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DIAGNOSIS OF THE SEWAGE TREATMENT PLANT BY FACULTATIVE LAGOONS BASED IN A 24 HOURS MONITORING

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Introduction

The Ilha Solteira's WWTP was monitored during 24 hours.

Determination of the parameters:

Flow rate (Q),

Dissolved oxygen (DO),

pH,

Temperature,

Chemical Oxygen Demand (COD),

Biochemical Oxygen Demand (BDO),

Total Coliform (TC),

Faecal Coliform (FC),

Total Solids (TS),

Total Fixed Solids (TFS),

Total Volatile Solids (TVS),

Total Suspended Solids (TSS),

Fixed (TFSS)

and Volatile (TVSS)

Sedimentable Solids (SdS).



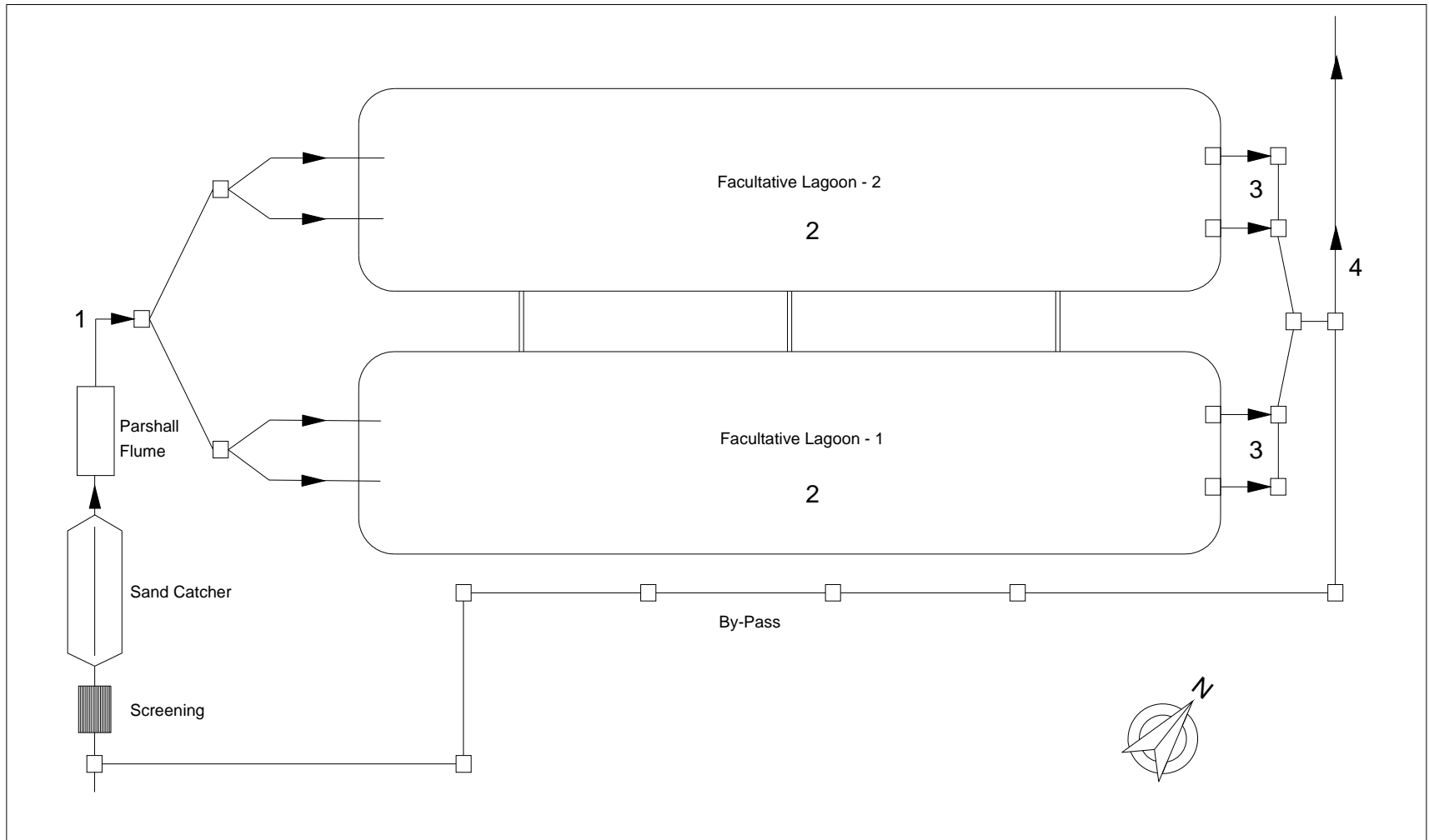


Figure 01 – Lay-out of Ilha Solteira's WWTP



Figure 02 - Ilha Solteira's WWTP space view.



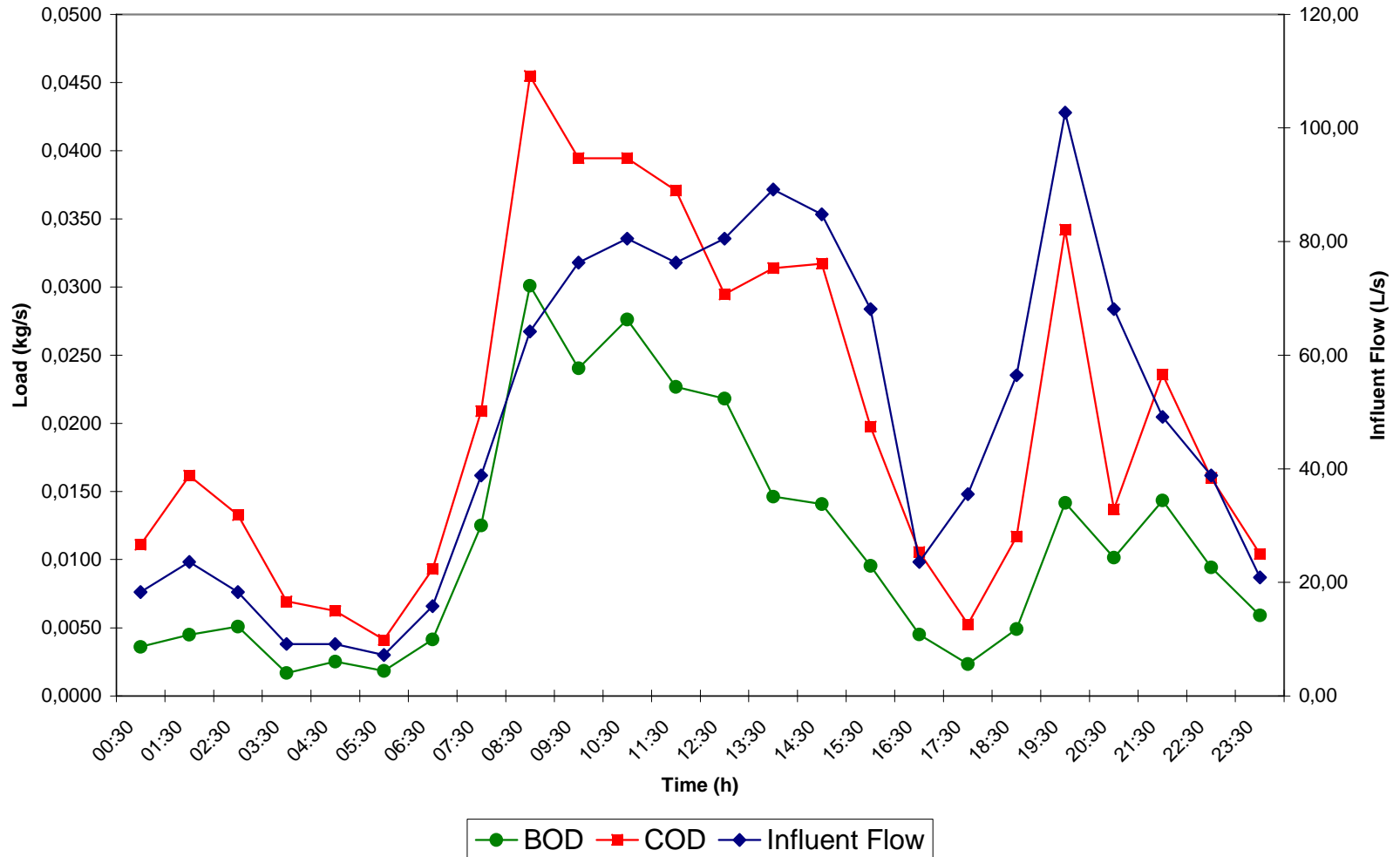


Figure 03 –BOD and COD Loads and Flow rate variation.





Results

Table 1 – Summary of average values of influent raw sewage characteristics in Ilha Solteira's WWTP.

| Parameters | Average Values |
|--|----------------|
| Volume of flow (L/s) | 49,26 |
| Dissolved oxygen (mg/L) | 7,1 |
| pH | 7,35 |
| Temperature (°C) | 28,9 |
| Chemical Oxygen Demand (mg/L) | 424 |
| Biochemical Oxygen Demand (mg/L) | 235 |
| Total Coliform (NMP/100mL) | 5,06E+07 |
| Faecal Coliform (NMP/100mL) | 5,13E+06 |
| Total Solids (mg/L) | 409 |
| Total Fixed Solids (mg/L) | 176 |
| Total Volatile Solids (mg/L) | 232 |
| Total Suspended Solids (mg/L) | 169 |
| Total Suspended Fixed Solids (mg/L) | 60 |
| Total Suspended Volatile Solids (mg/L) | 109 |

Conclusions

- Ilha Solteira's WWTP reach an BOD removal efficiency estimated of 78%, slightly lower to the 80% recommended removal goal.
- Pathogen removal in the WWTP was low, Faecal Coliforms minimum values registered at final effluent were near to 04log MPN/100 mL up to recommended 03log MPN/100mL.
- Solid mass balance of the lagoons indicated that exist accumulated solids inside the ponds, the solid concentration at the effluent is lower than at influent.
- Ilha Solteira's WWTP need an urgent remotion of the accumulated sludge at third parts of facultative lagoons.





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For
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8th IWA Specialist Group
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The logo for DEC (Departamento de Engenharia de Saneamento), consisting of the letters 'DEC' in a bold, blue, sans-serif font.

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