



Table S1. Details of the sampling (studied sites, sampling dates, geographical coordinates).

Streams	Sites	Sampling Date(s)	Geographical Coordinates
Allondon	La Plaine	2008 + mars 2011 + September 2011	46.17913° N 6.009264° E
Allondon	amont STEP St-Genis	2008	46.237331° N 6.015581° E
Versoix	amont Divonne	2008	46.360854° N 6.134695° E
Laire	embouchure	2008 + May 2012 + October 2012	46.14670° N 5.96761° E
Seymaz	Claparède	2008 + March 2013 + October 2013	46.187998° N 6.184627° E
Seymaz	embouchure	2008	46.180104° N 6.182019° E
Merley	aval rte de Chancy	2008 + May 2012 + October 2012 + September 2018	46°10'22.052" N 6°02'36.751" E
Hermance	pont de Crévy	2008 + June 2013 + October 2013	46.283307° N 6.240848° E
Versoix	amont STEP Divonne	2008	46.349162° N 6.156314° E
Rhône	aval STEP Aire	2008	46.202358° N 6.091064° E
Rhône	Chèvres	2008	46.201872° N 6.073066° E
Allondon	Fabry	2008 + March 2011 + September 2011	46.228971° N 6.013172° E
Seymaz	amont Rouelbeau	2008 + March 2013	46.242406° N 6.218963° E
Hermance	pont Neuf	2008	46.272885° N 6.242411° E
Aire	aval Ziplo	2008 + March 2010 + September 2010	46.17574° N 6.103508° E
Avril	Bourdigny	2008 + October 2012 + February 2018	46.21660° N 6.04665° E
Versoix	av. STEP Divonne	2008 + May 2018	46°20'24.243" N 6°08'25.635" E
Aire	pont de Certoux	2008 + March 2010 + September 2010	46.152335° N 6.076372° E
Rhône	baie de Peney	2008 + October 2012 + February 2018	46°12'03.374" N 6°02'35.551" E
Rhône	amont STEP Aire	2008	46.193055° N 6.091813° E
Grant Nant	amont Malchamps	March 2010 + July 2010	46.095822° N 6.067571° E
Ternier	amont St Julien	May 2010	46.138575° N 6.092920° E
nant de la Folle	amont Grand Nant	June 2010 + September 2010	46.136220° N 6.075227° E
Lissole	amont busage	March 2010	46.158708° N 6.099137° E
Voiret	embouchure	May 2010 + September 2010	46.181019° N 6.116331° E
Aire	Thérans	June 2010 + September 2010	46.146880° N 6.071336° E
Aire	pont du Centenaire	March 2010 + September 2010	46.176599° N 6.100119° E
Bistoquette	bois d'Humilly	March 2010 + September 2010	46.161414° N 6.136422° E
Clef	amont Tate	March 2010 + September 2010	46.144732° N 6.140897° E
Drize	Evordes	March 2010 + September 2010	46.149052° N 6.144937° E
Drize	Grange-Collomb	March 2010 + September 2010	46.175334° N 6.134211° E
Marais	Bellavista	March 2010	46.168607° N 6.143825° E
Bistoquette	entrée bois d'Humilly	September 2010	46.157026° N 6.137381° E
Lion	embouchure	March 2011+ September 2011	46.234290° N 6.017086° E
Allondon	Grand Pré	March 2011+ September 2011	46.234197° N 6.016829° E
Charmilles	ch. de Brive	March 2011+ September 2011 + September 2018	46°11'21.664" N 5°59'37.888" E
nant des Crues	Eaumorte	March 2011+ September 2011 + May 2012	46.16362° N 6.02058° E
Couchefatte	Moulin-Roget	May 2012 + October 2012	46.15827° N 5.98154° E
Laire	Moulin-de-Grave	May 2012 + October 2012	46.14353° N 5.99009° E
Laire	Rougemont	May 2012 + October 2012	46.13441° N 6.03529° E
Longet	amont rte de Vers-Vaux	June 2012	46.137998° N 5.96818° E
Moulin-de-la-Ratte	amont busage	May 2012 + October 2012	46.18448° N 6.04466° E
nant des Crues	Laconnex	October 2012	46.156627° N 6.032912° E
nant des Crues	embouchure	October 2012	46.175255° N 6.011293° E
Seymaz	De Haller	Mars 2013 + October 2013	46.20113° N 6.19611° E
Abbaye-de-Presinge	aval EIL	Mars 2013 + October 2013	46.22419° N 6.24983° E
Venoge	Site 2	26.02.2015	46.54349° N 6.55083° E
Venoge	Site 1	16.03.2015	46.54270° N 6.55138° E
Talent	Abbaye	31.03.2015	46.59058° N 6.66702° E

Streams	Sites	Sampling Date(s)	Geographical Coordinates
Cul-des-Prés	Site 1	27.04.2015	47.16085° N 6.87548° E
Venoge	L'isle	11.05.2015	46.61821° N 6.40739° E
Tinière	Source	25.08.2015	46.41076° N 6.96782° E
Boiron	river mouth	September 2015	46.49493° N 6.47711° E
Sorge	EPFL	2015	46.52266° N 6.57357° E
Venoge	river mouth	30.06.2015	46.50823° N 6.53978° E
Ron	Hochdorf upstream 1	March 2016 + September 2016	47.173540° N 8.280462° E
Ron	Hochdorf downstream 1	March 2016 + September 2016	47.17462° N 8.27986° E
Tannebach	Buttisholz upstream 1	March 2016 + September 2016	47.114089° N 8.074437° E
Tannebach	Buttisholz downstream 1	March 2016	47.115241° N 8.071179° E
Canal du Syndicat	downstream WWTP	March 2017	46°08'23.454" N 7°09'10.704" E
Benenté	source	June 2015 + September 2017	46°35'13.250" N 6°39'54.654" E
Mentue	source	August 2015 + September 2017	46°36'00.527" N 6°42'50.866" E
Boiron	source	2015 + October 2017	46°31'49.890" N 6°22'59.182" E
"Morges	Morges	February 2018	46°30'47.148" N 6°29'15.369" E
Chamberonne	UNIL	March 2018	46°31'22.261" N 6°34'57.729" E
Boiron	downstream	October 2018	46°29'36.335" N 6°27'10.915" E

Table S2. Details of the chemical data. Values of the metals Cr, Ni, Zn, Cu, Pb, Cd, Hg, As, Co, Mn and Fe ($\mu\text{g/g}$), of the percentage of organic matter (% OM) and of the mPEL_{Loligo}-Q obtained per site. Values of metals in blue correspond to concentrations $\geq \text{TEL}_{\text{Loligo}}$; Values of metals in bold and underlined correspond to concentrations $> \text{PEL}_{\text{Loligo}}$; The samples having a IOBS < 3 , a mPEL_{Loligo}-Q ≤ 0.92 and less than 4 metals $\geq \text{TEL}_{\text{Loligo}}$ and 2 metals $> \text{PEL}_{\text{Loligo}}$ are indicated with an asterisk in the sampling column.

Streams	Sites	Sampling	Cr	Ni	Zn	Cu	Pb	Cd	Hg	As	Co	Mn	Fe	% OM	mPEL _{Loligo} -Q
Allondon	La Plaine	2008	43.57	23.19	27.71	7.1	6.11	0.09	0.0091	2.01	3.95	322	9161	2.13	0.4177
Allondon	amont STEP St-Genis	2008	26.9	12.65	18.97	3.7	4.64	0.09	0.013	1.91	2.63	248	7576	0.82	0.3065
Versoix	amont Divonne	2008	38.12	10.3	30.63	5.2	10	0.12	0.016	2.47	2.7	213	6558	2.5	0.4148
Laire	embouchure	2008	44.26	19.23	19.79	5.8	5.26	0.08	0.0041	2.71	3.54	348	8802	0.36	0.3825
Seymaz	Claparède	2008 *	27.69	14.81	44.94	14.5	27.23	0.19	0.039	1.92	3.41	315	8330	1.57	0.6301
Seymaz	embouchure	2008	16.1	16.2	55.6	16.9	41.05	0.19	0.03	1.5	3.3	378	7974	2.54	0.6706
Merley	aval rte de Chancy	2008	117.07	94.61	61.87	24.2	17.79	0.19	0.023	4.71	22.15	1439	23 692	2.81	1.2037
Hermance	pont de Crévy	2008 *	39.88	18.69	27.59	10.5	8.39	0.09	0.012	2.65	4.31	417	10 631	1.97	0.4371
Versoix	amont STEP Divonne	2008	24.5	19.1	47	16.6	21.1	0.23	0.095	2.6	3.5	168	9402	7.79	0.7826
Rhône	aval STEP Aire	2008 *	28.02	18.06	50	11.2	13.71	0.14	0.016	6.86	5.65	312	15 773	1.33	0.5938
Rhône	Chèvres	2008	29.24	21.03	67.75	14.7	22.34	0.19	0.016	13.67	7.95	434	21 896	1.67	0.8692
Allondon	Fabry	2008 *	58.47	26.32	36.82	8.7	7.7	0.12	0.025	2.02	3.76	275	8981	2.17	0.5506
Seymaz	amont Rouelbeau	2008	58.91	30.88	151.13	57.0	29.37	0.27	0.055	5.24	6.69	404	17 229	7.69	1.2606
Hermance	pont Neuf	2008	36.36	20.84	40.24	13.9	14.3	0.11	0.022	2.27	4.88	311	11 160	3.55	0.5239
Aire	aval Ziplo	2008 *	22	20.1	53.1	12.6	38.49	0.11	0.025	2.2	4	348	9097	1.55	0.6269
Avril	Bourdigny	2008	82.09	43.64	218.89	163.1	85.81	0.45	0.054	4.52	8.33	533	15 485	2.6	2.2694
Versoix	aval STEP Divonne	2008	75.03	41.67	143.64	68.6	50.32	0.48	0.375	8.14	7.74	282	26 705	22.71	2.4079
Aire	pont de Certoux	2008	59.02	29.99	51.41	19.6	15.24	0.14	0.03	3.36	6.29	456	13 268	4.73	0.7214
Rhône	baie de Peney	2008	107.94	60.1	650.83	142.6	52.64	0.47	0.129	3.98	9.45	427	17 655	9.25	2.9294
Rhône	amont STEP Aire	2008	16.9	23.4	72	15.2	19.52	0.21	0.0094	14.6	7.6	408	20 864	1.31	0.8534
Grant Nant	amont Malchamps	March 2010	21	17.9	27.5	6.4	6.3	0.1	0.0125	3.3	3.7	376	9457	1.54	0.3762
Grant Nant	amont Malchamps	July 2010	24.5	20.3	36.9	7.9	8	0.12	0.0185	3.2	4.1	389	9571	2.6	0.4454
Ternier	amont St Julien	May 2010	19.4	16	51.8	30.6	12.9	0.14	0.0503	3.1	4	380	9655	2.64	0.6363
nant de la Folle	amont Grand Nant	June 2010	15	13	21.8	5.5	5.4	0.09	0.0075	3.2	3.6	365	8568	1.32	0.3063
nant de la Folle	amont Grand Nant	September 2010 *	17.3	15.2	27	7.9	6.8	0.09	0.013	2.6	3.5	328	8188	1.35	0.3446
Lissole	amont busage	March 2010	31.7	25.4	206	60.1	68.2	0.32	0.1013	3.9	6.6	1333	13 430	6.88	1.5647

Streams	Sites	Sampling	Cr	Ni	Zn	Cu	Pb	Cd	Hg	As	Co	Mn	Fe	% OM	mPELoligo-Q
Voiret	embouchure	May 2010	19.2	15.5	<u>96.7</u>	<u>29.2</u>	<u>24.6</u>	0.16	<u>0.0533</u>	3.4	5.2	241	8368	2	0.7776
Voiret	embouchure	September 2010	18.5	15.9	<u>89.9</u>	<u>30.3</u>	<u>30.7</u>	0.17	<u>0.2447</u>	3.3	5.3	275	9011	1.58	1.2502
Aire	Thérans	June 2010	22.7	17.5	36.5	8.2	7.6	0.09	0.018	2.7	3.8	344	8636	1.53	0.4004
Aire	Thérans	September 2010	33	<u>27.3</u>	<u>84.6</u>	<u>27.3</u>	<u>19.8</u>	0.17	<u>0.061</u>	2.1	5.8	379	11 041	5.3	0.8033
Aire	pont de Certoux	March 2010	33.4	<u>30.8</u>	<u>63.4</u>	<u>21.7</u>	<u>13.6</u>	0.16	<u>0.0633</u>	3	6.3	454	12 395	7.25	0.7517
Aire	pont de Certoux	September 2010	<u>43.7</u>	<u>43.8</u>	<u>205</u>	<u>79</u>	<u>36.1</u>	<u>0.32</u>	<u>0.1338</u>	2.9	8.5	497	16 914	11.67	1.6250
Aire	pont du Centenaire	March 2010 *	16	14.4	19.9	6.2	6.6	0.07	0.0088	1.4	3	284	6153	1.17	0.2732
Aire	pont du Centenaire	September 2010	29.1	<u>27.4</u>	<u>101</u>	<u>55.3</u>	<u>22.2</u>	<u>0.22</u>	<u>0.0583</u>	2.3	5.6	444	11 223	5.31	0.9670
Aire	aval Ziplo	March 2010 *	22.3	20.3	31.8	<u>10.6</u>	6.5	0.09	<u>0.025</u>	1.9	4.2	320	8314	2	0.4055
Aire	aval Ziplo	September 2010	29.8	<u>29.6</u>	<u>83.1</u>	<u>39.2</u>	<u>20.3</u>	<u>0.19</u>	<u>0.0588</u>	2.4	5.7	384	11 455	2.6	0.8638
Bistoquette	bois d'Humilly	March 2010	27.5	<u>24</u>	<u>75.9</u>	<u>15.7</u>	<u>21</u>	<u>0.18</u>	<u>0.0255</u>	<u>5.7</u>	8.3	748	14 595	3.43	0.7256
Bistoquette	bois d'Humilly	September 2010	23.5	20	<u>74.3</u>	<u>17.2</u>	<u>20.2</u>	<u>0.19</u>	<u>0.033</u>	<u>4.7</u>	6.7	463	12 775	4.04	0.7005
Clef	amont Tate	March 2010	<u>46.5</u>	<u>37.8</u>	<u>56.9</u>	<u>19.1</u>	<u>12.6</u>	0.15	<u>0.025</u>	2.4	6	432	10 310	4.12	0.6809
Clef	amont Tate	September 2010	<u>36.5</u>	<u>29</u>	<u>82</u>	<u>32.7</u>	<u>17.6</u>	0.17	<u>0.0513</u>	2.2	4.8	308	8905	4.45	0.8053
Drize	Evordes	March 2010	30.7	<u>26.9</u>	<u>56.3</u>	<u>23.4</u>	<u>15.6</u>	0.16	<u>0.0335</u>	1.7	4.6	395	8161	4.11	0.6398
Drize	Evordes	September 2010	<u>39.4</u>	<u>34.1</u>	<u>88.1</u>	<u>42.5</u>	<u>23</u>	<u>0.2</u>	<u>0.0493</u>	1.9	5.3	401	9722	6.44	0.9134
Drize	Grange-Collomb	March 2010	27.7	19.7	<u>55.5</u>	<u>13.8</u>	<u>81.7</u>	0.13	<u>0.0618</u>	3	3.8	375	8218	1.52	0.9888
Drize	Grange-Collomb	March 2010	<u>39.8</u>	<u>34.2</u>	<u>79.1</u>	<u>27.5</u>	<u>31.1</u>	0.16	<u>0.1196</u>	2.2	5.3	382	9810	3.7	1.0316
Marais	Bellavista	March 2010	22.5	20.1	<u>91.9</u>	<u>21.9</u>	<u>32.7</u>	<u>0.2</u>	<u>0.034</u>	<u>3.7</u>	5.5	473	10 822	2.49	0.7932
Bistoquette	entrée bois d'Humilly	September 2010	<u>44.1</u>	<u>39.1</u>	<u>263</u>	<u>78.9</u>	<u>77</u>	<u>0.63</u>	<u>0.1386</u>	<u>4.7</u>	8.1	456	18 868	10.32	2.1237
Lion	embouchure	March 2011	26	22.3	18	5.1	5.8	<u>0.21</u>	0.0073	2.5	3.9	284	6938	4.59	0.4148
Allondon	Grand Pré	March 2011 *	26.3	21.1	27.1	6.5	8.5	0.11	0.0082	2.3	3.6	267	6977	1.51	0.3873
Allondon	Fabry	March 2011	23.1	18	32	6.5	7.9	0.12	0.0091	2.1	3.6	252	6687	1.87	0.3742
Allondon	La Plaine	March 2011	21.9	17.1	44.9	9.5	10	<u>0.2</u>	<u>0.0271</u>	2.1	3.7	254	7797	1.37	0.4941
Charmilles	ch. de Brive	March 2011	<u>72</u>	<u>81.3</u>	<u>69.4</u>	<u>53.1</u>	<u>30.1</u>	<u>0.23</u>	0.0201	<u>4.4</u>	15.4	713	8254	2.12	1.2321
nant des Crues	Eaumorte	March 2011	<u>51.6</u>	<u>55</u>	<u>193</u>	<u>177</u>	<u>24.6</u>	<u>0.34</u>	<u>0.0951</u>	<u>5.3</u>	10.7	561	22 673	7.48	1.9795
Lion	embouchure	September 2011	31.2	21	<u>158</u>	<u>35</u>	<u>19.4</u>	<u>0.26</u>	<u>0.0575</u>	2.18	5.1	290	9191	15.1	0.9509
Allondon	Grand Pré	September 2011	<u>42.8</u>	<u>37.6</u>	<u>98.2</u>	<u>27.4</u>	<u>13.8</u>	<u>0.27</u>	<u>0.0363</u>	2.11	6.7	391	11 473	11.34	0.8534
Allondon	Fabry	September 2011	<u>42.8</u>	<u>38.6</u>	<u>191</u>	<u>43</u>	<u>20.7</u>	<u>0.35</u>	<u>0.07</u>	2.29	7	407	12 638	17.17	1.2132
Allondon	La Plaine	September 2011	<u>45.9</u>	<u>33.8</u>	43.9	<u>13.9</u>	10.2	0.13	<u>0.0222</u>	2.48	5.9	324	10 547	4.86	0.5970
Charmilles	ch. de Brive	September 2011	<u>109</u>	<u>111</u>	<u>117</u>	<u>125</u>	<u>36.5</u>	<u>0.27</u>	<u>0.0522</u>	<u>3.97</u>	19	809	23 579	6.25	1.9193

Streams	Sites	Sampling	Cr	Ni	Zn	Cu	Pb	Cd	Hg	As	Co	Mn	Fe	% OM	mPEL _{oligo-Q}
nant des Crues	Eaumorte	September 2011	<u>53.3</u>	<u>44.2</u>	<u>285</u>	<u>200</u>	<u>47.5</u>	<u>0.33</u>	<u>0.127</u>	<u>5.35</u>	10.3	652	20 825	8.85	2.3571
Merley	av. rte de Chancy	May 2012	<u>98.5</u>	<u>94.6</u>	<u>119</u>	<u>49.3</u>	<u>21.1</u>	<u>0.21</u>	<u>0.0598</u>	1.57	13.6	607	19 914	11.23	1.3800
Couchefatte	Moulin-Roget	May 2012	21.6	23.8	<u>117</u>	<u>46.4</u>	<u>22.8</u>	<u>0.29</u>	<u>0.0571</u>	2.64	7.9	735	10 071	8.33	0.9661
nant des Crues	Eaumorte	May 2012	<u>48.7</u>	<u>45</u>	<u>254</u>	<u>229</u>	<u>54</u>	<u>0.39</u>	<u>0.1833</u>	<u>6.94</u>	10.8	716	19 851	12.68	2.6522
Laire	Embouchure	May 2012 *	<u>39.8</u>	<u>34.4</u>	38.8	<u>13.9</u>	6.39	0.09	0.0181	2.62	6.3	412	10 047	2.52	0.5273
Laire	Moulin-de-Grave	May 2012	<u>40.4</u>	<u>33.1</u>	35.8	<u>12.4</u>	7.37	0.11	0.0138	<u>4.53</u>	8.8	487	11 587	2.15	0.5618
Laire	Rougemont	May 2012	<u>53.4</u>	<u>50.5</u>	<u>55.8</u>	<u>14.4</u>	9.51	0.12	<u>0.0219</u>	3.42	8.5	508	12 877	3.07	0.7084
Longet	amont rte de Vers-Vaux	June 2012	28.6	23.4	24.3	8.1	4.9	0.12	<u>0.0233</u>	2.86	5.1	398	8260	1.38	0.4383
Moulin-de-la-Ratte	amont busage	May 2012	<u>45.9</u>	<u>48.2</u>	<u>159</u>	<u>31.5</u>	<u>23.9</u>	<u>0.32</u>	<u>0.087</u>	<u>3.86</u>	11.6	1136	19 700	17.43	1.2392
Merley	av. rte de Chancy	October 2012	<u>79.5</u>	<u>81.7</u>	<u>187</u>	<u>63.8</u>	<u>29.3</u>	<u>0.26</u>	<u>0.0721</u>	1.29	13.6	674	19 841	13.07	1.5283
Couchefatte	Moulin-Roget	October 2012	20.4	<u>24.2</u>	<u>113</u>	<u>44.7</u>	<u>23.5</u>	<u>0.3</u>	<u>0.0734</u>	2.28	6.69	673	10 869	10.74	0.9907
nant des Crues	Laconnex	October 2012	31.5	<u>28</u>	<u>121</u>	<u>181</u>	<u>48.2</u>	<u>0.29</u>	<u>0.1184</u>	<u>5.18</u>	7.43	450	14 247	6.97	1.8873
nant des Crues	embouchure	October 2012	22.4	20.7	28.1	<u>12.7</u>	<u>13.8</u>	0.1	0.0215	2.95	5.05	333	8736	1.67	0.4689
Laire	Embouchure	October 2012 *	27.6	<u>25.2</u>	26.3	8.02	6.85	0.09	0.015	2.41	5.01	313	9163	2.5	0.4095
Laire	Moulin-de-Grave	October 2012 *	<u>38.8</u>	<u>42</u>	46.6	<u>20.3</u>	10.2	0.12	<u>0.0236</u>	2.49	8.51	458	13 849	4.47	0.6354
Laire	Rougemont	October 2012	<u>43.2</u>	<u>42.7</u>	43.4	9.33	8.4	0.1	0.0138	2.43	6.86	481	12 404	1.91	0.5569
Moulin-de-la-Ratte	amont busage	October 2012	<u>38.5</u>	<u>45</u>	<u>150</u>	<u>38.2</u>	<u>29</u>	<u>0.41</u>	<u>0.1469</u>	2.72	9.35	706	18 006	28.53	1.4109
Rhône	baie de Peney	October 2012	<u>51</u>	<u>56.7</u>	<u>948</u>	<u>121</u>	<u>45.1</u>	<u>1.04</u>	<u>0.1454</u>	<u>5.08</u>	9.79	499	18 110	30.79	3.4288
Avril	Bourdigny	October 2012	<u>35.7</u>	<u>27.8</u>	<u>792</u>	<u>176</u>	<u>93.1</u>	<u>0.67</u>	<u>0.0995</u>	<u>3.7</u>	6.91	292	11 954	5.05	3.1950
Rouelbeau	amont ch. de Rouelbeau	March 2013	<u>54.4</u>	<u>43.5</u>	<u>345</u>	<u>123.2</u>	<u>51.6</u>	<u>0.47</u>	<u>0.1321</u>	<u>7.2</u>	9.78	544.9	29306	15.46	2.2829
Seymaz	De Haller	March 2013	16.38	14.64	<u>57.4</u>	<u>19.73</u>	<u>28.94</u>	0.13	<u>0.0318</u>	2.92	4.75	310.1	8214	2.94	0.6189
Seymaz	De Haller	October 2013	12.92	13.54	<u>54.89</u>	<u>21.92</u>	<u>15.15</u>	0.1	<u>0.0291</u>	2.09	4.34	287.9	7120	2.14	0.4979
Seymaz	Claparède	March 2013	19.73	15.56	<u>59.03</u>	<u>22.22</u>	<u>23.17</u>	<u>0.18</u>	<u>0.0466</u>	2.79	4.32	313.1	8427	2.61	0.6722
Seymaz	Claparède	October 2013 *	15.77	13.27	<u>54.68</u>	<u>22.45</u>	<u>34.39</u>	0.15	<u>0.0349</u>	1.85	3.55	227.5	6519	1.64	0.6424
Hermance	pont de Crévy	June 2013 *	15.85	15.17	26.58	7.29	7.36	0.09	0.0118	2.78	4.75	401.4	8233	1.83	0.3416
Hermance	pont de Crévy	October 2013 *	16.17	<u>26.1</u>	27.81	9.06	9.01	0.09	0.0126	2.48	4.3	329.2	7844	1.78	0.3953
Abbaye-de-Presinge	aval EIL	March 2013	23.4	20.58	<u>136.6</u>	<u>33.91</u>	<u>19.6</u>	<u>0.27</u>	<u>0.0566</u>	3.05	5.11	428.3	10243	7.11	0.9169

Streams	Sites	Sampling	Cr	Ni	Zn	Cu	Pb	Cd	Hg	As	Co	Mn	Fe	% OM	mPEL _{oligo-Q}
Abbaye-de- Presinge	aval EIL	October 2013	18.93	17.87	<u>116.7</u>	<u>25.39</u>	<u>17.09</u>	<u>0.19</u>	<u>0.0329</u>	2.2	4.87	293	8287	4.4	0.7021
Venoge	Site 2	February 2015 *	20.36	19.75	22.74	7.79	5.31	0.13	0.01314	1.92				1.53	0.3625
Venoge	Site 1	March 2015 *	19.55	18.51	21.62	6.92	5.19	0.11	0.00844	2.18				1.4	0.3339
Talent	Abbaye	March 2015 *	23.43	16.88	16.91	2.01	4.61	0.05	0.00584	1.37				1.41	0.2526
Cul-des-Prés	Site 1	April 2015	<u>41.68</u>	<u>35.88</u>	<u>187.8</u>	<u>77.03</u>	<u>100.23</u>	<u>1.41</u>	<u>0.76627</u>	2.82				10.21	3.9482
Venoge	L'isle	May 2015	23.92	18.82	18.9	3.4	6.4	0.11	<u>0.02201</u>	3.58				1.92	0.3974
Tinière	Source	August 2015	7.68	14.68	17.29	5.46	6.74	<u>0.2</u>	0.01796	1.63				3.49	0.3425
Boiron	river mouth	September 2015 *	21.02	21.82	26.25	<u>11.88</u>	6.55	0.13	0.01230	2.85				2.45	0.4183
Sorge	EPFL	2015	11.17	9.74	<u>58.51</u>	<u>12.26</u>	9.46	<u>0.23</u>	0.01616	<u>4.83</u>					0.5164
Benenté	site 1	June 2015	22.59	16.18	13.94	1.38	4.21	0.04	0.00928	1.42				1.59	0.2425
Venoge	river mouth	June 2015 *	18.99	19.61	27.74	10.31	7.4	<u>0.18</u>	0.01558	2.5				1.69	0.4319
Mentue	source	August 2015	<u>35.02</u>	23.36	18.29	1.43	4.99	0.07	0.00938	1.2				1.54	0.3249
Boiron	source	September 2015	10.01	7.69	16.42	2.47	3.08	0.12	0.00675	2.3				2.26	0.2361
Ron	Hochdorf upstream 1	March 2016 *	8.85	7.63	38.91	7.15	11.07	<u>0.37</u>	0.01089	<u>5.05</u>				2.15	0.5310
Ron	Hochdorf downstream 1	March 2016	11.46	10.21	<u>59.21</u>	<u>14.29</u>	10.44	<u>0.99</u>	0.02140	<u>5.84</u>				3.72	0.9805
Tannebach	Buttisholz upstream 1	March 2016	11.6	9.75	<u>82.95</u>	<u>14.17</u>	10.42	<u>0.3</u>	<u>0.02508</u>	<u>11.75</u>				4.32	0.7754
Tannebach	Buttisholz downstream 1	March 2016	15.06	12.21	<u>97.24</u>	<u>18.64</u>	<u>12.58</u>	<u>0.36</u>	<u>0.03616</u>	<u>11.3</u>				7.3	0.8919
Ron	Hochdorf upstream 2	September 2016 *	8.33	6.98	28.24	4.92	6.65	<u>0.29</u>	0.01260	<u>4.44</u>				1.43	0.4271
Ron	Hochdorf downstream 2	September 2016 *	8.11	6.99	37.7	5.11	7.14	<u>0.43</u>	0.01188	<u>4.56</u>				1.47	0.5203
Tannebach	Buttisholz upstream 2	September 2016 *	8.41	7.31	36.47	6.47	8.15	<u>0.21</u>	0.01228	<u>5.88</u>				1.95	0.4417
Canal du Syndicat	downstream WWTP	March 2017	18.3	<u>24.7</u>	<u>77.1</u>	<u>32.4</u>	9.2	0.15	<u>0.03907</u>	<u>6.1</u>	7.2			5.1	0.7345
Benenté	source	September 2017	22.7	13.0	21.9	1.8	3.9	0.09	0.01197	1.4	3.5			<u>2.6</u>	0.2768
Mentue	source	September 2017 *	<u>39.9</u>	22.2	32.7	1.6	3.7	0.10	0.01617	1.5	5.1			2.7	0.3896
Boiron	source	October 2017	15.2	9.8	15.8	3.7	3.4	0.09	0.00430	<u>4.1</u>	2.5			0.7	0.2815
Morges	Morges	February 2018 *	26.4	<u>24.6</u>	34.4	<u>14.9</u>	6.0	0.13	0.01443	2.5	5.6			1.8	0.4595
Chamberonne	UNIL	March 2018	18.9	13.9	<u>59.3</u>	<u>13.8</u>	8.8	0.14	0.01843	2.5	4.2			1.4	0.4594
Avril	Bourdigny	February 2018	<u>38.1</u>	23.8	<u>409.4</u>	<u>78.5</u>	<u>33.9</u>	<u>0.43</u>	<u>0.08390</u>	2.3	4.6			2.8	1.7448
Rhône	baie de Peney	February 2018	<u>63.1</u>	<u>52.3</u>	<u>1390.6</u>	<u>146.3</u>	<u>35.6</u>	<u>0.55</u>	<u>0.16080</u>	<u>4.0</u>	9.6			19.6	3.8684
Versoix	aval STEP Divonne	May 2018	<u>38.7</u>	<u>36.2</u>	<u>190.4</u>	<u>60.1</u>	<u>28.5</u>	<u>0.32</u>	<u>0.20397</u>	2.6	6.6			18.0	1.6029

Streams	Sites	Sampling	Cr	Ni	Zn	Cu	Pb	Cd	Hg	As	Co	Mn	Fe	% OM	mPEL _{Loligo-Q}
Boiron	downstream	October 2018 *	15.2	11.2	28.5	9.0	6.2	0.11	0.00703	2.8	3.1			1.3	0.3279
Charmilles	ch. de Brive	September 2018	<u>86.7</u>	<u>85.1</u>	<u>61.7</u>	<u>42.4</u>	11.9	0.20	0.02387	2.4	14.4			2.3	1.0872
Merley	av. rte de Chancy	September 2018	<u>64.0</u>	<u>61.6</u>	<u>93.8</u>	<u>34.0</u>	12.3	0.17	0.03158	1.7	9.4			5.9	0.9405

Table S3. Details of the faunistic data. Values of the IOBS index, % of tubificids without hair setae (TUSP), % of tubificids with hair setae (TUCP), density of oligochaetes per 0.1m² (n ind), number of taxa (n taxa) and % of the species *Aulodrilus plurisetus* (% *A. plurisetus*) obtained per sample; IOBS values in blue: very good biological quality; in green: good quality; in yellow: medium quality; in orange: poor quality; in red: bad quality.

Streams	Sites		IOBS	TUSP	TUCP	n ind	n taxa	% <i>A. plurisetus</i>
Allondon	La Plaine	2008	50	1	2	533	10	0
Allondon	amont STEP St-Genis	2008	30	2	2	577	5	0
Versoix	amont Divonne	2008	4.16	5	24	821	10	1
Laire	embouchure	2008	10	8	8	50	8	1
Seymaz	Claparède	2008	1.63	10	43	755	7	0
Seymaz	embouchure	2008	1.3	13	70	1214	9	0
Merley	aval rte de Chancy	2008	1.56	25	64	3090	10	3
Hermance	pont de Crévy	2008	1.13	30	62	481	7	0
Versoix	amont STEP Divonne	2008	1.4	35	64	2023	9	5
Rhône	aval STEP Aire	2008	2	49	51	1254	10	1
Rhône	Chèvres	2008	1	61	39	4928	6	0
Allondon	Fabry	2008	1.6	63	34	3641	10	1
Seymaz	amont Rouelbeau	2008	1.1	63	30	3438	7	0
Hermance	pont Neuf	2008	1.6	64	35	3875	10	1
Aire	aval Ziplo	2008	1.64	67	13	6300	11	0
Avril	Bourdigny	2008	0.8	71	28	4120	6	0
Versoix	aval STEP Divonne	2008	1.05	76	21	6917	8	8
Aire	pont de Certoux	2008	0.64	78	22	26579	5	0
Rhône	baie de Peney	2008	0.7	81	19	1562	6	0
Rhône	amont STEP Aire	2008	1.38	85	14	1063	12	2
Grant Nant	amont Malchamps	March 2010	50	0	0	19	5	0
Grant Nant	amont Malchamps	July 2010	22	5	1	769	11	0
Ternier	amont St Julien	May 2010	16	1	5	2125	8	0
nant de la Folle	amont Grand Nant	June 2010	12.1	14	4	157	17	1
nant de la Folle	amont Grand Nant	September 2010	1.3	76	9	1047	10	1
Lissole	amont busage	March 2010	6.7	0	8	246	12	0
Voiret	embouchure	May 2010	4.8	26	33	946	16	2
Voiret	embouchure	September 2010	1.4	34	65	983	9	0
Aire	Thérens	June 2010	10	12	2	622	12	0
Aire	Thérens	September 2010	3.4	35	22	213	12	0
Aire	pont de Certoux	March 2010	0.7	81	17	19774	6	0
Aire	pont de Certoux	September 2010	0.9	87	11	4354	8	0
Aire	pont du Centenaire	March 2010	1.3	79	16	3775	10	0
Aire	pont du Centenaire	September 2010	1.4	63	35	5250	9	0
Aire	aval Ziplo	March 2010	1.4	63	28	1675	10	0
Aire	aval Ziplo	September 2010	1.5	55	44	5600	8	0
Bistoquette	bois d'Humilly	March 2010	11.4	3	7	576	8	0
Bistoquette	bois d'Humilly	September 2010	1.6	43	39	661	7	0
Clef	amont Tate	March 2010	6.5	6	17	6821	11	0
Clef	amont Tate	September 2010	2	35	51	6083	10	0
Drize	Evordes	March 2010	3	47	10	886	14	0
Drize	Evordes	September 2010	3.6	20	48	2028	17	2
Drize	Grange-Collomb	March 2010	1.6	11	44	2733	7	1
Drize	Grange-Collomb	March 2010	1.2	59	39	4528	7	0
Marais	Bellavista	March 2010	1.5	29	52	1241	8	1
Bistoquette	entrée bois d'Humilly	September 2010	1	36	63	12333	6	0
Lion	embouchure	March 2011	3.3	3	21	972	8	0
Allondon	Grand Pré	March 2011	0.9	8	91	5667	8	1
Allondon	Fabry	March 2011	3	33	37	896	11	1
Allondon	La Plaine	March 2011	30	24	0	558	9	0
Charmilles	ch. de Brive	March 2011	1.2	65	28	3958	8	0
nant des Crues	Eaumorte	March 2011	1.5	56	35		8	2
Lion	embouchure	September 2011	1.3	18	63	1875	8	0

Streams	Sites		IOBS	TUSP	TUCP	n ind	n taxa	% <i>A. pluriseta</i>
Allondon	Grand Pré	September 2011	0.9	19	80	2375	7	3
Allondon	Fabry	September 2011	1	63	36	2167	6	4
Allondon	La Plaine	September 2011	6.2	1	13	688	8	6
Charmilles	ch. de Brive	September 2011	0.8	77	22	4429	6	0
nant des Crues	Eaumorte	September 2011	0.6	35	65	4438	4	28
Merley	av. rte de Chancy	May 2012	0.9	18	70	10083	6	0
Couchefatte	Moulin-Roget	May 2012	1.2	4	74	1857	9	0
nant des Crues	Eaumorte	May 2012	0.8	30	72	2229	6	40
Laire	embouchure	May 2012	2.4	35	67	1946	14	1
Laire	Moulin-de-Grave	May 2012	2.5	13	44	613	11	0
Laire	Rougemont	May 2012	2	52	39	449	10	0
Longet	amont rte de Vers-Vaux	June 2012	14.4	9	7	104	13	0
Moulin-de-la-Ratte	amont busage	May 2012	6	4	8	2271	6	0
Merley	av. rte de Chancy	October 2012	0.4	29	71	6800	3	0
Couchefatte	Moulin-Roget	October 2012	2.1	35	42	1030	9	0
nant des Crues	Laconnex	October 2012	1	61	34	20000	6	0
nant des Crues	embouchure	October 2012	50	0	0	42	5	0
Laire	embouchure	October 2012	1.6	21	69	3400	11	1
Laire	Moulin-de-Grave	October 2012	0.7	84	14	5600	6	0
Laire	Rougemont	October 2012	20	0	0	363	2	0
Moulin-de-la-Ratte	amont busage	October 2012	1	76	21	650	7	0
Rhône	baie de Peney	October 2012	1.2	77	16		9	0
Avril	Bourdigny	October 2012	1	40	60		6	0
Rouelbeau	amont ch. de Rouelbeau	March 2013	1.3	14	80	6111	10	0
Seymaz	De Haller	March 2013	4.1	27	16	2250	11	0
Seymaz	De Haller	October 2013	2.2	36	33	1273	8	0
Seymaz	Claparède	March 2013	5.8	19	12	1100	11	0
Seymaz	Claparède	October 2013	2.5	48	46	1463	12	0
Hermance	pont de Crévy	June 2013	2.1	62	19	1817	13	0
Hermance	pont de Crévy	October 2013	1	80	14	602	8	0
Abbaye-de-Presinge	aval EIL	March 2013	1.5	16	66	747	10	0
Abbaye-de-Presinge	aval EIL	October 2013	1.6	10	56	681	9	0
Venoge	Site 2	February 2015	1	92	3	1444	9	0
Venoge	Site 1	March 2015	1	88	11	1472	9	1
Talent	Abbaye	March 2015	1.4	42	56	743	8	47
Cul-des-Prés	Site 1	April 2015	0.7	72	28	NC	5	0
Venoge	L'isle	May 2015	9.1	0	11	NC	10	0
Tinière	source	August 2015	60	0	5	NC	11	0
Boiron	river mouth	September 2015	2.2	55	18		12	2
Sorge	EPFL	2015	7.4	23	16	464	17	5
Benenté	source	June 2015	40	3	2	64	12	0
Venoge	river mouth	June 2015	1.2	81	10	800	10	0
Mentue	source	August 2015	22	0	0		6	0
Boiron	source	September 2015	40	2	5	NC	12	0
Ron	Hochdorf upstream 1	March 2016	2.8	26	60	1127	16	16
Ron	Hochdorf downstream 1	March 2016	3.8	37	40	779	15	13
Tannebach	Buttisholz upstream 1	March 2016	2	36	54	1321	11	2
Tannebach	Buttisholz downstream 1	March 2016	2.5	43	48	4250	12	2
Ron	Hochdorf upstream 2	September 2016	1.5	55	44	1563	8	11
Ron	Hochdorf downstream 2	September 2016	1.4	70	25	1444	10	1
Tannebach	Buttisholz upstream 2	September 2016	1.1	37	61	2500	7	10
Canal du Syndicat	downstream WWTP	March 2017	2.8	14	25	24438	7	0
Benenté	source	September 2017	23.3	3	2	225	7	0
Mentue	source	September 2017	0.5	0	83	112	4	0
Boiron	source	October 2017	60	0	0	20	6	0
Morges	Morges	February 2018	1.2	92	1	217	11	0
Chamberonne	UNIL	March 2018	17.3	10	5	169	17	1
Avril	Bourdigny	February 2018	1.5	55	44	18833	8	0
Rhône	baie de Peney	February 2018	1.4	64	26	3188	9	0
Versoix	av. STEP Divonne	May 2018	0.8	15	74	40833	6	0

Streams	Sites		IOBS	TUSP	TUCP	n ind	n taxa	% <i>A. pluriseta</i>
Boiron	downstream	October 2018	1.7	54	34	1365	9	0
Charmilles	ch. de Brive	September 2018	0.7	73	25	2729	5	0
Merley	av. rte de Chancy	September 2018	0.7	7	91	37853	6	0



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