**Supplementary Tables**

**Supplementary Table S1.** Total HAAs formation results observed before BAC-filtration in RW sample

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Cl₂ Dose (mg/L)** |  | **RW BEFORE BAC-FILTRATION -4 HOURS** | | | | | |  |  |  |
| **HAAs Speciation(µg/L)** | **MCAA** | **DCAA** | **TCAA** | **BDCAA** | **BCAA** | **DBCAA** | **MBAA** | **DBAA** | **TBAA** | **THAA** |
| 4 | 11.913316 | 15.665535 | 18.753711 | 10.535504 | 10.371277 | 2.005426 | 0.850909 | 0.000000 | 0.000000 | 70.095677 |
| 6 | 18.943773 | 20.171369 | 27.981820 | 16.958402 | 13.210688 | 0.909089 | 0.422673 | 0.000000 | 0.000000 | 98.597815 |
| 8 | 34.812545 | 42.703358 | 46.864405 | 20.673321 | 17.411876 | 0.689894 | 0.135622 | 0.000000 | 0.000000 | 163.291021 |
|  |  | **RW BEFORE BAC-FILTRATION -7 DAYS** | | | | | |  |  |  |
| 4 | 13.252099 | 16.524894 | 24.725712 | 11.136826 | 14.456608 | 2.168668 | 1.218601 | 0.000000 | 0.000000 | 83.483408 |
| 6 | 23.174135 | 24.501809 | 38.766852 | 18.051204 | 16.299715 | 1.485298 | 0.628710 | 0.000000 | 0.000000 | 122.907723 |
| 8 | 40.353799 | 63.717395 | 69.106118 | 22.474351 | 21.232033 | 0.892343 | 0.220975 | 0.000000 | 0.000000 | 217.997015 |

**Supplementary Table S2.** Total HAAs formation results observed before BAC-filtration in ozonated water after 4 hours

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Cl2 Dose (mg/L)** | **OZONATED WATER AT OZONE DOSE-1(0.53 mg ozone absorbed/mg DOC) BEFORE BAC-FILTRATION 4Hours** | | | | | | | | | |
| **HAAs Speciation(µg/L)** | **MCAA** | **DCAA** | **TCAA** | **BDCAA** | **BCAA** | **DBCAA** | **MBAA** | **DBAA** | **TBAA** | **THAA** |
| 4 | 9.882367 | 12.019538 | 17.189766 | 8.699304 | 6.861250 | 1.057773 | 0.503987 | 0.000000 | 0.000000 | 56.213986 |
| 6 | 13.382851 | 14.386826 | 22.973259 | 11.260280 | 10.289431 | 0.802035 | 0.268266 | 0.000000 | 0.000000 | 73.362948 |
| 8 | 23.342982 | 26.128560 | 33.431716 | 17.409146 | 12.378600 | 0.462728 | 0.103043 | 0.000000 | 0.000000 | 113.256775 |
|  | **OZONATED WATER AT OZONE DOSE-2(0.68 mg ozone absorbed/mg DOC) BEFORE BAC-FILTRATION 4Hours** | | | | | | | | | |
| 4 | 9.519730 | 10.591714 | 14.602940 | 5.984693 | 5.571585 | 0.634861 | 0.801748 | 0.000000 | 0.000000 | 47.707270 |
| 6 | 11.445884 | 13.966414 | 18.863285 | 9.189684 | 8.317623 | 0.378333 | 0.419448 | 0.000000 | 0.000000 | 62.580670 |
| 8 | 22.319314 | 24.794364 | 24.855408 | 11.529575 | 9.283892 | 0.189012 | 0.142530 | 0.000000 | 0.000000 | 93.114094 |
|  | **OZONATED WATER AT OZONE DOSE-3(1.05 mg ozone absorbed/mg DOC) BEFORE BAC-FILTRATION 4Hours** | | | | | | | | | |
| 4 | 6.616283 | 7.079867 | 8.893230 | 3.033602 | 3.265369 | 0.354957 | 1.489105 | 0.670795 | 0.000000 | 31.403209 |
| 6 | 10.069440 | 10.465676 | 12.367187 | 4.057075 | 6.878016 | 0.231208 | 0.727689 | 0.237036 | 0.000000 | 45.033328 |
| 8 | 15.565994 | 15.660283 | 16.483471 | 10.334800 | 8.185584 | 0.149569 | 0.260009 | 0.125492 | 0.000000 | 66.765203 |

**Supplementary Table S3.** Total HAAs formation results observed before BAC-filtration in ozonated water after 7 days

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Cl₂ Dose(mg/L)** | **OZONATED WATER AT OZONE DOSE-1(0.53 mg ozone absorbed/mg DOC) BEFORE BAC-FILTRATION 7Days** | | | | | | | | | |
| **HAAs Speciation(µg/L)** | **MCAA** | **DCAA** | **TCAA** | **BDCAA** | **BCAA** | **DBCAA** | **MBAA** | **DBAA** | **TBAA** | **THAA** |
| 4 | 12.020996 | 15.846238 | 18.208318 | 9.251458 | 8.314495 | 1.547280 | 0.994471 | 0.000000 | 0.000000 | 66.183257 |
| 6 | 21.503376 | 20.770260 | 23.163554 | 16.783690 | 11.869124 | 0.636919 | 0.496909 | 0.000000 | 0.000000 | 95.223832 |
| 8 | 30.285839 | 36.547061 | 46.320066 | 19.711415 | 16.750518 | 0.340724 | 0.122113 | 0.000000 | 0.000000 | 150.077736 |
|  | **OZONATED WATER AT OZONE DOSE-2(0.68 mg ozone absorbed/mg DOC) BEFORE BAC-FILTRATION 7Days** | | | | | | | | | |
| 4 | 11.644792 | 12.106522 | 17.532738 | 6.691009 | 8.443242 | 0.832913 | 1.331600 | 0.000000 | 0.000000 | 58.582817 |
| 6 | 15.661708 | 17.678908 | 20.452318 | 11.528014 | 9.474406 | 0.492410 | 0.652115 | 0.000000 | 0.000000 | 75.939879 |
| 8 | 27.773027 | 34.479510 | 37.767002 | 14.987030 | 11.426068 | 0.345288 | 0.246237 | 0.000000 | 0.000000 | 127.024163 |
|  | **OZONATED WATER AT OZONE DOSE-3(1.05 mg ozone absorbed/mg DOC) BEFORE BAC-FILTRATION 7Days** | | | | | | | | | |
| 4 | 7.484945 | 9.569296 | 10.814348 | 5.451520 | 4.592489 | 0.652626 | 2.708294 | 1.021020 | 0.135345 | 42.429884 |
| 6 | 10.556176 | 14.897629 | 15.621401 | 7.062216 | 9.315323 | 0.452676 | 0.737688 | 0.468952 | 0.060329 | 59.172392 |
| 8 | 18.821368 | 22.479160 | 29.253138 | 10.540722 | 9.807784 | 0.296750 | 0.352645 | 0.176993 | 0.039533 | 91.768093 |

**Supplementary Table S4.** Total HAAs formation results observed after BAC-filtration in RW sample

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Cl2 Dose(mg/L)** |  | **GANGA WATER AFTER BAC-FILTRATION -4 HOURS** | | | | | |  |  |  |
| **HAAs Speciation(µg/L)** | **MCAA** | **DCAA** | **TCAA** | **BDCAA** | **BCAA** | **DBCAA** | **MBAA** | **DBAA** | **TBAA** | **THAA** |
| 4 | 9.945219 | 10.010276 | 10.700196 | 2.633526 | 2.367538 | 1.067182 | 4.780689 | 1.130673 | 0.181473 | 42.816772 |
| 6 | 12.479702 | 13.126691 | 15.908268 | 3.495715 | 3.507735 | 2.158952 | 2.339804 | 0.646485 | 0.176659 | 53.840011 |
| 8 | 19.331444 | 20.990210 | 22.306239 | 6.214813 | 5.855421 | 3.222305 | 1.020214 | 0.187825 | 0.494843 | 79.623314 |
|  |  | **GANGA WATER AFTER BAC-FILTRATION -7 DAYS** | | | | | |  |  |  |
| 4 | 11.241024 | 12.109840 | 14.317259 | 4.377890 | 3.440351 | 1.377836 | 5.699040 | 1.494090 | 0.082172 | 54.139503 |
| 6 | 15.026311 | 15.314641 | 16.061248 | 6.591077 | 5.170345 | 2.386488 | 3.092164 | 0.704555 | 0.105481 | 64.452310 |
| 8 | 21.197691 | 24.909911 | 26.430058 | 9.301482 | 7.130359 | 4.477739 | 1.115446 | 0.625632 | 0.076623 | 95.264939 |

**Supplementary Table S5.** Total HAAs formation results observed after BAC-filtration in ozonated water after 4 hours

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Cl2 Dose(mg/L)** | **OZONATED WATER AT OZONE DOSE-1(0.53 mg ozone absorbed/mg DOC) AFTER BAC-FILTRATION 4Hours** | | | | | | | | | |
| **HAAs Speciation(µg/L)** | **MCAA** | **DCAA** | **TCAA** | **BDCAA** | **BCAA** | **DBCAA** | **MBAA** | **DBAA** | **TBAA** | **THAA** |
| 4 | 7.138188 | 8.049877 | 9.620912 | 2.117689 | 2.091801 | 1.014876 | 2.624840 | 0.874825 | 0.193318 | 33.726325 |
| 6 | 9.702078 | 10.707473 | 13.404848 | 3.403987 | 3.061641 | 1.374206 | 1.169630 | 0.179643 | 0.449470 | 43.452976 |
| 8 | 12.345181 | 15.048416 | 18.955498 | 5.407542 | 3.617562 | 1.617982 | 0.945040 | 0.114475 | 0.117524 | 58.169219 |
|  | **OZONATED WATER AT OZONE DOSE-2(0.68 mg ozone absorbed/mg DOC) AFTER BAC-FILTRATION 4Hours** | | | | | | | | | |
| 4 | 5.699985 | 6.817217 | 8.132487 | 1.910395 | 1.730332 | 0.451781 | 3.148945 | 1.010649 | 0.304794 | 29.206587 |
| 6 | 7.102418 | 9.761743 | 10.943422 | 2.885502 | 2.349261 | 0.939898 | 2.199616 | 0.569329 | 0.345525 | 37.096714 |
| 8 | 10.677767 | 11.452182 | 17.122402 | 4.200101 | 3.050218 | 1.221897 | 1.170522 | 0.194135 | 0.275948 | 49.365173 |
|  | **OZONATED WATER AT OZONE DOSE-3(1.05 mg ozone absorbed/mg DOC) AFTER BAC-FILTRATION 4Hours** | | | | | | | | | |
| 4 | 4.687297 | 5.505093 | 6.843826 | 2.005947 | 0.910490 | 0.358029 | 5.764321 | 1.433565 | 0.283334 | 27.791903 |
| 6 | 6.917249 | 7.441558 | 9.452593 | 2.364517 | 1.774586 | 0.604296 | 2.811821 | 0.830309 | 0.361440 | 32.558370 |
| 8 | 9.716690 | 11.212112 | 14.467975 | 3.364408 | 2.755880 | 0.969198 | 1.503490 | 0.214453 | 0.236639 | 44.440845 |

**Supplementary Table S6.** Total HAAs formation results observed after BAC-filtration in ozonated water after 7 days

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Cl2 Dose(mg/L)** | **OZONATED WATER AT OZONE DOSE-1(0.53 mg ozone absorbed/mg DOC) AFTER BAC-FILTRATION 7Days** | | | | | | | | | |
| **HAAs Speciation(µg/L)** | **MCAA** | **DCAA** | **TCAA** | **BDCAA** | **BCAA** | **DBCAA** | **MBAA** | **DBAA** | **TBAA** | **THAA** |
| 4 | 8.405123 | 9.179839 | 10.554639 | 4.277482 | 2.964050 | 1.120327 | 3.556268 | 0.495688 | 0.128542 | 40.681959 |
| 6 | 13.324666 | 13.297071 | 14.076448 | 5.219861 | 3.688761 | 1.908263 | 1.696161 | 0.157995 | 0.235259 | 53.604484 |
| 8 | 19.704404 | 20.799350 | 21.928985 | 7.045882 | 5.452961 | 2.213288 | 1.004574 | 0.082425 | 0.149236 | 78.381105 |
|  | **OZONATED WATER AT OZONE DOSE-2(0.68 mg ozone absorbed/mg DOC) AFTER BAC-FILTRATION 7Days** | | | | | | | | | |
| 4 | 7.772442 | 9.086296 | 10.389016 | 1.976596 | 2.019187 | 0.590815 | 4.243409 | 0.897502 | 0.271758 | 37.247021 |
| 6 | 11.450710 | 11.802542 | 13.518199 | 3.556891 | 3.356471 | 0.923583 | 2.241984 | 0.395367 | 0.093796 | 47.339544 |
| 8 | 14.125410 | 18.458873 | 19.169200 | 5.726450 | 4.076398 | 1.312790 | 1.566113 | 0.241562 | 0.202902 | 64.879698 |
|  | **OZONATED WATER AT OZONE DOSE-3(1.05 mg ozone absorbed/mg DOC) AFTER BAC-FILTRATION 7Days** | | | | | | | | | |
| 4 | 6.845018 | 8.679621 | 9.729343 | 0.684643 | 1.675468 | 0.409075 | 5.987597 | 1.023300 | 0.119121 | 35.153184 |
| 6 | 8.750753 | 10.816521 | 13.685669 | 3.025925 | 2.202899 | 0.862292 | 3.309065 | 0.338325 | 0.141694 | 43.133142 |
| 8 | 10.617700 | 13.643602 | 15.122907 | 5.482799 | 3.604143 | 1.074878 | 2.923851 | 0.266439 | 0.093054 | 52.829371 |