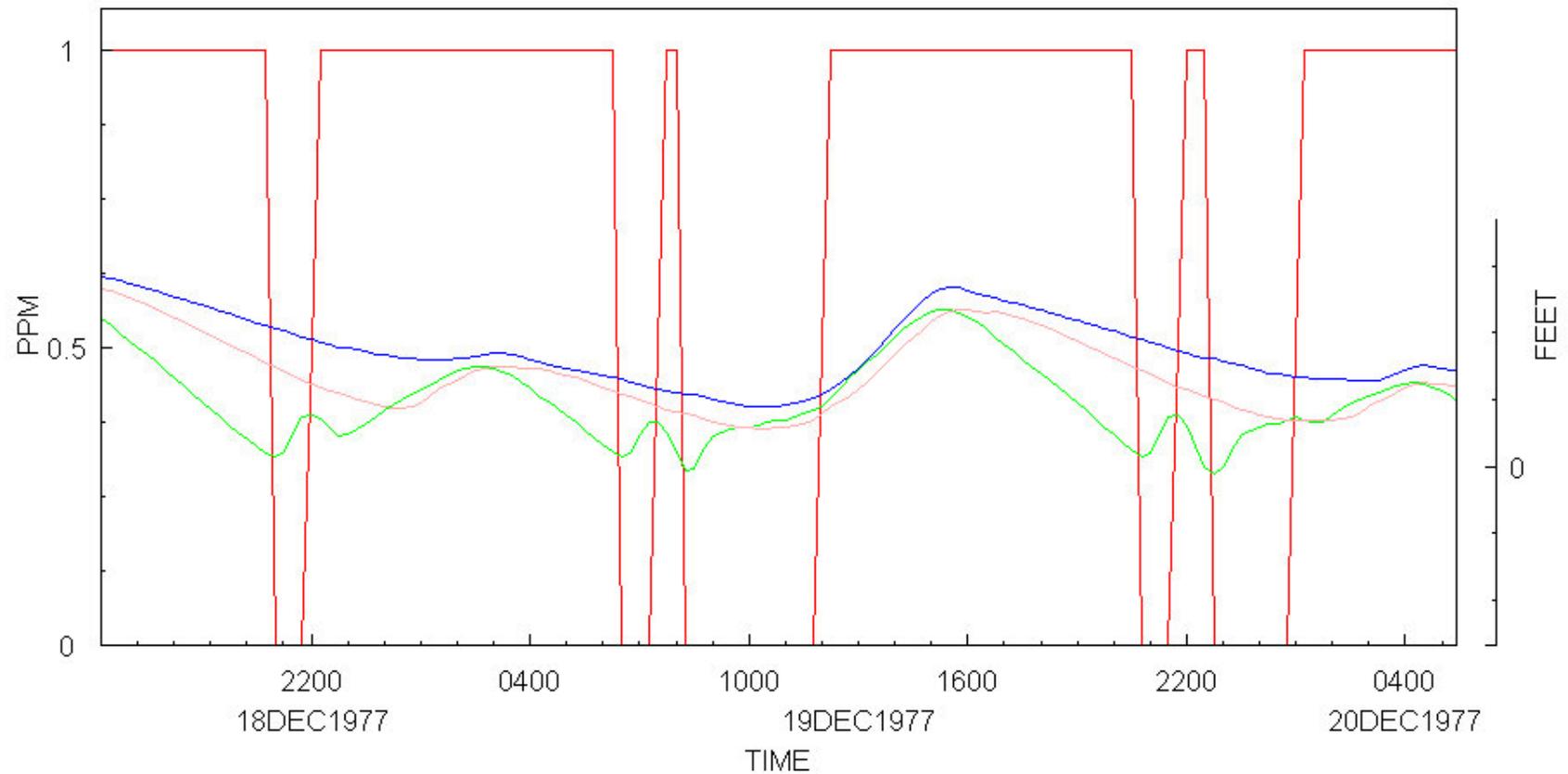
Graph (PLANNING+GATE)



- CFWEIRDOWN at RMID027 (2020INTEGRATED)
- OP-FROM-NODE at MIDR-OP (DWR+PERM-PLAN-PBGOPS)

# Grant Line Canal Barrier

Graph (DSM2-HYDRO-7.30+GATE)



- OP-TO-NODE at GLC-OP (DWR+PERM-PLAN-PBGOPS)
- STAGE at GLCBELOWBAR (DWR+PERM-PLAN-PBGOPS)
- STAGE at MRUNDINERD (DWR+PERM-PLAN-PBGOPS)
- STAGE at OLDR\_TRACY (DWR+PERM-PLAN-PBGOPS)