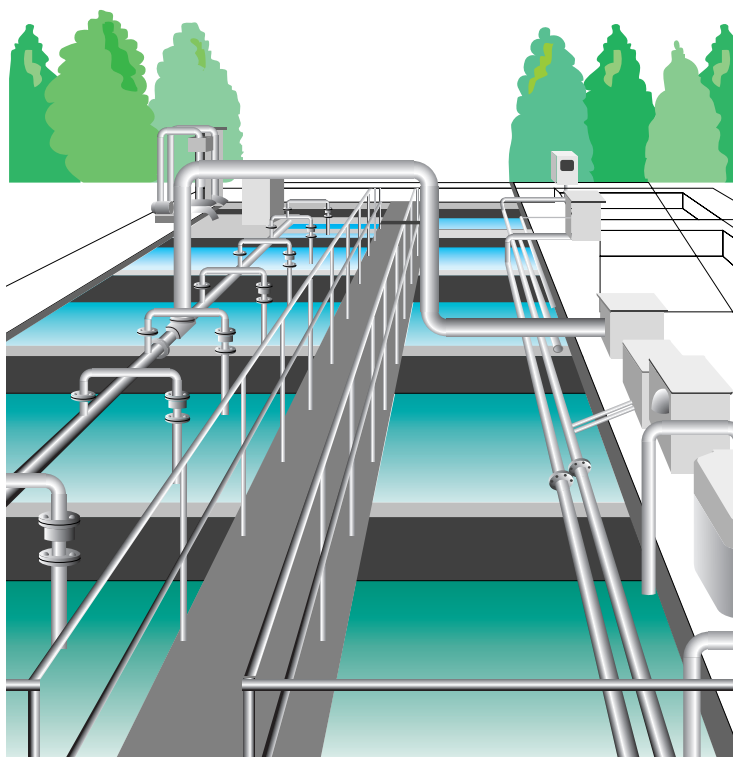


Measurement of TOC and TN in effluent using Shimadzu TOC-V combined with TN Unit

Compared with biochemical oxygen demand (BOD) or chemical oxygen demand (COD), the measurement of total organic carbon (TOC) content is quicker and more reproducible, and it provides a better index of organic pollution in water. Hence the measurement of TOC is being used in a wide range of fields, ranging from controlling raw water and processed effluent at wastewater processing facilities to monitoring public water, cooling water or rinse water for organic content. Particularly plant effluents and water at the intake of wastewater processing facilities contain high concentrations of organic pollutants, and operating conditions of wastewater processing facilities can be efficiently controlled by TOC management. Also, control of TOC in processed and discharged effluent is critically important from the viewpoint of environmental protection. TN (total nitrogen) is also an important item to be monitored, with standards being established for nitrogen content in environmental water and effluent in order to prevent eutrophication in enclosed water bodies. TOC and TN can be simultaneously measured by combining the Shimadzu Total Organic Carbon Analyzer TOC-V and the TN measurement unit TNM-1. This Application News presents an example of TOC/TN measurement using this system.

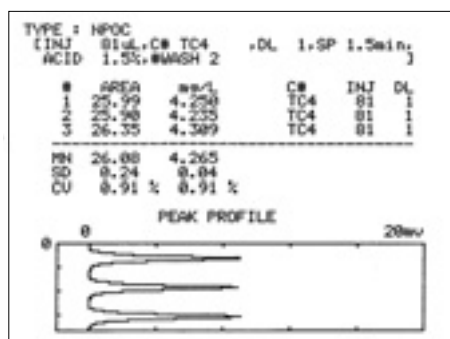
Measurement Conditions

Samples: (1) Effluent from a metal-plating factory
 (2) Water from (1) treated by precipitation
 Instrument used: Shimadzu Total Organic Carbon Analyzer TOC-VCSH with TN measurement unit TNM-1
 Measurement items: TOC (measured by acidification and sparging), TN

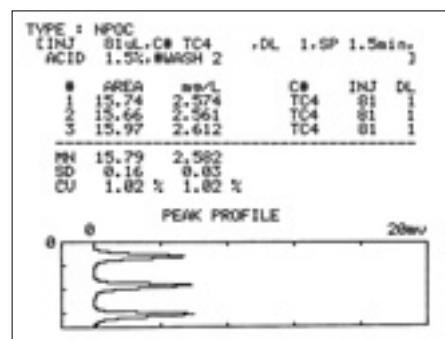


Results

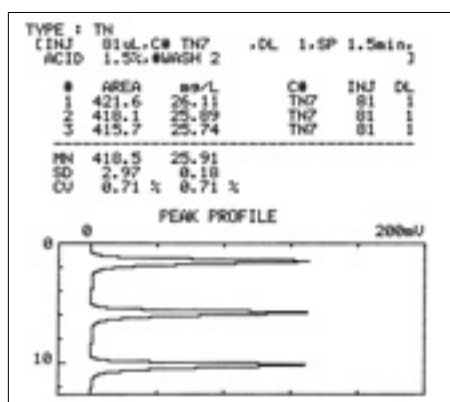
Sample	TOC (mgC/L)	TN (mgN/L)
(1) Effluent	4.27	25.9
(2) Processed water	2.58	3.73



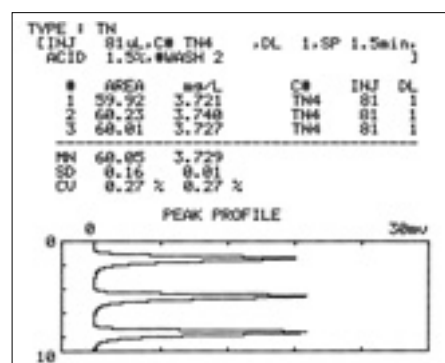
(1) Effluent TOC measurement



(2) Processed water TOC measurement



(1) Effluent TN measurement



(2) Processed water TN measurement

Features of TOC-V and TN Measurement Unit

- TOC and TN are measured simultaneously, enabling quick determination of TOC and TN concentrations.
- The same combustion tube and oxidation catalyst are used for TOC and TN measurements, eliminating the need of special maintenance for the TN measurement unit.



Shimadzu TOC-V Series
TOC/TN Measurement System



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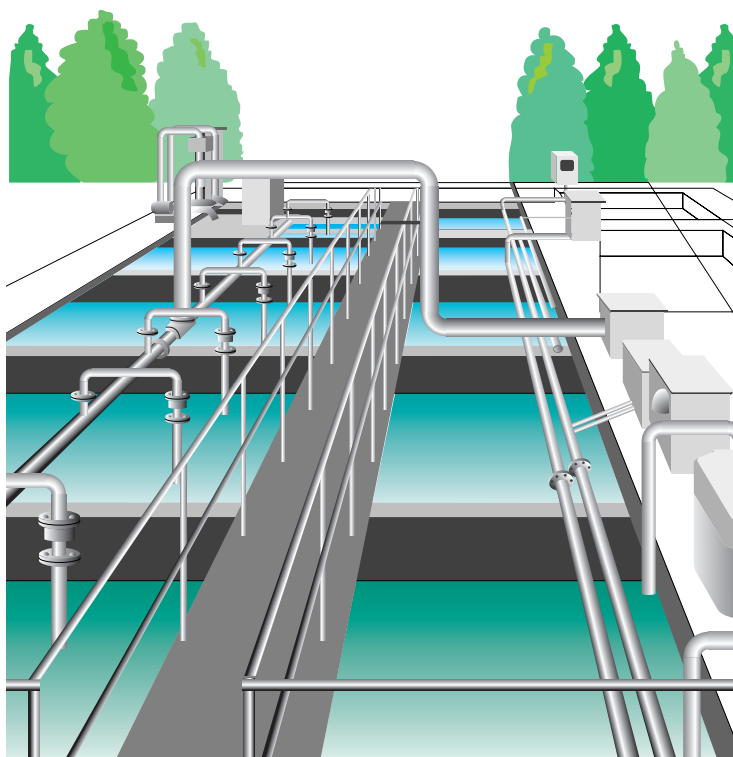
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