Supplementary Table 1. Effects of biosorbent dose, contact time, and agitation speed

| trt | rep | dose (gm) | Agitation speed (rpm) | Contact time (Hr.) |
|-----|-----|-----------|-----------------------|--------------------|
| A1  | 1   | 1         | 160                   | 2                  |
| A1  | 2   | 1         | 160                   | 2                  |
| B1  | 1   | 1         | 160                   | 2                  |
| B1  | 2   | 1         | 160                   | 2                  |
| C1  | 1   | 1         | 160                   | 2                  |
| C1  | 2   | 1         | 160                   | 2                  |
| A2  | 1   | 2         | 160                   | 2                  |
| A2  | 2   | 2         | 160                   | 2                  |
| B2  | 1   | 2         | 160                   | 2                  |
| B2  | 2   | 2         | 160                   | 2                  |
| C2  | 1   | 2         | 160                   | 2                  |
| C2  | 2   | 2         | 160                   | 2                  |
| A3  | 1   | 3         | 160                   | 2                  |
| A3  | 2   | 3         | 160                   | 2                  |
| B3  | 1   | 3         | 160                   | 2                  |
| B3  | 2   | 3         | 160                   | 2                  |
| C3  | 1   | 3         | 160                   | 2                  |
| C3  | 2   | 3         | 160                   | 2                  |
| A4  | 1   | 4         | 160                   | 2                  |
| A4  | 2   | 4         | 160                   | 2                  |
| B4  | 1   | 4         | 160                   | 2                  |
| B4  | 2   | 4         | 160                   | 2                  |
| C4  | 1   | 4         | 160                   | 2                  |
| C4  | 2   | 4         | 160                   | 2                  |
| A21 | 1   | 2         | 160                   | 1                  |
| A21 | 2   | 2         | 160                   | 1                  |
| B21 | 1   | 2         | 160                   | 1                  |
| B21 | 2   | 2         | 160                   | 1                  |
| C21 | 1   | 2         | 160                   | 1                  |
| C21 | 2   | 2         | 160                   | 1                  |
| A22 | 1   | 2         | 160                   | 2                  |
| A22 | 2   | 2         | 160                   | 2                  |
| B22 | 1   | 2         | 160                   | 2                  |
| B22 | 2   | 2         | 160                   | 2                  |
| C22 | 1   | 2         | 160                   | 2                  |
| C22 | 2   | 2         | 160                   | 2                  |
| A23 | 1   | 2         | 160                   | 3                  |
| A23 | 2   | 2         | 160                   | 3                  |
| B23 | 1   | 2         | 160                   | 3                  |
| B23 | 2   | 2         | 160                   | 3                  |
| C23 | 1   | 2         | 160                   | 3                  |
| C23 | 2   | 2         | 160                   | 3                  |
| A24 | 1   | 2         | 160                   | 4                  |
| A24 | 2   | 2         | 160                   | 4                  |
| B24 | 1   | 2         | 160                   | 4                  |
| B24 | 2   | 2         | 160                   | 4                  |
| C24 | 1   | 2         | 160                   | 4                  |
| C24 | 2   | 2         | 160                   | 4                  |
| Code  | Row | Column | Value1 | Value2 |
|-------|-----|--------|--------|--------|
| A160  | 1   | 2      | 160    | 2      |
| A160  | 2   | 2      | 160    | 2      |
| B160  | 1   | 2      | 160    | 2      |
| B160  | 2   | 2      | 160    | 2      |
| C160  | 1   | 2      | 160    | 2      |
| C160  | 2   | 2      | 160    | 2      |
| A200  | 1   | 2      | 200    | 2      |
| A200  | 2   | 2      | 200    | 2      |
| B200  | 1   | 2      | 200    | 2      |
| B200  | 2   | 2      | 200    | 2      |
| C200  | 1   | 2      | 200    | 2      |
| C200  | 2   | 2      | 200    | 2      |
| A80   | 1   | 2      | 80     | 2      |
| A80   | 2   | 2      | 80     | 2      |
| B80   | 1   | 2      | 80     | 2      |
| B80   | 2   | 2      | 80     | 2      |
| C80   | 1   | 2      | 80     | 2      |
| C80   | 2   | 2      | 80     | 2      |
| A120  | 1   | 2      | 120    | 2      |
| A120  | 2   | 2      | 120    | 2      |
| B120  | 1   | 2      | 120    | 2      |
| B120  | 2   | 2      | 120    | 2      |
| C120  | 1   | 2      | 120    | 2      |
| C120  | 2   | 2      | 120    | 2      |
| initial con of Total Cr (mg/L) | after bio sorption | percentage removal |
|-------------------------------|-------------------|-------------------|
| 12                            | 8.67              | 27.75             |
| 12.5                          | 8.8               | 29.6              |
| 12                            | 9.5               | 20.83333333       |
| 12.5                          | 9.7               | 22.4              |
| 12                            | 4                 | 66.666666667      |
| 12.5                          | 3.9               | 68.8              |
| 12                            | 6.67              | 44.416666667      |
| 12.5                          | 6.8               | 45.6              |
| 12                            | 6.83              | 43.08333333       |
| 12.5                          | 6.9               | 44.8              |
| 12                            | 1.17              | 90.25             |
| 12.5                          | 1.3               | 89.6              |
| 12                            | 3.83              | 68.08333333       |
| 12.5                          | 3.9               | 68.8              |
| 12                            | 4.17              | 65.25             |
| 12.5                          | 4.3               | 65.6              |
| 12                            | 1.67              | 86.08333333       |
| 12.5                          | 1.8               | 85.6              |
| 12                            | 1                 | 91.666666667      |
| 12.5                          | 1.2               | 90.4              |
| 12                            | 4.83              | 59.75             |
| 12.5                          | 4.91              | 60.72             |
| 12                            | 2                 | 83.33333333       |
| 12.5                          | 2.1               | 83.2              |
| 12                            | 7.33              | 38.91666667       |
| 12.5                          | 7.6               | 39.2              |
| 12                            | 7.17              | 40.25             |
| 12.5                          | 7.3               | 41.6              |
| 12                            | 0.67              | 94.41666667       |
| 12.5                          | 0.7               | 94.4              |
| 12                            | 6.67              | 44.416666667      |
| 12.5                          | 6.8               | 45.6              |
| 12                            | 6.83              | 43.08333333       |
| 12.5                          | 6.9               | 44.8              |
| 12                            | 1.17              | 90.25             |
| 12.5                          | 1.32              | 89.44             |
| 12                            | 5.33              | 55.58333333       |
| 12.5                          | 5.35              | 57.2              |
| 12                            | 5.67              | 52.75             |
| 12.5                          | 5.78              | 53.76             |
| 12                            | 2.33              | 80.58333333       |
| 12.5                          | 2.42              | 80.64             |
| 12                            | 5.67              | 52.75             |
| 12.5                          | 5.8               | 53.6              |
| 12                            | 6.17              | 48.58333333       |
| 12.5                          | 6.4               | 48.8              |
| 12                            | 1.83              | 84.75             |
| 12.5                          | 1.9               | 84.8              |

Supplementary Table 1. Effects of biosorbent dose, contact time, and agitation speed.
| 12.5 | 6.5 | 48    |
| 12   | 6.67| 44.41666667 |
| 12.5 | 6.8 | 45.6 |
| 12   | 6.83| 43.08333333 |
| 12.5 | 6.9 | 44.8 |
| 12   | 6.87| 42.75 |
| 12.5 | 1.3 | 89.6 |
| 12   | 1.29| 89.25 |
| 12.5 | 5.91| 52.72 |
| 12   | 5.5 | 54.16666667 |
| 12.5 | 5.8 | 53.6 |
| 12   | 5.77| 51.91666667 |
| 12.5 | 3.9 | 68.8 |
| 12   | 4   | 66.66666667 |
| 12   | 9.67| 19.41666667 |
| 12.5 | 9.9 | 20.8 |
| 12   | 6.67| 44.41666667 |
| 12.5 | 6.8 | 45.6 |
| 12   | 4.83| 59.75 |
| 12.5 | 4.95| 60.4 |
| 12   | 7.5 | 37.5 |
| 12.5 | 8   | 36   |
| 12   | 6.33| 47.25 |
| 12.5 | 6.5 | 48   |
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