Calculation of Oxygenation Capacity
Mechanical Surface Aerators
at day MCRT

Required Input Data

(1) Oxygen Required, \(O_2^{\text{REQ}}\) lb \(O_2/\text{day}\)

(2) Oxygen Transfer Capacity (field condition), OT lb \(O_2/\text{hp/hr}\)

Assumptions

(3) Typical oxygen transfer capacities for mechanical aerators as follows:

<table>
<thead>
<tr>
<th>Oxygen Transfer Rate (field conditions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Speed Surface Aerator</td>
</tr>
<tr>
<td>Low Speed Surface Aerator with Draft Tube</td>
</tr>
<tr>
<td>High Speed Floating Aerator</td>
</tr>
</tbody>
</table>

Determine Aerator Horsepower Required

(3) \(hp^{\text{REQ}} = \frac{(O_2^{\text{REQ}})}{(OT)(24 \text{ hr/day})}\) Enter from line (1)

(4) \(hp^{\text{REQ}} = \frac{(\phantom{0})}{(\phantom{0})(24 \text{ hr/day})}\)

Enter from line (2)

\(hp^{\text{REQ}} = \)