

(6) 水質（常時観測）

- 1) 観測目的

ダム撤去により環境が変化すると予測されるダム上・下流において、水質の常時観測を行い、出水時の水の濁り等の発生状況を把握することを目的とする。
- 2) 観測項目

次の4つの項目を観測する。①水温、②pH、③D0、④濁度
- 3) 観測時期・頻度

平成27年4月1日～平成28年3月31日の期間において、1時間毎とする。

4) 観測方法

各観測項目の観測方式及び測定範囲を下表に示す。

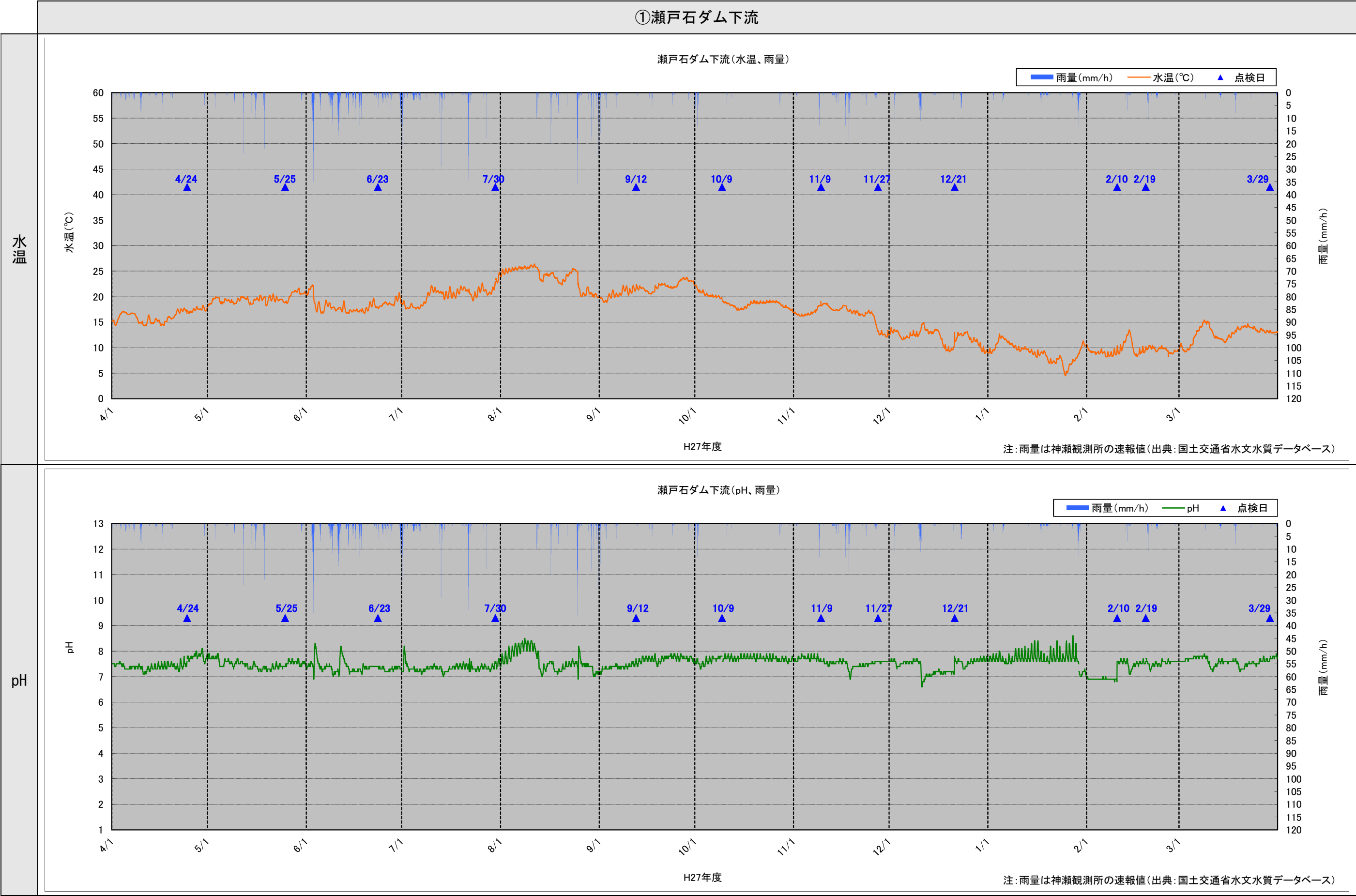
観測項目	観測方式	測定範囲
水温	半導体センサ	-5～50℃
pH	固定電解液ガラス電極方式	0～14
D0	ガルバニ電極方式	0～20mg/L
濁度	積分球方式及び透過光方式	0～2000FTU

- 5) 観測地点
- 次の3地点で観測した。①瀬戸石ダム下流、②道の駅坂本、③横石



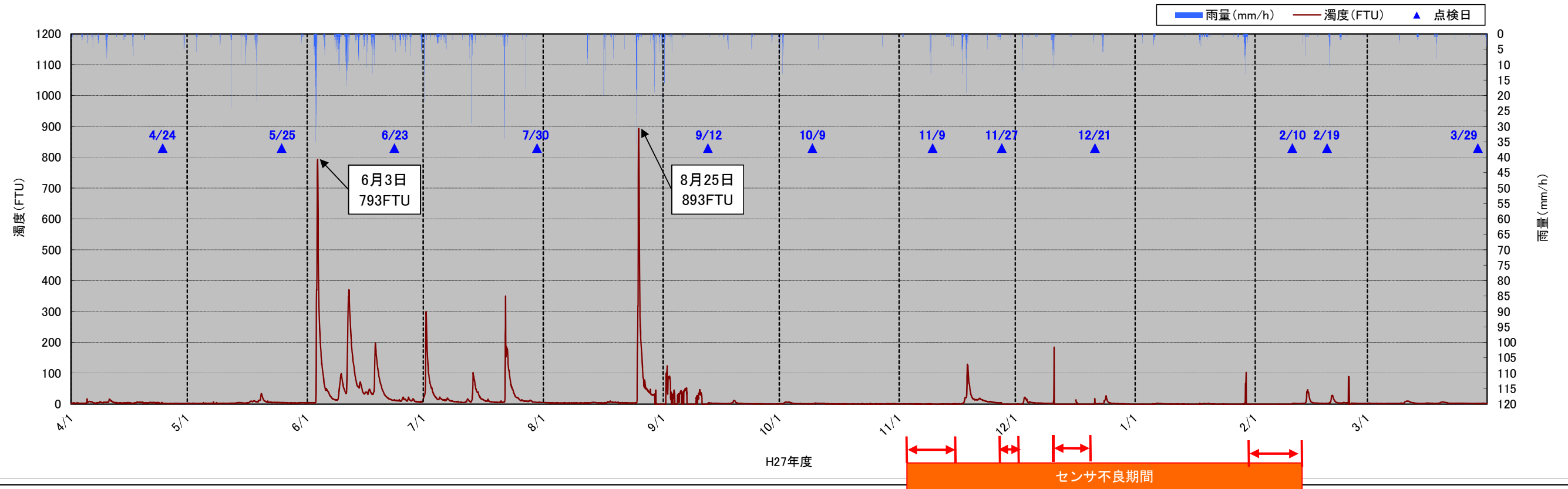
※この地図は、国土地理院発行の2万5千分の1地形図(坂本、中津道)を背景図として使用したものである。

6) 観測結果



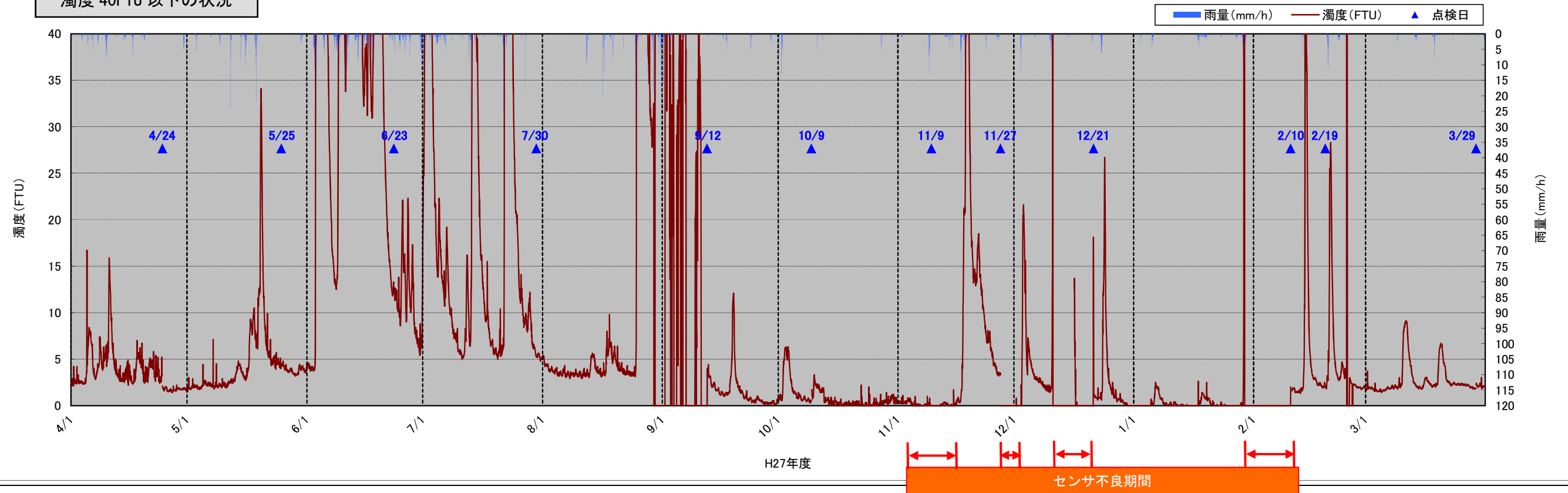
①瀬戸石ダム下流

瀬戸石ダム下流(濁度、雨量)

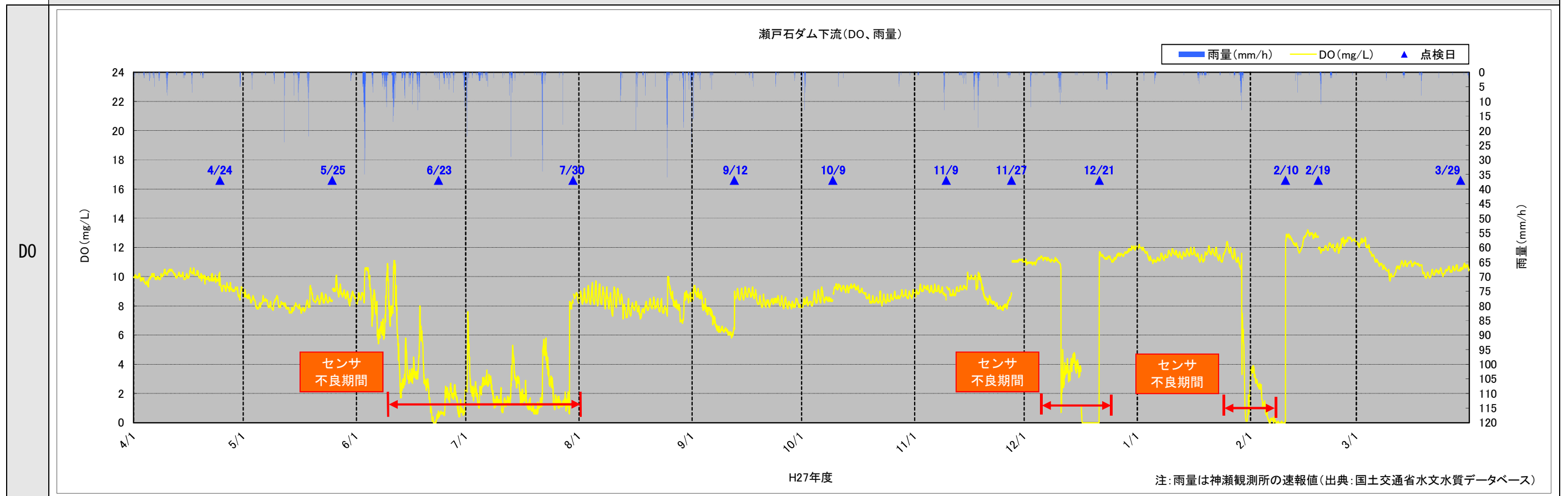


濁度 40FTU 以下の状況

瀬戸石ダム下流(濁度、雨量)

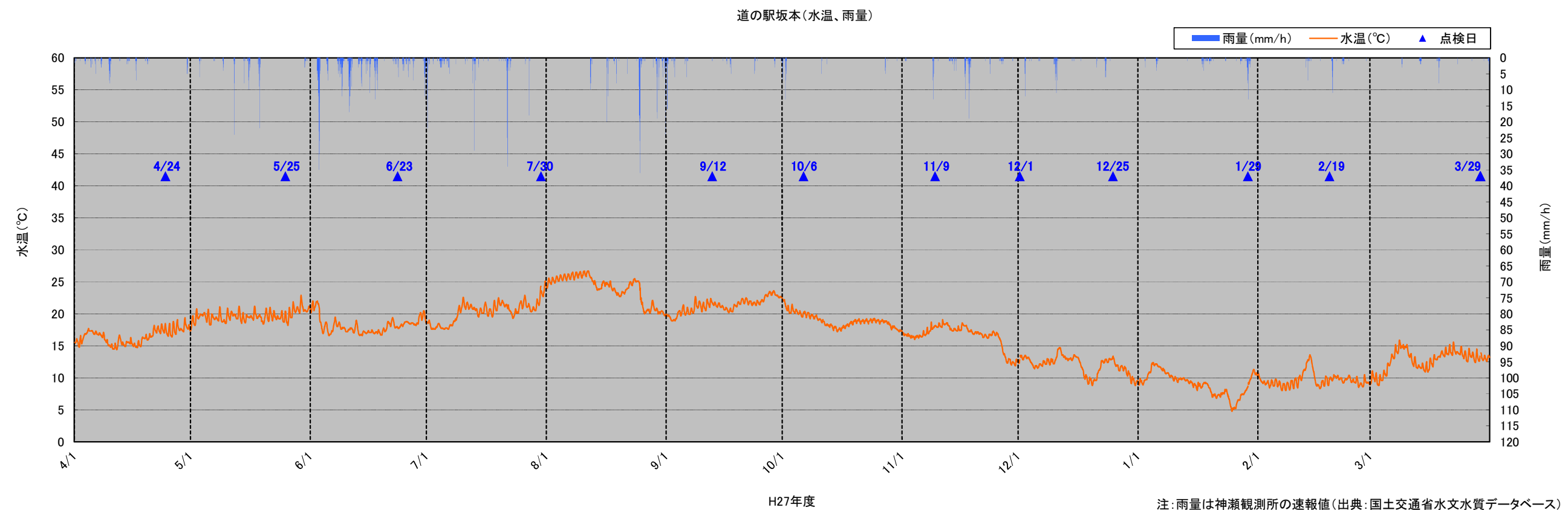


①瀬戸石ダム下流

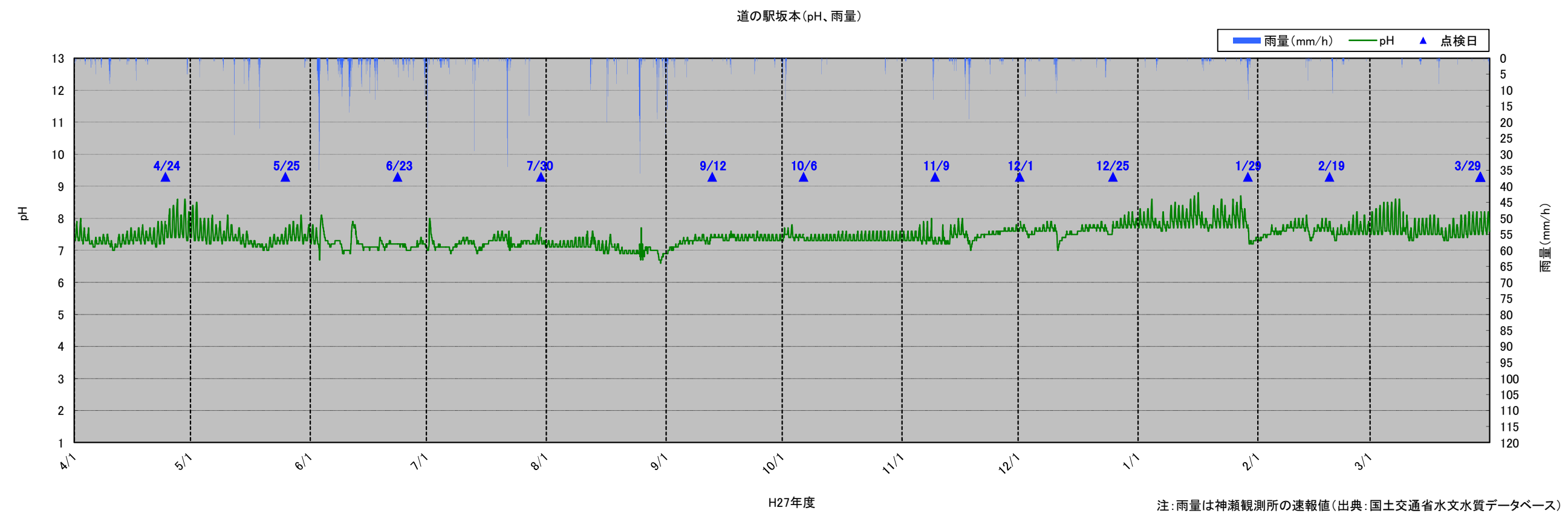


②道の駅坂本

水温

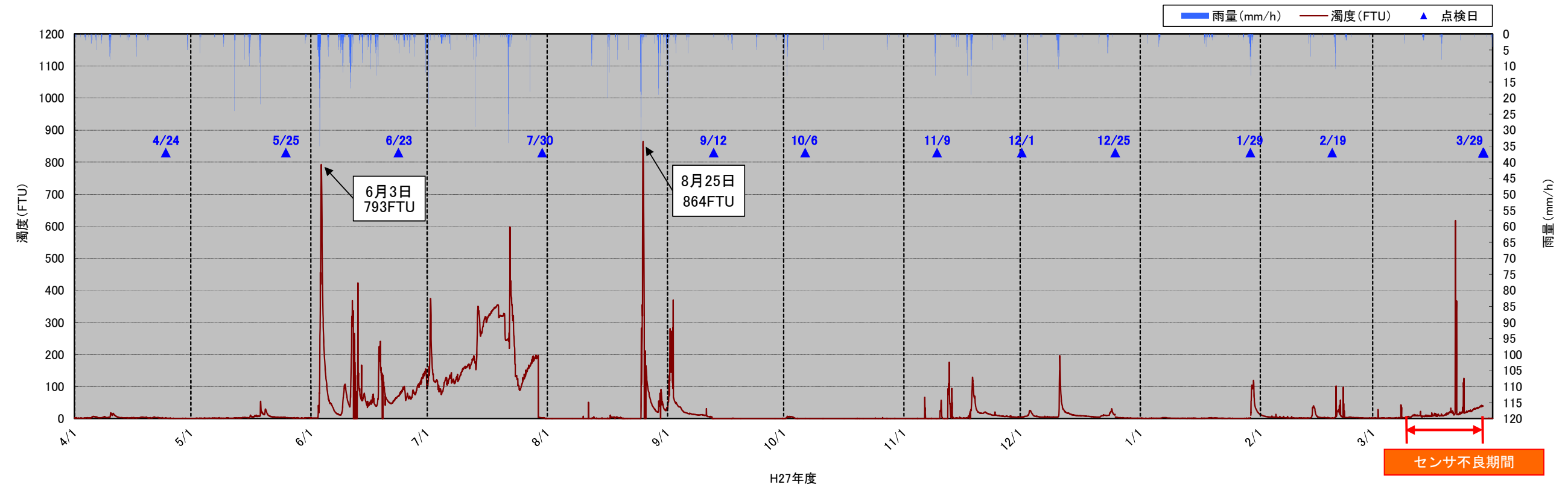


pH



②道の駅坂本

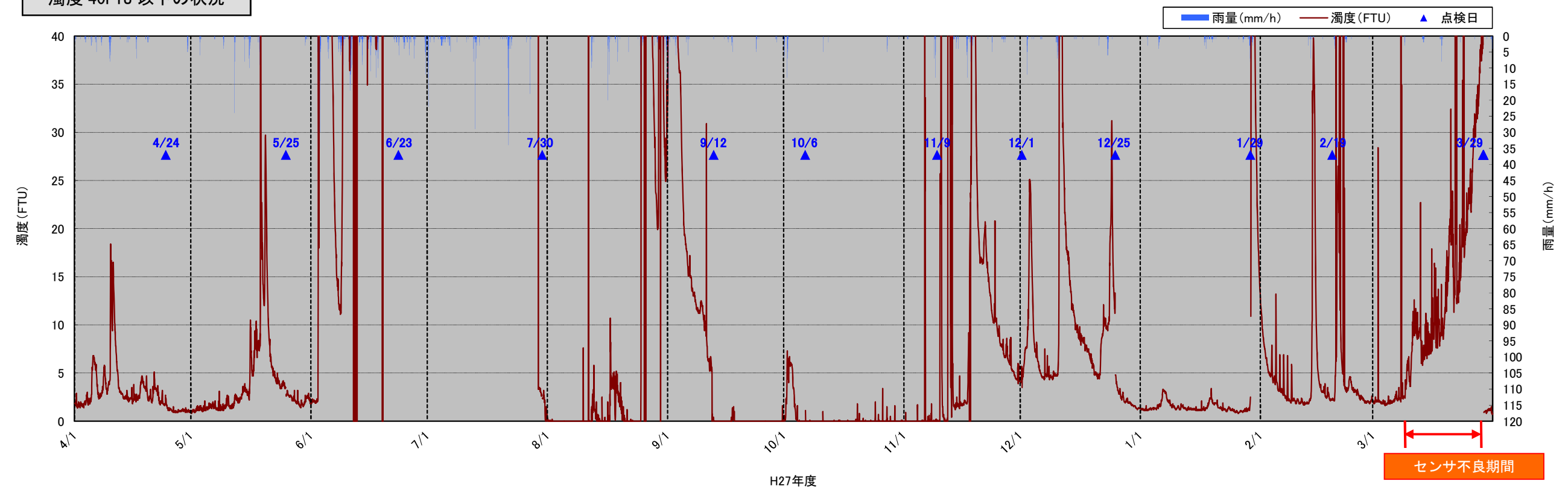
道の駅坂本(濁度、雨量)



濁度

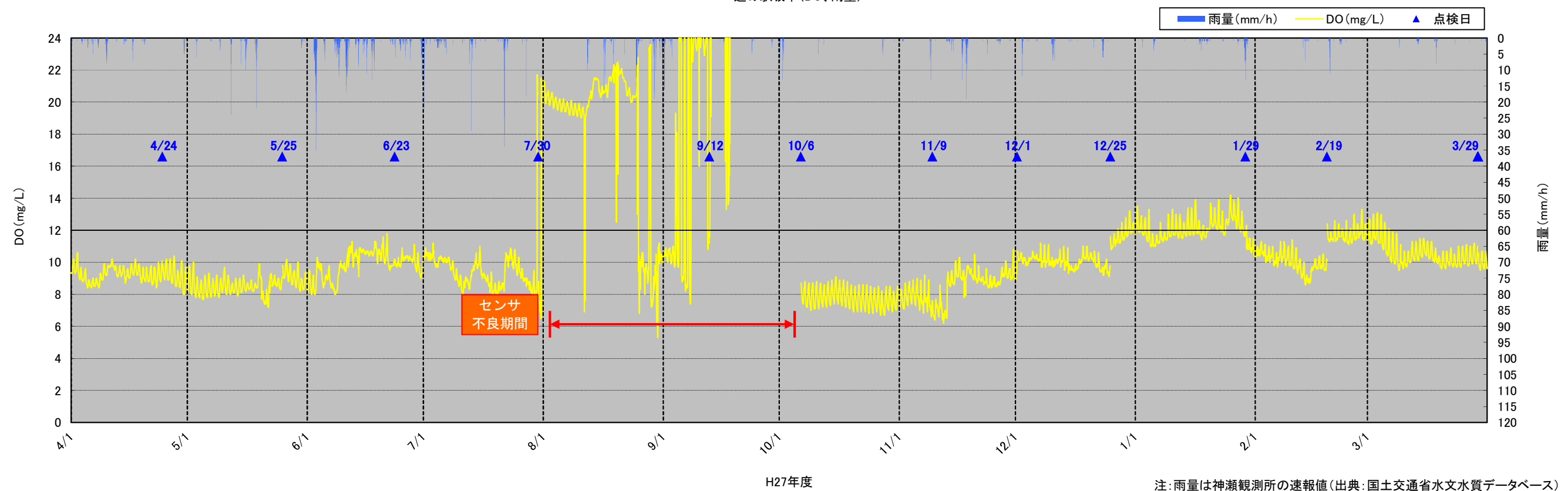
濁度 40FTU 以下の状況

道の駅坂本(濁度、雨量)



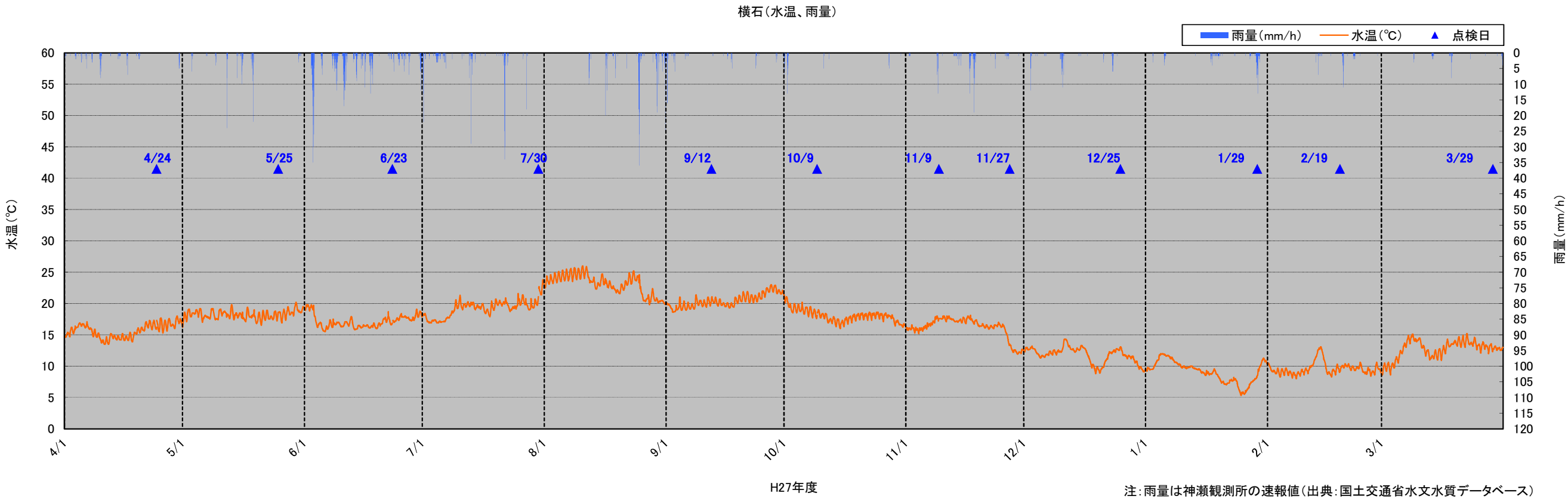
②道の駅坂本

道の駅坂本(DO、雨量)

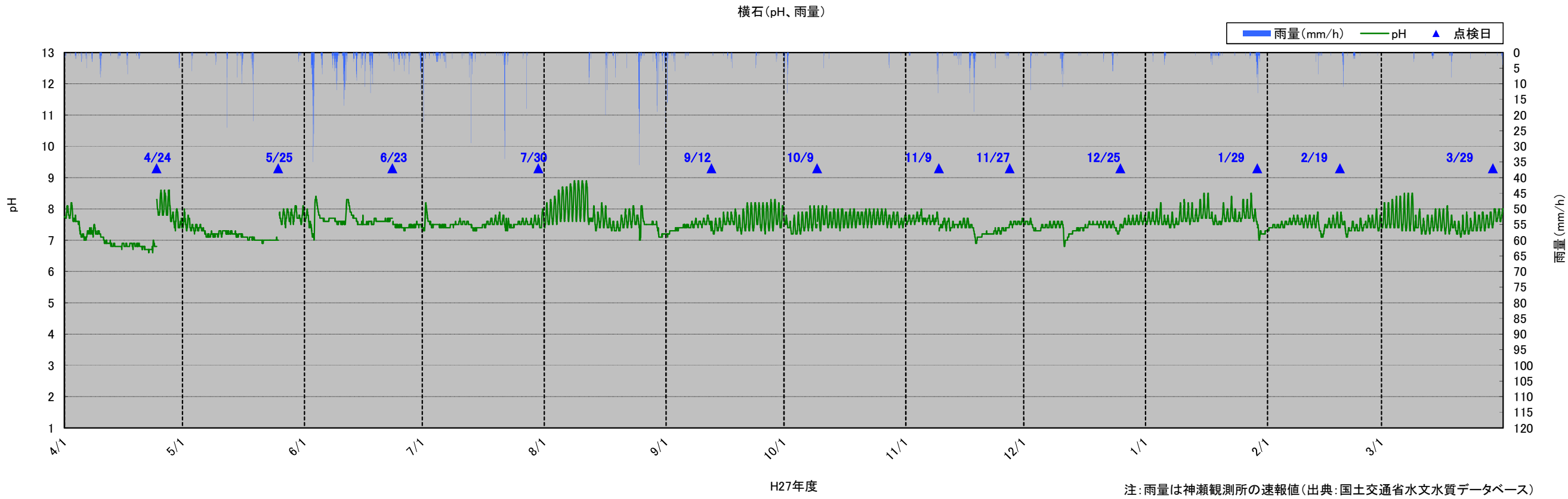


③横石

水温

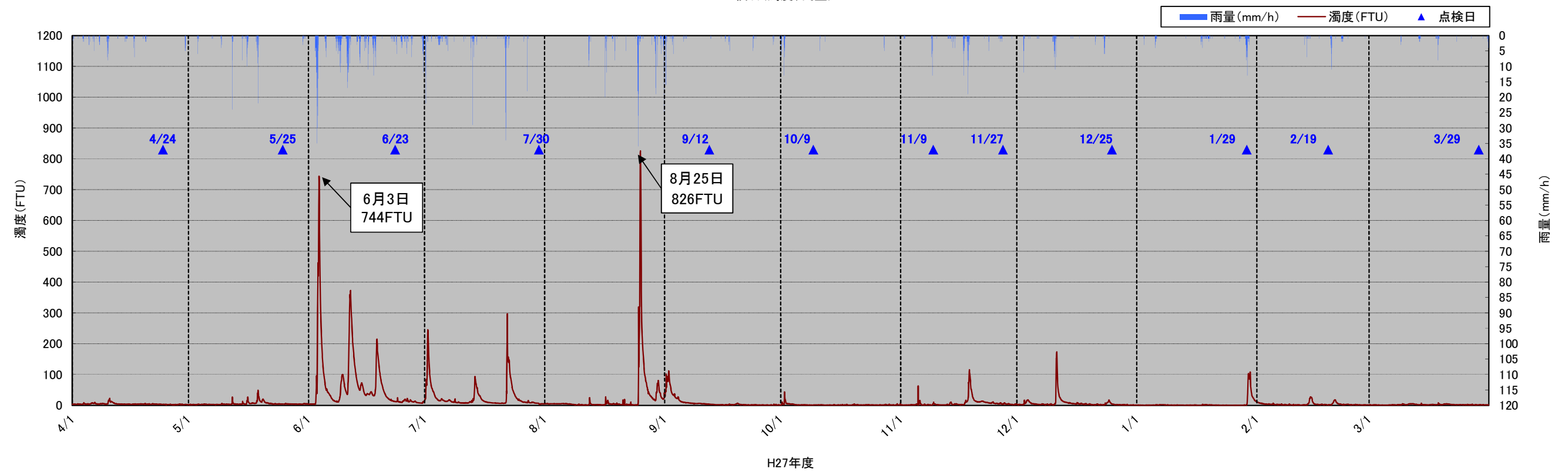


pH



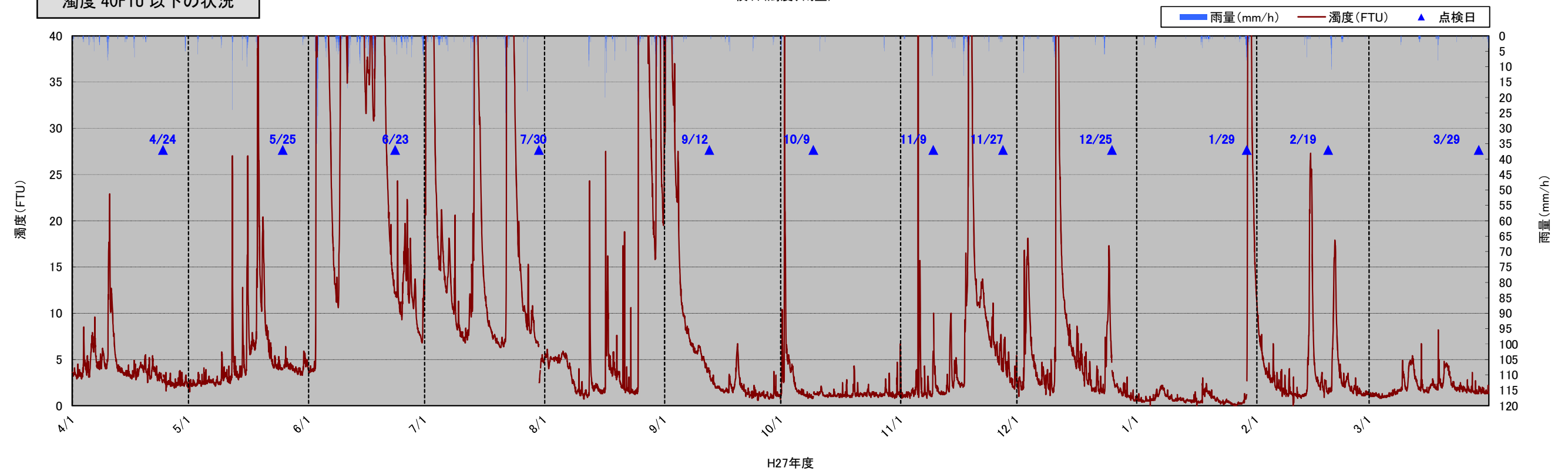
③横石

横石(濁度、雨量)



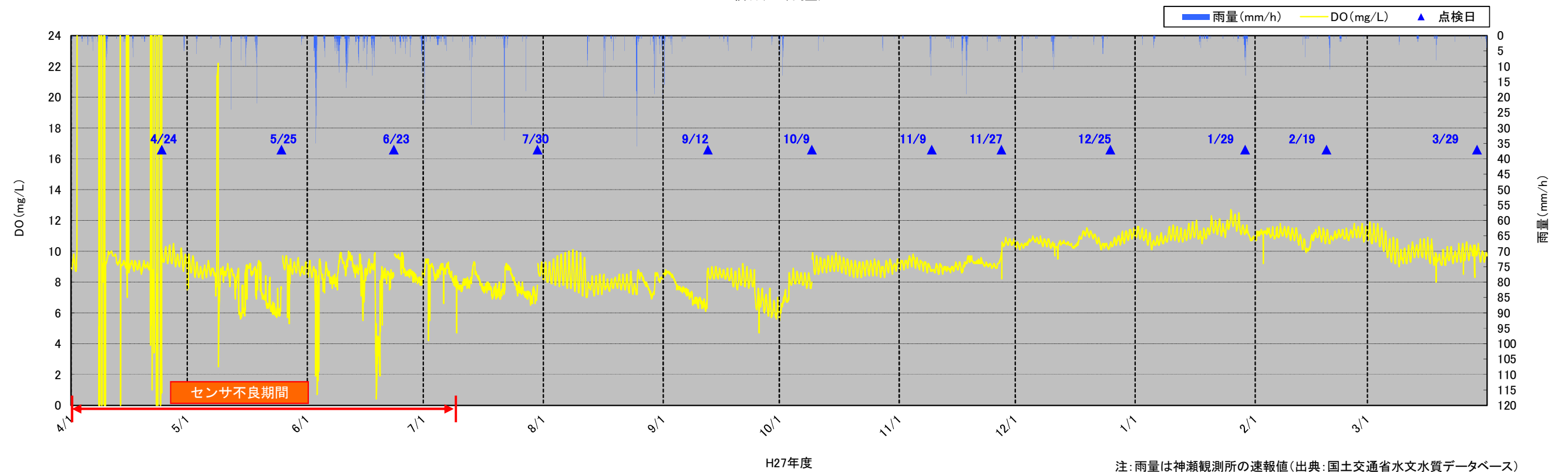
濁度 40FTU 以下の状況

横石(濁度、雨量)



③横石

横石(DO、雨量)



7) 出水時の流量と濁度（FTU）の時間的な変化について（H21～27 年度）

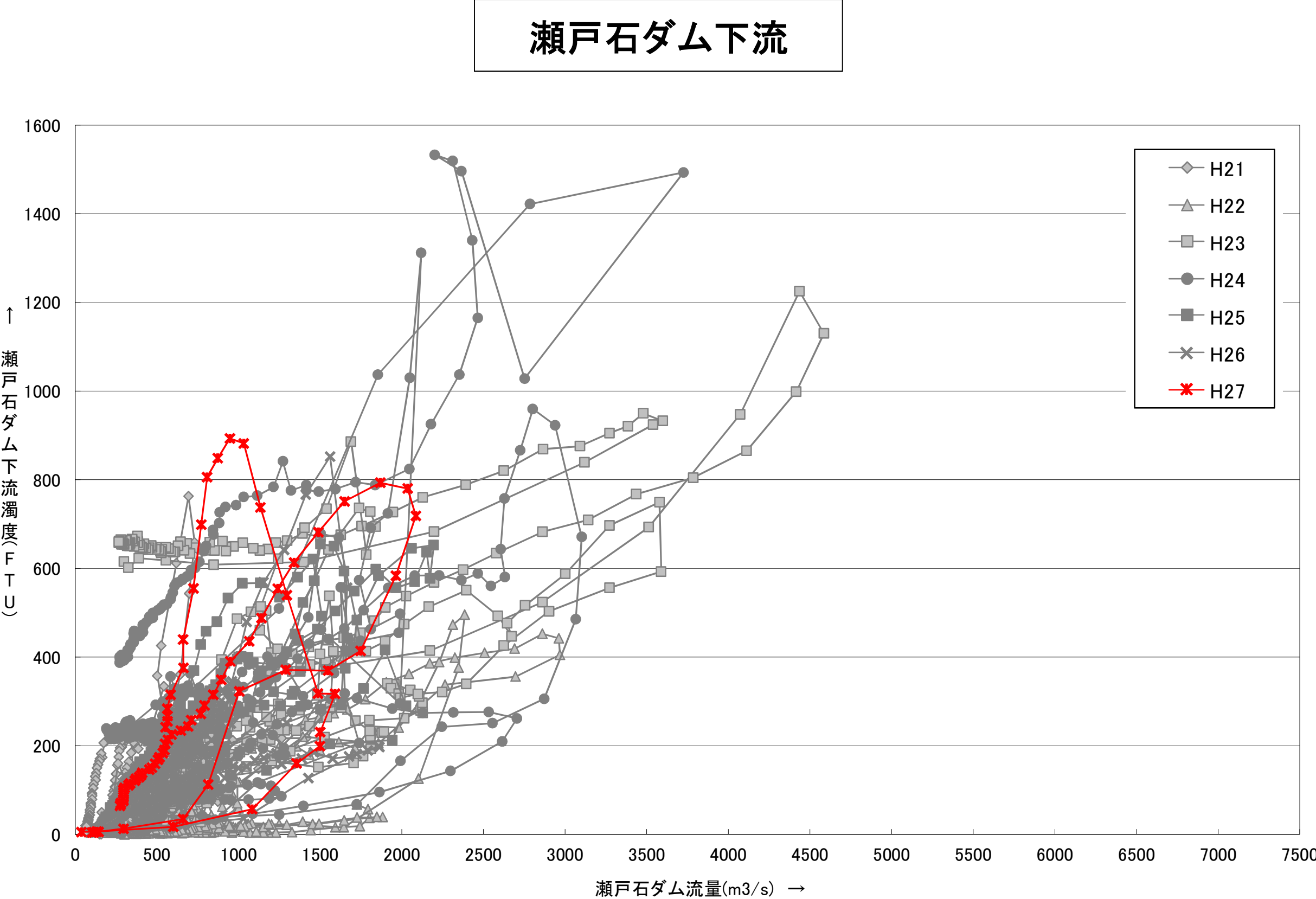
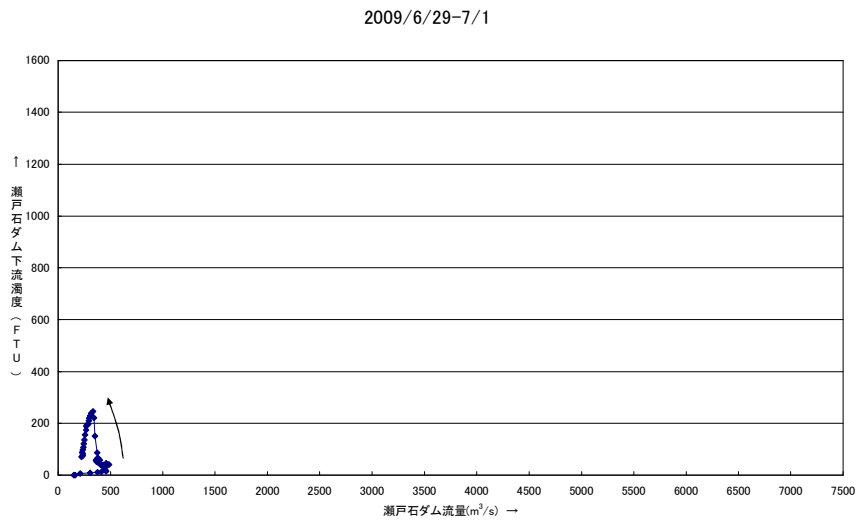


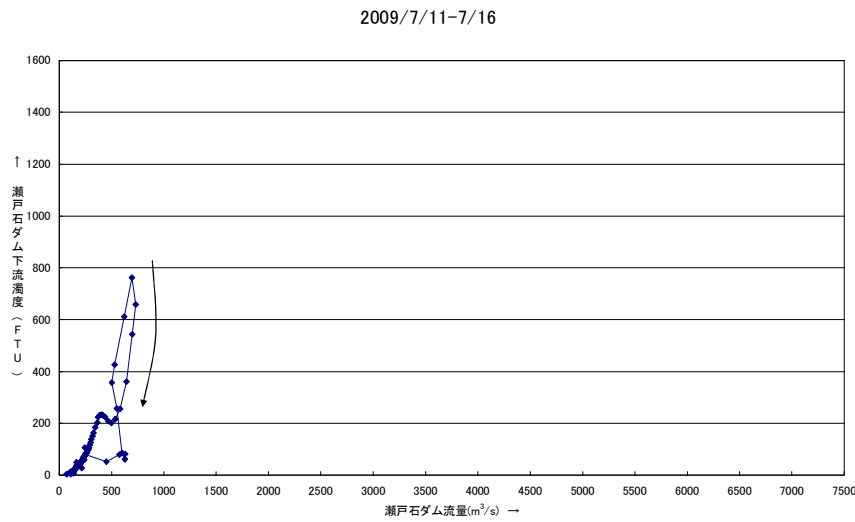
図 出水時の流量と濁度（FTU）の時間的な変化（瀬戸石ダム下流）

瀬戸石ダム下流

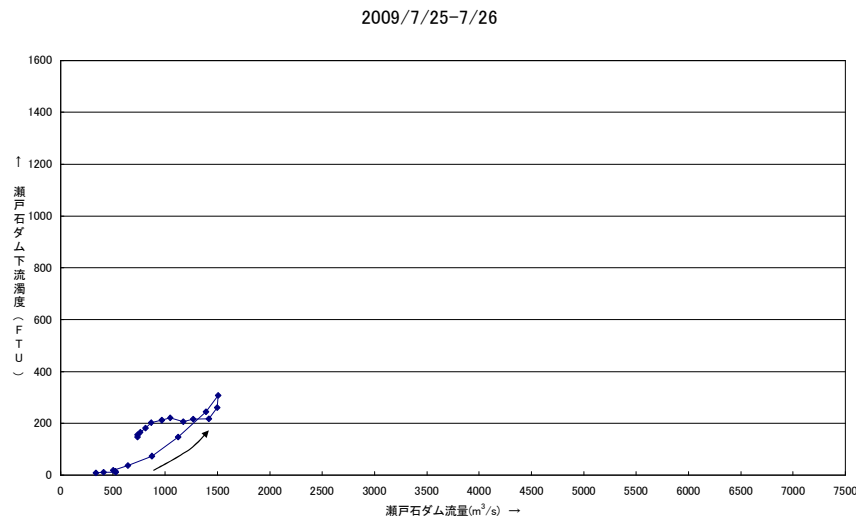
H21 年度①



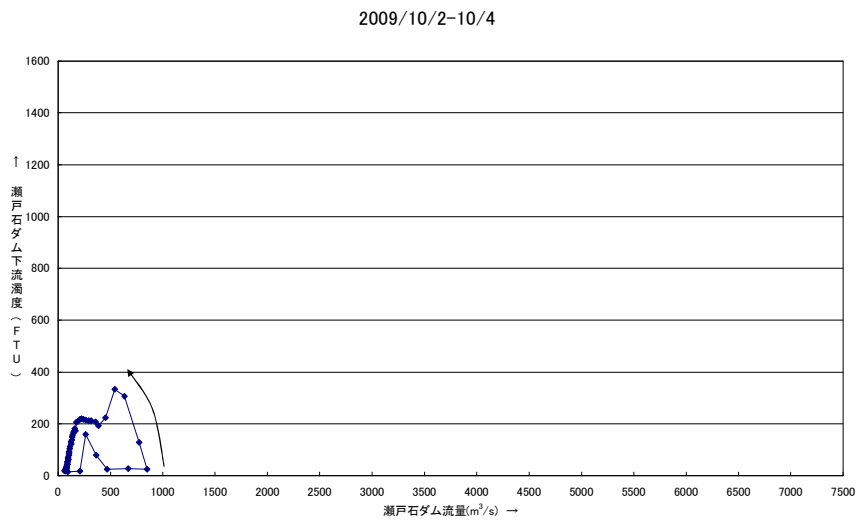
H21 年度②



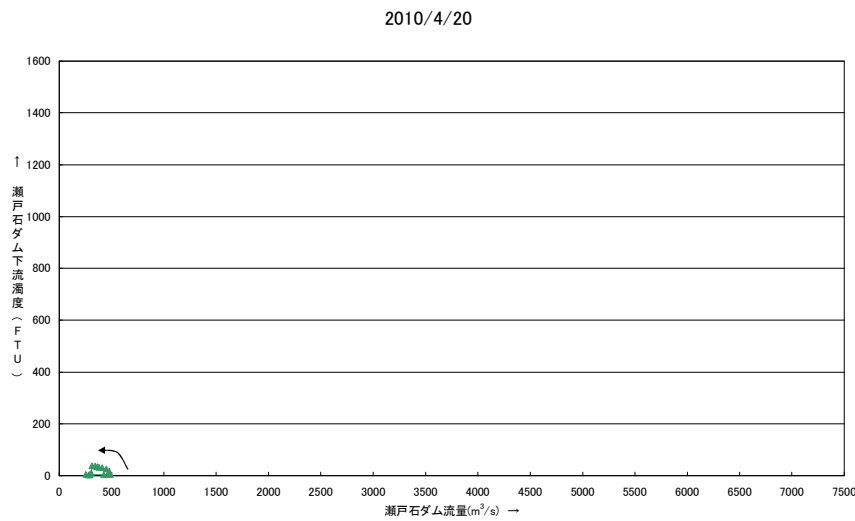
H21 年度③



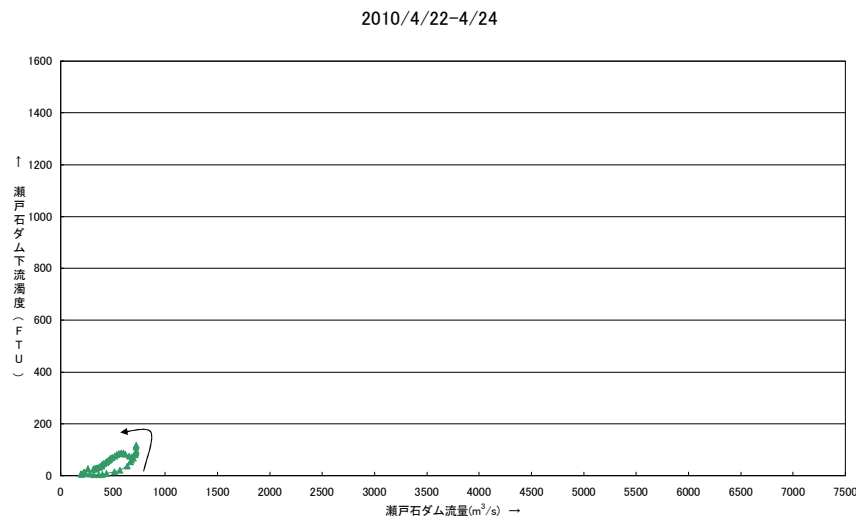
H21 年度④



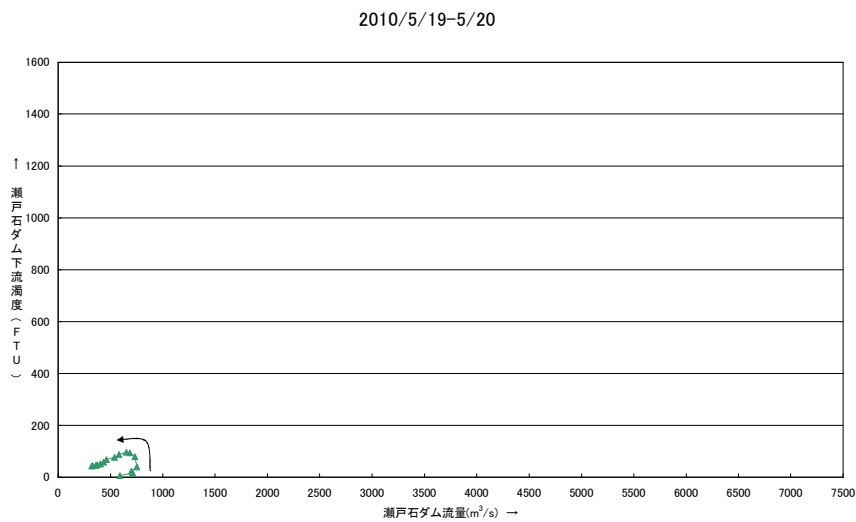
H22 年度①



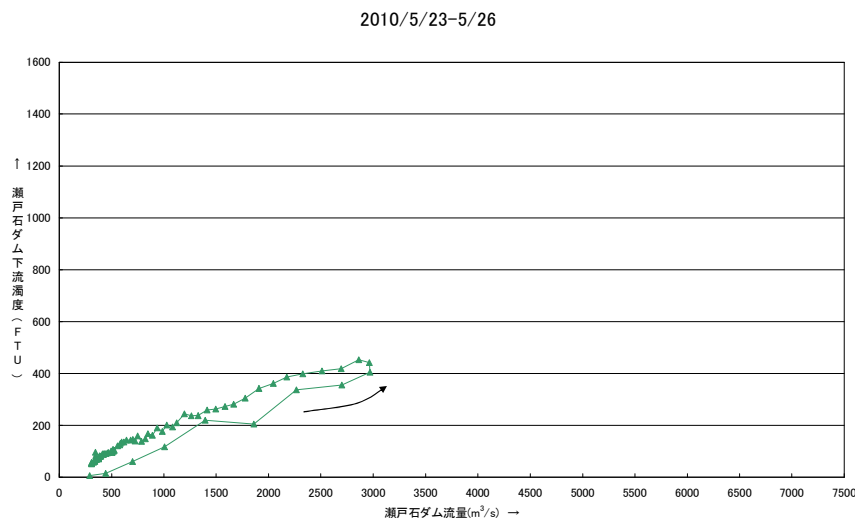
H22 年度②



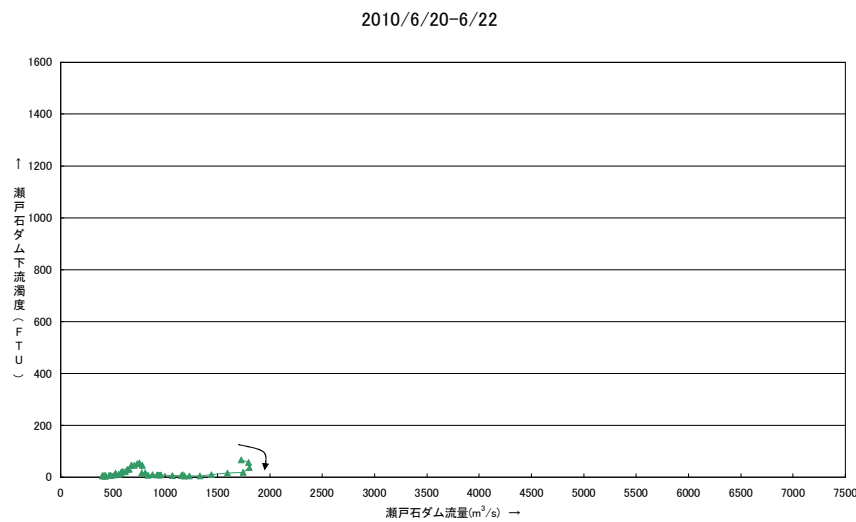
H22 年度③



H22 年度④

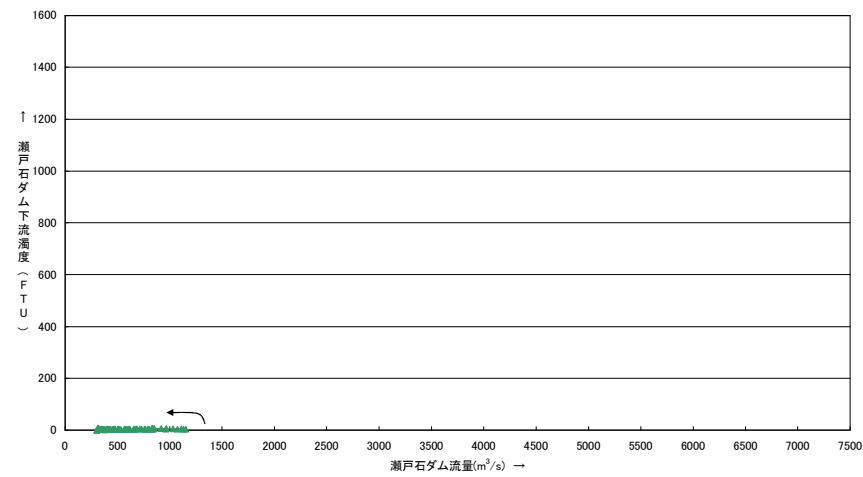


H22 年度⑤



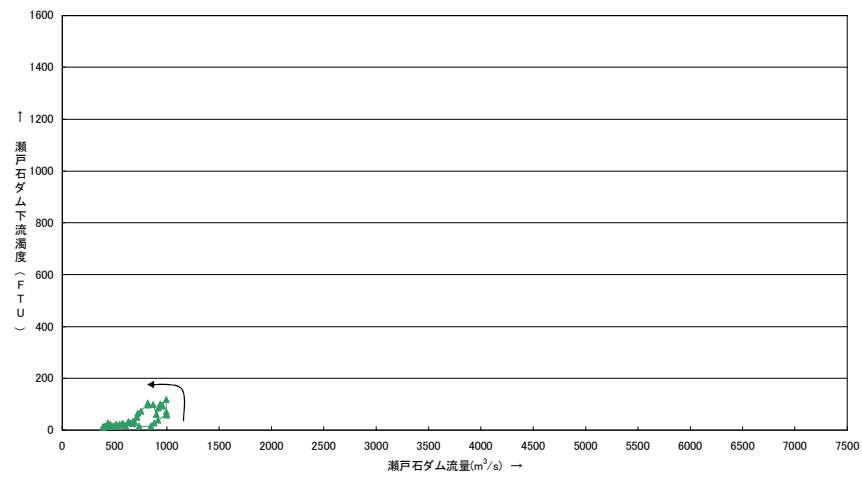
H22 年度⑥

2010/6/22-6/25



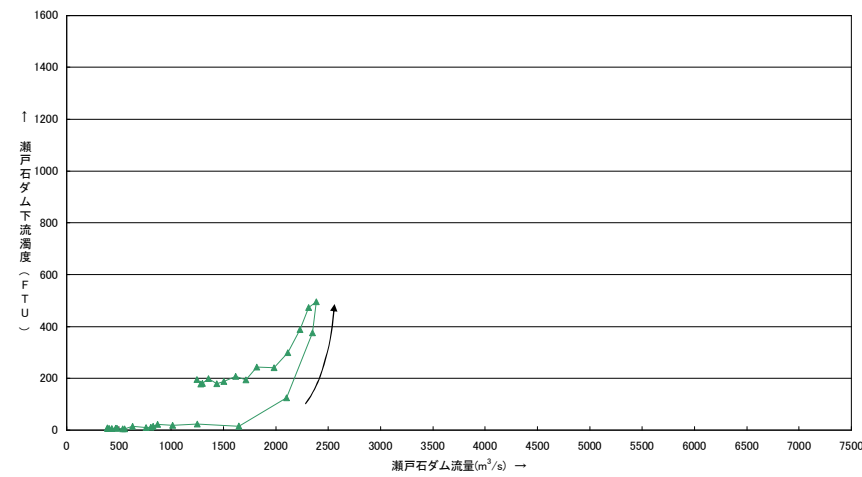
H22 年度⑦

2010/6/26-6/28



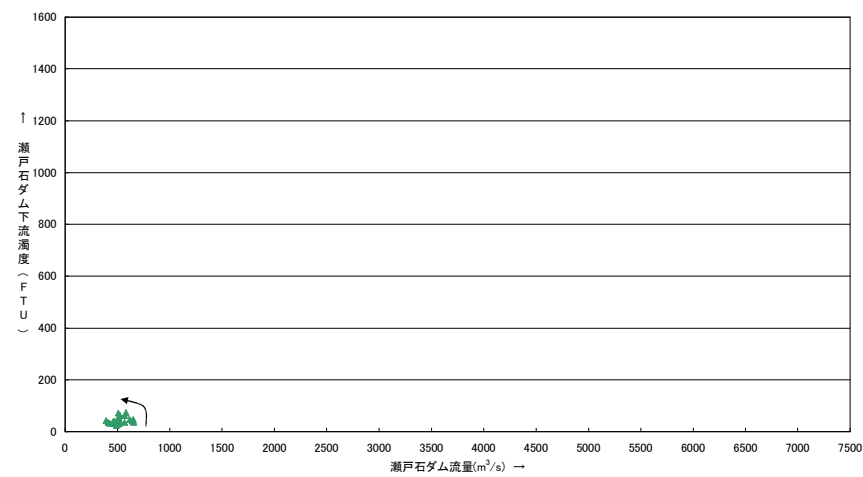
H22 年度⑧

2010/6/28-6/30



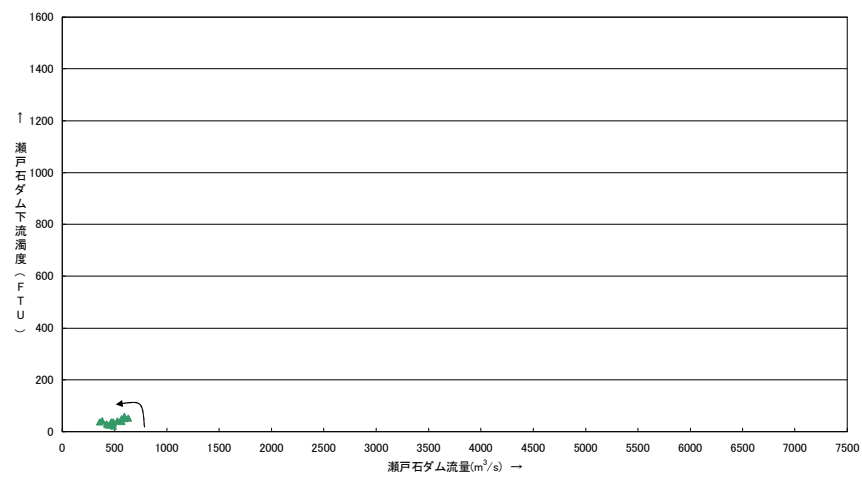
H22 年度⑨

2010/7/3-7/4



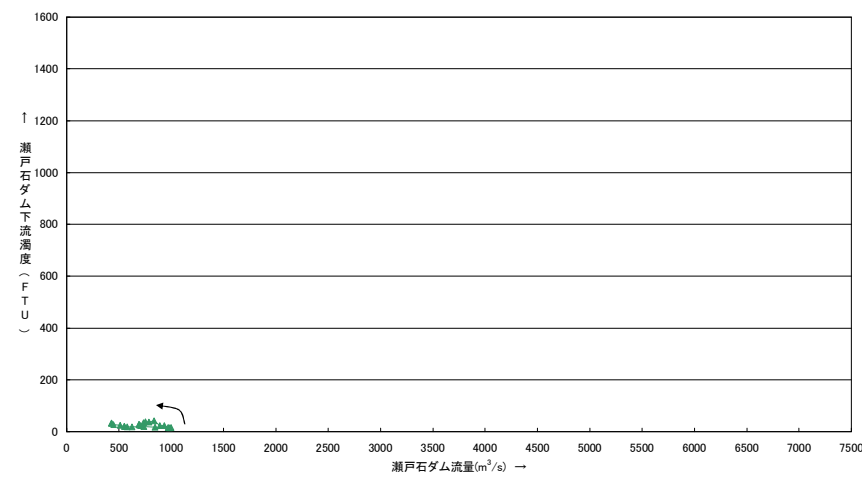
H22 年度⑩

2010/7/11-7/12



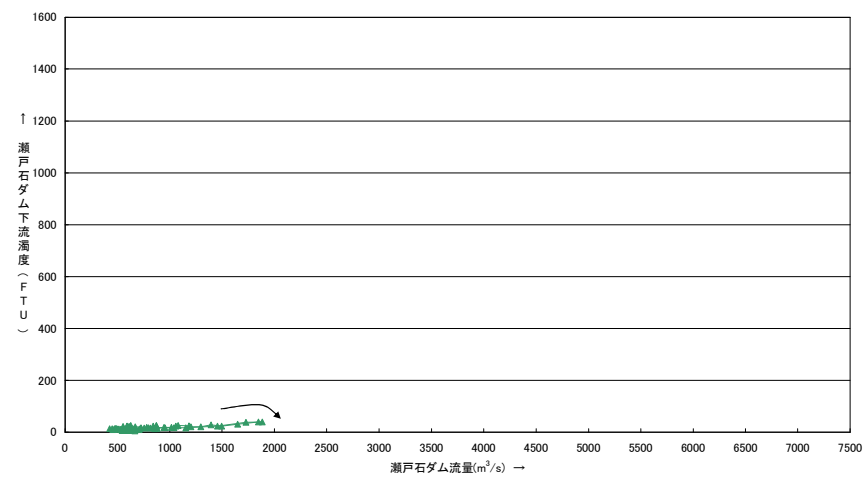
H22 年度⑪

2010/7/12-7/13



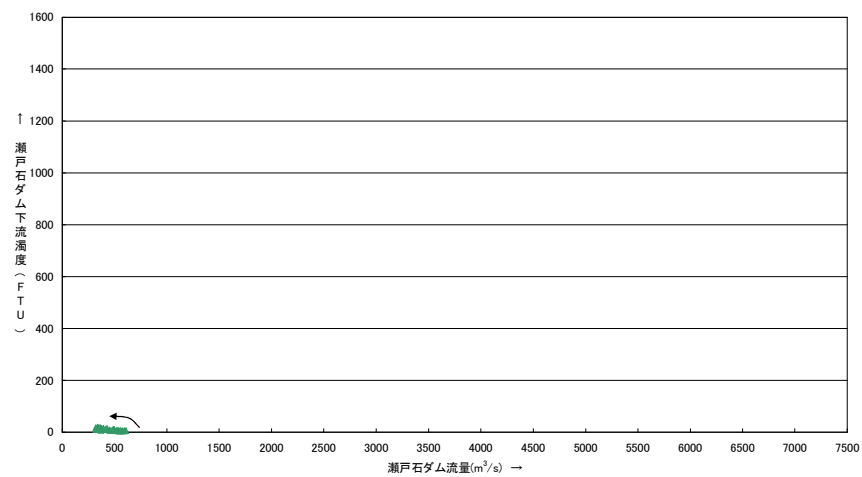
H22 年度⑫

2010/7/14-7/16



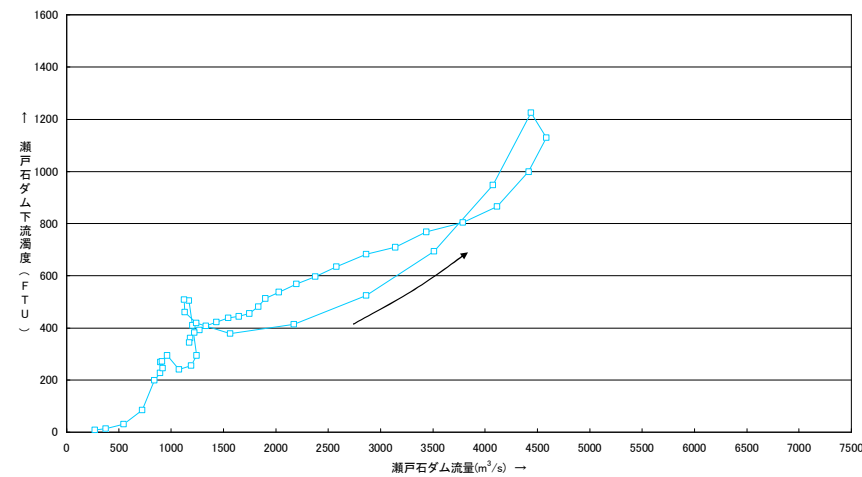
H22 年度⑬

2010/7/28-7/30



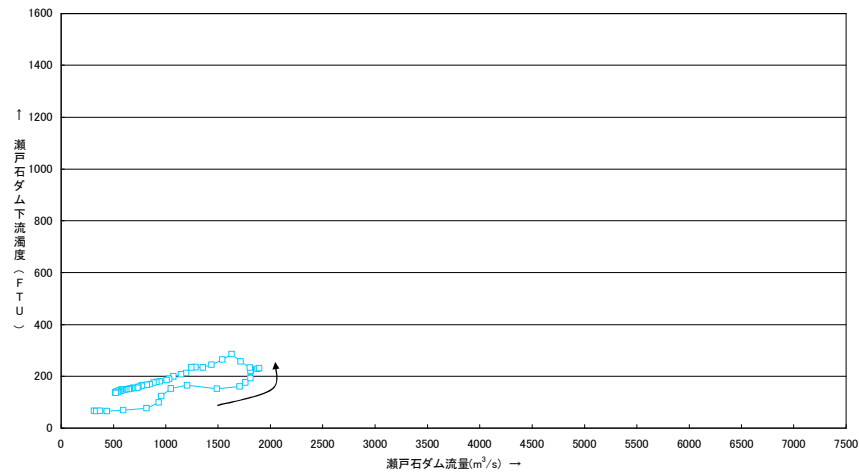
H23 年度①

2011/6/10-6/12



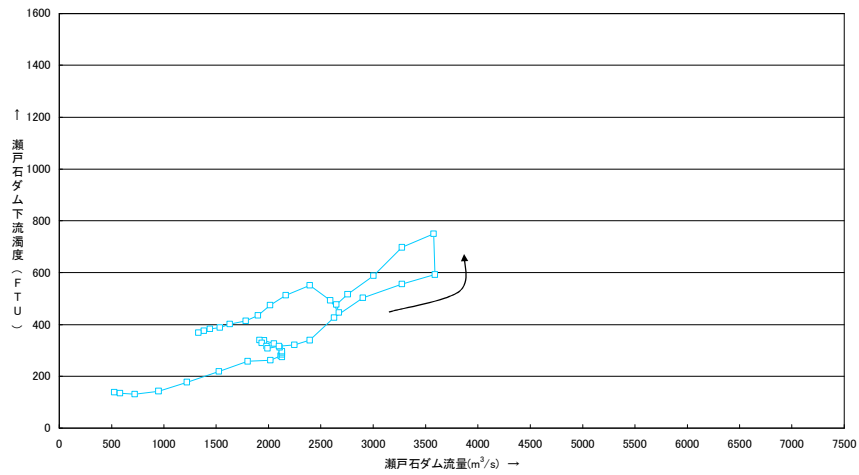
H23 年度②

2011/6/15-6/18



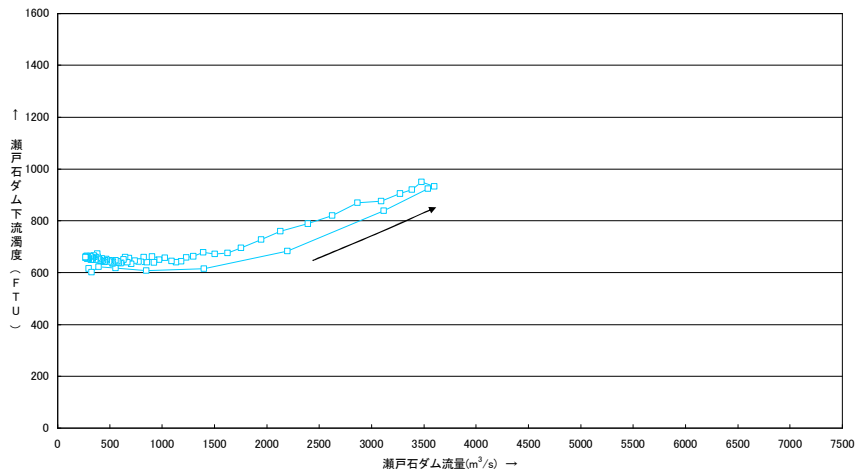
H23 年度③

2011/6/18-6/20



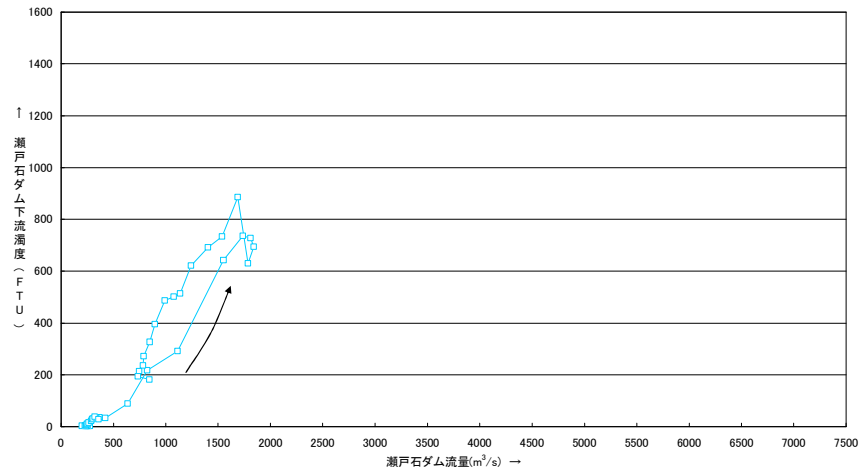
H23 年度④

2011/7/6-7/10



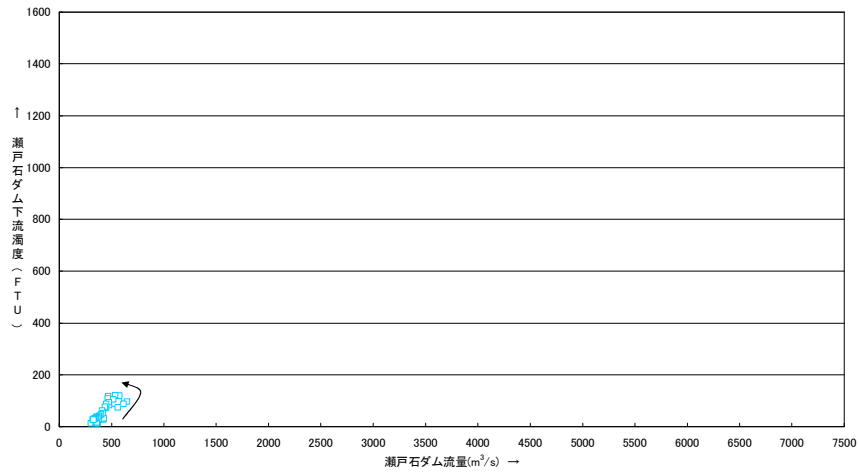
H23 年度⑤

2011/8/14-8/16



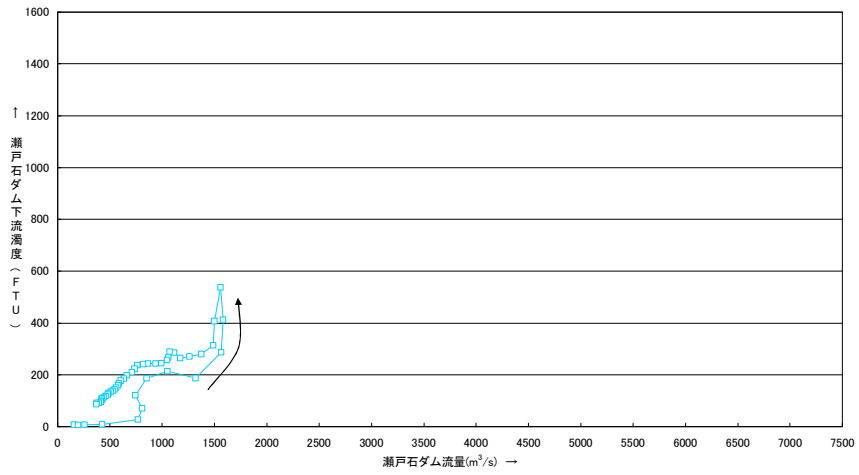
H23 年度⑥

2011/8/21-8/23



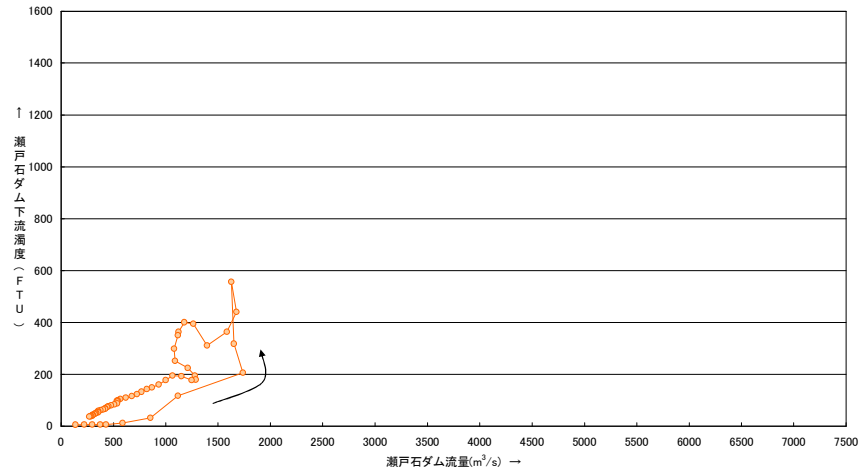
H23 年度⑦

2011/9/20-9/22



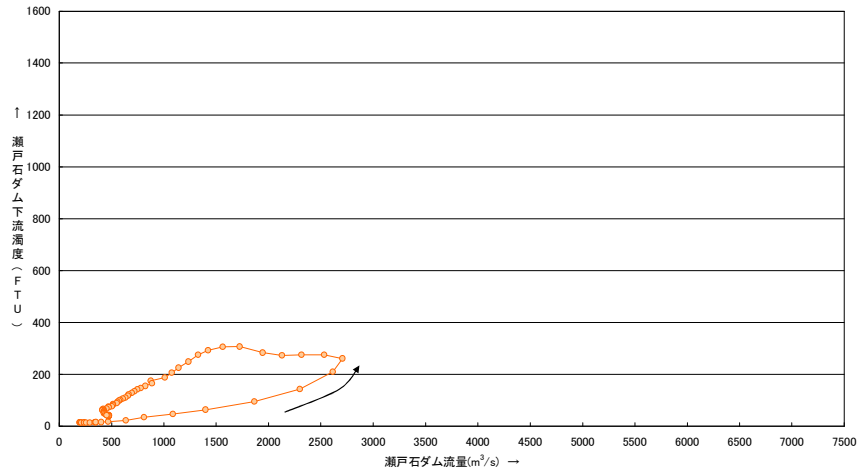
H24 年度①

2012/6/15-6/18



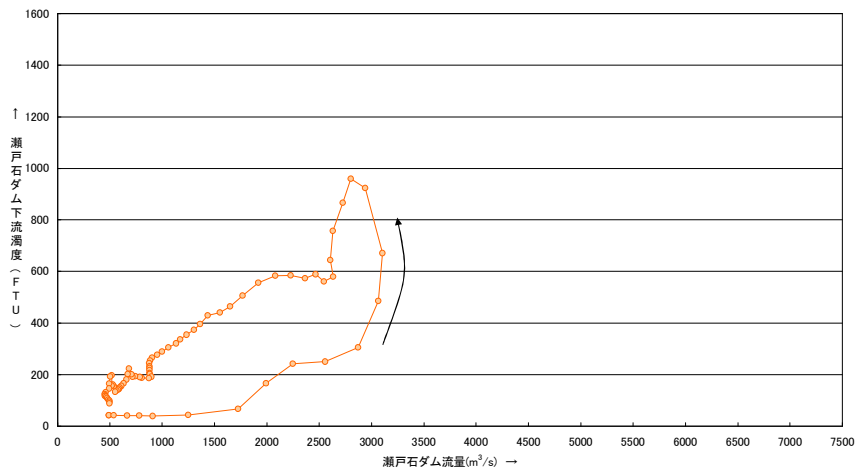
H24 年度②

2012/6/21-6/23

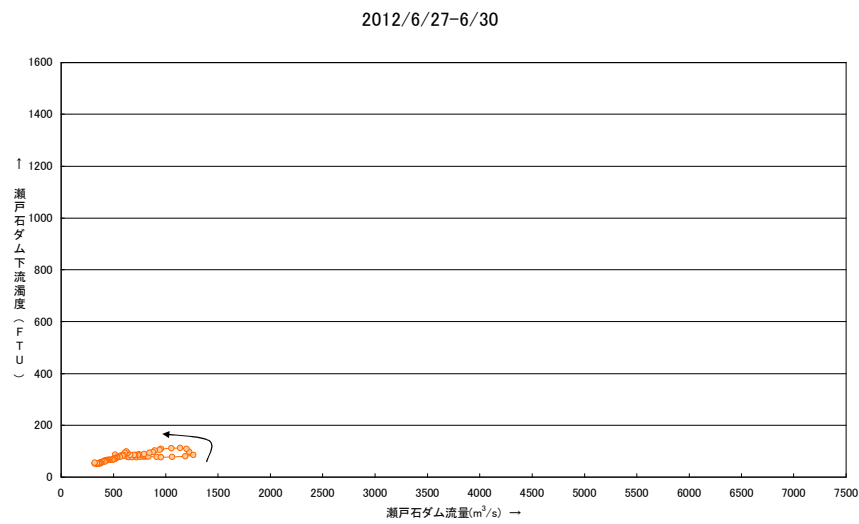


H24 年度③

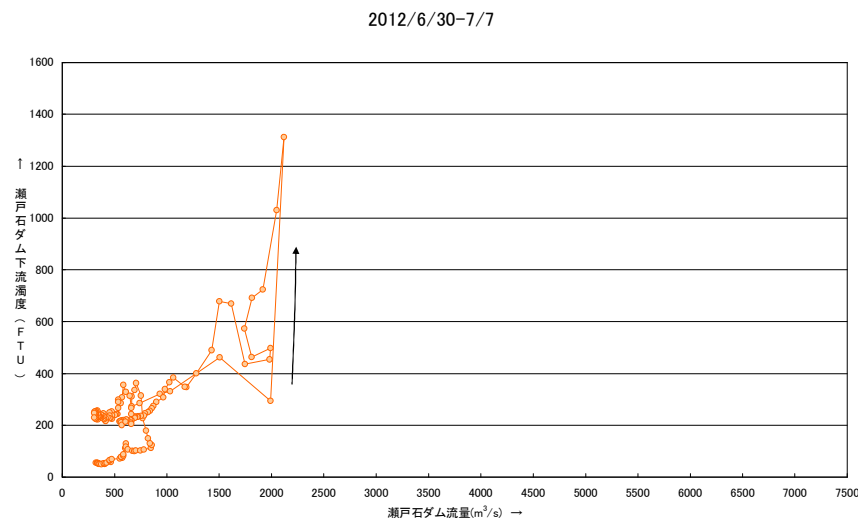
2012/6/24-6/27



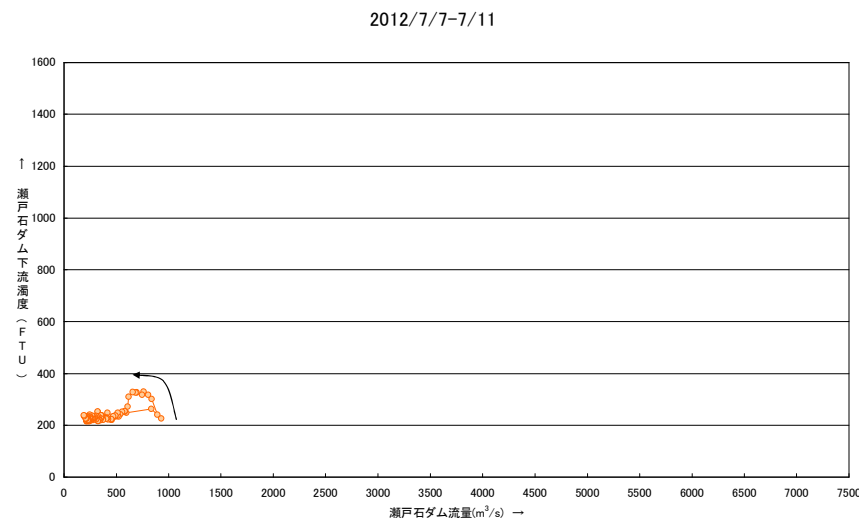
H24 年度④



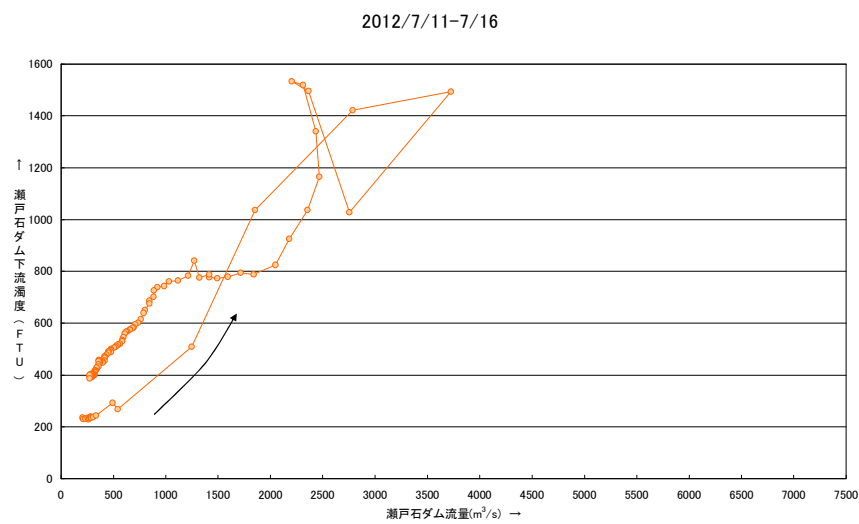
H24 年度⑤



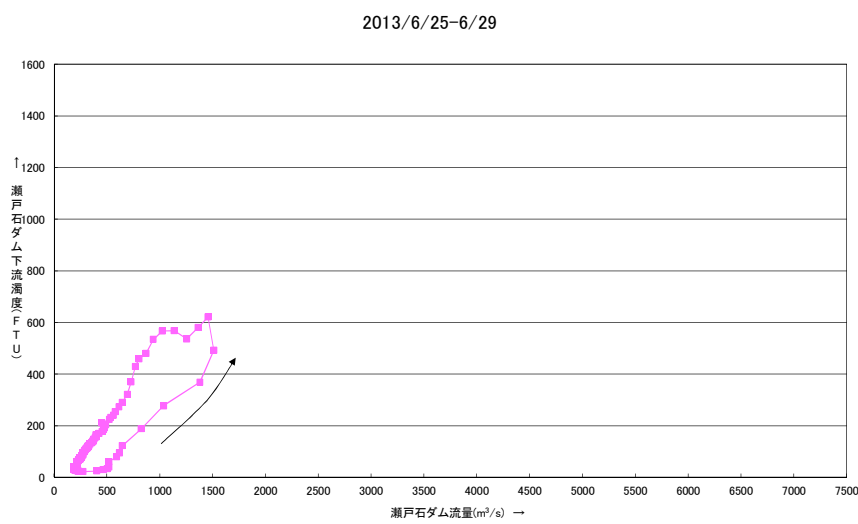
H24 年度⑥



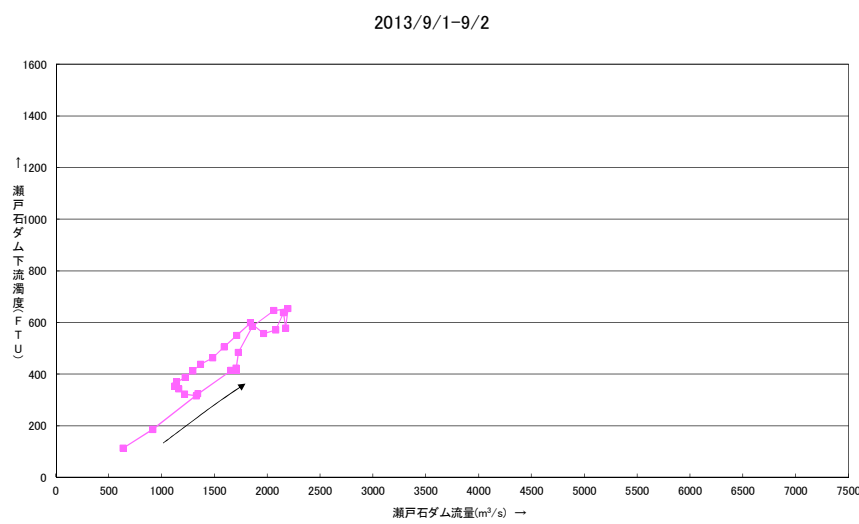
H24 年度⑦



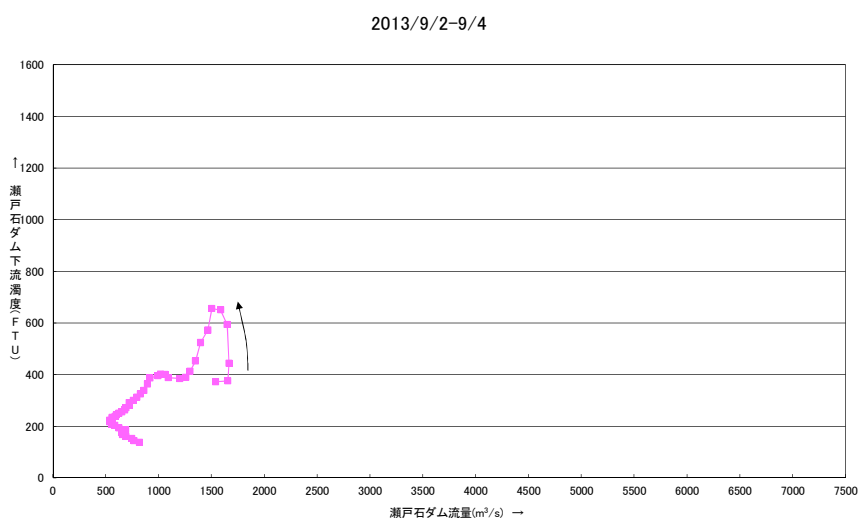
H25 年度①



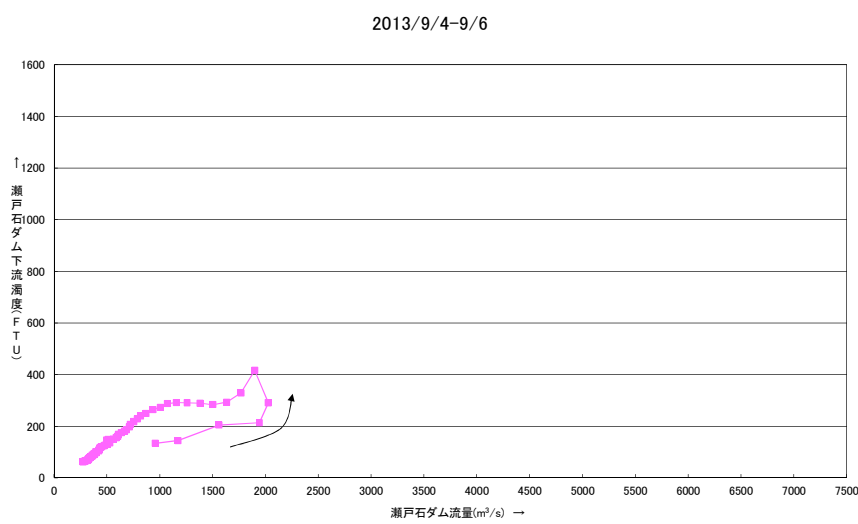
H25 年度②



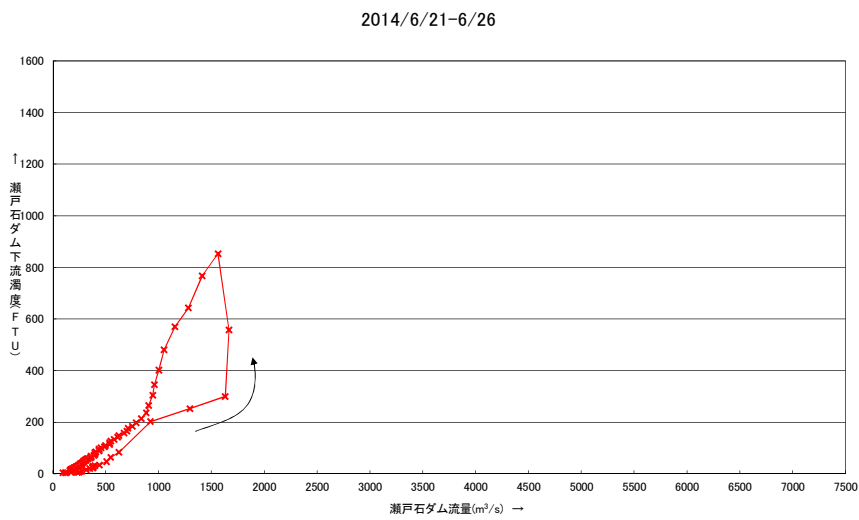
H25 年度③



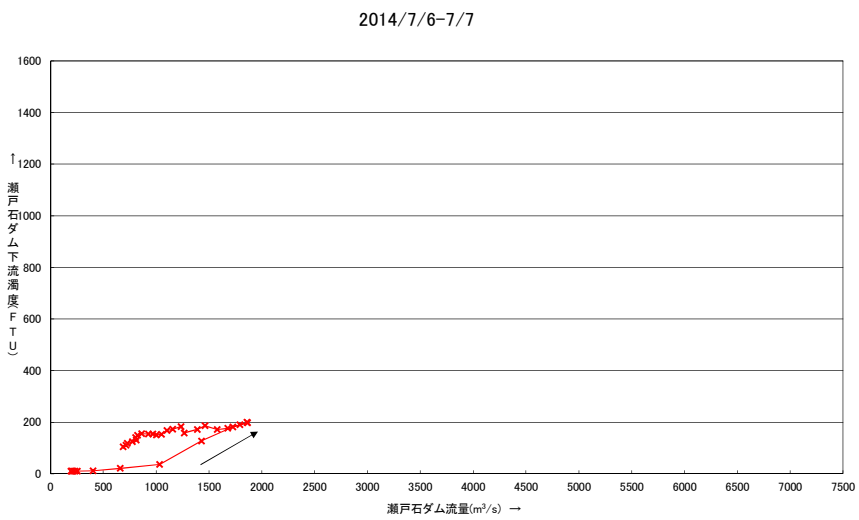
H25 年度④



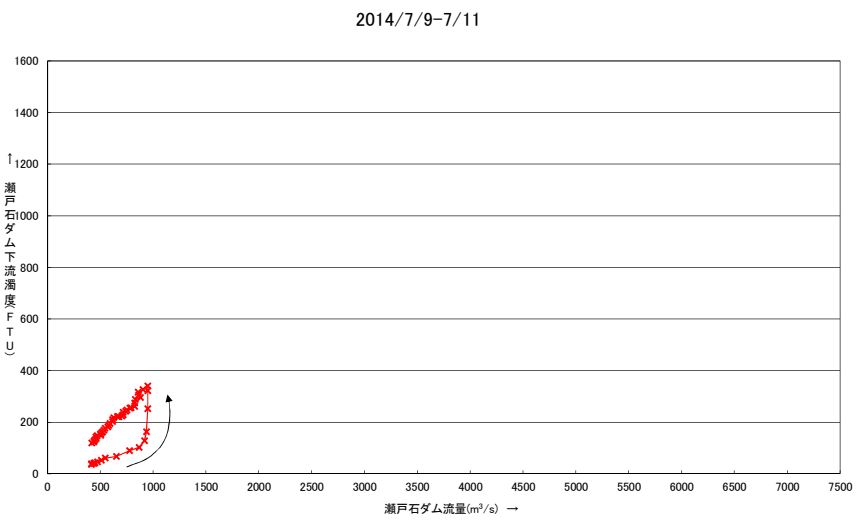
H26 年度①



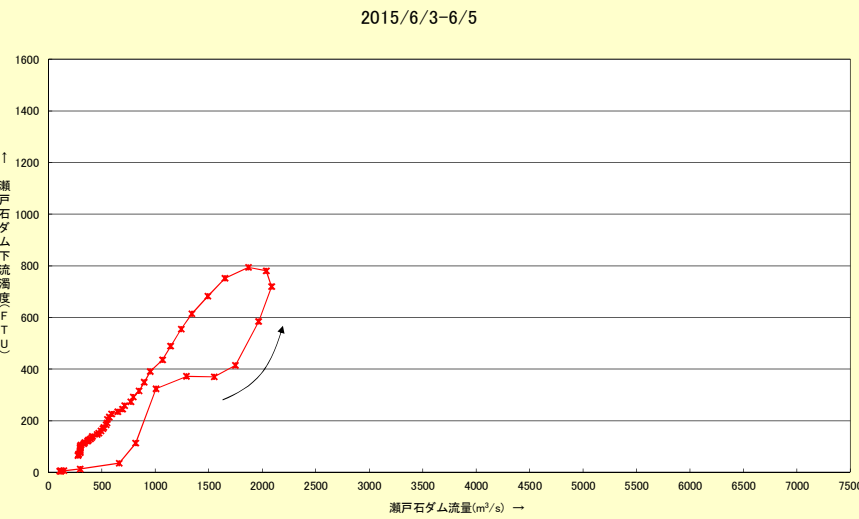
H26 年度②



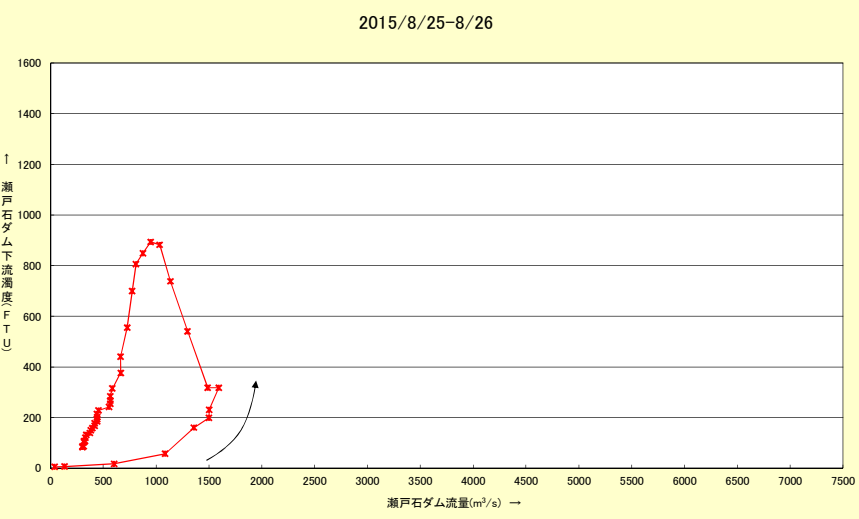
H26 年度③



H27 年度①



H27 年度②



道の駅坂本

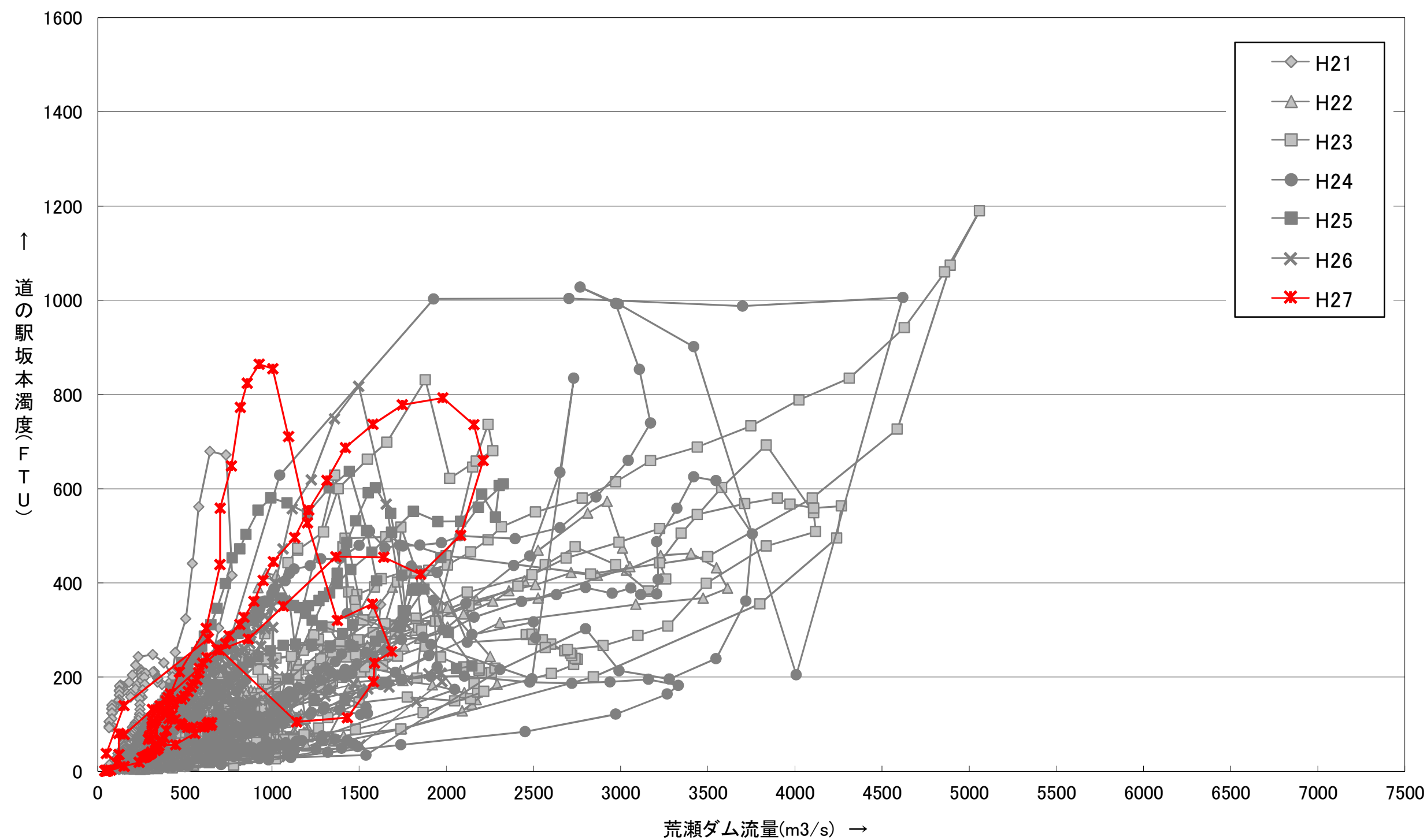
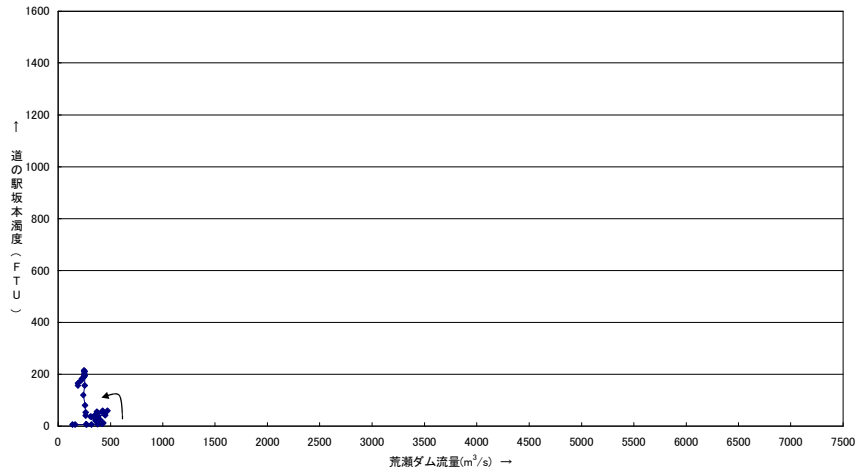


図 出水時の流量と濁度 (FTU) の時間的な変化 (道の駅坂本)

道の駅坂本

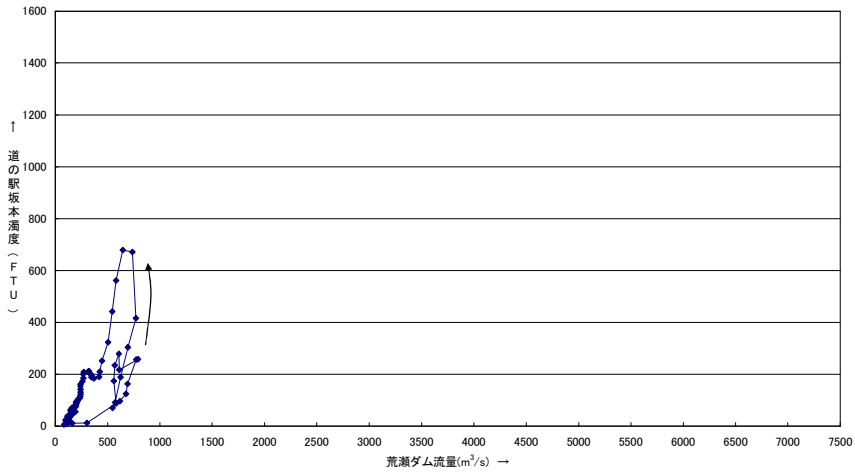
H21 年度①

2009/6/29-7/1



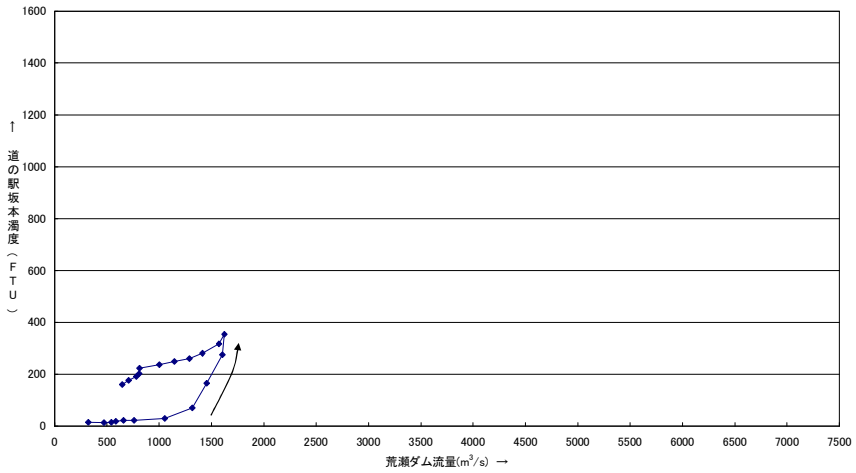
H21 年度②

2009/7/11-7/16



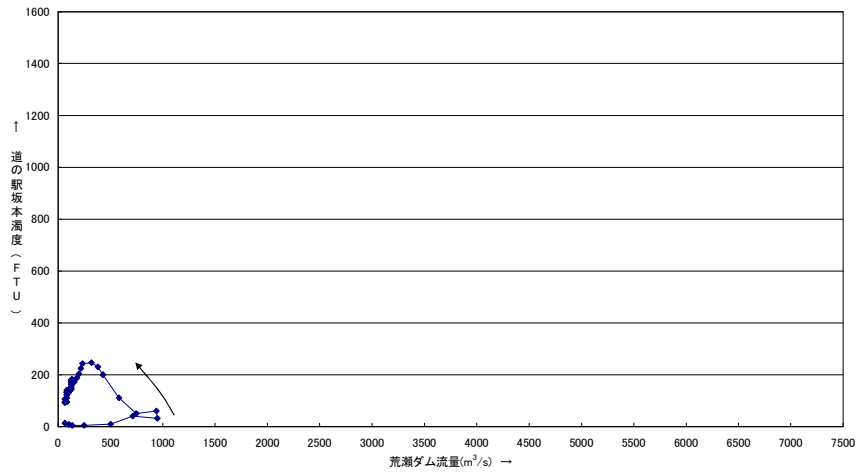
H21 年度③

2009/7/25-7/26



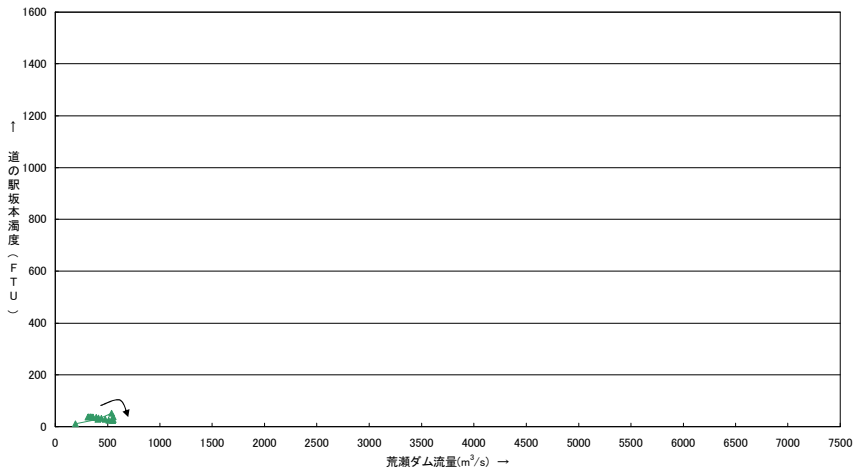
H21 年度④

2009/10/2-10/4



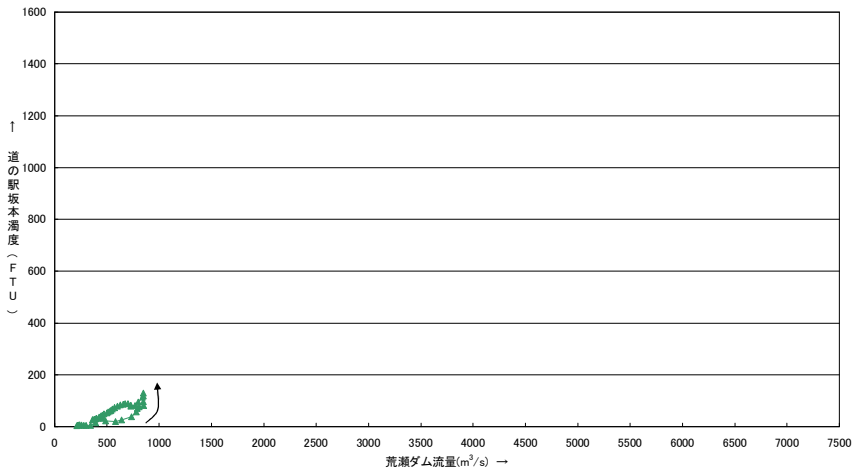
H22 年度①

2010/4/20



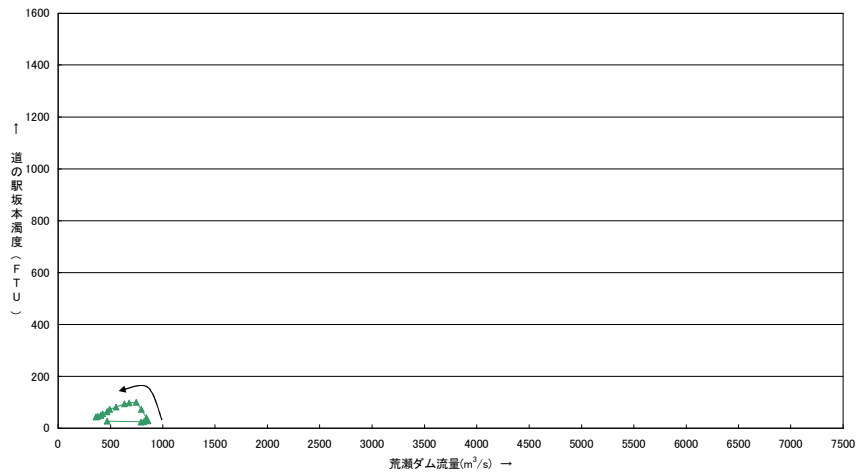
H22 年度②

2010/4/22-4/24



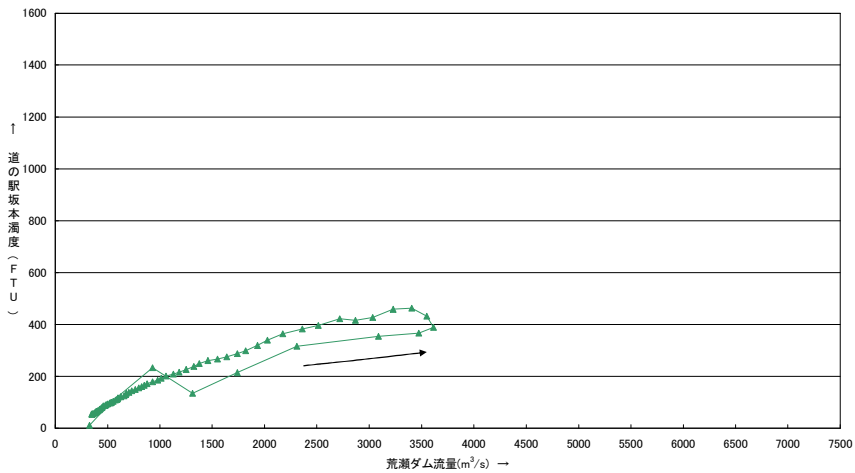
H22 年度③

2010/5/19-5/20



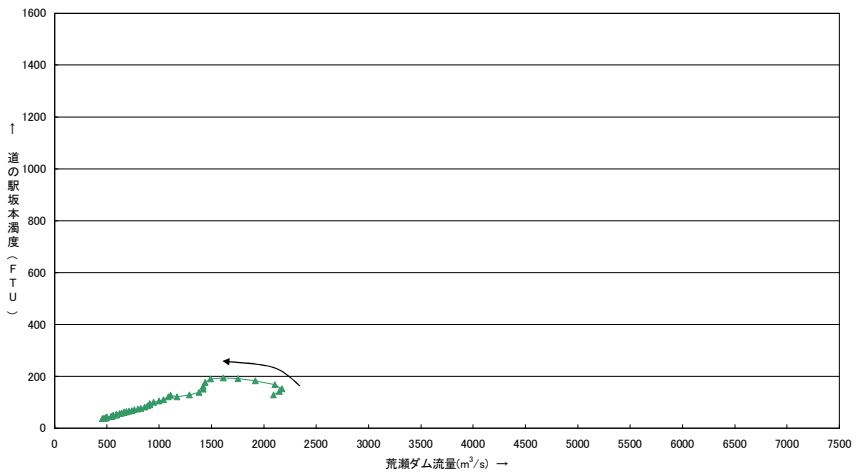
H22 年度④

2010/5/23-5/26

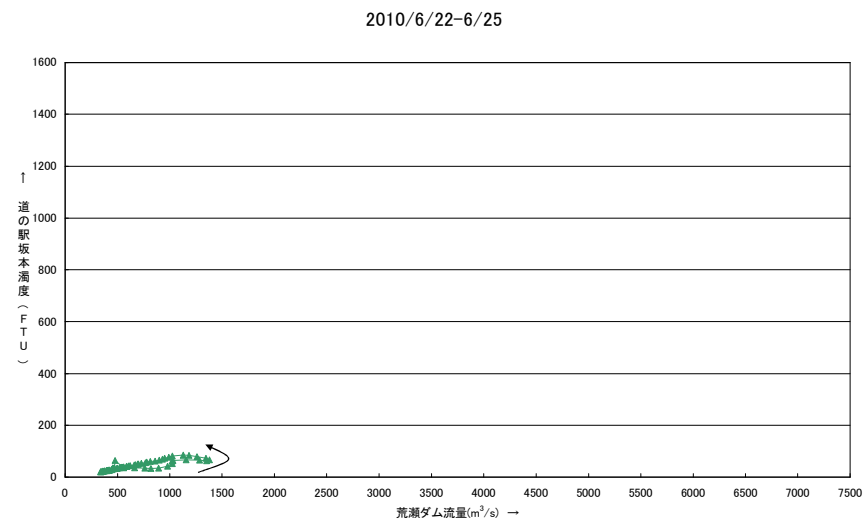


H22 年度⑤

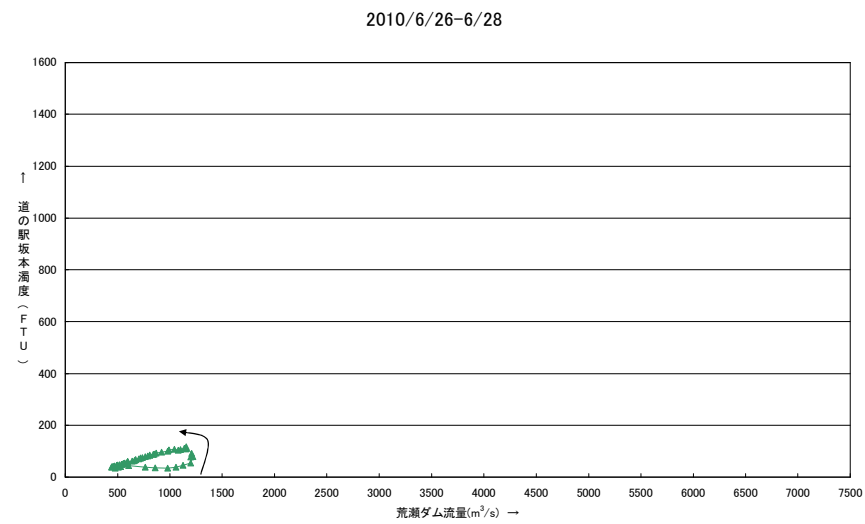
2010/6/20-6/22



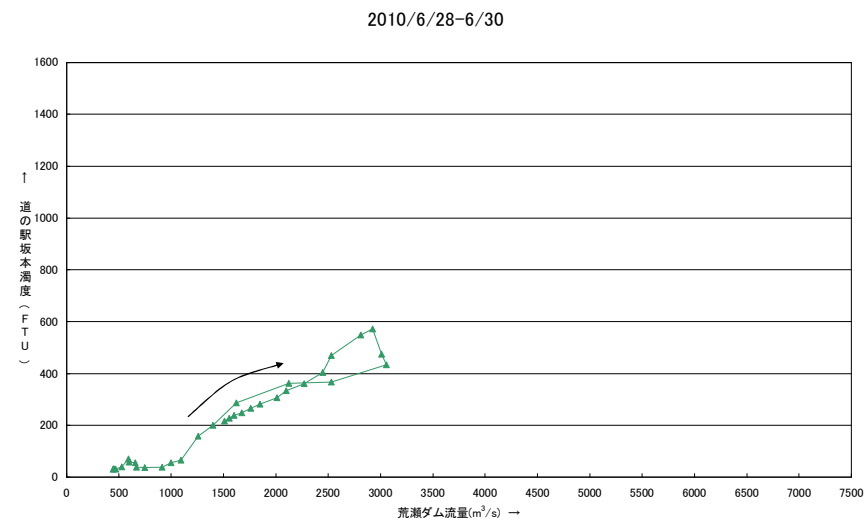
H22 年度⑥



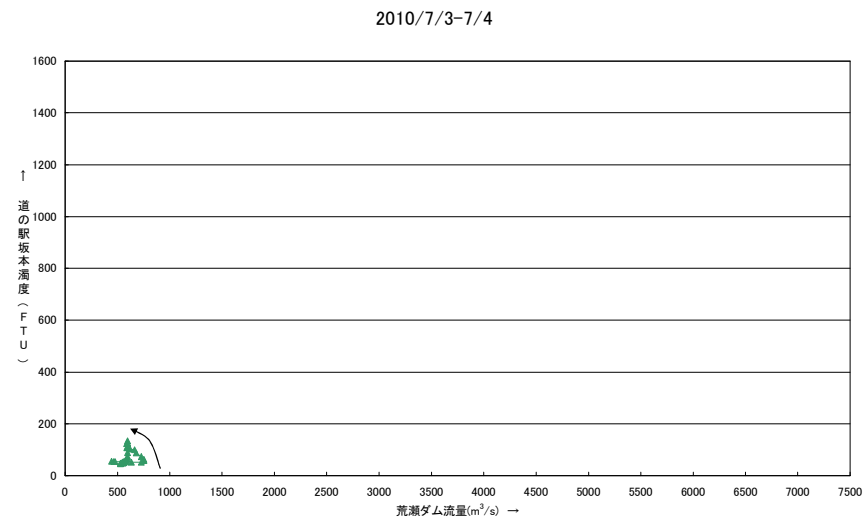
H22 年度⑦



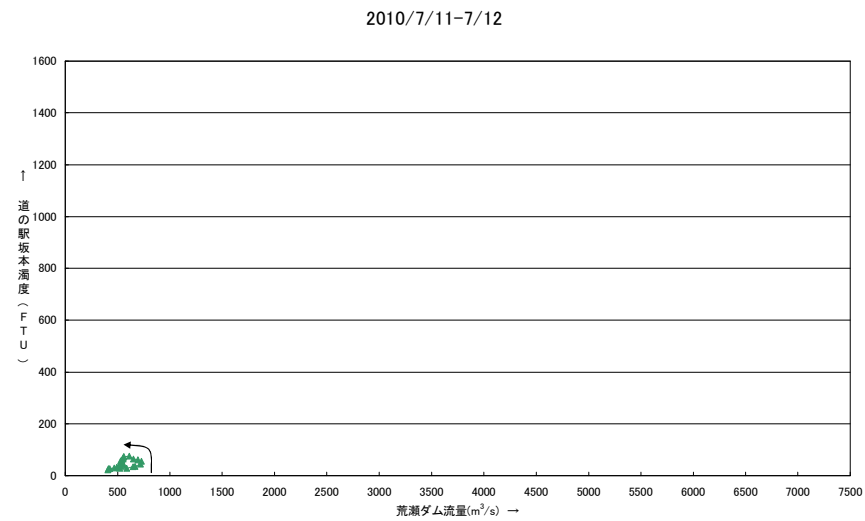
H22 年度⑧



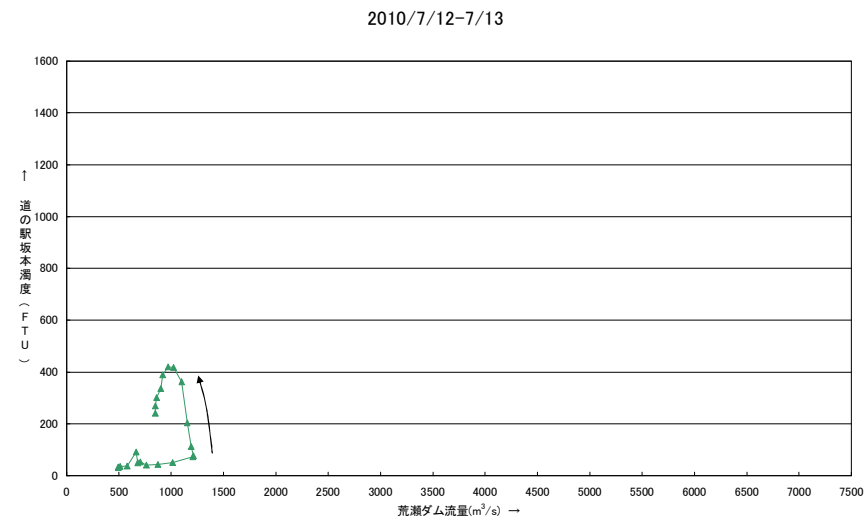
H22 年度⑨



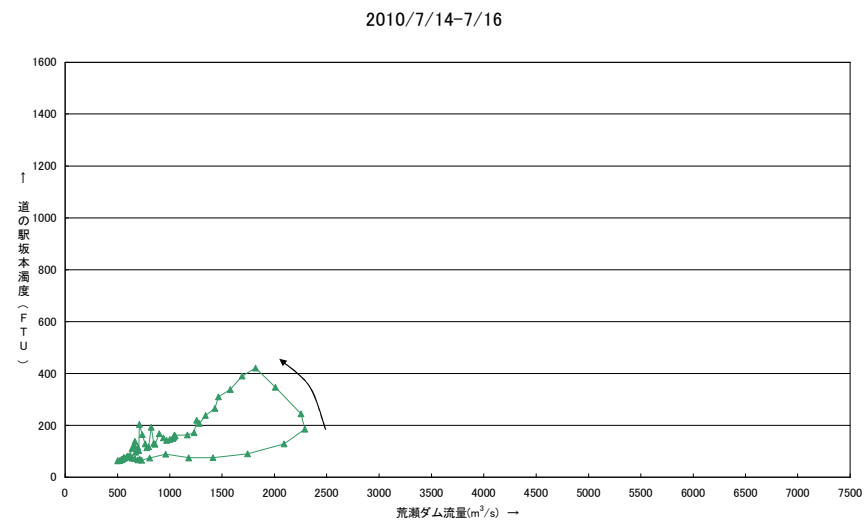
H22 年度⑩



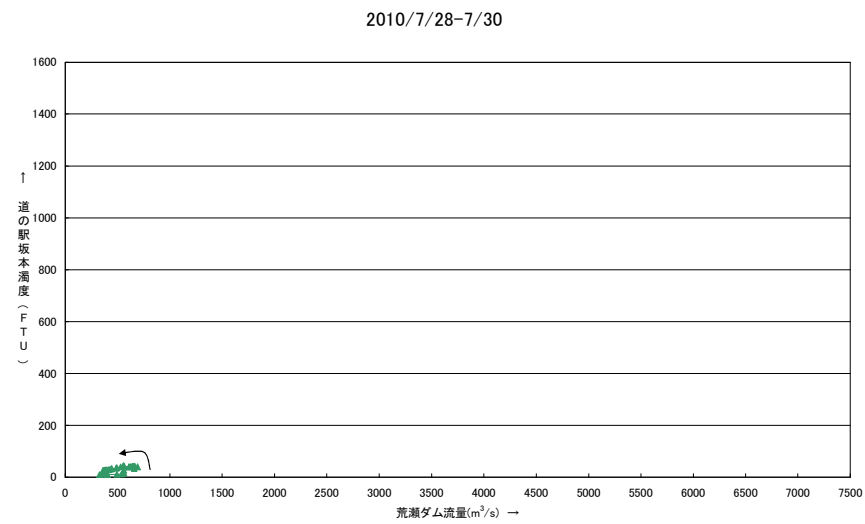
H22 年度⑪



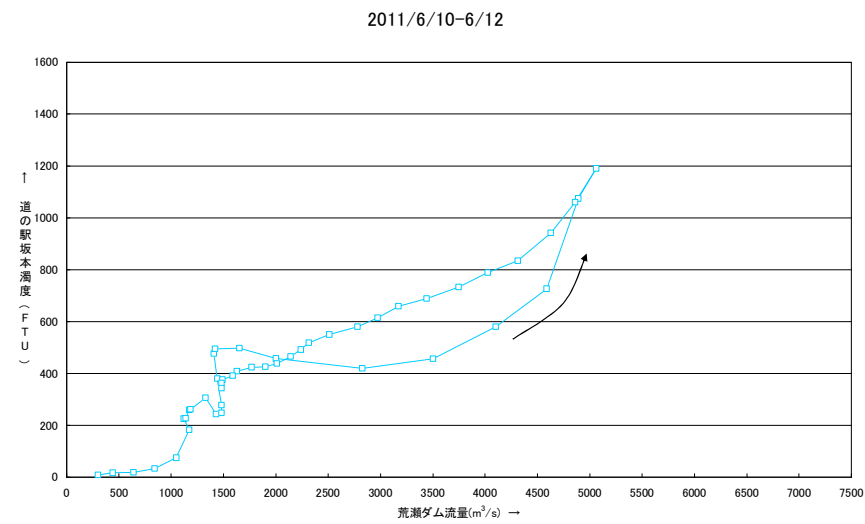
H22 年度⑫



H22 年度⑬

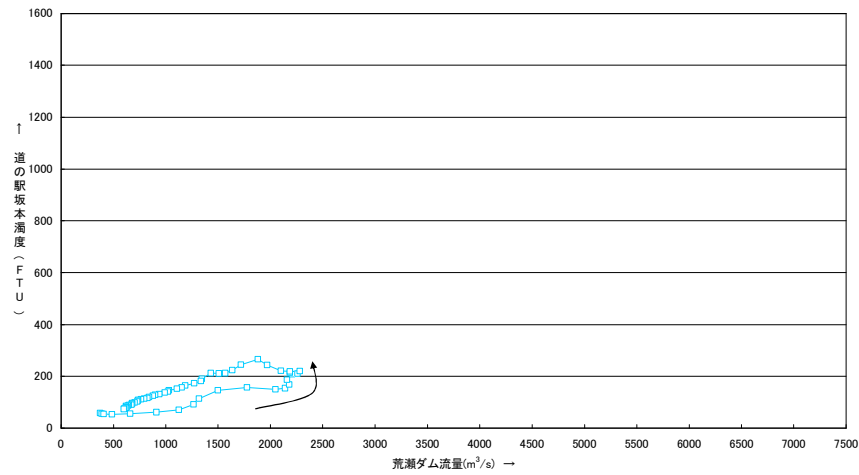


H23 年度①



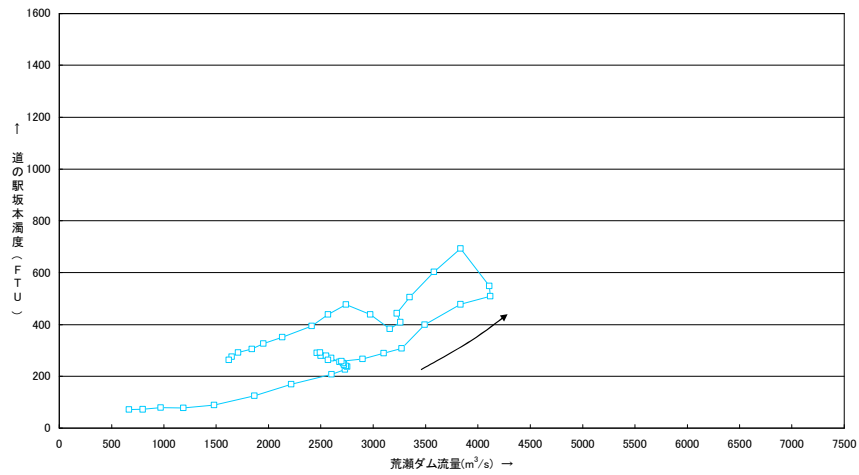
H23 年度②

2011/6/15-6/18



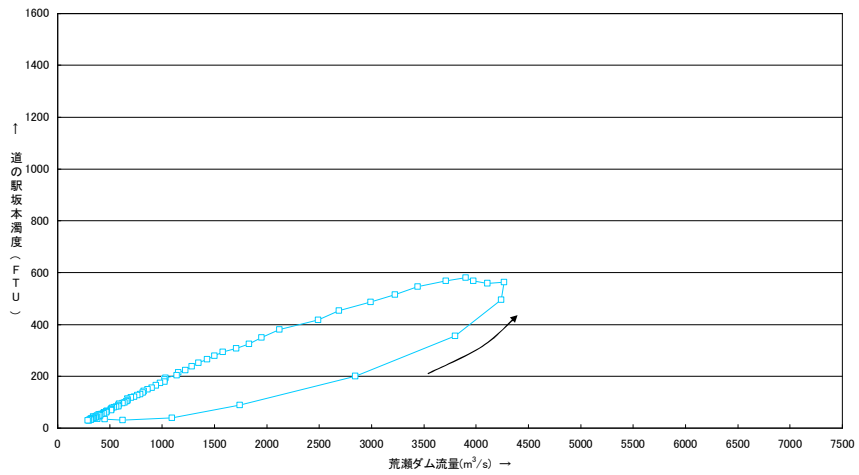
H23 年度③

2011/6/18-6/20



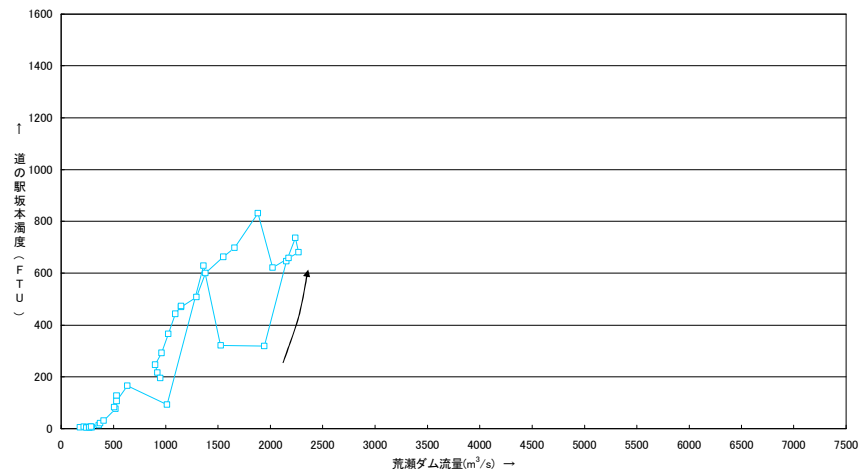
H23 年度④

2011/7/6-7/10



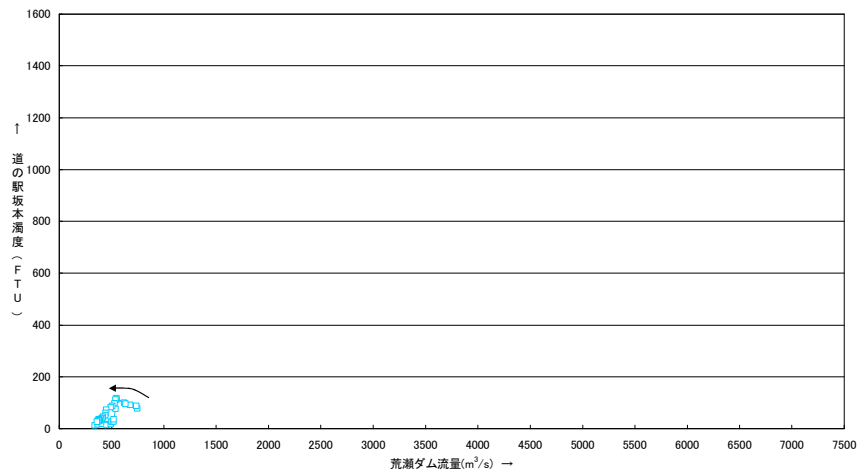
H23 年度⑤

2011/8/14-8/16



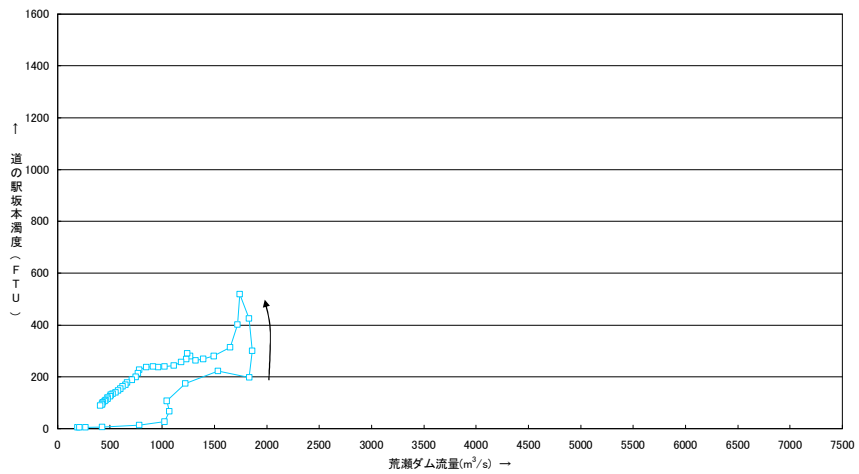
H23 年度⑥

2011/8/21-8/23



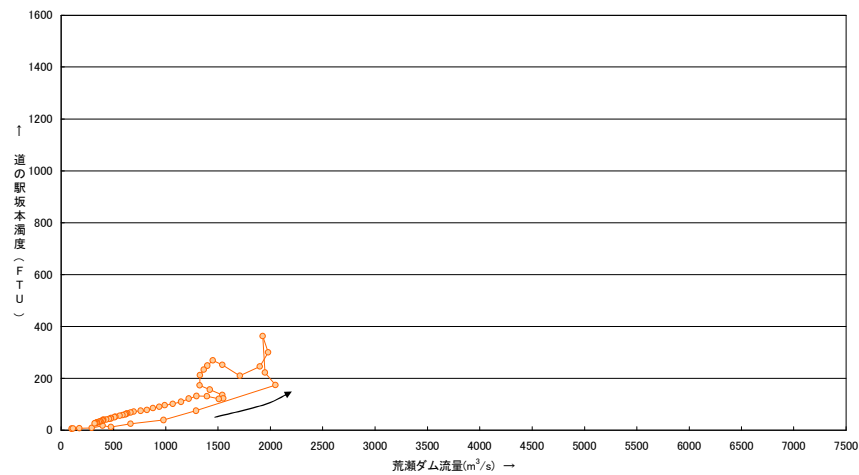
H23 年度⑦

2011/9/20-9/22



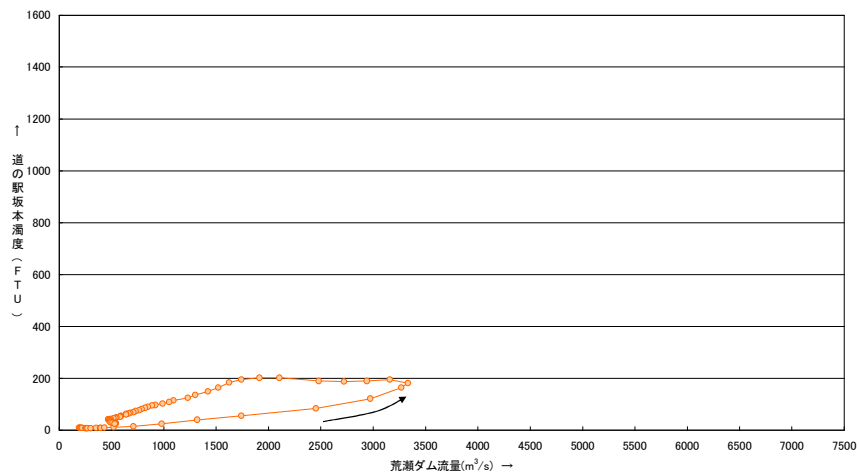
H24 年度①

2012/6/15-6/18



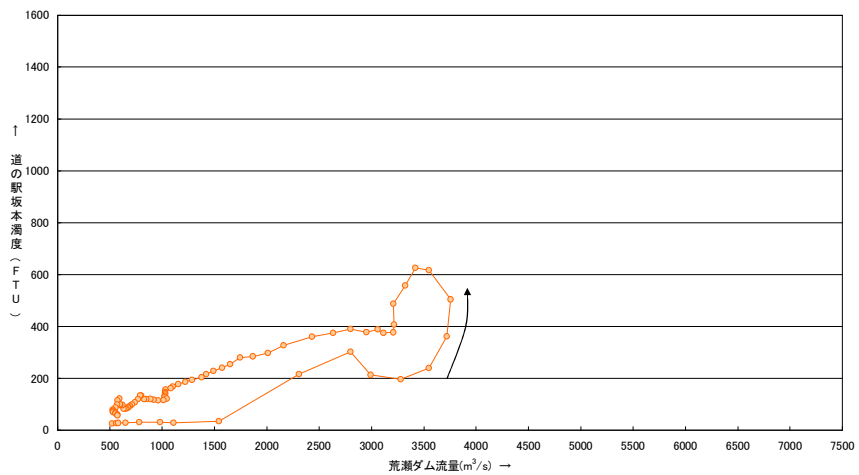
H24 年度②

2012/6/21-6/23

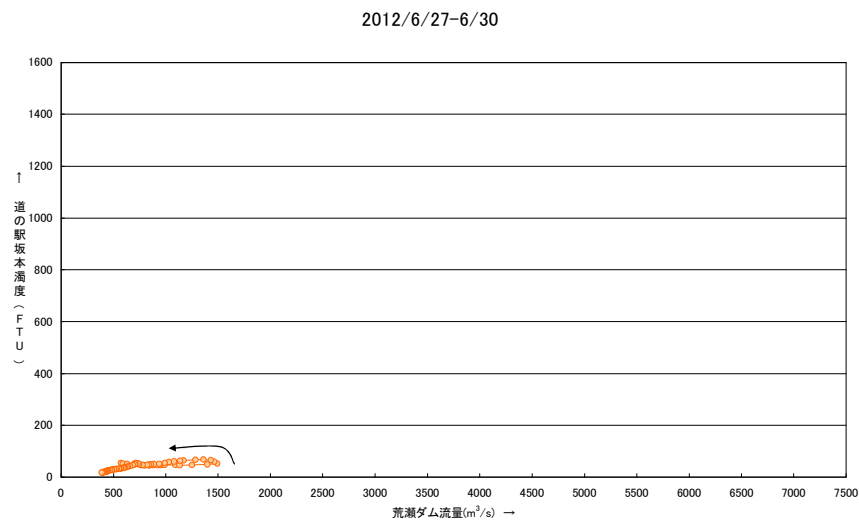


H24 年度③

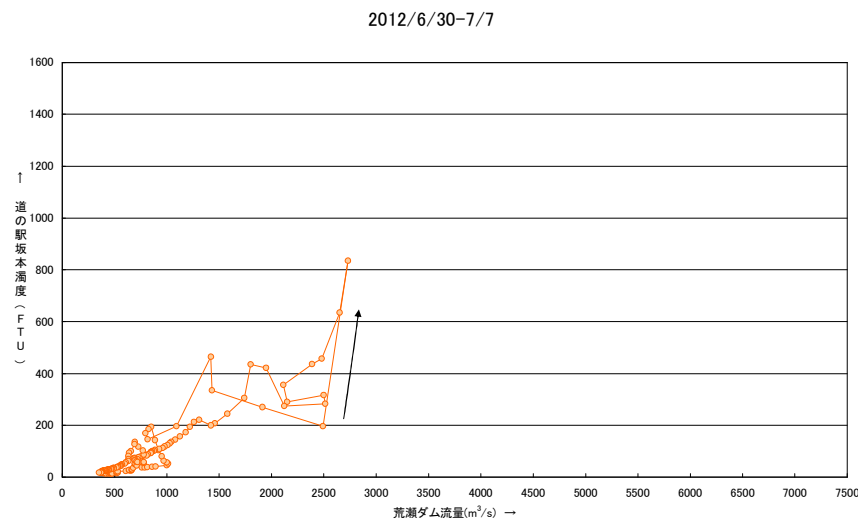
2012/6/24-6/27



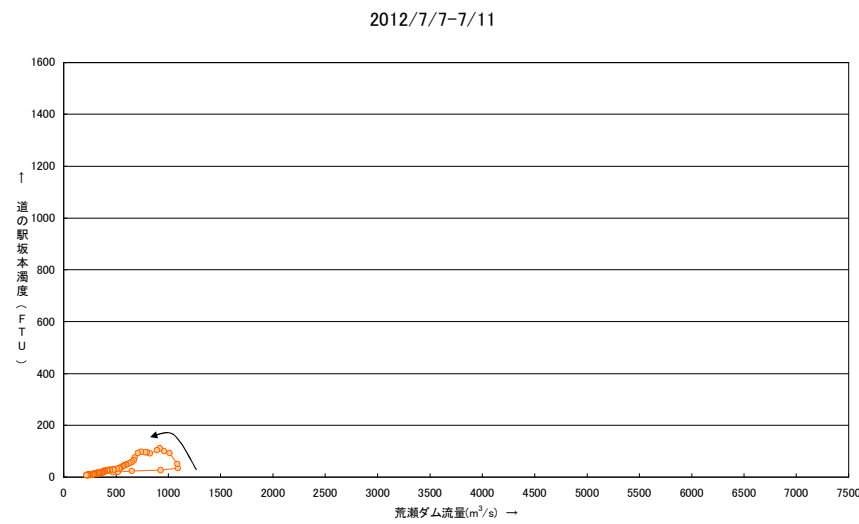
H24 年度④



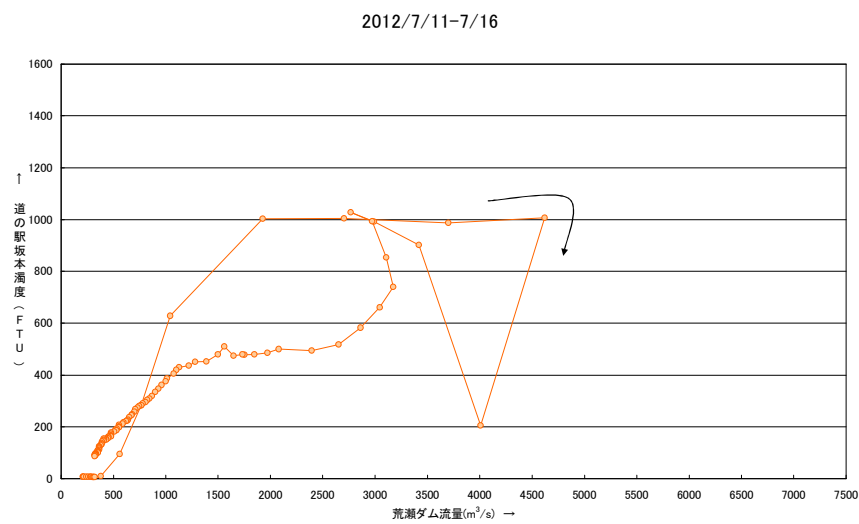
H24 年度⑤



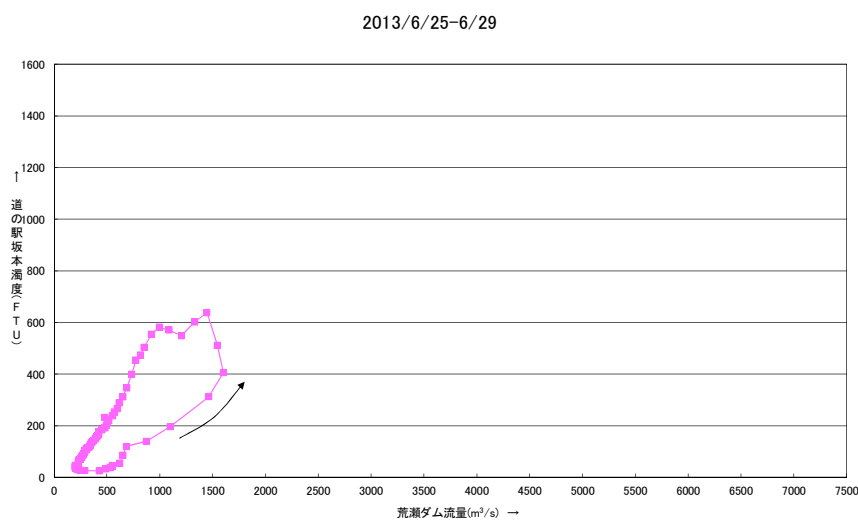
H24 年度⑥



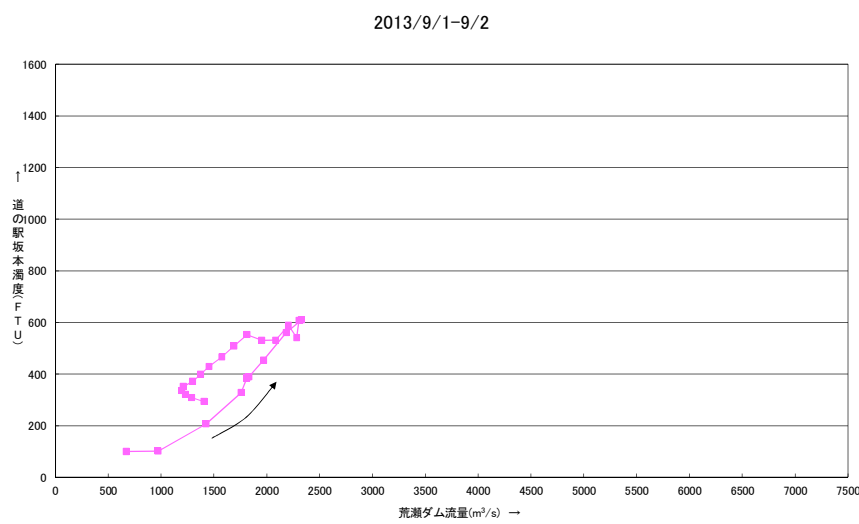
H24 年度⑦



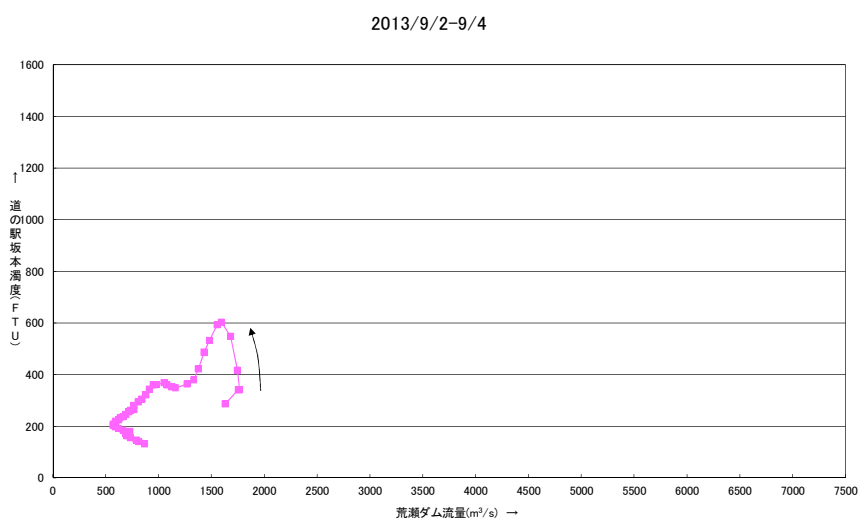
H25 年度①



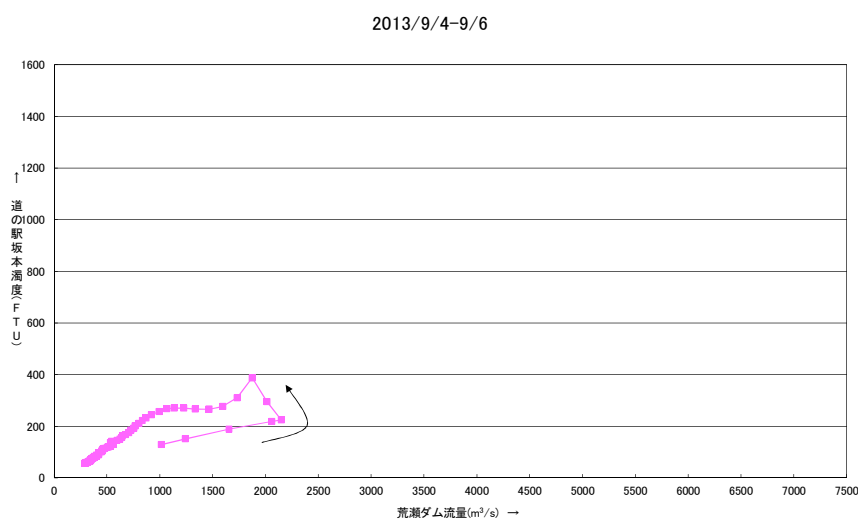
H25 年度②



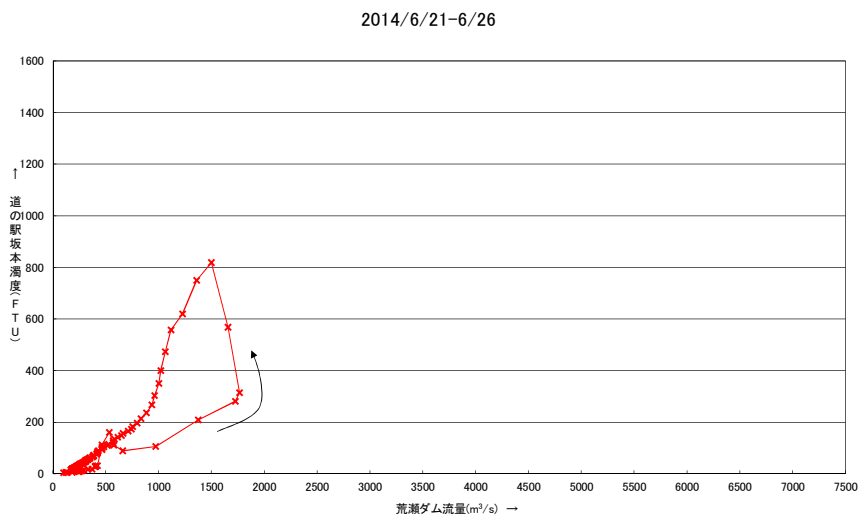
H25 年度③



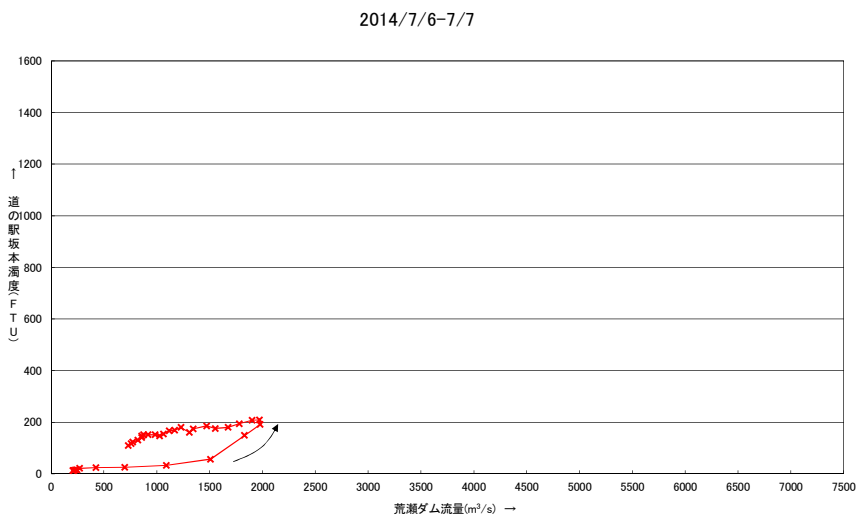
H25 年度④



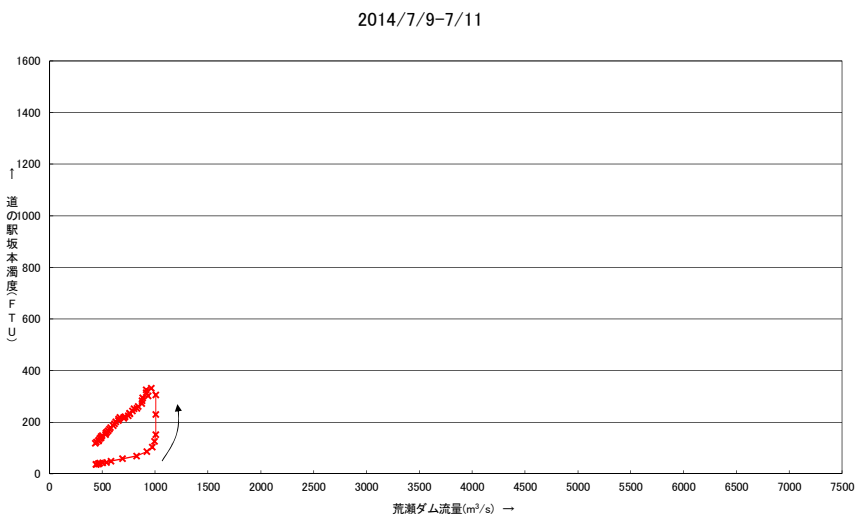
H26 年度①



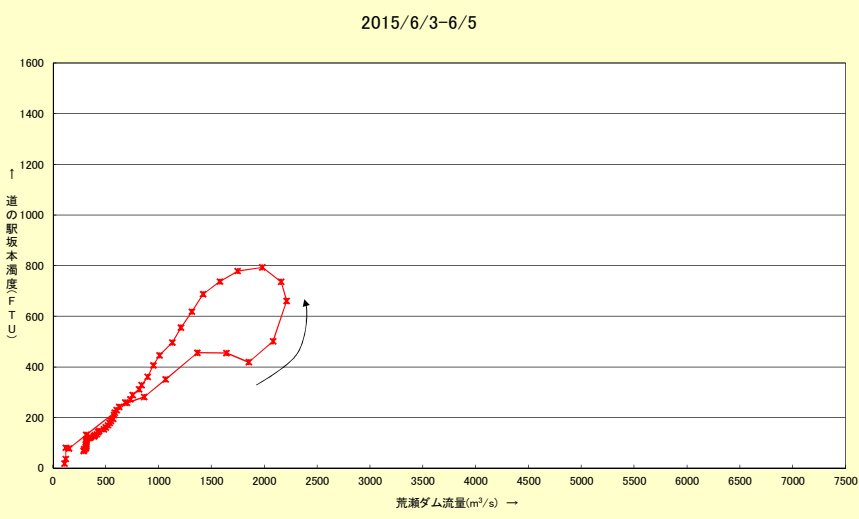
H26 年度②



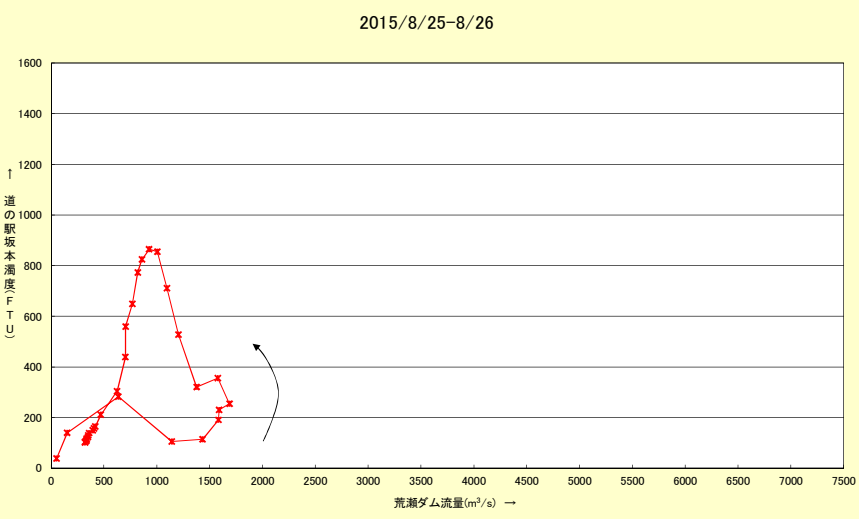
H26 年度③



H27 年度①



H27 年度②



横 石

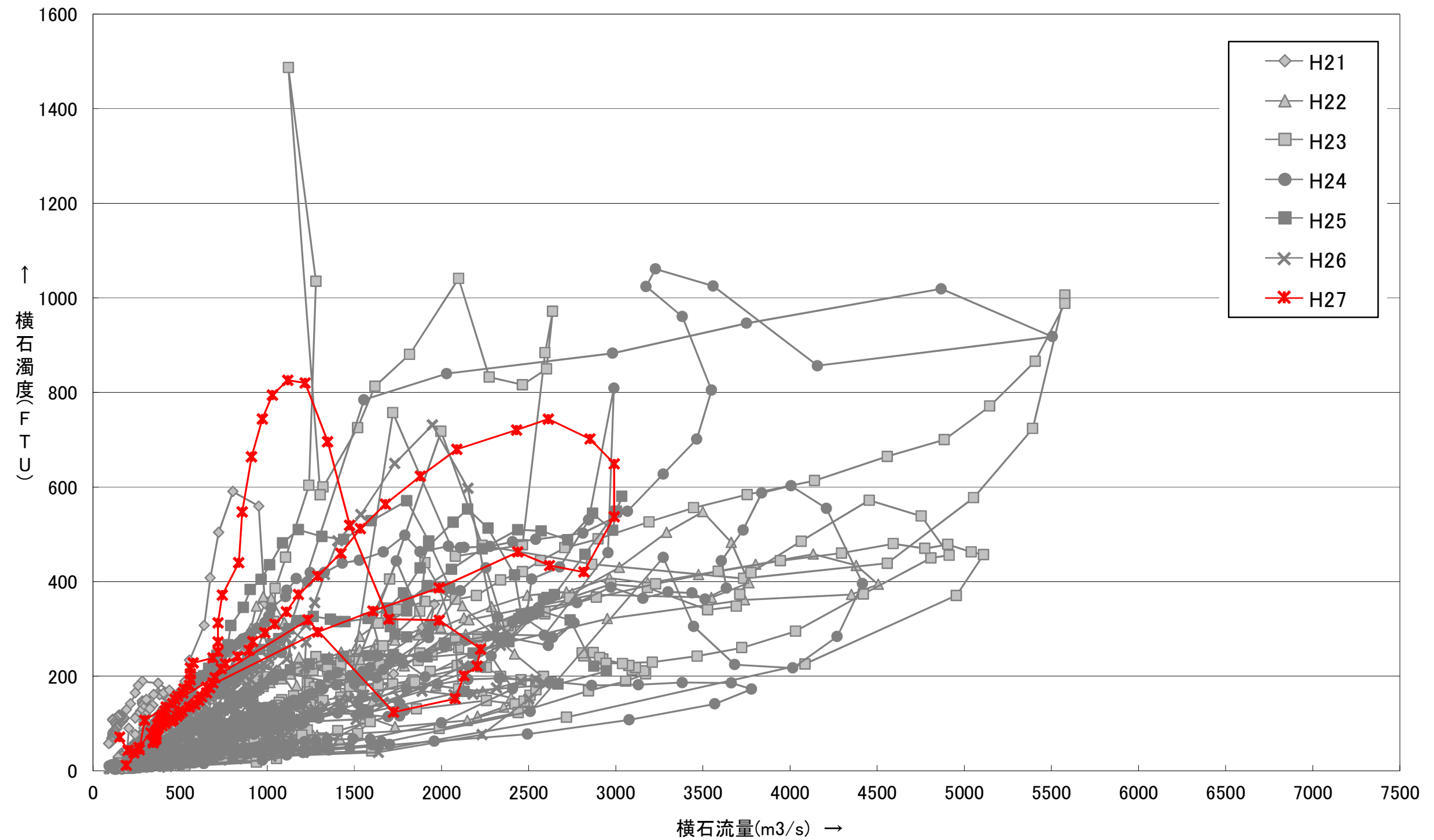
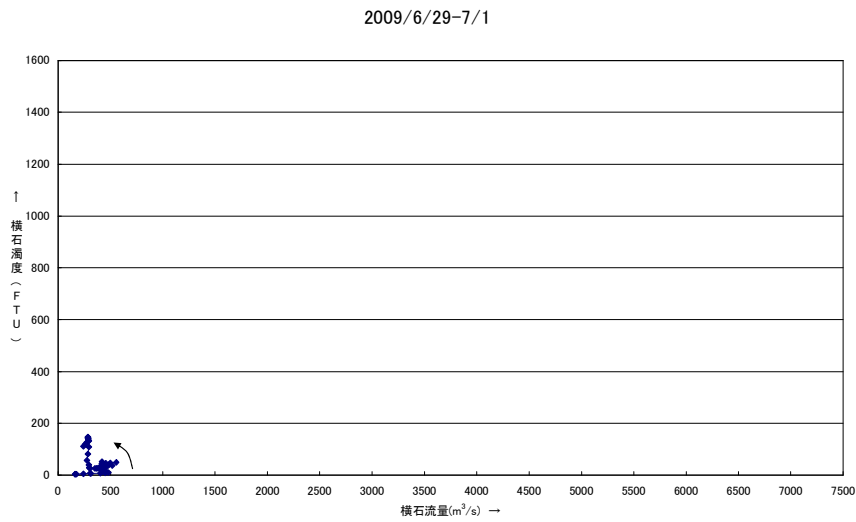


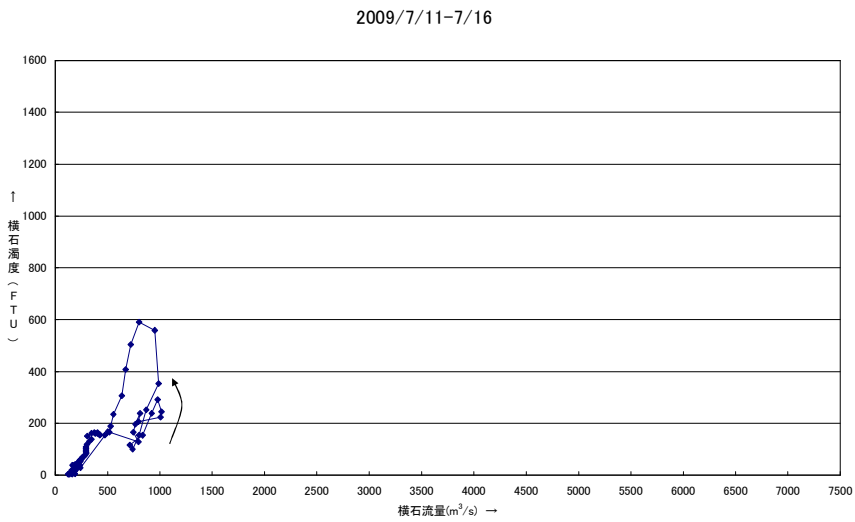
図 出水時の流量と濁度 (FTU) の時間的な変化 (横石)

横石

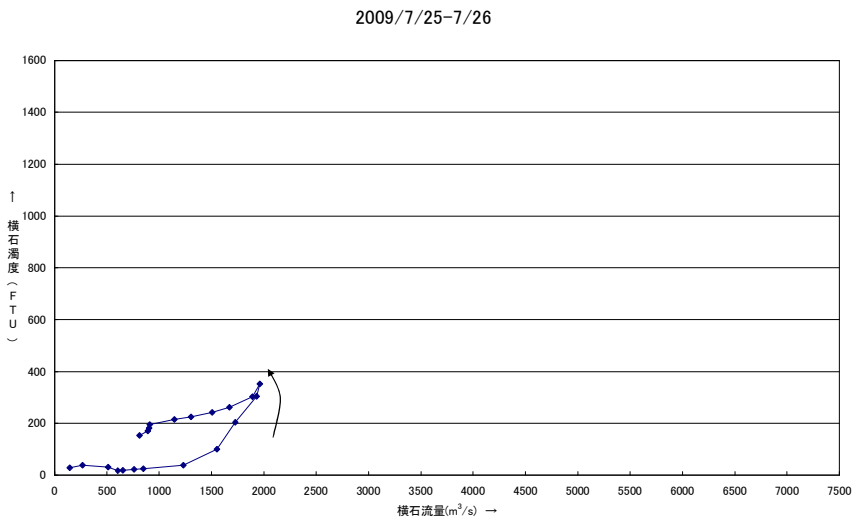
H21 年度①



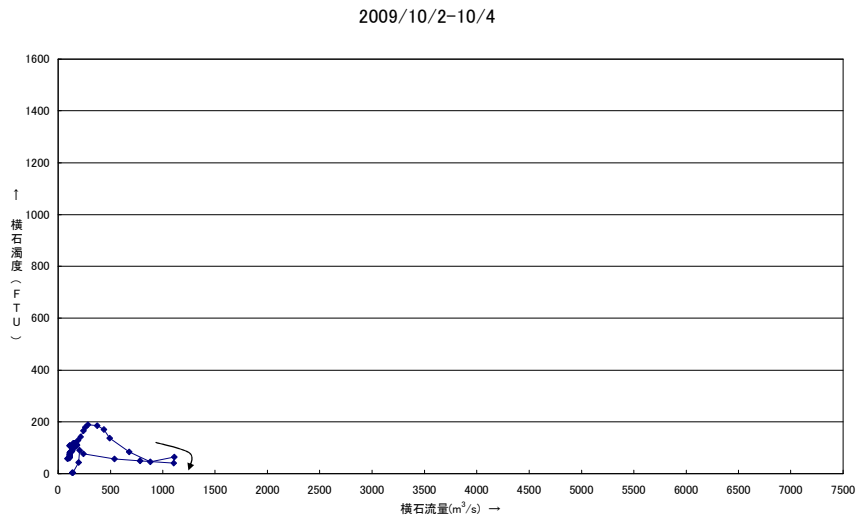
H21 年度②



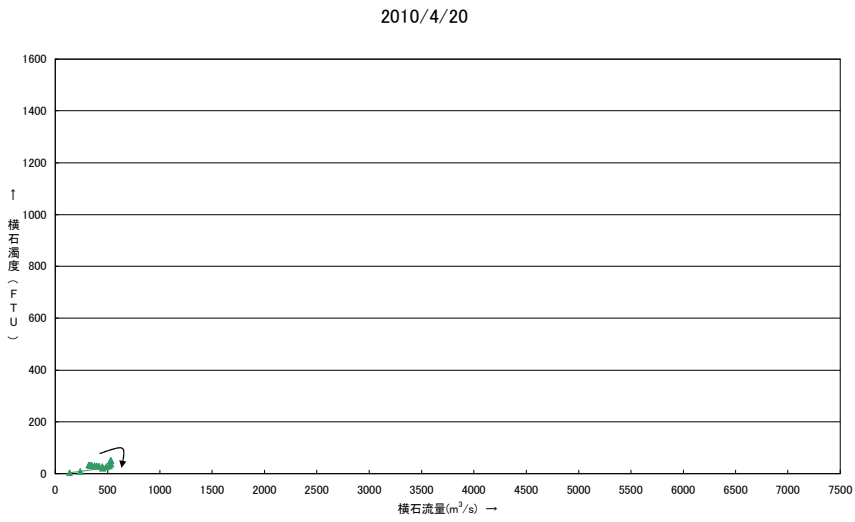
H21 年度③



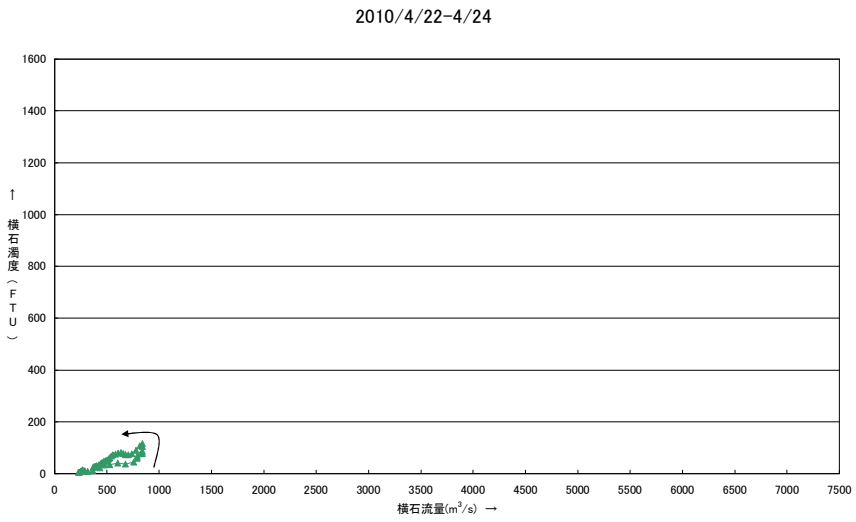
H21 年度④



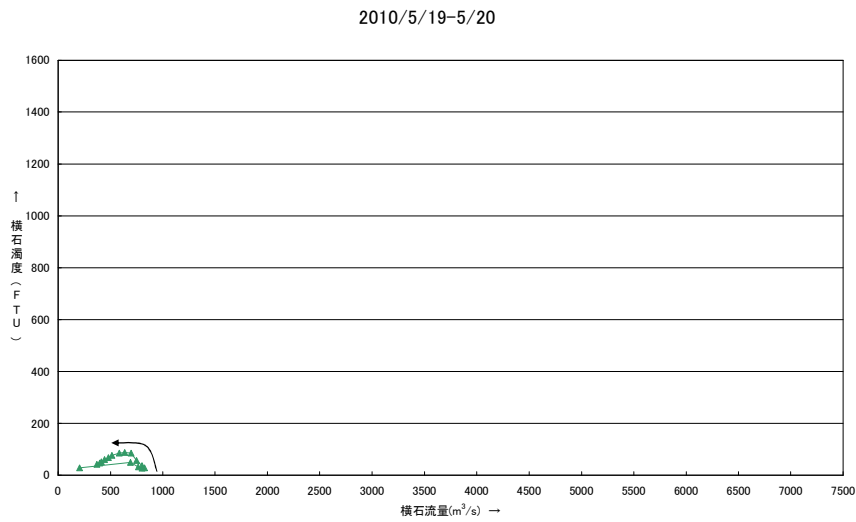
H22 年度①



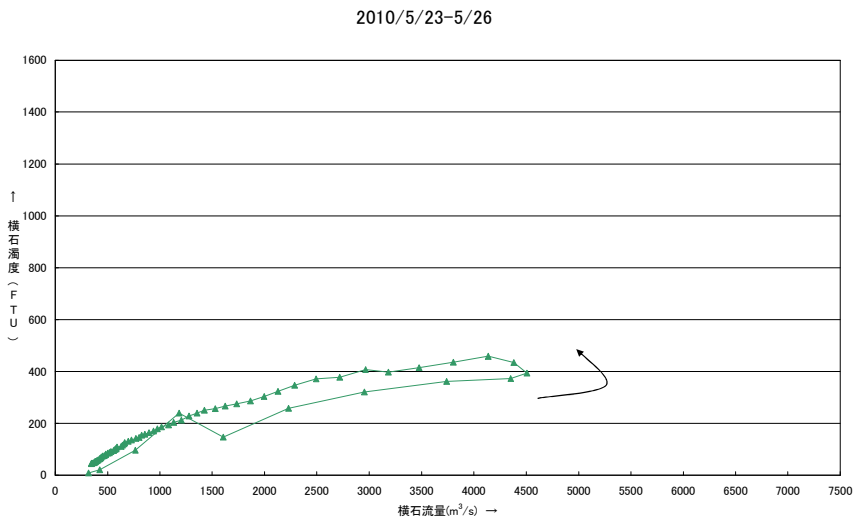
H22 年度②



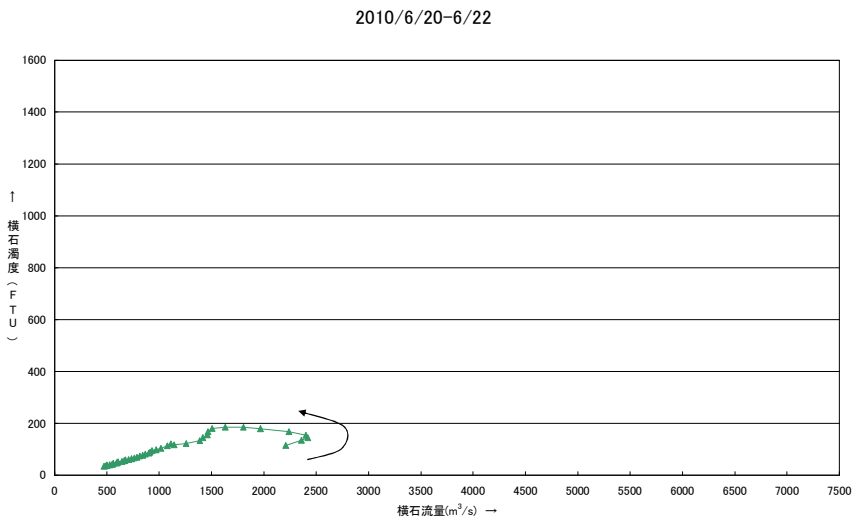
H22 年度③

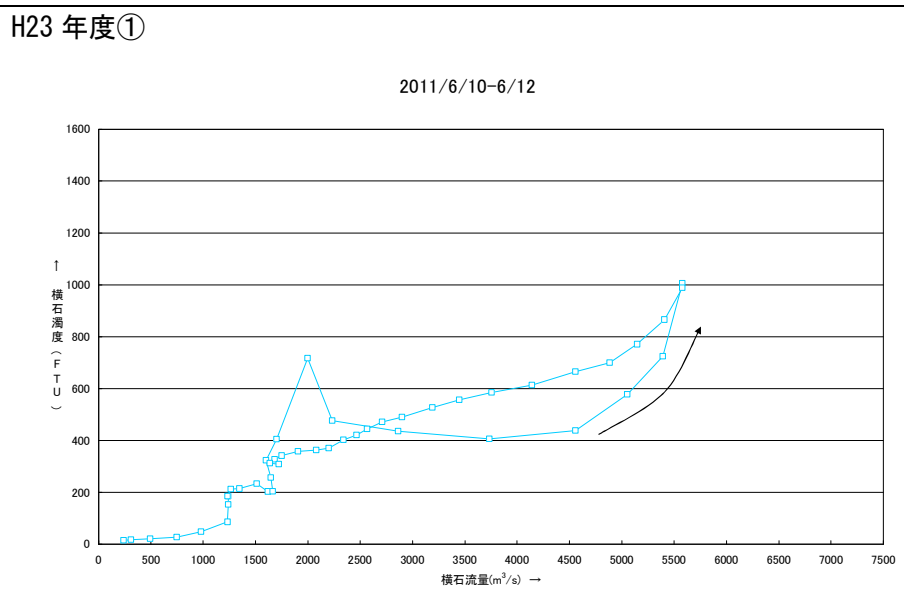
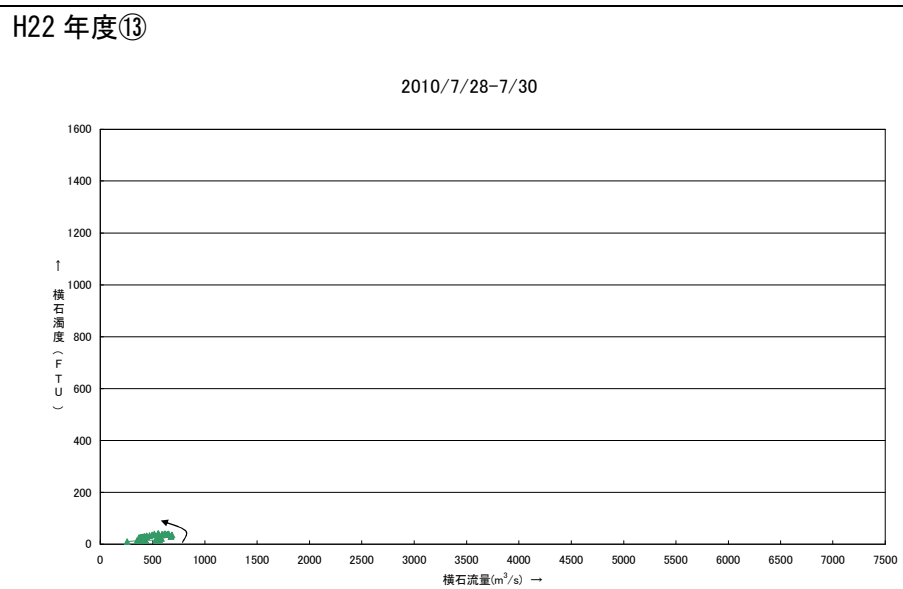
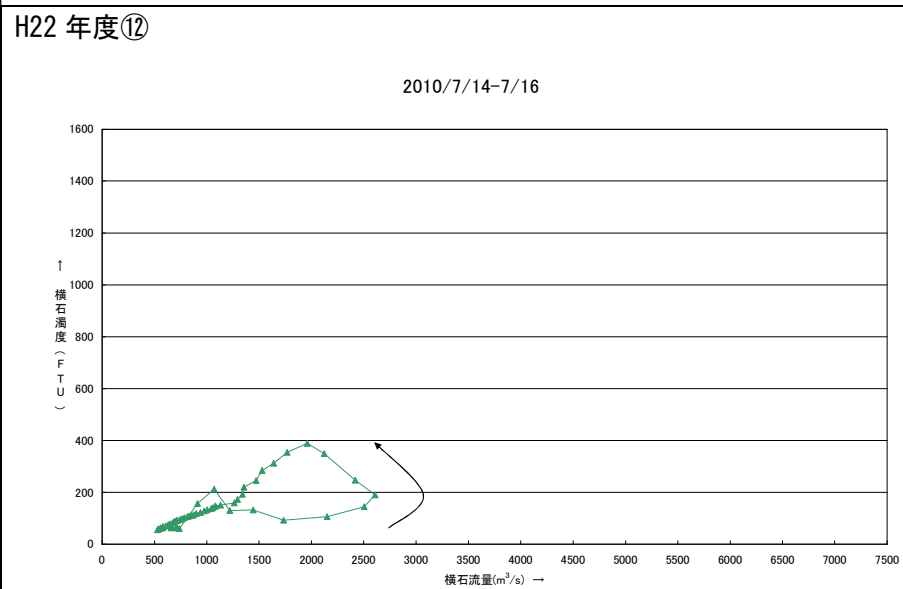
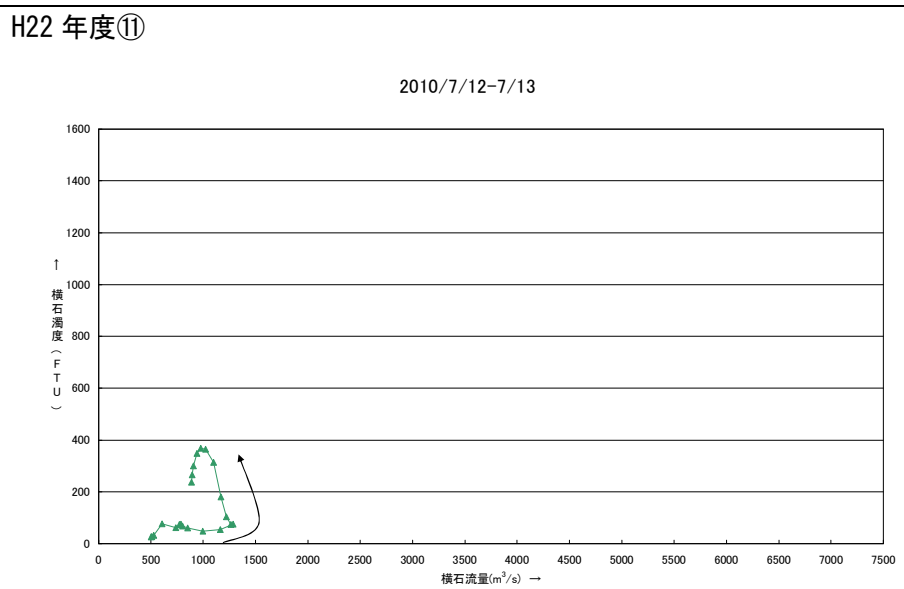
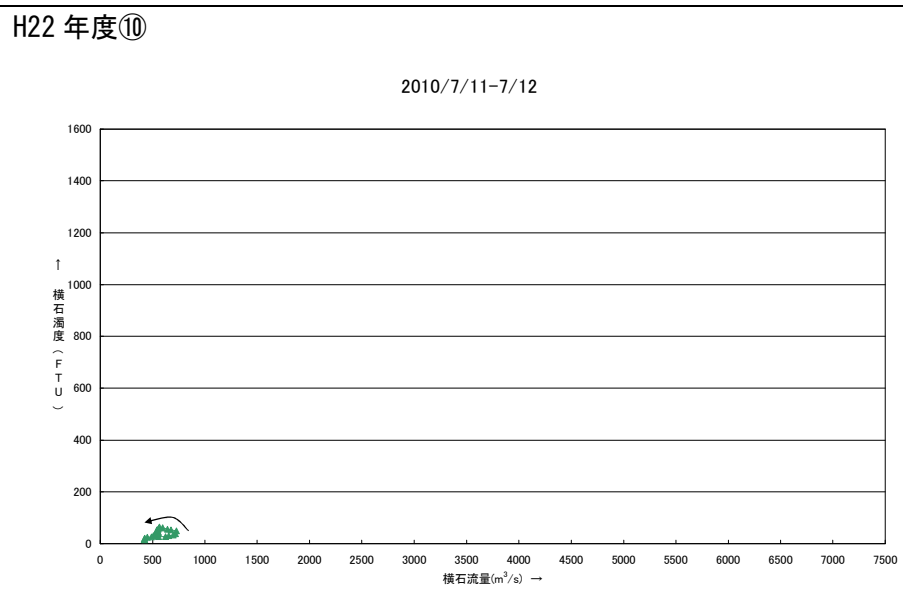
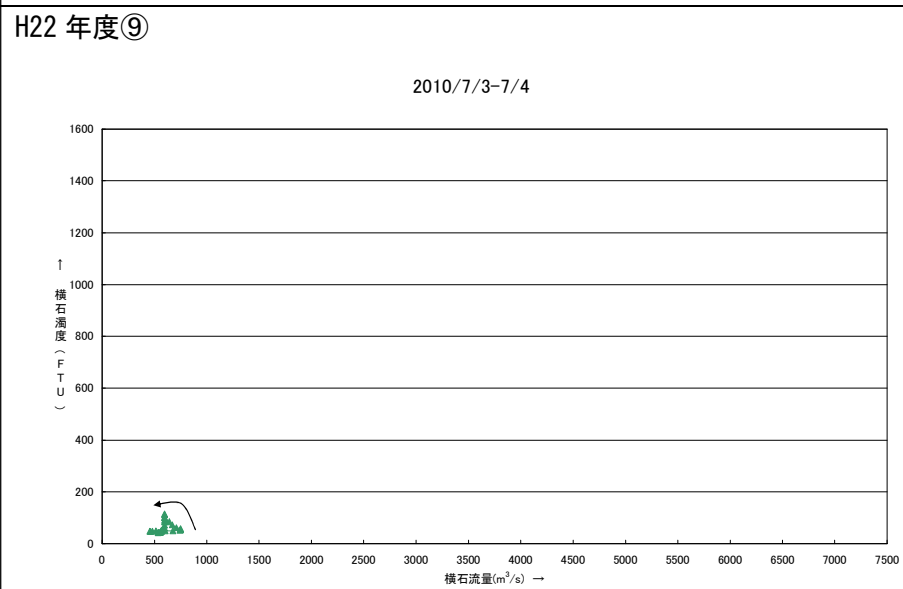
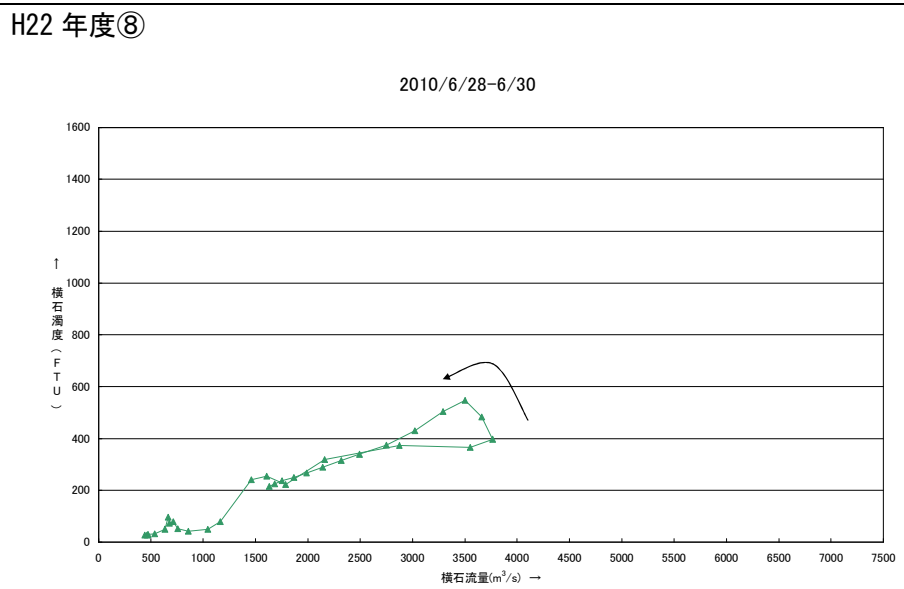
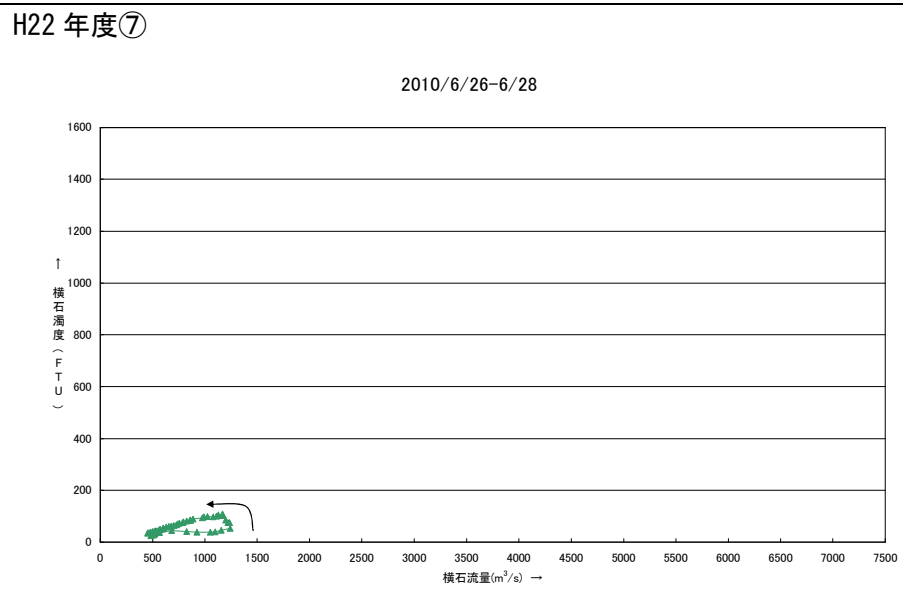
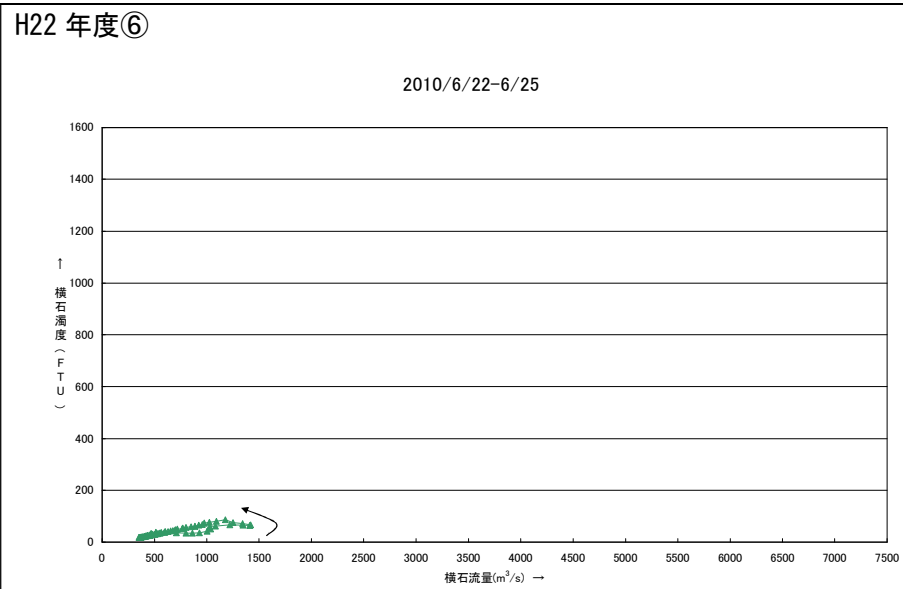


H22 年度④

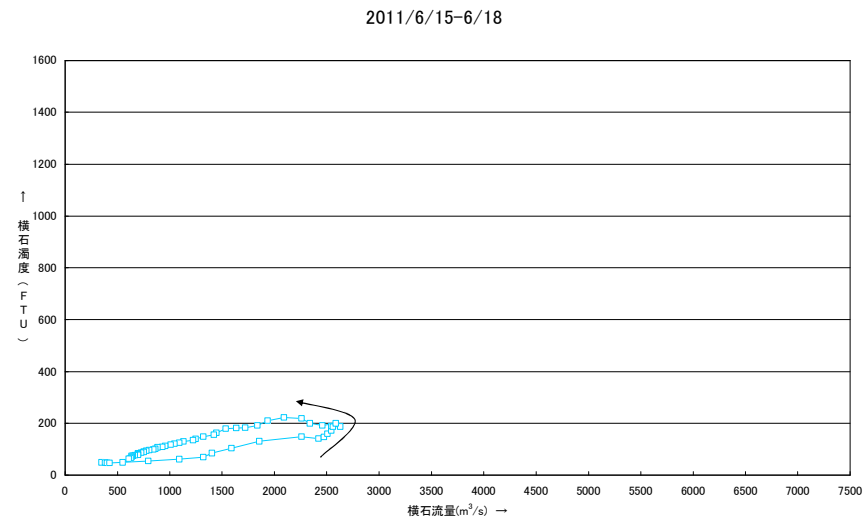


H22 年度⑤

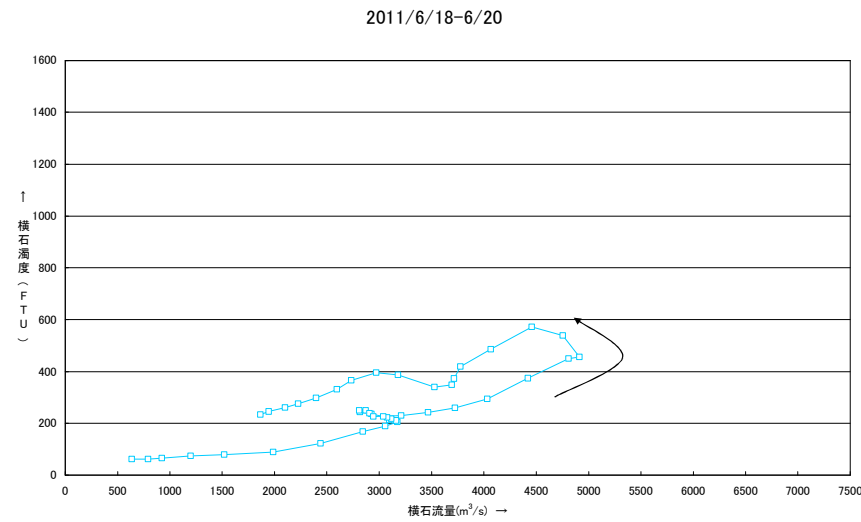




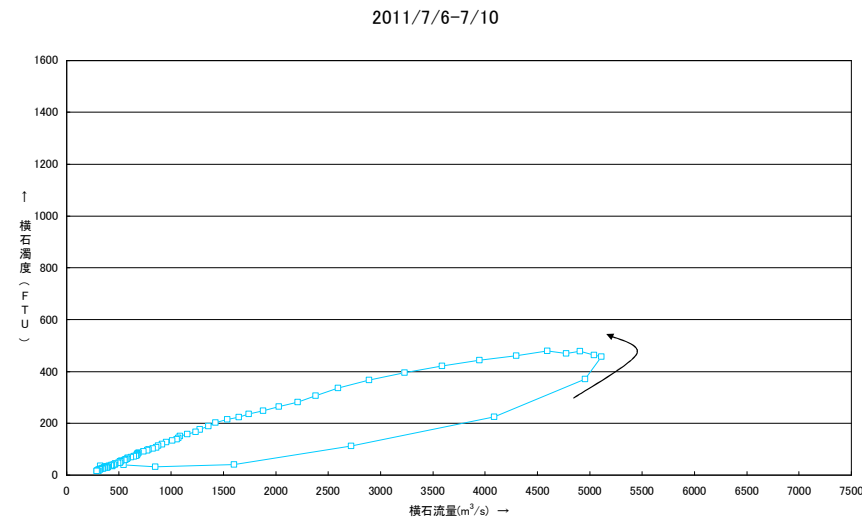
H23 年度②



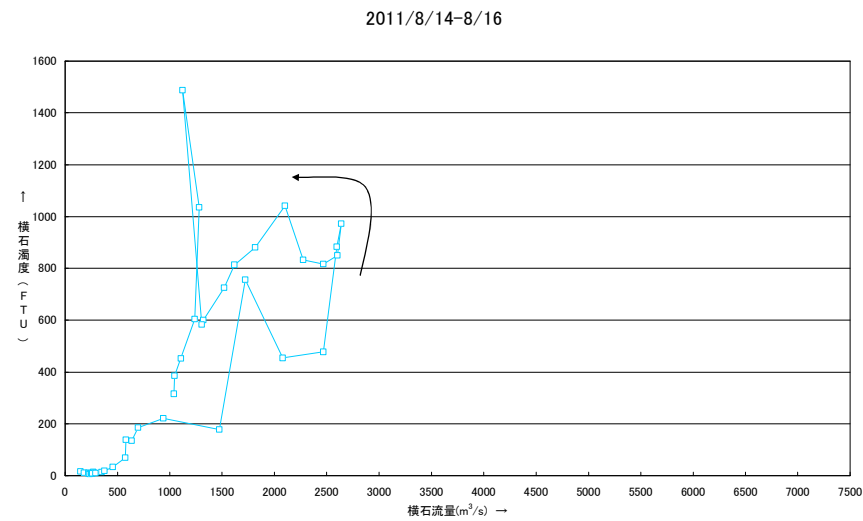
H23 年度③



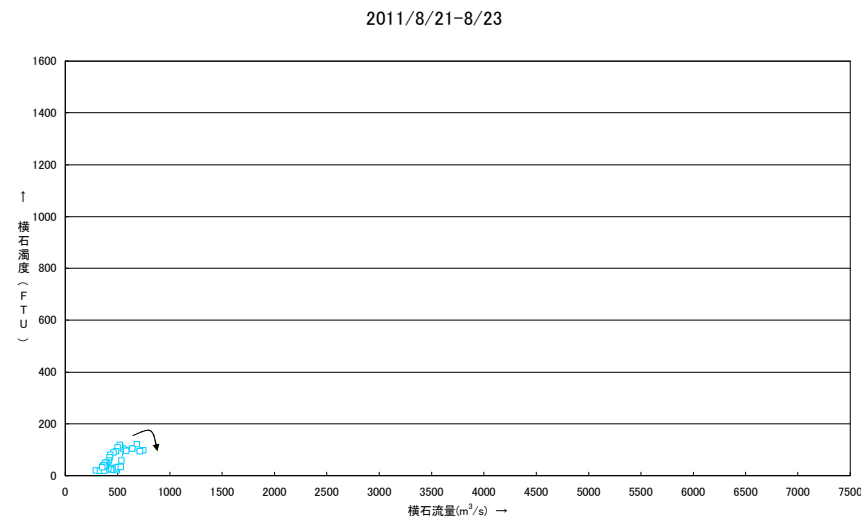
H23 年度④



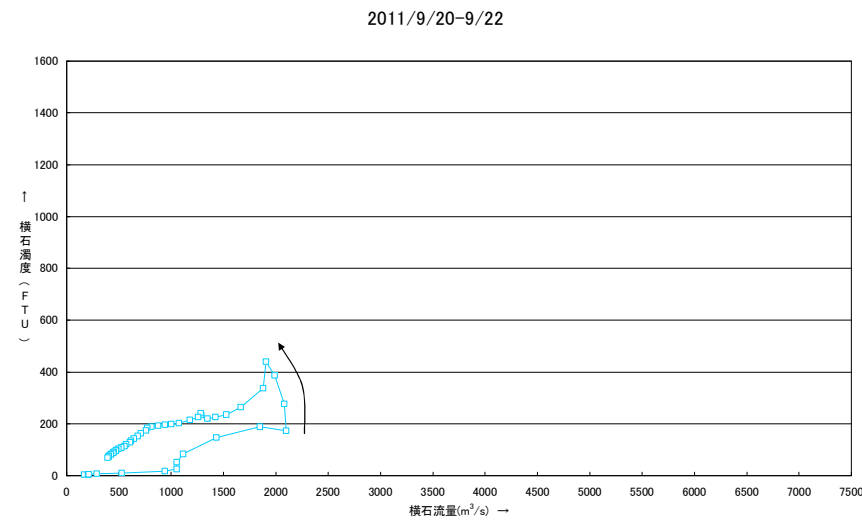
H23 年度⑤



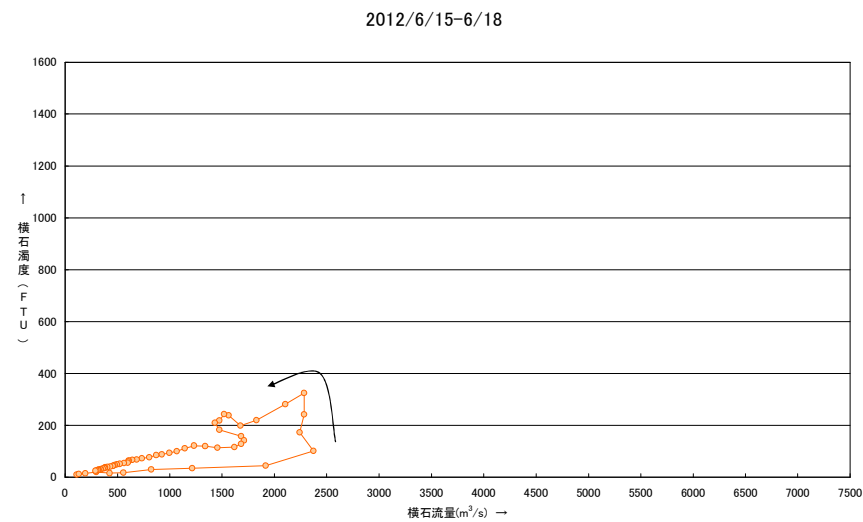
H23 年度⑥



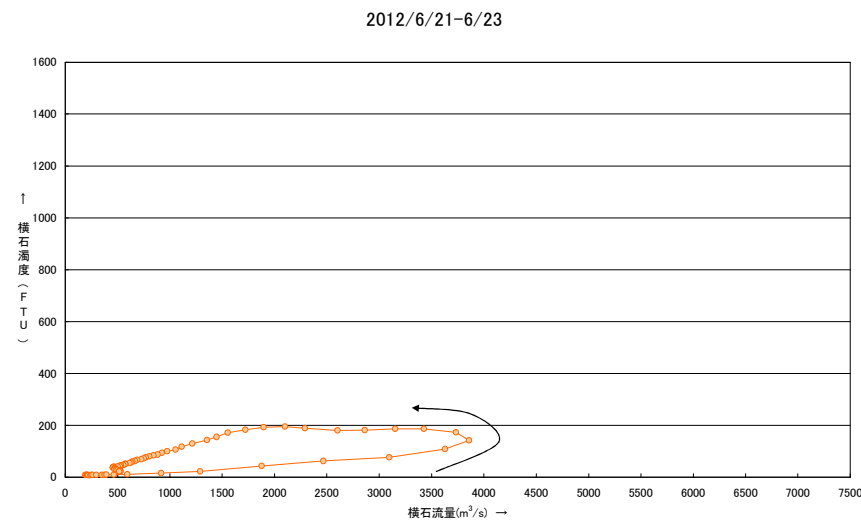
H23 年度⑦



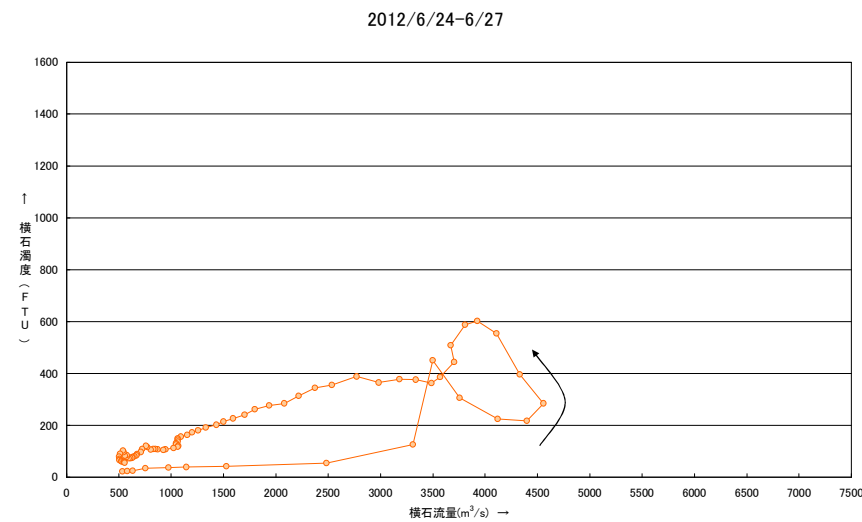
H24 年度①



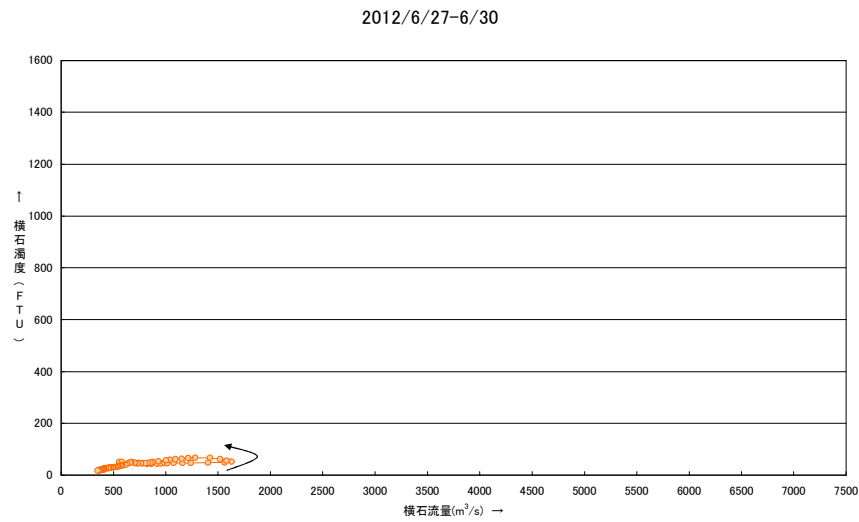
H24 年度②



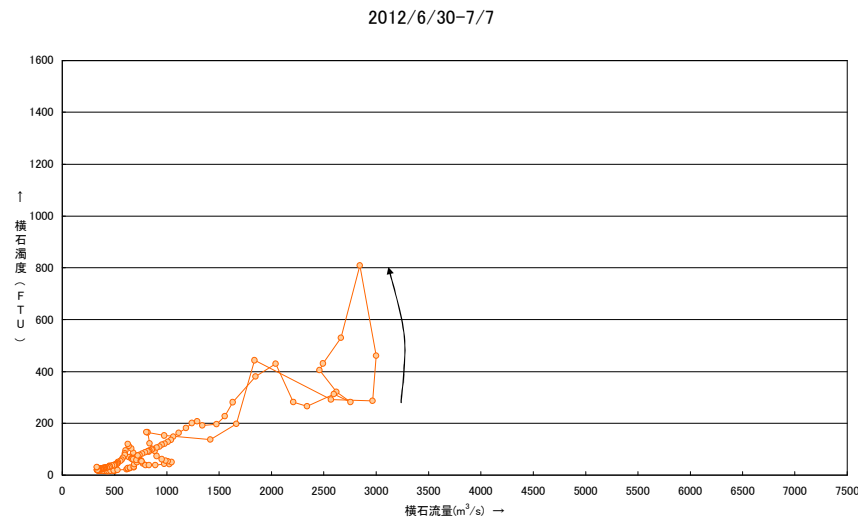
H24 年度③



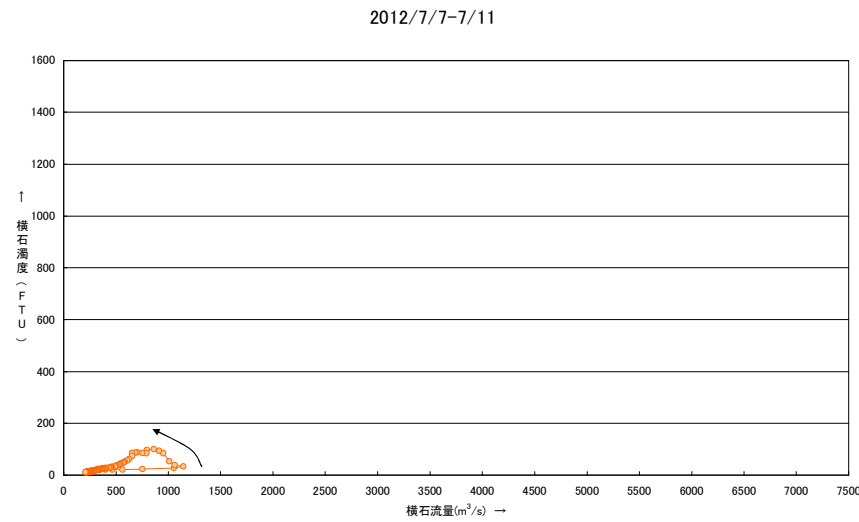
H24 年度④



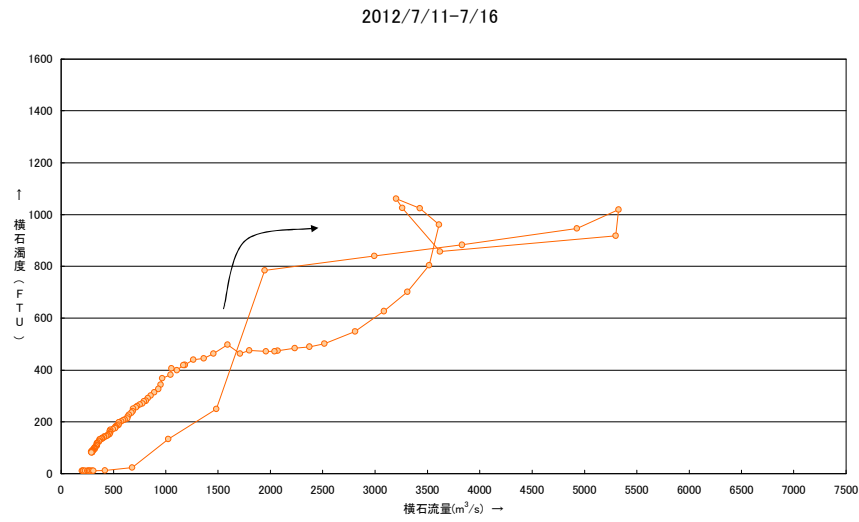
H24 年度⑤



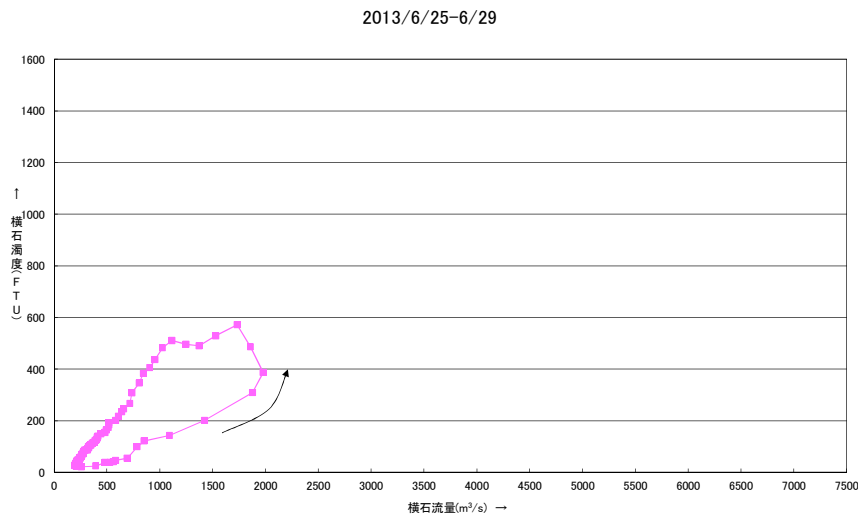
H24 年度⑥



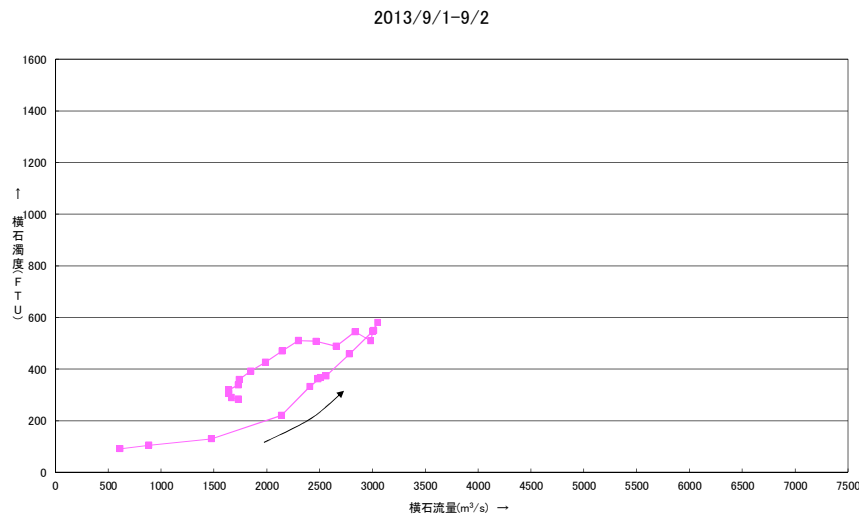
H24 年度⑦



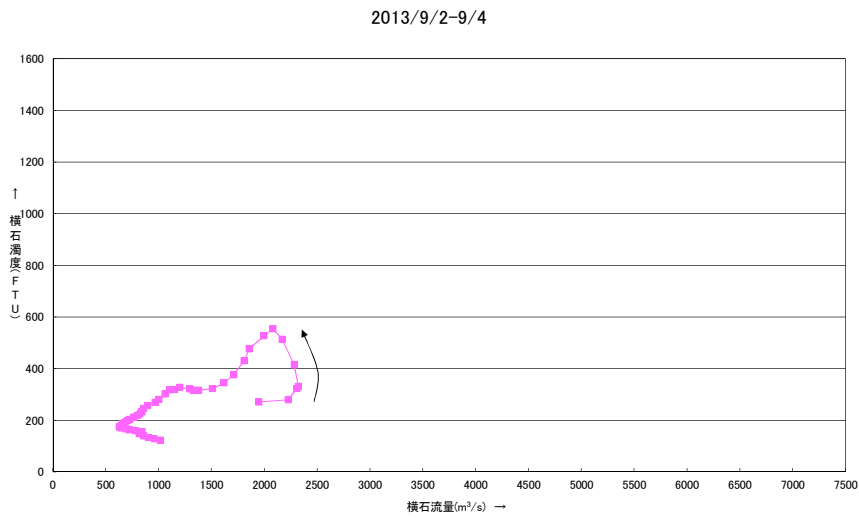
H25 年度①



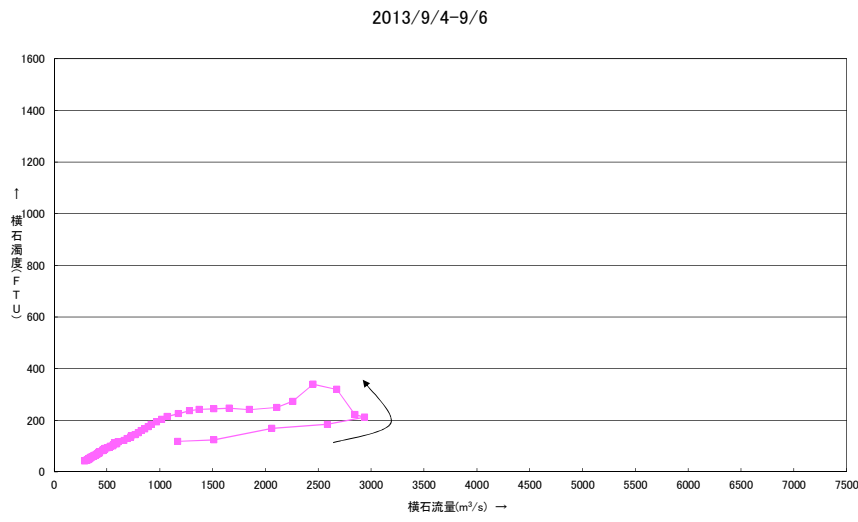
H25 年度②



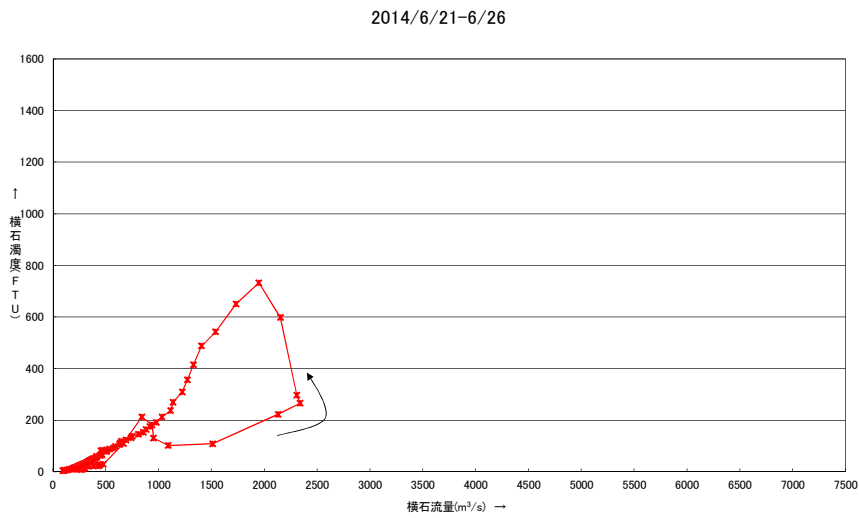
H25 年度③



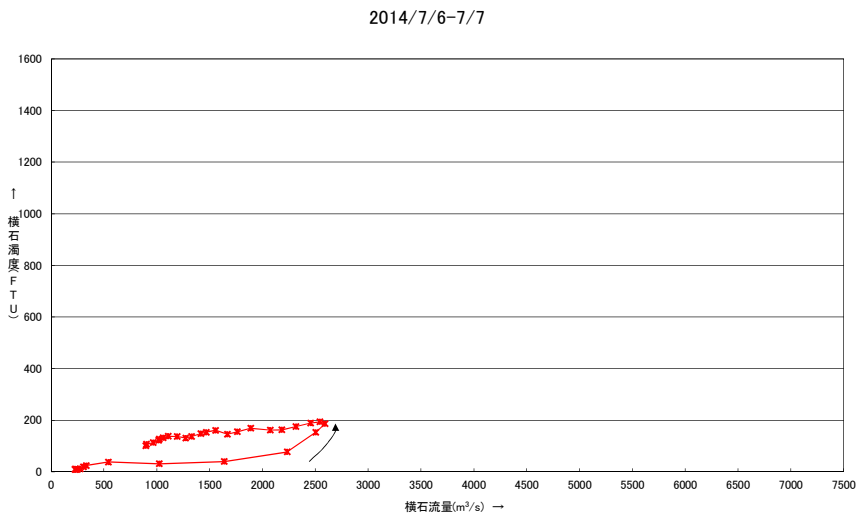
H25 年度④



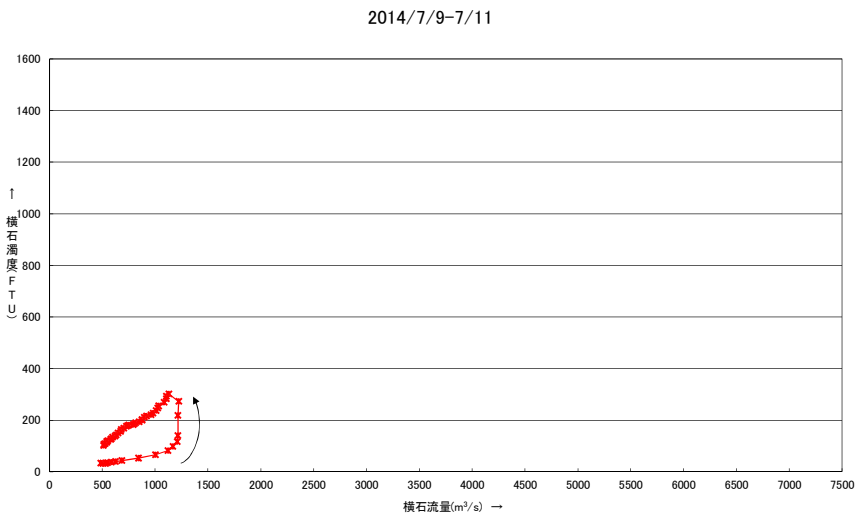
H26 年度①



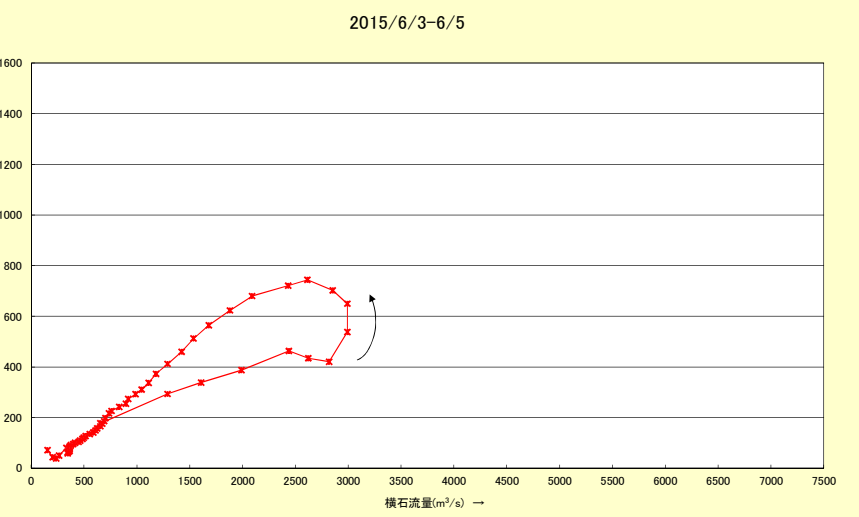
H26 年度②



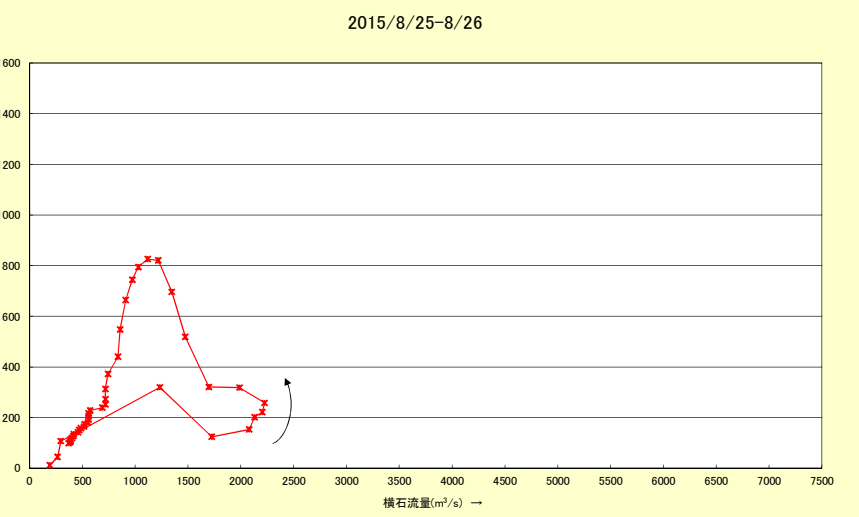
H26 年度③



H27 年度①

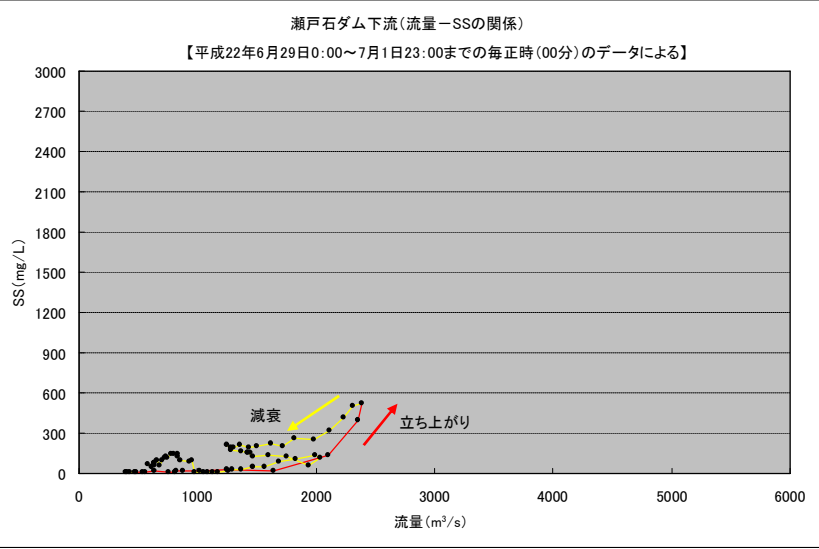


H27 年度②

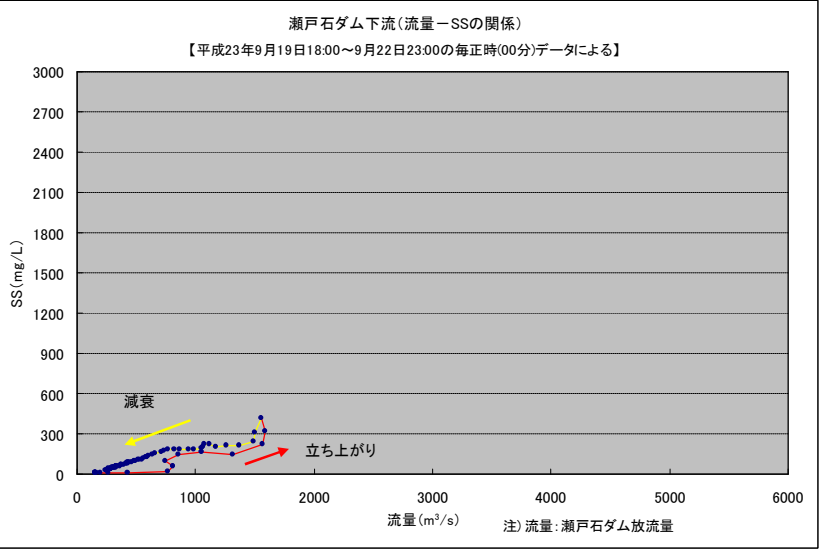


出水時調査時の流量と SS の時間的変化について、平成 22 年度、平成 23 年度、平成 25 年度及び平成 27 年度のデータを整理した図を以下に示す。全て反時計回りである。

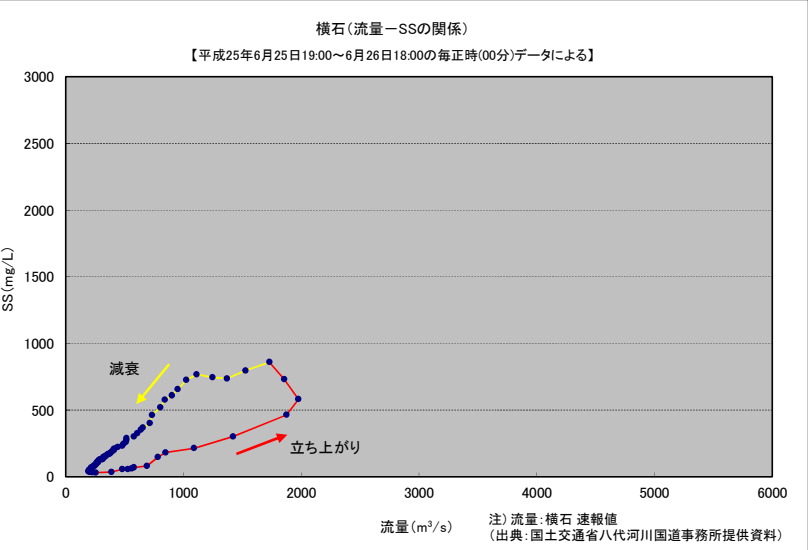
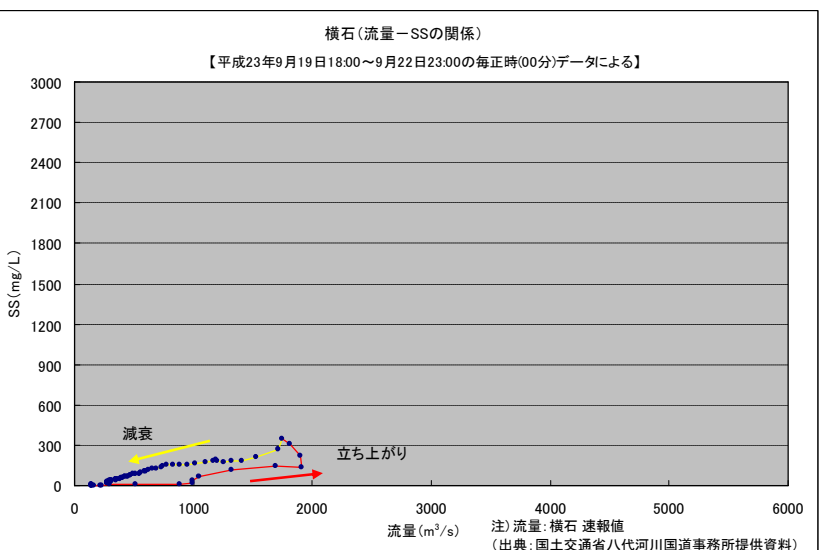
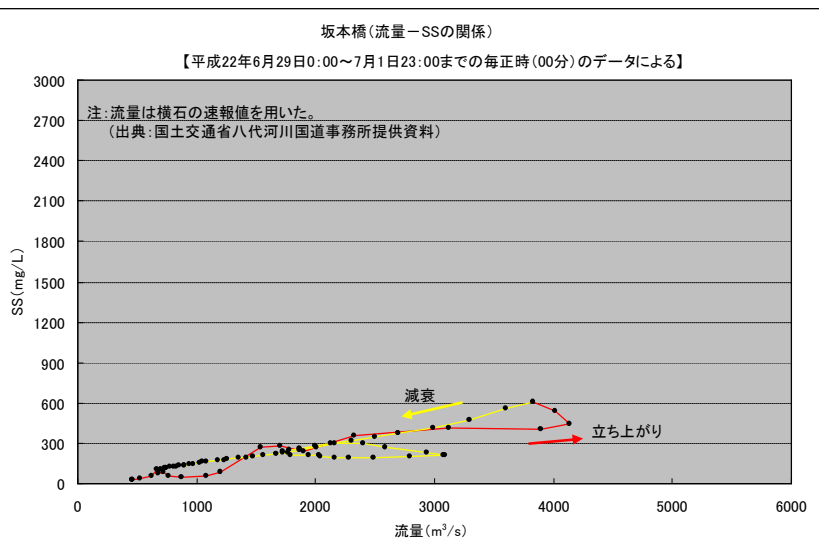
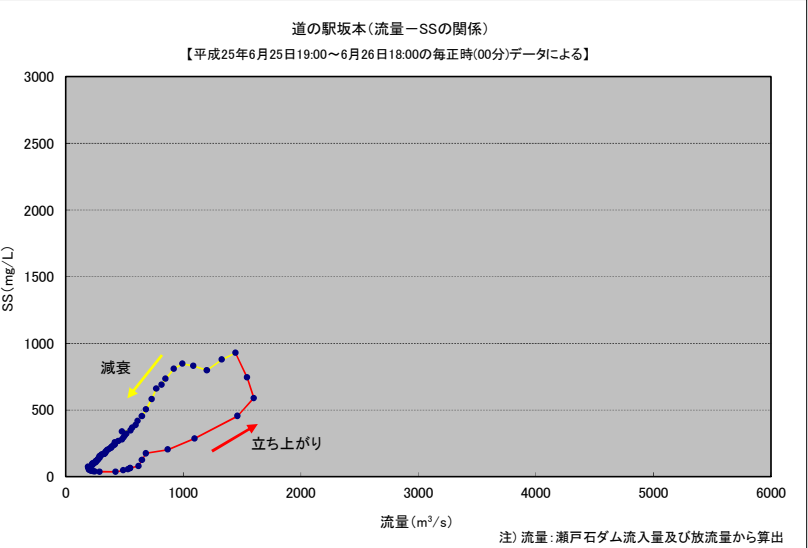
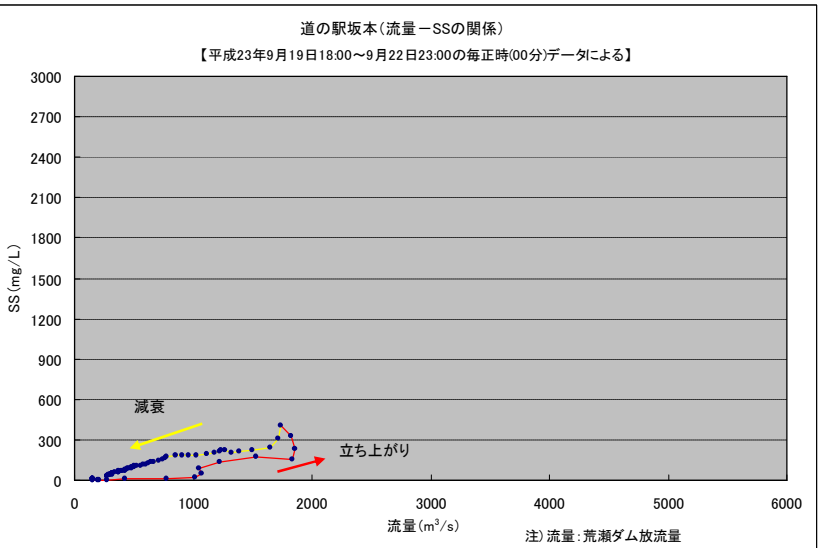
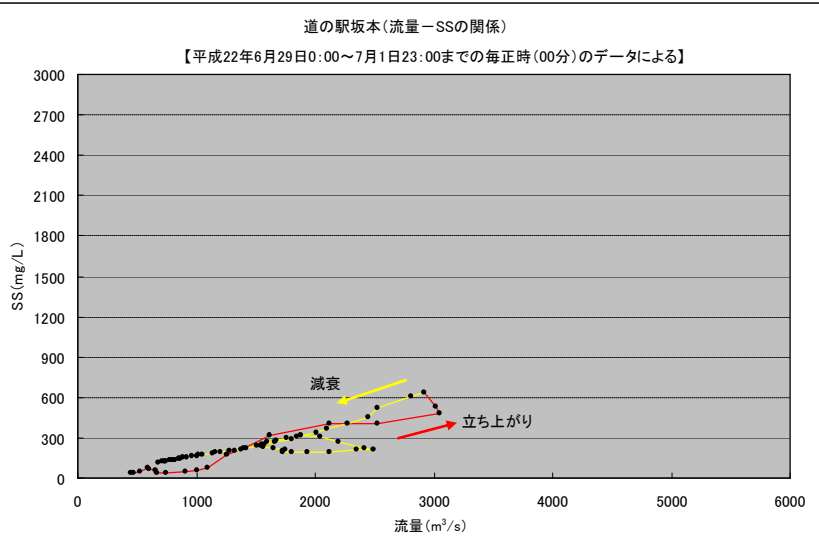
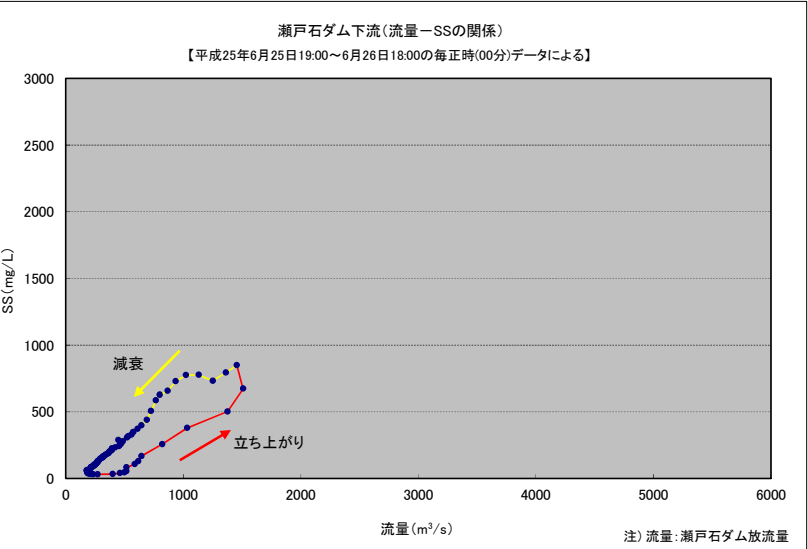
[出水時 1] 平成 22 年度 出水時調査結果（平成 22 年 6 月 29 日～7 月 1 日）



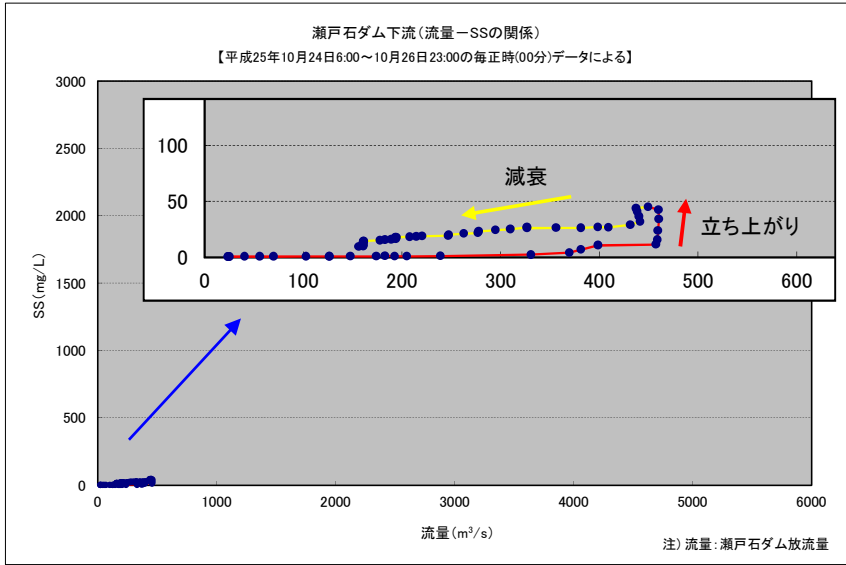
[出水時 2] 平成 23 年度 出水時調査結果（平成 23 年 9 月 19 日～9 月 22 日）



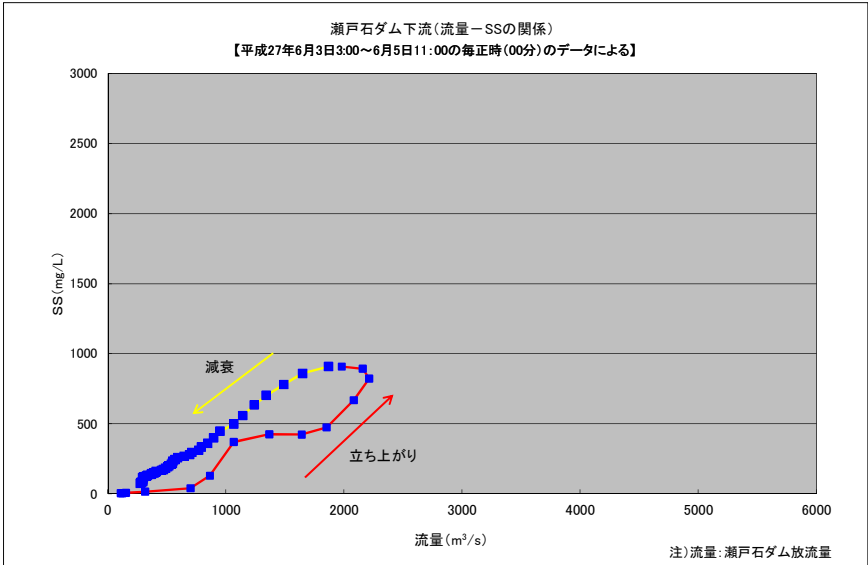
[出水時 3]平成 25 年度 出水時調査結果（平成 25 年 6 月 25 日～26 日）



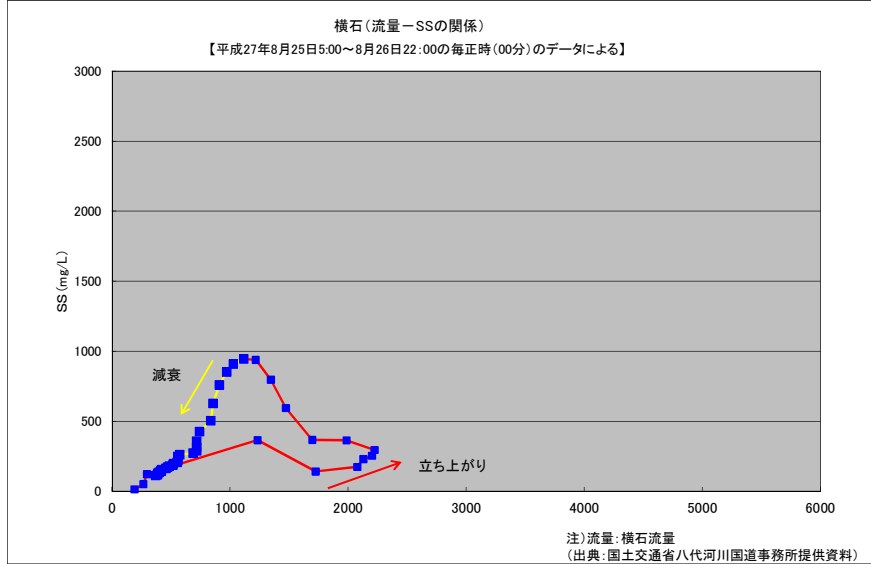
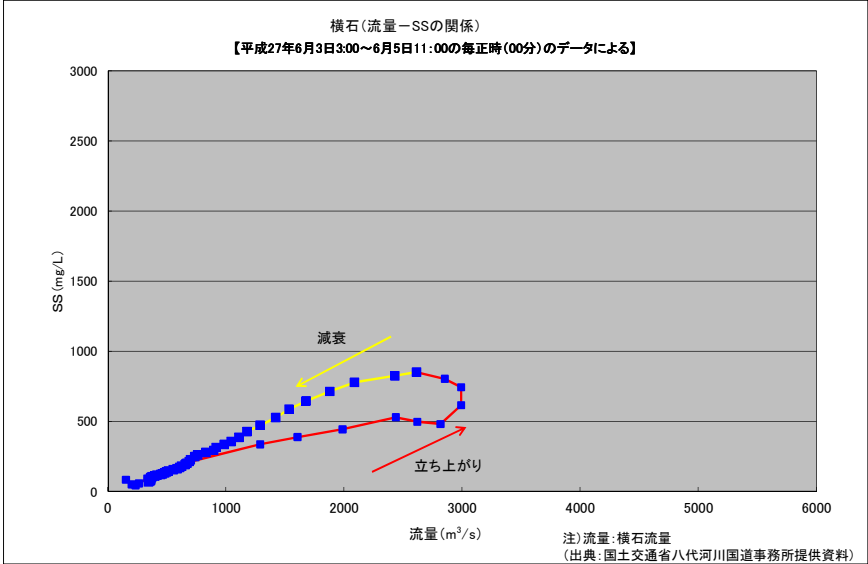
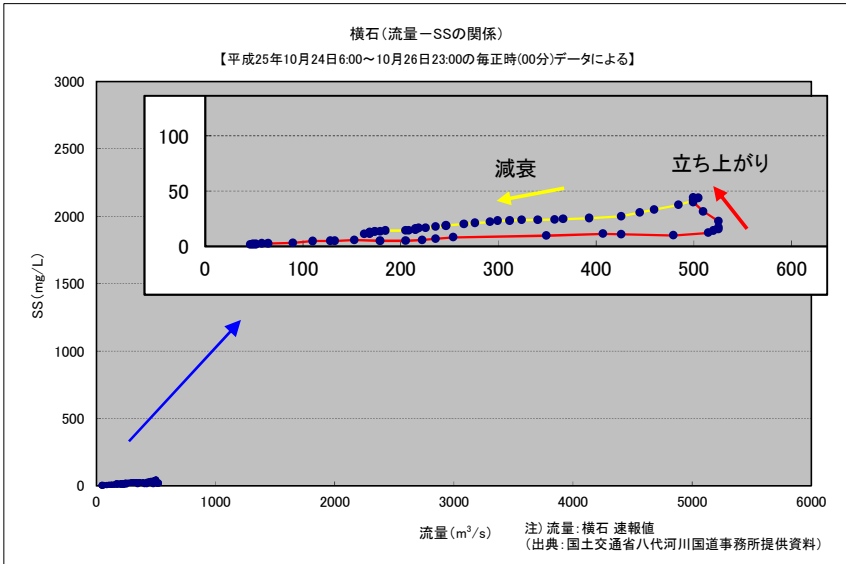
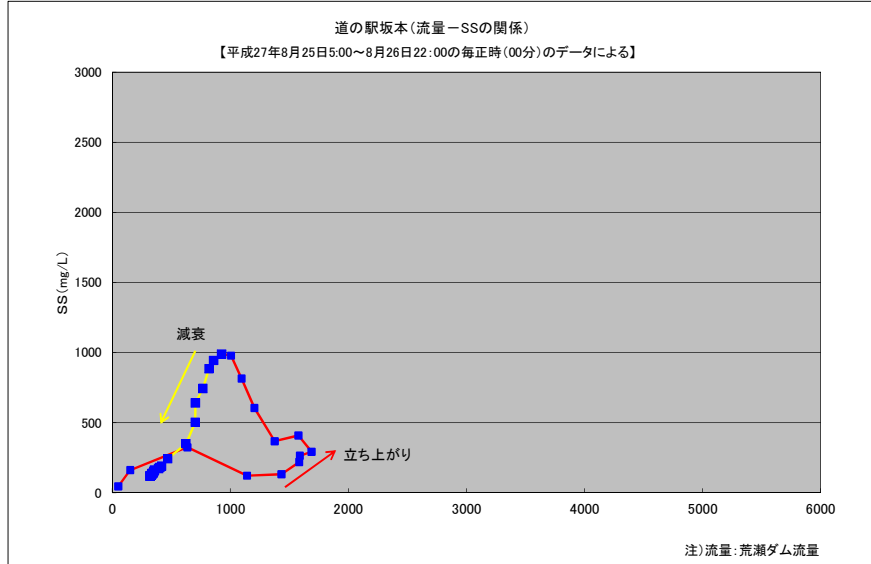
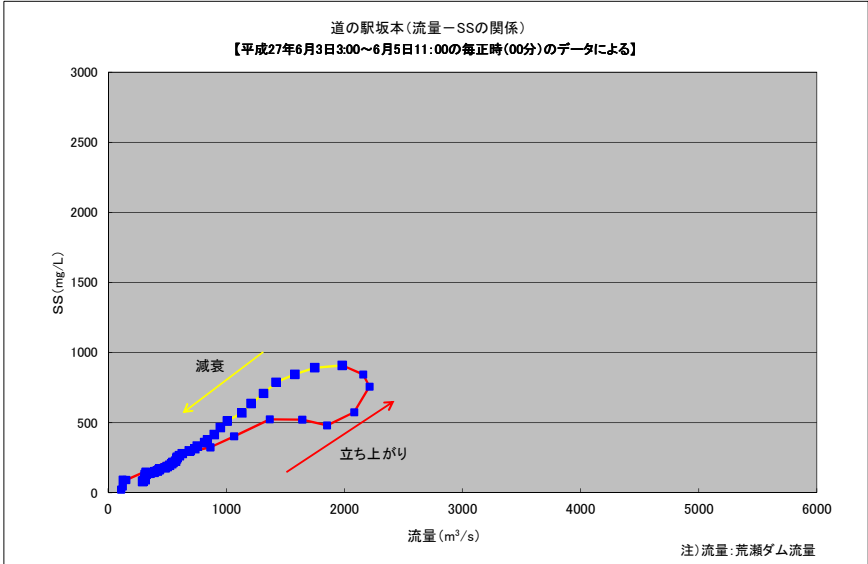
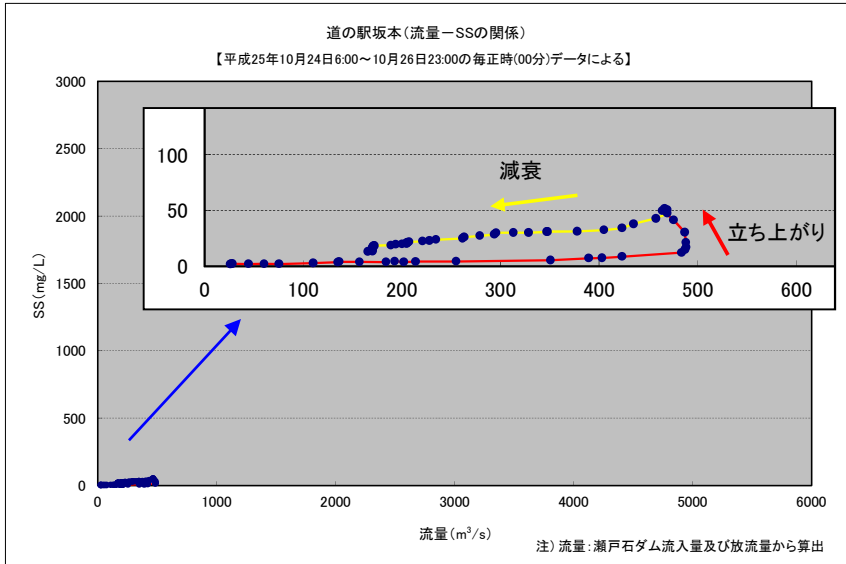
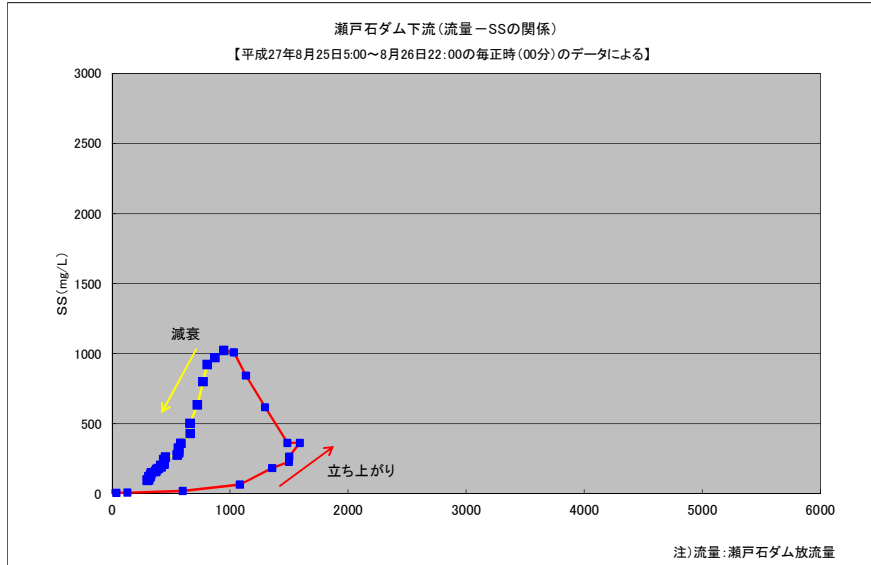
[出水時 4]平成 25 年度 出水時調査結果（平成 25 年 10 月 24 日～26 日）



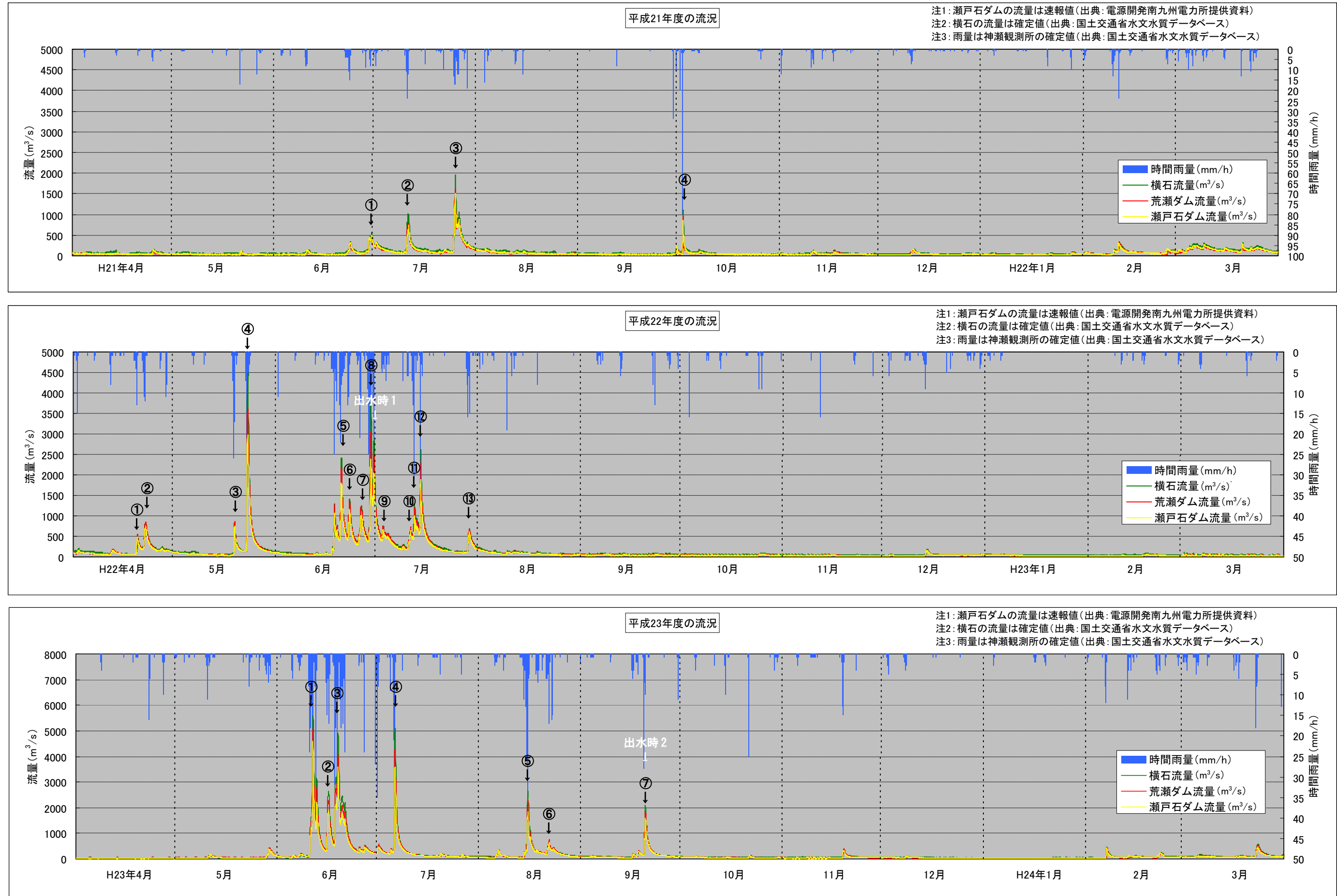
[出水時5]平成 27 年度 出水時調査結果（平成 27 年 6 月 3 日～5 日）

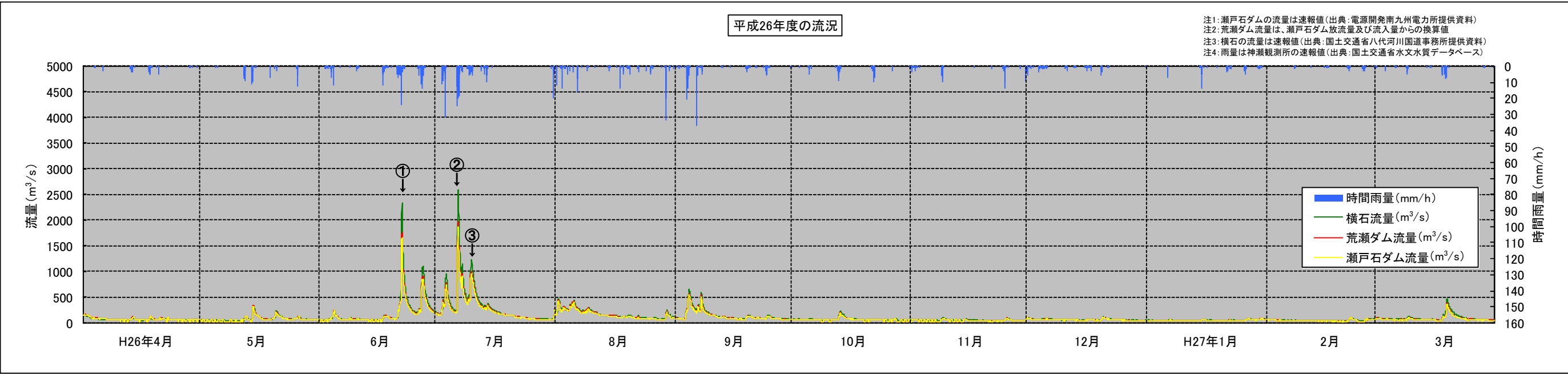
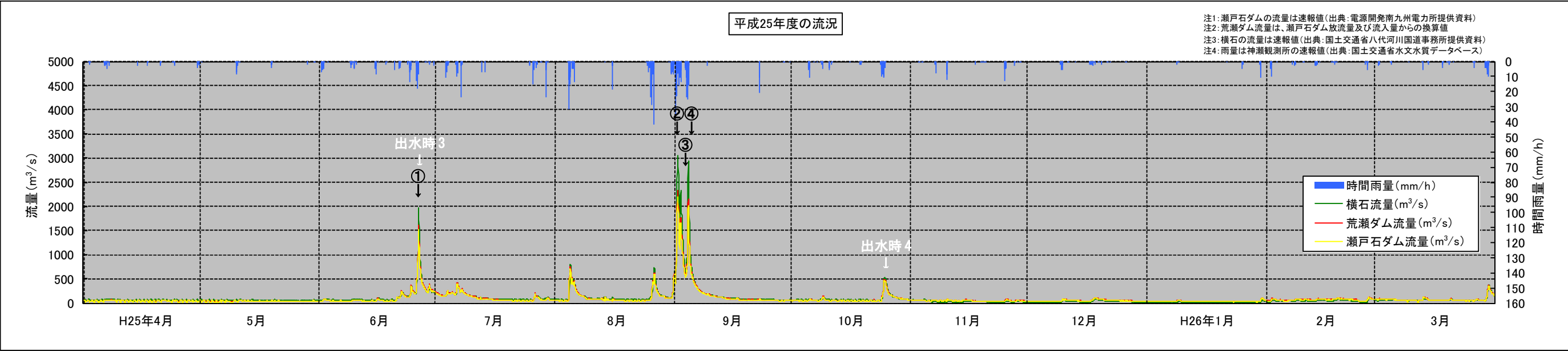
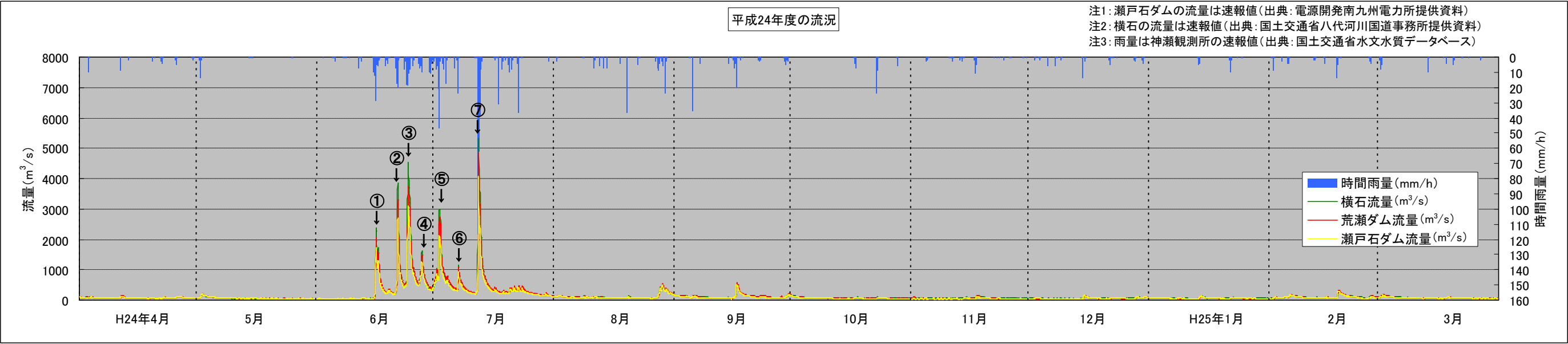


[出水時6]平成 27 年度 出水時調査結果（平成 27 年 8 月 25～26 日）



■「7) 出水時の流量と濁度 (FTU) の時間的な変化について (H21～27 年)」に掲載したグラフにおいて、各年度で抽出した出水を以下の図に示した。抽出した出水は丸数字で表してあり、7)のグラフの丸数字と対応している。

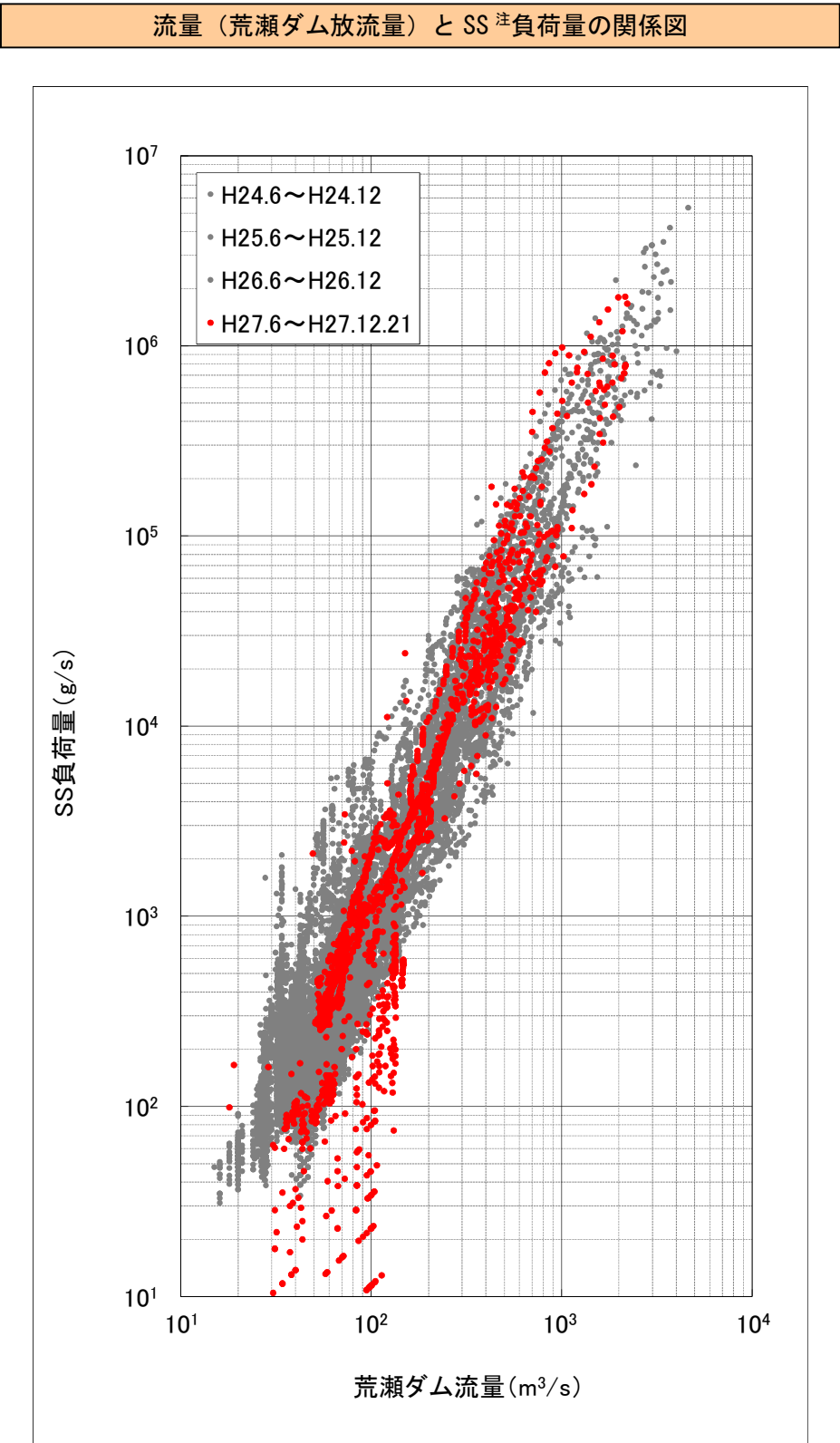
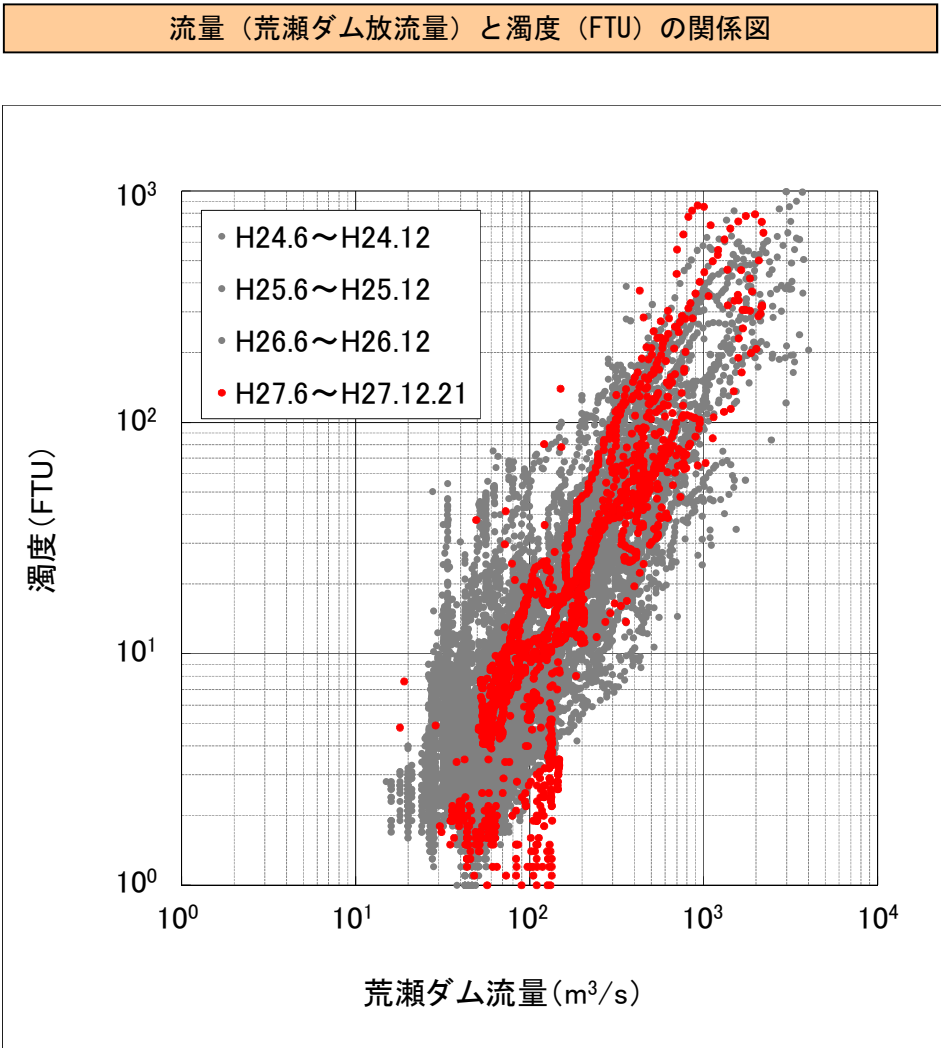




8) 出水時の道の駅坂本の流量（荒瀬ダム流量）と水質（濁度、SS）の関係について（H27 年度観測）

流量と濁度や SS の関係の平均的な挙動を把握するために、平成 24 年 6～12 月、平成 25 年 6～12 月、平成 26 年 6～12 月及び平成 27 年 6 月～12 月の出水時における「流量と濁度 (FTU)」及び「流量と SS 負荷量」のデータをプロットしたものを下図に示す。

注：濁度から SS への換算は、平成 25 年度までのデータから作成した「 $SS=1.1435 \times \text{濁度}$ 」（第 7 回委員会資料と同じもの）を用いている。



注：SS は、回帰式による濁度 (FTU) の換算値