Detailed contamination level values according to the Igeo and Zc index values (GN, 1994, Jiang et al., 2019)

|  |  |  |  |
| --- | --- | --- | --- |
| Zc | | Igeo | |
| *Pollution level* | *Value* | *Pollution level* | *Value* |
| Allowable | <16 | Unpolluted | Igeo<0 |
| Moderately hazardous | 16-32 | Unpolluted to moderately polluted | 0<Igeo<1 |
| Hazardous | 32-128 | Moderately polluted | 1<Igeo<2 |
| Extremely hazardous | >128 | Moderately to strongly polluted | 2<Igeo<3 |
|  |  | Strongly polluted | 3<Igeo<4 |
|  |  | Strongly polluted | 4<Igeo<5 |

Kc and Zc values

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sampling code | Depth, cm | Kc value | | | | | Zc |
| Cu | Pb | Zn | Ni | Cd |
| SD1 | 0-10 | 0,63 | 0,26 | 0,71 | 0,75 | nd | -1 |
| 10-20 | 0,62 | 0,25 | 0,70 | 0,73 | nd | -1 |
| 20-30 | 0,69 | 0,23 | 0,68 | 0,95 | nd | 0 |
| 30-40 | 0,93 | 0,23 | 0,72 | 1,10 | nd | 0 |
| 40-50 | 0,52 | 0,18 | 0,38 | 0,73 | nd | -1 |
| 50-60 | 0,33 | 0,10 | 0,24 | 0,50 | nd | -2 |
| 60-70 | 0,40 | 0,11 | 0,29 | 0,67 | nd | -2 |
| 80-90 | 0,47 | 0,11 | 0,33 | 0,78 | nd | -1 |
| 90-100 | 0,07 | 0,04 | 0,08 | 0,26 | 4,08 | 1 |
| SD2 | 0-10 | 0,72 | 0,83 | 1,68 | 0,86 | 11,55 | 12 |
| 10-20 | 0,72 | 0,89 | 1,25 | 0,87 | 10,00 | 10 |
| 20-30 | 0,05 | 0,05 | 0,10 | 0,20 | nd | -3 |
| 30-40 | 0,08 | 0,06 | 0,11 | 0,19 | 2,11 | -3 |
| YT1 | 0-10 | 0,74 | 0,22 | 0,94 | 1,78 | 6,62 | 6 |
| 10-20 | 0,62 | 0,17 | 0,69 | 1,76 | nd | 0 |
| 20-30 | 0,85 | 0,15 | 0,72 | 2,90 | nd | 2 |
| 30-40 | 1,00 | 0,18 | 0,82 | 4,06 | nd | 3 |
| YT2 | 0-10 | 0,25 | 0,11 | 0,24 | 0,70 | 3,80 | 1 |
| 10-20 | 0,47 | 0,14 | 0,54 | 1,08 | 6,62 | 5 |
| 20-30 | 0,63 | 0,18 | 0,86 | 1,38 | 8,73 | 8 |
| YT3 | 0-10 | 0,77 | 0,27 | 0,70 | 1,54 | 3,94 | 3 |
| 10-20 | 0,64 | 0,21 | 0,76 | 1,81 | nd | 0 |
| 20-30 | 0,89 | 0,28 | 0,88 | 2,10 | 0,85 | 1 |
| SA1 | 0-10 | 0,72 | 0,83 | 1,68 | 0,86 | 11,55 | 12 |
| 20-30 | 0,72 | 0,89 | 1,25 | 0,87 | 10,00 | 10 |
| SA2 | 0-10 | 0,31 | 0,04 | 0,11 | 0,44 | nd | -2 |
| 10-20 | 0,95 | 0,19 | 0,64 | 1,20 | nd | 0 |
| 20-30 | 0,41 | 0,08 | 0,35 | 0,94 | 2,11 | 0 |
| 30-40 | 0,47 | 0,08 | 0,43 | 0,75 | nd | -1 |
| 40-50 | 0,63 | 0,12 | 0,57 | 1,06 | nd | -1 |

Igeo values

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sampling code | Depth, cm | Igeo | | | | |
| Cu | Pb | Zn | Ni | Cd |
| SD1 | 0-10 | -1 | -3 | -1 | -1 | nd |
| 10-20 | -1 | -3 | -1 | -1 | nd |
| 20-30 | -1 | -3 | -1 | -1 | nd |
| 30-40 | -1 | -3 | -1 | 0 | nd |
| 40-50 | -2 | -3 | -2 | -1 | nd |
| 50-60 | -2 | -4 | -3 | -2 | nd |
| 60-70 | -2 | -4 | -2 | -1 | nd |
| 80-90 | -2 | -4 | -2 | -1 | nd |
| 90-100 | -4 | -5 | -4 | -3 | 1 |
| SD2 | 0-10 | -1 | -1 | 0 | -1 | ***3*** |
| 10-20 | -1 | -1 | 0 | -1 | ***3*** |
| 20-30 | -5 | -5 | -4 | -3 | nd |
| 30-40 | -4 | -5 | -4 | -3 | 0 |
| YT1 | 0-10 | -1 | -3 | -1 | 0 | ***2*** |
| 10-20 | -1 | -3 | -1 | 0 | nd |
| 20-30 | -1 | -3 | -1 | ***1*** | nd |
| 30-40 | -1 | -3 | -1 | ***1*** | nd |
| YT2 | 0-10 | -3 | -4 | -3 | -1 | ***1*** |
| 10-20 | -2 | -3 | -1 | 0 | ***2*** |
| 20-30 | -1 | -3 | -1 | 0 | ***3*** |
| YT3 | 0-10 | -1 | -2 | -1 | 0 | ***1*** |
| 10-20 | -1 | -3 | -1 | 0 | nd |
| 20-30 | -1 | -2 | -1 | 0 | -1 |
| SA1 | 0-10 | -1 | -1 | 0 | -1 | ***3*** |
| 20-30 | -1 | -1 | 0 | -1 | ***3*** |
| SA2 | 0-10 | -2 | -5 | -4 | -2 | nd |
| 10-20 | -1 | -3 | -1 | 0 | nd |
| 20-30 | -2 | -4 | -2 | -1 | 0 |
| 30-40 | -2 | -4 | -2 | -1 | nd |
| 40-50 | -1 | -4 | -1 | 0 | nd |