

5. Useful Forms/ Check List – Samples

5.1 Recommended Minimum Monitoring Frequency for Different Water Quality Parameters for Cooling Tower System

| Parameters | Minimum Monitoring Frequency for Cooling Water |
|---|--|
| Conductivity | Monthly |
| Total dissolved solids | Monthly |
| Suspended solids | Monthly |
| Calcium hardness | Monthly |
| pH | Monthly |
| Total alkalinity | Quarterly |
| Oxidising biocide | Monthly |
| Inhibitor level | Monthly |
| Temperature | Monthly |
| Chloride as mg/L Cl | Quarterly |
| Sulphate as mg/L SO ₄ | Quarterly |
| Total iron as mg/L Fe | Quarterly |
| Residual Cl/ Oxidation Reduction Potential (ORP) | Monthly |
| 5-day Biochemical oxygen demand (BOD ₅) | Monthly |
| Chemical Oxygen Demand (COD) | Monthly |
| Heterotrophic colony count | Monthly |
| Legionella | Quarterly* |

*Remarks: Cooling tower systems installed at medical and health care premises should be monitored exceptionally closely. Water sampling for cooling tower systems installed in these locations should be carried out at least once a month for both legionella test and HCC. Moreover, if legionella or HCC is found to be greater than the specified requirement under routine sampling, more frequent water sampling is required to form part of the system operation programme.

| Parameters | Minimum Monitoring Frequency for Cooling Water |
|---------------------|--|
| Colour | Quarterly |
| Turbidity | Quarterly |
| Threshold Odour No. | Quarterly |

| Parameters | Minimum Monitoring Frequency for Cooling Water |
|---------------------------------|--|
| Ammoniacal Nitrogen | Quarterly |
| Suspended Solids | Quarterly |
| Dissolved Oxygen | Quarterly |
| 5-day Biochemical Oxygen Demand | Quarterly |
| Synthetic Detergents | Quarterly |
| E. Coli/ 100mL | Quarterly |

Note: The above checklists are for reference only. The owners of the cooling tower systems should develop their own water quality monitoring schedules to suit their systems.