<table>
<thead>
<tr>
<th>Parameter</th>
<th>COD</th>
<th>BOD&lt;sub&gt;5&lt;/sub&gt;</th>
<th>TOC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Oxidant Used</strong></td>
<td>$K_2Cr_2O_7$ (\text{Mn}_2(SO_4)_3)</td>
<td>Oxidation by microorganisms</td>
<td>$O_2$ (K_2S_2O_8) (\text{Heat}) Combination of the above with various catalysts</td>
</tr>
<tr>
<td><strong>Most Suitable Use</strong></td>
<td>Rapid and frequent monitoring of treatment plant efficiency and water quality</td>
<td>Modeling treatment plant process and the effects organic compounds on the dissolved oxygen content of receiving waters</td>
<td>Measures amount of total of organic carbon in samples</td>
</tr>
<tr>
<td><strong>Test Completion Time</strong></td>
<td>1-1/2 to 3 hours</td>
<td>5 days (for standard BOD test)</td>
<td>Several minutes to hours</td>
</tr>
</tbody>
</table>
| **Advantages**            | • Correlates with BOD on waste with constant composition  
• Toxic materials do not affect oxidant  
• Changes in the COD value between influent and effluent may parallel BOD content and supplement BOD results  
• Short analysis time | • Most closely models the natural environment when used with the proper “seed” | • Correlates with BOD on waste with constant composition, but not as closely as COD  
• Short analysis time |
| **Disadvantages**         | • Interference from chloride ions  
• Some organic compounds are not oxidized completely | • Toxic materials kill microorganisms  
• Microorganisms do not oxidize all materials present in waste  
• Inaccuracies when used with improper “seed”  
• Lengthy test period | • Requires expensive equipment  
• Some organic compounds are not oxidized completely  
• Measures Total Organic Carbon and not oxygen demand |