



# Water Quality Status Vs Industrial Wastewater Management in Sri Lanka

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**Dr. R.M.S.K. Ratnayake**  
**Director / Environmental Pollution Control Unit**  
**Central Environmental Authority**  
**Sri Lanka**



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- Major Water Bodies and Water Quality Status
- Pollutants & Sources
- Major Industry Sectors & Categories
- Industrial Wastewater Management in SL
- Challenges in Wastewater Management

## Water Quality monitoring results in selected rivers Vs proposed ambient water quality standards by CEA

River name	Kelani	Mahaweli	Mahaoya	Proposed ambient standards by CEA			
	Sampling point	Kaduwela	Peradeniya	Mawanella	Class 1 Drinking (with simple treatment*1)	Class 2 Bathing	Class 2 Fish and aquaculture
Month/Year	June 2010	January 2011 (four times)	November 2011 (four times)				
BOD (mg/L)	2.5	5-10	4-5	3	4	4	5
COD (mg/L)	12.6	15-20	10	15	20	15	30
Total Coli form (MPN/100mL)	13,000	-	170	500	1,000	20,000	5,000
NO <sub>3</sub> (mg/L) <sup>3</sup>	N/A	N/A	0.47	5	5	5	5
PO <sub>4</sub> (mg/L) <sup>4</sup>	N/A	N/A	<0.01	0.7	0.7	0.4	0.7

(Notes)

\*1. Only boiling and no chemical treatment

\*2. Treated by filtration and chlorination

\*3. Proposed ambient standards are for NO<sub>3</sub>-N

\*4. Proposed ambient standards are for PO<sub>4</sub>-P

(Source: Provided by CEA, based on results of water quality monitoring conducted by CEA) extracted from WEPA outlook 2012

## Water Quality monitoring results in selected lakes Vs proposed ambient water quality standards by CEA

Lake Name	Bolgoda	Kandy	Gregory	Proposed ambient standards by CEA			
	Sampling point	Centre of the lake	Average from 4 locations	Centre of the lake	Class 1 Drinking (with simple treatment*1)	Class 2 Bathing	Class 2 Fish and aquaculture
Month/Year	Feb 2011	Jan 2011	Dec 2009				
BOD (mg/L)	2	8.4	3	3	4	4	5
COD (mg/L)	12	45.6	15	15	20	15	30
DO (mg/L)	6.9	4.6	6	6	5	3	4
NO <sub>3</sub> (mg/L) <sup>3</sup>	N/A	N/A	0.96	5	5	5	5
PO <sub>4</sub> (mg/L) <sup>4</sup>	N/A	N/A	0.02	0.7	0.7	0.4	0.7

(Notes)

\*1. Only boiling and no chemical treatment

\*2. Treated by filtration and chlorination

\*3. Proposed ambient standards are for NO<sub>3</sub>-N

\*4. Proposed ambient standards are for PO<sub>4</sub>-P

(Source: Provided by CEA, based on results of water quality monitoring conducted by CEA) extracted from WEPA outlook 2012

## Pollutants & Sources

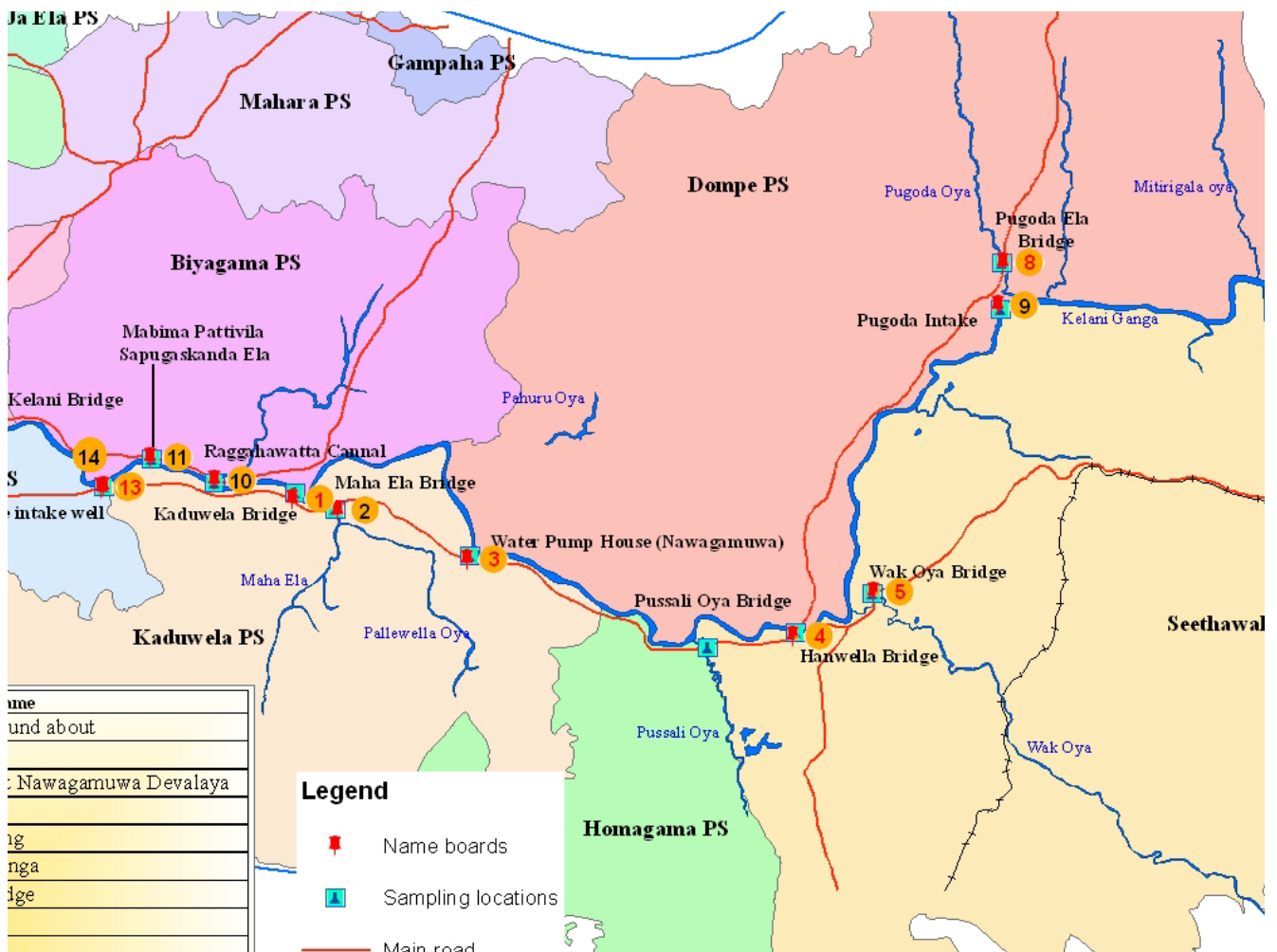
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- **Untreated wastewater discharge**
    - Domestic
    - Industrial
  - **Haphazard dumping of solid waste.**
  - **Agricultural run off**
    - Agro chemicals
    - Fertilizers
  - **Sand mining activities**
  - **Unplanned development activities**

## Major Industry Sectors & Categories

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- **Textile**
  - **Food & Beverages**
  - **Alcohol & Alcoholic Beverages**
  - **Chemical**
  - **Dairy**
  - **Tanning**
  - **Rubber**
  - **Agrochemical and fertilizer**
  - **Health care centres**
  - **Transport & Vehicle service**
  - **Paper & Pulp**

## Factories located in Kelani River basin (monitored by the CEA)

- Coca cola Beverages ( Kaduwela)
- Ceylon Leather Products ( Mattakkuliya )
- Ceylon Cold Stores - Beverages (Ranala)
- Sapugaskanda Power Plant (Heiyanthuduwa)
- New Zealand Milk Products (Biyagama)
- Oil Refinery (Biyagama)
- Manchester Yarn Thread (Kaduwela)
- Lion Brewery (Biyagama)
- Lindel Industrial Estate (Sapugaskanda)
- Lanka Tiles (Ranala)
- Nit Fin Ltd (Kapugoda)
- Ole Spring - water bottling ( Ranala)
- Oil Installation (Kolonnawa)
- South Asian Textile (Pugoda)
- Auspray Clothing (Ranala)
- Seethawaka Industrial Zone (Seethawaka)
- Sultan Leather (Wattala)
- Tan Lanka (Hendala)
- Tank Farm - oil storage (orugodawatte)
- Texpro - textile
- Nelna Farm (Pugoda)



# Industrial Wastewater Management in Sri Lanka

National Environmental Act No. 47 of 1980.

## Part IV - Environmental Management and Protection

### Part IV A- Environment Protection

Environment Protection Licence (EPL) Procedure  
Hazardous Waste Management Licence (HWML) procedure

### Part IV B- Environment Quality

Environmental Standards for Emissions  
(Wastewater, Noise, Air emission, Vibration)

### Part IV C- Environment Management

Environmental Impact Assessment (EIA),  
Strategic Environmental Assessment (SEA)

## Industrial Survey 2009-2011

### ■ Data updated in 2013

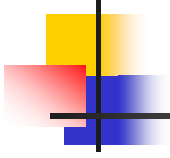
		A Category	B Category	Industries in Western Province –A category
1	Number of Industries	9306	13694	4309
2	Industries having EPL	4819	5704	2660
3	EPL processing	1736	1528	401
4	No EPL	2316	5452	1087
5	Industry closed	435	1010	161

## Island wide wastewater Treatment Plants established & commissioned up to August 2012 (based on sectors)

	Industry sector & categories	Number
1	Chemical	38
2	Food & Beverages	71
3	Alcohol & Alcoholic Beverages	10
4	Metal Finishing & Surface Treatment	12
5	Dairy	14
6	Textile	31
7	Tanning	04
8	Rubber	45
9	Agrochemical	13
10	Pharmaceutical	07
11	Clay, Glass & Ceramic	10
12	Health	04
13	Transport & Vehicle service	220
14	Paper & Pulp	02
15	Sewerage / leachate / common WWTP	17

## Challenges in Wastewater Management

- Financial issues in small and medium enterprises for pollution control
- Lack of low cost pollution control technologies
- Financial & administration constraint for implementation new pollution control strategies
- Weaknesses in law enforcement
- Lack of sewage network facility at least for populated cities
- Unavailability of proper zoning plans in local government authorities



**THANK YOU!**