



WATER & WASTEWATER AUDIT

 Cholamandalam  MS
Risk Services

(A Joint Venture Company between Murugappa Group and Mitsui Sumitomo Insurance Group of Japan)

.....for total solutions

Need

- Industry is the second largest user of water after agriculture. However the amount of water used varies widely from one industry type to another. Out of the total fresh water available in India about 22 % is used by the industries
- Many business, notably the food, beverage, pharmaceutical sectors consume water by using it as an ingredient in finished products for human consumption. Think of dairy products, soups, beverages and medicines that are delivered in liquid form
- Many businesses dispose of wastewater or cleaning water into natural fresh water systems. Rivers and lakes can “process” small quantities of waste that can be broken down by nature. However, when these limits are exceeded, water quality declines and downstream water is no longer useable without expensive treatment



Industries are focusing on reducing demand, maximizing recycling opportunities; minimizing water losses due to breakdowns and leakages; and investing in new water storage infrastructure. Safe disposal of industrial effluents has become a mandate, subject to the increasingly stringent discharge regulations. For Sustainable development another challenge before the industry is optimal management of water and wastewater leading to zero discharge.

One of the core elements of Water Management is “**Water Audit**”.

A Water Audit is a “*Systematic approach of Identifying, Measuring, Monitoring and Reducing the Water Consumption by various activities in an Industry*”

Objective

- ➔ Identify the sources of water consumption and Wastewater Generation through Field Studies
- ➔ Quantification and Characterization of Water and Wastewater by way appropriate sampling and measurements
- ➔ Establishment of Specific water Consumption and Wastewater Generation/Ton of Product Produced
- ➔ Benchmarking of Specific Water Consumption and Wastewater Generation with similar type of Industry
- ➔ Identify Energy Saving Potential in Pumps and Pumping Systems
- ➔ Evolve Techno-Economic feasible solutions for recommended measures for implementation

CMSRSL Approach

Water & Wastewater audit are conducted to meet clients needs based on a range of targets aimed at sustainable water management. The approach followed by Cholamandalam MS Risk Services Ltd. (CMSRS) in-line with the client's requirement for the study involves:

STEP : I Pre Assessment Audit - Walk Through Audit

- Analyse historic water use in the plant
- Identify water flow and quality for each applications
- Identify the areas for water conservation
- Identify the sources of wastewater Generation
- Pre -Assessment Audit Report submission

STEP : II Detailed Water & Wastewater Audit - Field Studies

- In-depth Process studies for waste quantification and characterization
- Identify for Flow Monitoring, Measurement, Sampling and Analysis
- Identify areas for water conservation and waste minimization measures
- Identify energy saving potential for pumps and pumping systems
- Analyse for Compliance & Legal Requirments
- On-the spot recommendations of General House Keeping measures
- Recommendations of short term measures

STEP : III Synthesis

- Evolving Options for Medium and Long-Term measures
- Evolving Techno-Economic feasible measures for the options identified
- Recommend the feasible options for recommendations
- Submission of Detailed Audit Report



Deliverables

- ✚ Schematic Layout of Water Supply Distribution System
- ✚ Schematic Layout of Drainage Layout of the Plant
- ✚ Check List for self assessment for determining the water efficiency for facility managers
- ✚ Energy Conservation Measures in Pumps and Pumping Systems
- ✚ Pre Assessment Audit Report
- ✚ Detailed Water Audit and Wastewater Audit Report

Case Studies

Determining Water Loss by Leaks

Determine the volume of water Loss by leaks is importance to determine both water and cost savings by repairing the leak. One of the simplest methods to determine the leak loss is the bucket and stopwatch. A sample drip can also be measured by the bucket and stopwatch method. Mathematical estimates of leaks also can be used.

Drips/Second to LPM conversion	
No.of Drips/Second	Litres per minute
1	0.027
2	0.045
3	0.068
4	0.095
5	0.113

CMSRSL Expertise Areas in Environmental Management

- ✚ Water and Wastewater Audit
- ✚ Environmental Audit
- ✚ Environmental Impact Assessment
- ✚ Environmental Management Systems (ISO 14001)
- ✚ Energy Audit
- ✚ Waste Management
- ✚ Environmental Compliance Monitoring and Legal Requirements
- ✚ Hazardous Waste Management - Site Assessment for Disposal Facility Requirements
- ✚ Solid Waste Management
- ✚ Environment Due Diligence Audit
- ✚ Environmental Social Assessment Report
- ✚ Corporate Social Reporting

About Cholamandalam MS Risk Services

Cholamandalam MS Risk Services Limited (CMSRSL), awarded as **Risk Manager of the year in Asia** by 11th Asian Insurance Industry Awards 2007 is a joint venture between the INR 9582 crore Murugappa Group and Mitsui Sumitomo Insurance of Japan. CMSRSL offers specialized and innovative risk management solutions to clients in India and rest of Asia.

Cholamandalam started operations in Risk Services about 13 years ago and has carried out more than 500 assignments in safety and risk serving around 350 clients till date.

The Environment Team comprises of Environmental, Mechanical, Chemical and Electrical Engineers having vast experience in consulting domain expertise of Air, Water, Noise, Solid and Hazardous Waste Management, Environmental Management Systems, EIA, Environmental Audit, Environmental Training etc.

To whom to approach for Conducting Water & Wastewater Audit

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