Water quality data of the Saidenbach Reservoir's tributaries

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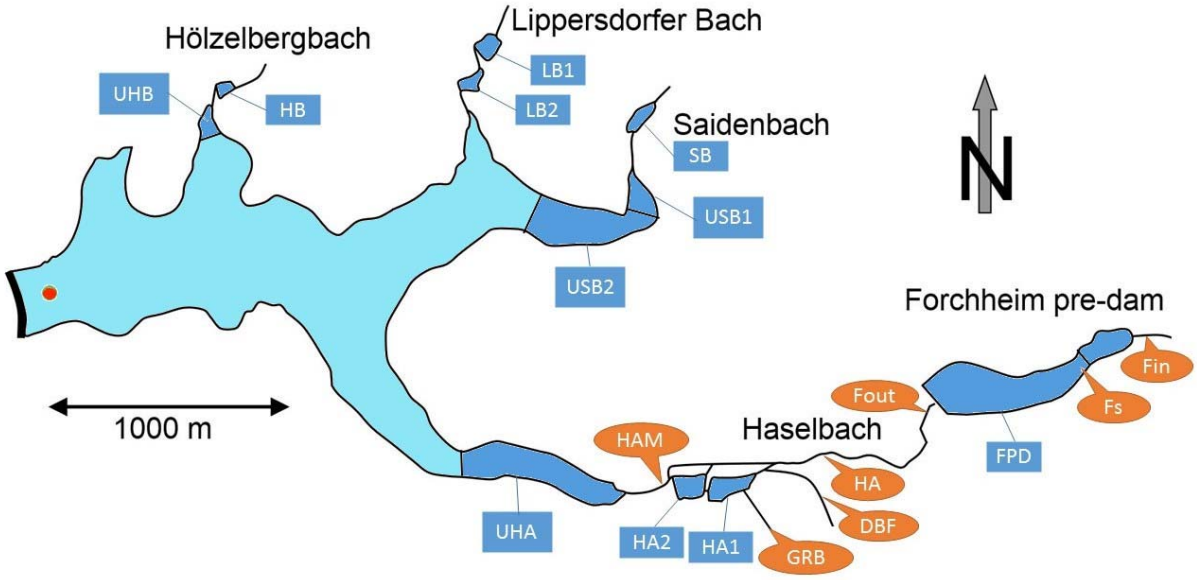
Data file: Saidenbach_Tributaries-Chemistry&Temperature.csv

Sampling stations:

Sampling usually occurred between 7 a.m. and 10 a.m. up- and downstream the pre-dams at the main tributaries Hölzelbergbach (HB), Lippersdorfer Bach (LB1 and LB2), Saidenbach (SB), and Haselbach (HA1 and HA2). A more sophisticated regime was established at the Forchheim pre-dam (FPD) (see sketch below). UHB, USB1, USB2, and UHA are underwater pre-dams



Characteristic hydrological and morphological data of the pre-dams at the Saidenbach Reservoir:

Pre-dam	Volume m³	Surface ha	Spillway level m.a.sl.	Crest level m.a.sl.	Dam hight m	Retention time d	Mean depth m
UHB*	1,850	0.15	431.00	?	4.54	?	1.23
HB	2,700	0.40	444.00	?	4.35	3.40	0.68
LB1	15,650	0.54	448.67	?	4.10	2.60	2.90
LB2	6,400	0.53	445.00	?	5.00	1.10	1.21
SB	19,200	1.30	442.50	?	6.90	0.70	1.48
USB1*	20,000	1.66	435.00	436.00	5.30	?	1.20
USB2*	135,100	4.37	430.50	431.50	10.44	?	3.09
HA1	23,900	1.67	443.00	?	5.50	0.35	1.43
HA2	18,300	1.56	441.00	?	4.95	0.27	1.17
UHA*	219,500	6.63	434.00	435.00	9.52	?	3.31
FPD	588,390	11.97	468.00	?	13.30	8.60	4.92

* Underwater basins (crest usually below reservoir surface depending on actual surface level)

Geographic locations of the sampling stations:

Station	N. latitude	E. longitude	Note
HA	50.7260481	13.2652509	till 1985
Fin	50.7302282	13.2874703	since 1985
Fin	50.7299158	13.3016539	since 1985 when Fin inaccessible
Fs	50.7294642	13.2824171	since 1985 at bottom sill in FPD
Fout	50.7278920	13.2732707	since 1985
DBF	50.7257526	13.2658142	
HA1in	50.7256270	13.2631856	
GRB	50.7247339	13.2621878	
HA1out	50.7251380	13.2599562	
GRB	50.7247339	13.2621878	
HAM	50.7250327	13.2568771	
SBin	50.7406105	13.2585400	
SBout	50.7389403	13.2558578	
LB1in	50.7429019	13.2478219	
LB1in	50.7511807	13.2465345	if LB1in inaccessible
LB1out	50.7422977	13.2466525	
LB2out	50.7405766	13.2457620	
HBin	50.7410790	13.2325763	
HBout	50.7409941	13.2313102	

Variables measured:

Variable	Shortcut	Unit
Soluble reactive phosphorus	SRP	µg L^{-1} PO_4^{3-}-P
Total dissolved phosphorus	DP	µg L^{-1} PO_4^{3-}-P
Total phosphorus	TP	µg L^{-1} PO_4^{3-}-P
Nitrate	NO3	mg L^{-1}
Dissolved silica	DSI	mg L^{-1} Si
pH	PH	---
Conductivity	CON	µS cm^{-1}
Water temperature	WT	° C
Acid capacity	AC	mval L^{-1}
Spectral absorption coefficient at 254 nm	SAC254	m^{-1}
Spectral absorption coefficient at 436 nm	SAC436	m^{-1}
Ammonium	NH4	mg L^{-1}
Determination of filterable matter	FM	mg L^{-1}
Loss of ignition of filterable matter	LOI	%
Formazine Nephelometric Units (Turbidity)	FNU	FNU

Measuring devices or analytical methods:

Variable	Method
SRP	Photometric analysis of dissolved (after filtration through 0.45 µm membrane filters) and total phosphorus (after digestion with sulfuric acid and H_2O_2) with the molybdenum blue method; before 1990 according to AMW, later according to DIN 38 405 D 11-1 (digestion with $K_2S_2O_8$ under pressure)
DP	
TP	
NO3	Before 1990: Photometric analysis with sodium salicylate according to AMW, later according to application GA No. 1, Dr. Bruno Lange GMbH Berlin (UV-self-absorption of the filtered sample)
DSI	Before 1990: Photometric determination of ortho silicate according to AMW, after 1990 according to DIN 38 405-D21 (silicomolybdate)
PH	Electrochemical determination according to DIN 38 404 -5; WTW pH 196 T, after 2006: WTW pH/mV-Meter pH 197i + TA pH-60
CON	DIN EN 27 888 ; WTW LF 196 T, after 2006: WTW Cond 197i + TA 197 LF-60
WT	Before 1990: scoop thermometer; later measured with WTW pH 196 T and since 2006 with WTW pH/mV-Meter pH 197i + TA pH-60
AC	Following DIN 38409-7, since … Titrator …
SAC254	Photometric measurement according to DIN 38 404 -3
SAC436	Photometric measurement according to DIN 38 404-C1
NH4	Photometric measurement according to DIN 38 406 E5-1
FM	DIN 38 409-H2
LOI	Following DIN 18128
FNU	Turbidity meter TMS 200/H (SMT & HYBRID GmbH, Weißig)

AMW - Ausgewählte Methoden der Wasseruntersuchung. Band 1: Chemische, physikalisch-chemische und physikalische Methoden. G. Fischer Verlag, Jena. In the valid version, respectively.

Data availability (e.g. 85-17 means 1985 – 2017):

Variable→ ↓Station	SRP	DP	TP	NO3	DSI	PH	CON	WT	AC	SAC254	SAC436	NH4	FM	LOI	FNU
Fin	85-17	85-17	85-17	85-17	85-17	85-16	94-17	85-17	87-17	03-06, 16-17	03-06, 16-17	03-06	03-06	03-06	03-06
Fs	03-06	03-06	03-06	03-06	03-06	03-06	90, 92-95	03-06	03-06	03-06	03-06	03-06	03-06	03-06	03-06
Fout	85-17	85-17	85-17	85-17	85-17	85-16	94-17	85-17	87-17	03-06, 16-17	03-06, 16-17	03-06	03-06	03-06	03-06
HA	75-85	75-85	75-85	75-85	81-85	83-85	---	75-85	---	---	---	---	---	---	---
DBF	84-17	85-17	85-17	85-17	86-17	85-16	94-17	85-17	87-17	16-17	16-17	---	---	---	---
HA1in	83, 85-86, 03-06, 11	83, 85-86, 03-06, 11	83, 85-86, 03-06, 11	83, 85-86, 03-06, 11	03-06, 11	85-86, 03-06	03-06	85-86, 03-06, 11	03-06, 11	03-06	03-06	03-06	03-06	03-06	03-06
GRB	84, 87-89	84, 87-89	84, 87-89	84, 87-89	87-89	87-89	---	85-89	87-89	---	---	---	---	---	---
HA1out	85-87	85-87	85-87	85-87	---	85-87	03-06, 11	---	---	---	---	---	---	---	---
HAM	85-17	85-17	85-17	85-17	85-17	83-16	94-17	85-17	87-17	16-17	16-17	---	---	---	---
SBin	75-17	75-17	75-17	75-17	81-17	83-16	94-17	75-17	87-17	16-17	16-17	---	---	---	---
SBout	85-17	85-17	85-17	85-17	85-17	85-16	94-17	85-17	87-17	16-17	16-17	---	---	---	---
LB1in	75-17	75-17	75-17	75-17	81-17	83-16	94-17	75-17	87-17	16-17	16-17	---	---	---	---
LB1out	85-86	85-86	85-86	85-86	---	85-86	---	85-86	---	---	---	---	---	---	---
LB2out	85-17	85-17	85-17	85-17	85-17	85-86, 93-16	94-17	85-17	90-17	16-17	16-17	---	---	---	---
HBin	75-17	75-17	75-17	75-17	81-17	83-16	94-17	75-17	87-17	16-17	16-17	---	---	---	---
HBout	85-17	85-17	85-17	85-17	85-17	85-16	94-17	85-17	87-17	16-17	16-17	---	---	---	---