

# **Impact Assessment of 2020 COVID-19 Lockdown on Landfill Leachate Treatment in Rio de Janeiro**

**Ricardo Soares,<sup>a,b,\*</sup> Beatriz César Maestá,<sup>b</sup> Felipe Debize da Motta,<sup>b</sup> Rafaela  
Naegele,<sup>a</sup> Carlos Eduardo Soares Canejo Pinheiro da Cunha<sup>b</sup>**

<sup>a</sup>Veiga de Almeida University, Tijuca Campus, ZIP Code 20271-020, Rio de Janeiro-RJ, Brazil.

<sup>b</sup>State Institute of the Environment of Rio de Janeiro, Saúde, ZIP Code 20081-312, Rio de Janeiro-RJ,  
Brazil.

\*ricardosoaresuff@gmail.com

## **Supplementary Information**

**Table 1S.** Limit of Detection (LOD) and Limit of Quantification (LOQ) determined for the different analytes present in the LL samples

| Parameter              | LOD                             | LOQ    | Parameter                          | LOD                             | LOQ   | Parameter                               | LOD                             | LOQ | Parameter            | LOD                             | LOQ |
|------------------------|---------------------------------|--------|------------------------------------|---------------------------------|-------|-----------------------------------------|---------------------------------|-----|----------------------|---------------------------------|-----|
|                        | ---- (µg L <sup>-1</sup> ) ---- |        |                                    | ---- (µg L <sup>-1</sup> ) ---- |       |                                         | ---- (µg L <sup>-1</sup> ) ---- |     |                      | ---- (µg L <sup>-1</sup> ) ---- |     |
| <b>Color</b>           | 330                             | 1,000  | <b>Surfactants</b>                 | 33                              | 100   | <b>Cr<sup>6+</sup></b>                  | 0.33                            | 1   | <b>F<sup>-</sup></b> | 132                             | 400 |
| <b>TA</b>              | 1,650                           | 5,000  | <b>Chloroform</b>                  | 0.66                            | 2     | <b>Cr<sub>(Total)</sub></b>             | 3.3                             | 10  | <b>Fe</b>            | 3,3                             | 10  |
| <b>TH</b>              | 660                             | 2,000  | <b>NO<sub>2</sub><sup>-</sup></b>  | 4.95                            | 15    | <b>Cu<sub>(Disolvide)</sub></b>         | 0.33                            | 1   | <b>Hg</b>            | 0.033                           | 0.1 |
| <b>TS</b>              | 3,300                           | 10,000 | <b>NO<sub>3</sub><sup>-</sup></b>  | 75.9                            | 230   | <b>Cu<sub>(Total)</sub></b>             | 0.33                            | 1   | <b>K</b>             | 33                              | 100 |
| <b>TDS</b>             | 3,300                           | 10,000 | <b>SO<sub>4</sub><sup>2-</sup></b> | 660                             | 2,000 | <b>Benzene</b>                          | 0.66                            | 2   | <b>Mg</b>            | 33                              | 100 |
| <b>SS</b>              | 33                              | 100    | <b>S<sup>2-</sup></b>              | 0.66                            | 2     | <b>Styrene</b>                          | 0.66                            | 2   | <b>Mn</b>            | 3.3                             | 10  |
| <b>TOC</b>             | 330                             | 1,000  | <b>Al</b>                          | 3.3                             | 10    | <b>Etylbenzene</b>                      | 0.66                            | 2   | <b>Na</b>            | 33                              | 100 |
| <b>BOD<sub>5</sub></b> | 660                             | 2,000  | <b>As</b>                          | 0.33                            | 1     | <b>Toluene</b>                          | 0.66                            | 2   | <b>Ni</b>            | 3.3                             | 10  |
| <b>COD</b>             | 990                             | 3,000  | <b>B</b>                           | 3.3                             | 10    | <b>Xylenes</b>                          | 0.66                            | 2   | <b>P</b>             | 3.3                             | 10  |
| <b>N<sub>A</sub></b>   | 4.95                            | 15     | <b>Ba</b>                          | 3.3                             | 10    | <b>Phenols<sub>(Total)</sub></b>        | 0.99                            | 3   | <b>Pb</b>            | 3.3                             | 10  |
| <b>N<sub>T</sub></b>   | 330                             | 1,000  | <b>Ca</b>                          | 33                              | 100   | <b>Cl<sup>-</sup><sub>(Free)</sub></b>  | 3.3                             | 10  | <b>Sn</b>            | 0.33                            | 1   |
| <b>VOAF</b>            | 1,650                           | 5,000  | <b>Cd</b>                          | 0.33                            | 1     | <b>Cl<sup>-</sup><sub>(Total)</sub></b> | 33                              | 100 | <b>Zn</b>            | 3.3                             | 10  |
| <b>MO</b>              | 1,650                           | 5,000  | <b>Co</b>                          | 3.3                             | 10    | <b>CN<sup>-</sup><sub>(Total)</sub></b> | 0.66                            | 2   |                      |                                 |     |
| <b>TOG</b>             | 1,650                           | 5,000  | <b>Cr<sup>3+</sup></b>             | 0.33                            | 1     | <b>CN<sup>-</sup><sub>(Free)</sub></b>  | 3,3                             | 10  |                      |                                 |     |

Total Alkalinity (TA), Total Hardness (TH), Total Solids (TS), Total Dissolved Solids (TDS), Sedimentable Solids (SS), Total Organic Carbon (TOC), Biochemical Oxygen Demand (BOD<sub>5</sub>), Chemical Oxygen Demand (COD), Ammoniacal Nitrogen (N<sub>A</sub> = NH<sub>3</sub> + NH<sub>4</sub><sup>+</sup>), Total Nitrogen (N<sub>T</sub>), Vegetable Oils and Animal Fats (VOAF), Mineral Oils (MO), Total Oils and Greases (TOG)