



TAMIL NADU POLLUTION CONTROL BOARD

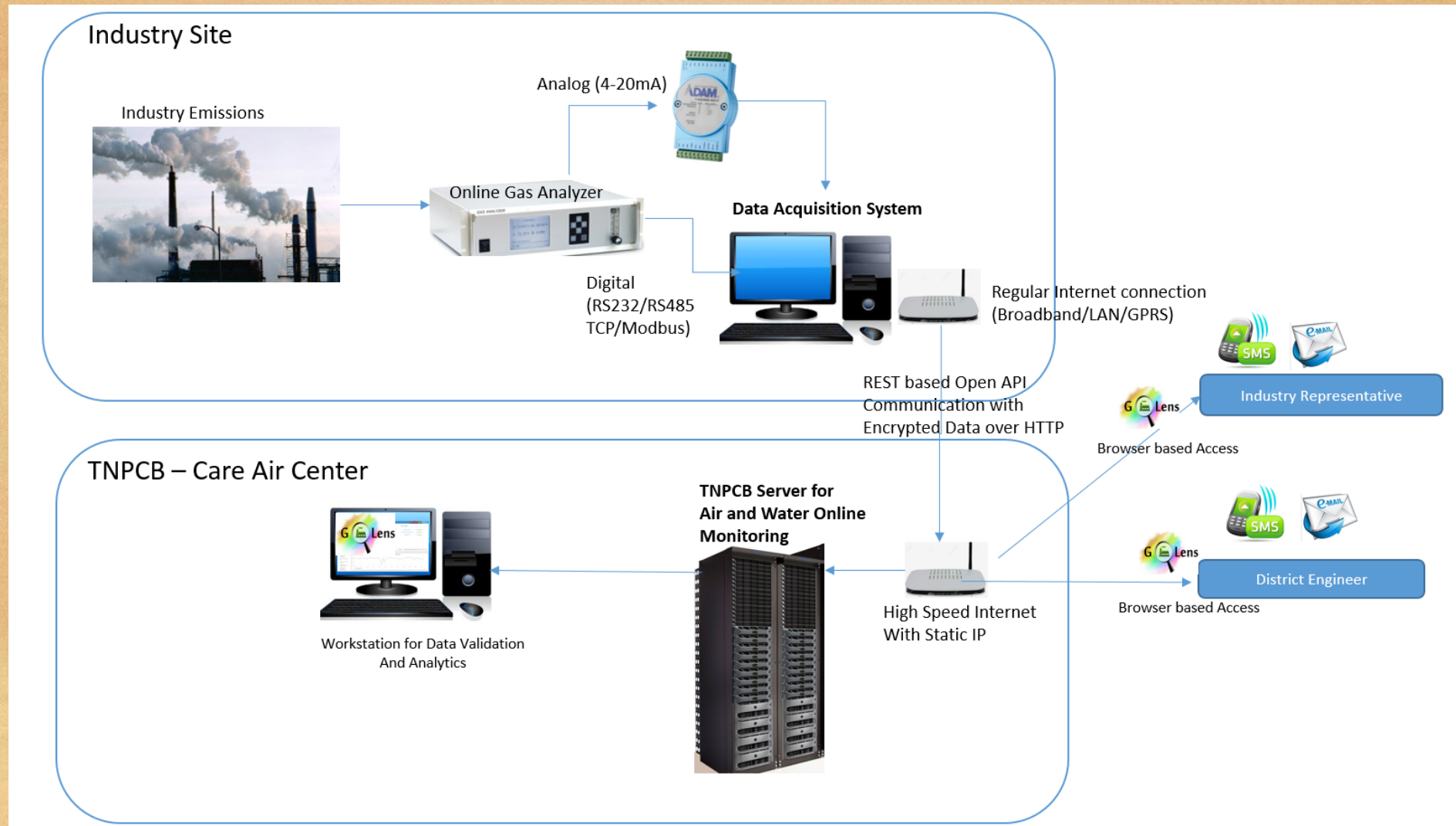
CARE AIR CENTRE

**CENTRE FOR ASSESSING REAL TIME AIR
(QUALITY) INFORMATION REPORTS**

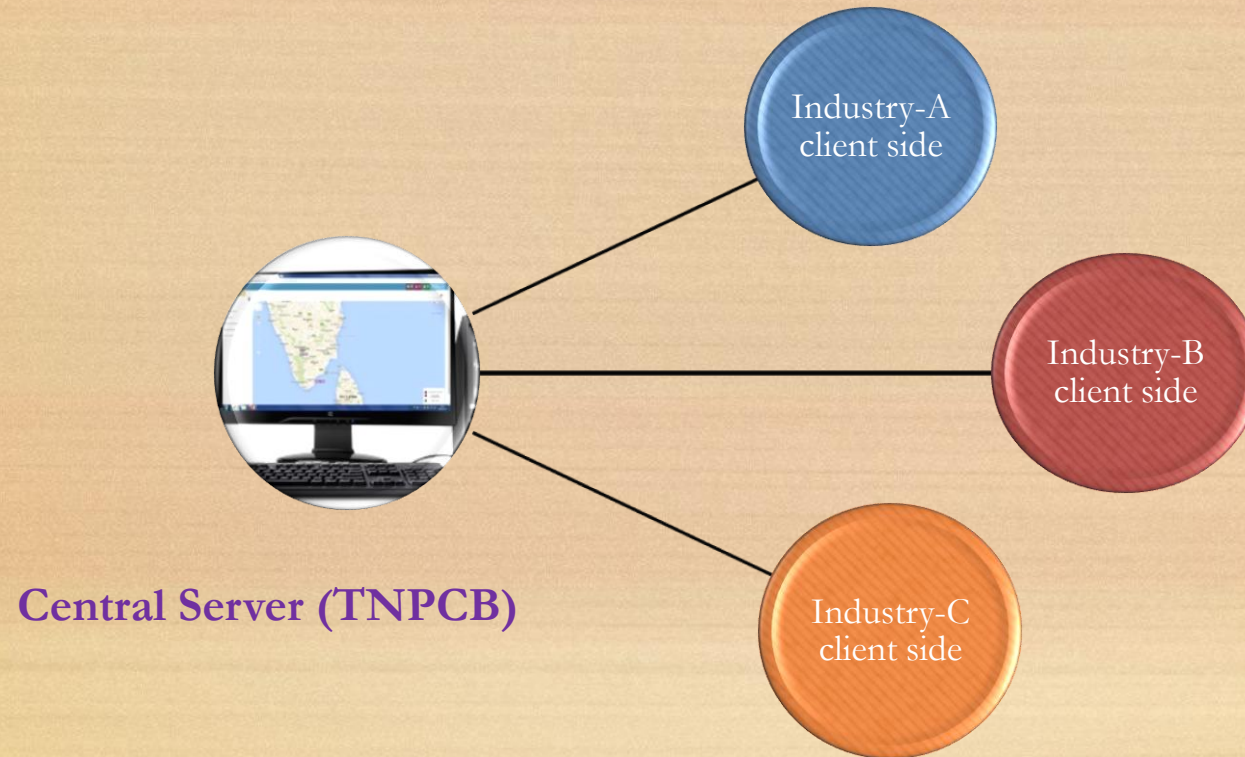
Vision of CARE AIR CENTRE

- To monitor all the industrial emissions in TamilNadu on real time basis to analyse the trend of emissions into the Atmosphere.
- Apart from Emission monitoring, Ambient Air monitoring around the Industrial premises and Effluent parameters are monitored at the Centre

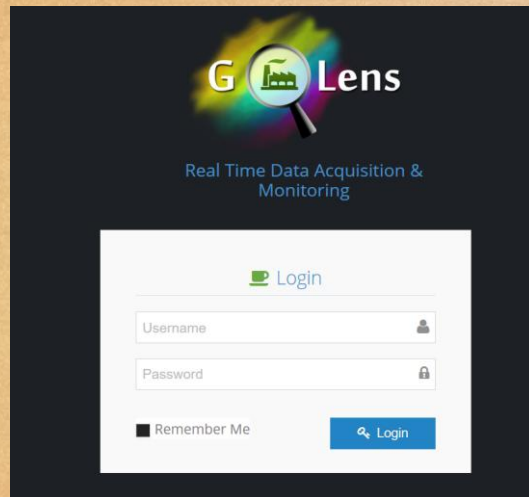
Online Monitoring Client-Server Environment at TNPCB



- In August 2015 the TNPCB has introduced an new client-server environment.
- In this platform the central sever is unique and the client side is an open module.
- To facilitate more connectivity & easy access to industry and regulator.



➤ New Central Server Login Page:



The dashboard displays a map of Tamil Nadu, India, with various monitoring sites marked. The sites are color-coded: purple for 'Connection Failure', red for 'Parameter Exceedance', and green for 'Site Active'. A legend in the bottom right corner explains these colors. The map includes labels for major cities like Chennai, Madurai, and Coimbatore, and various monitoring sites such as SAAPL, JSACF, JCALAY, KCP, UAL-PL, Jmpl, and GRN FER. The top navigation bar shows 'Welcome, Sudheesh' and notification icons for 114 messages and 0 alerts. A left sidebar lists menu items: Live Status, Site Status, Data Validation, Wind Rose, Remote Calibration, Report Setup, and Live Camera Feed.

Central Server (TNPCB)

➤ Site Status

G Lens 1 8 0 Welcome, ACCTNPCB

Site Status

Live Status

Site Status

Data Validation

Wind Rose

Remote Calibration

Report Setup

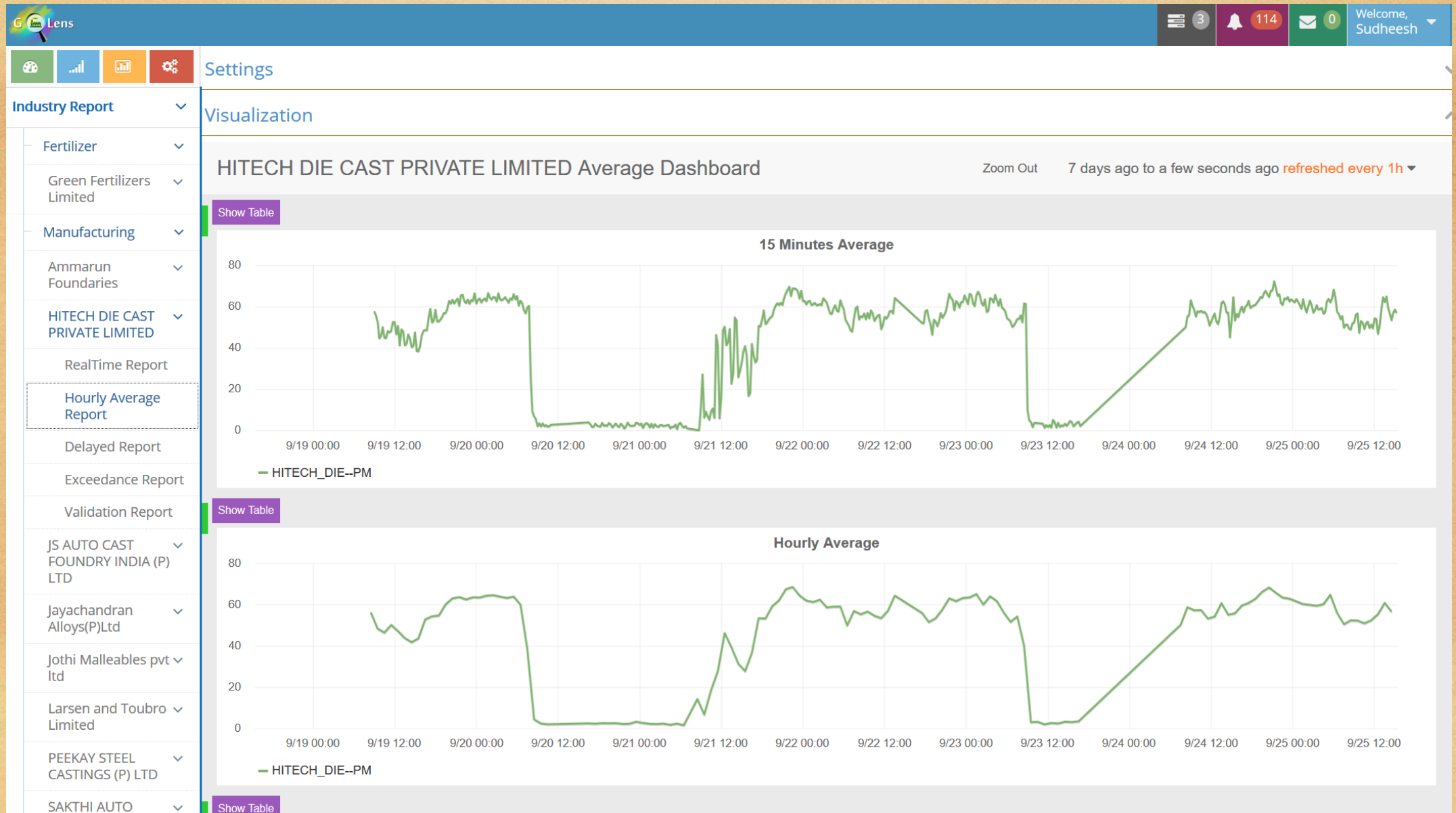
Live Camera Feed

Show entries CSV PDF Search:

Site Name	Site Label	City	Industry	Industry ID	Last Synchronized	Site Status	
Ammarun Foundaries	AF	coimbatore	Manufacturing	site_107	12 minutes ago	Active	
Green Fertilizers Limited	GRN_FER	Tuticorin	Fertilizer	site_102	11 days ago	Inactive	
HITECH DIE CAST PRIVATE LIMITED	HDCPL	Achipatti,Kurumbapalayam Village	Manufacturing	site_109	12 minutes ago	Active	
Jayachandran Alloys(P)Ltd	JCA	Coimbatore	Manufacturing	site_104	24 days ago	Inactive	
Jothi Malleables pvt ltd	JMPL	Trichy	Manufacturing	site_106	12 minutes ago	Active	
JS AUTO CAST FOUNDRY INDIA (P) LTD	JSACF	COIMBATORE	Manufacturing	site_105	11 minutes ago	Active	
KARUR KCP PACKKAGINGS LTD	KCP	POLLACHI	Thermal Power	site_103	13 minutes ago	Active	
Larsen and Toubro Limited	LATL	Coimbatore	Manufacturing	site_108	12 minutes ago	Active	
PEEKAY STEEL CASTINGS (P) LTD	PEEKAY	Coimbatore	Manufacturing	site_112	12 minutes ago	Active	
SAKTHI AUTO ANCILLARY PRIVATE LIMITED	SAAPL	Coimbatore	Manufacturing	site_111	12 minutes ago	Active	
UNICAST ALLOYS LTD	UAL	Kurumbapalayam,Achipatti	Manufacturing	site_110	12 minutes ago	Active	

Showing 1 to 11 of 11 entries Previous 1 Next

➤ Data Analysis at CAC TNPCB



Automated Alerts sent to the Industry & Regulator

6 Lens

Welcome, ACCTNPCB

Acknowledge View UnRead ✕

Showing 1 to 10 of 10 entries Search:

<input type="checkbox"/>	Site Name	City	Monitoring Type	Monitoring ID	Time Created	Parameter Name	Alarm Message	Alarm Category	Alarm Priority
<input type="checkbox"/>	Green Fertilizers Limited	Tuticorin	Ambient	SPIC_AAQMS	2015-09-04T12:07:53	Wind_Direction	Green Fertilizers Limited Exceedance Wind_Direction 145.0 Degree(100.0 Degree) at 2015-09-04 12:07:53.	Critical	Very High
<input type="checkbox"/>	HUMAN BIOLOGICAL INSTITUTE	Ooty	Effluent	ETP	2015-07-03T23:20:44	TSS	HUMAN BIOLOGICAL INSTITUTE Exceedance TSS 247.918991089 mg/l(100.0 mg/l) at 2015-07-03 23:20:44.	Critical	Very High
<input type="checkbox"/>	HUMAN BIOLOGICAL INSTITUTE	Ooty	Effluent	ETP	2015-07-10T12:25:55	TSS	HUMAN BIOLOGICAL INSTITUTE Exceedance TSS 104.431945801 mg/l(100.0 mg/l) at 2015-07-10 12:25:55.	Critical	Very High
<input type="checkbox"/>	Green Fertilizers Limited	Tuticorin	Ambient	SPIC_AAQMS	2015-09-04T18:41:52	Wind_Direction	Green Fertilizers Limited Exceedance Wind_Direction 187.0 Degree(100.0 Degree) at 2015-09-04 18:41:52.	Critical	Very High
<input type="checkbox"/>	Green Fertilizers Limited	Tuticorin	Ambient	SPIC_AAQMS	2015-09-05T00:44:56	Wind_Direction	Green Fertilizers Limited Exceedance Wind_Direction 240.0 Degree(100.0 Degree) at 2015-09-05 00:44:56.	Critical	Very High
<input type="checkbox"/>	KARUR KCP PACKKAGINGS LTD	POLLACHI	Emission	POWER_PLANT	2015-09-08T05:36:08	NOx	KARUR KCP PACKKAGINGS LTD Exceedance NOx 107.724 mg/Nm3(100.0 mg/Nm3) at 2015-09-08 05:36:08.	Critical	Very High
<input type="checkbox"/>	KARUR KCP PACKKAGINGS LTD	POLLACHI	Emission	POWER_PLANT	2015-09-06T10:45:42	NOx	KARUR KCP PACKKAGINGS LTD Exceedance NOx 107.724 mg/Nm3(100.0 mg/Nm3) at 2015-09-06 10:45:42.	Critical	Very High

Parameters Monitored at CAC

Emission Parameters

- ❖ PM
- ❖ SO₂
- ❖ NO_x
- ❖ CO
- ❖ CO₂
- ❖ THC
- ❖ VOC
- ❖ NH₃
- ❖ HF
- ❖ Cl₂
- ❖ HCl
- ❖ Mercapton
- ❖ VCM
- ❖ Fluorine
- ❖ Flow
- ❖ Temp

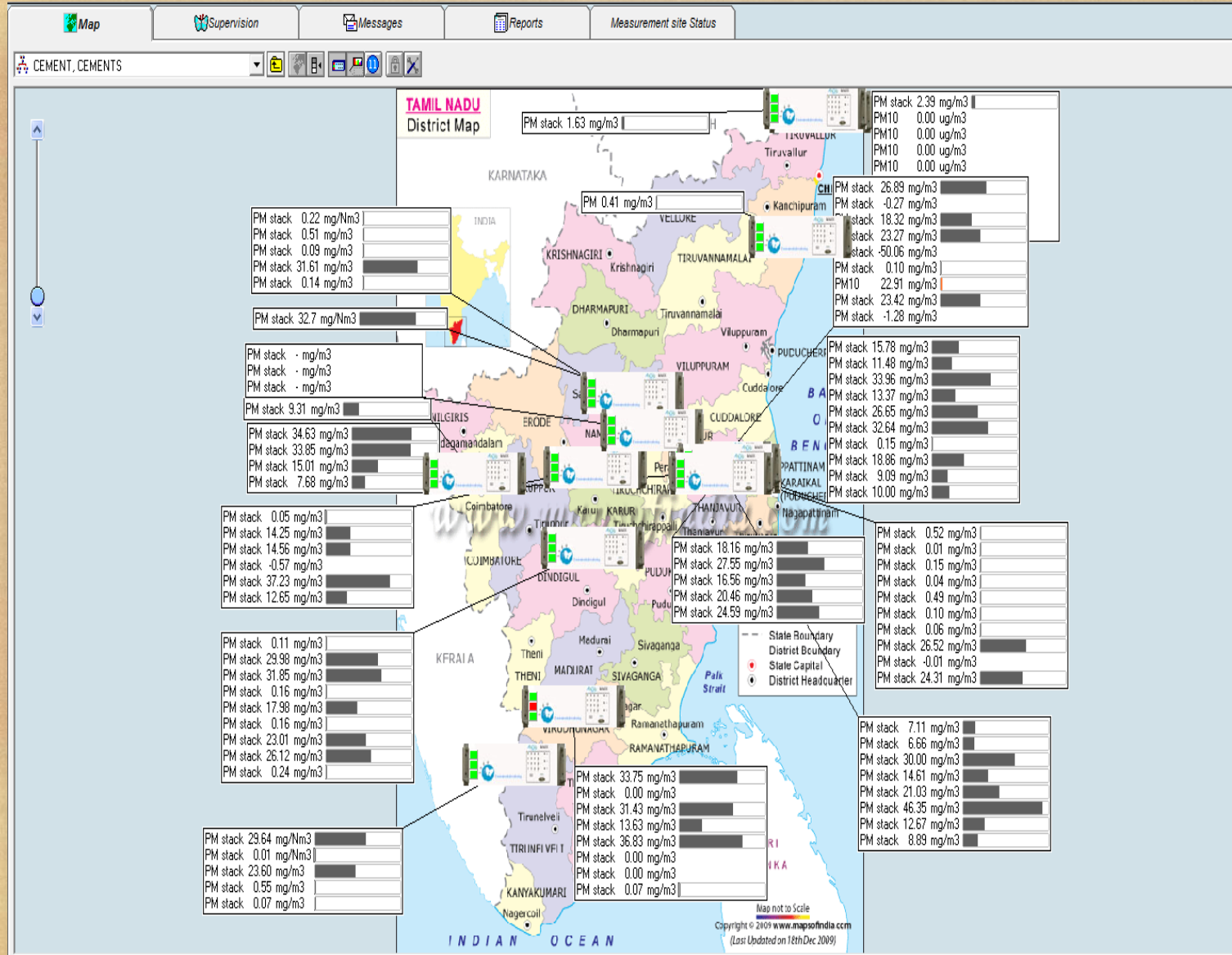
Ambient Parameters

- ❖ PM₁₀
- ❖ PM_{2.5}
- ❖ SO₂
- ❖ NO
- ❖ NO₂
- ❖ NO_x
- ❖ CO
- ❖ C₆H₆
- ❖ Cl₂
- ❖ HCl
- ❖ VOC
- ❖ NH₃
- ❖ CH₄
- ❖ HCNM
- ❖ Fluorine
- ❖ HCT
- ❖ VCM
- ❖ O₃
- ❖ Bromine
- ❖ Hydrogen
- ❖ RH
- ❖ Temp
- ❖ Wind Direction
- ❖ Wind speed

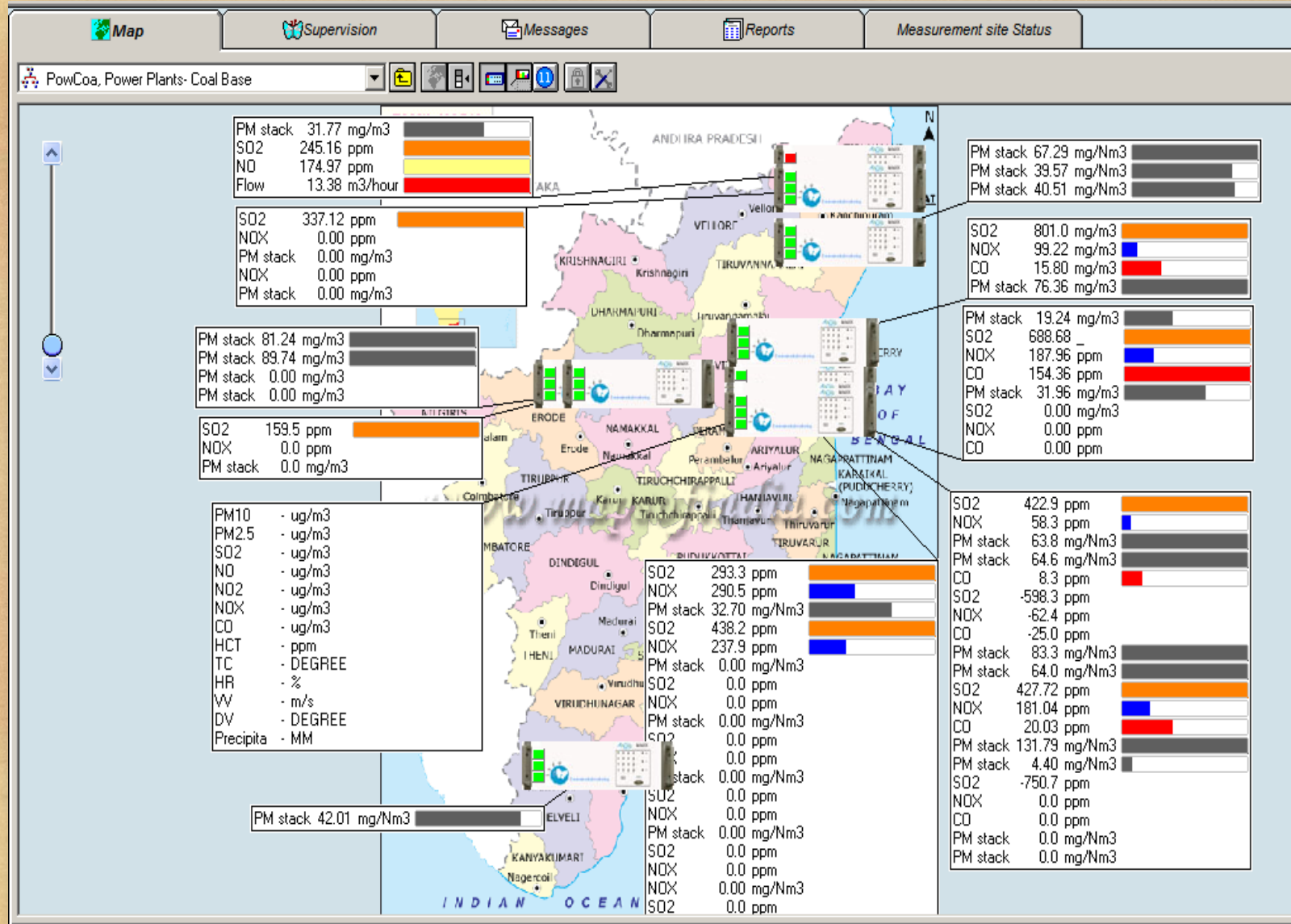
Effluent Parameters

- ❖ pH
- ❖ TDS
- ❖ Flow
- ❖ Temperature

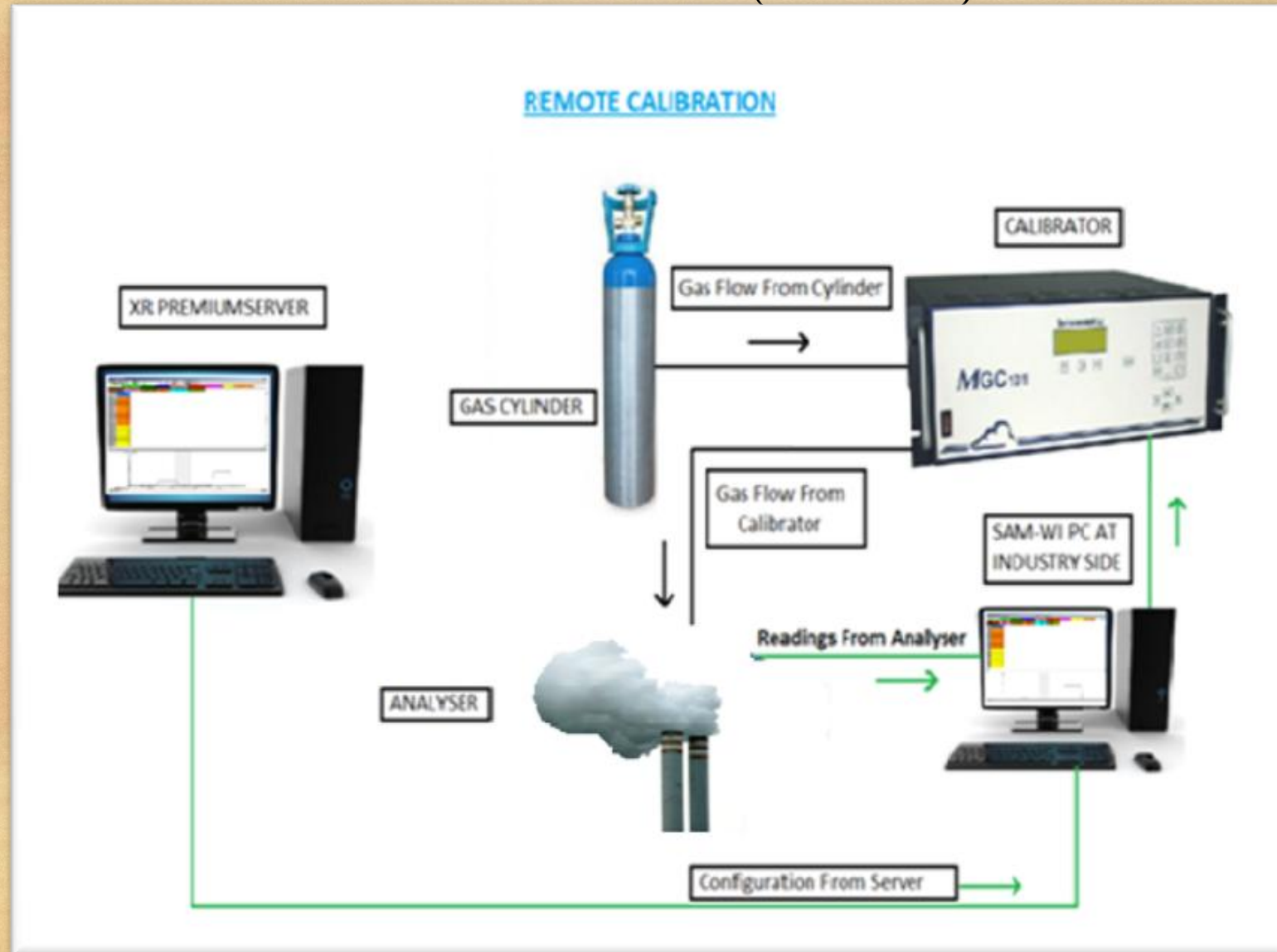
Sector Wise Monitoring (Cement plants)



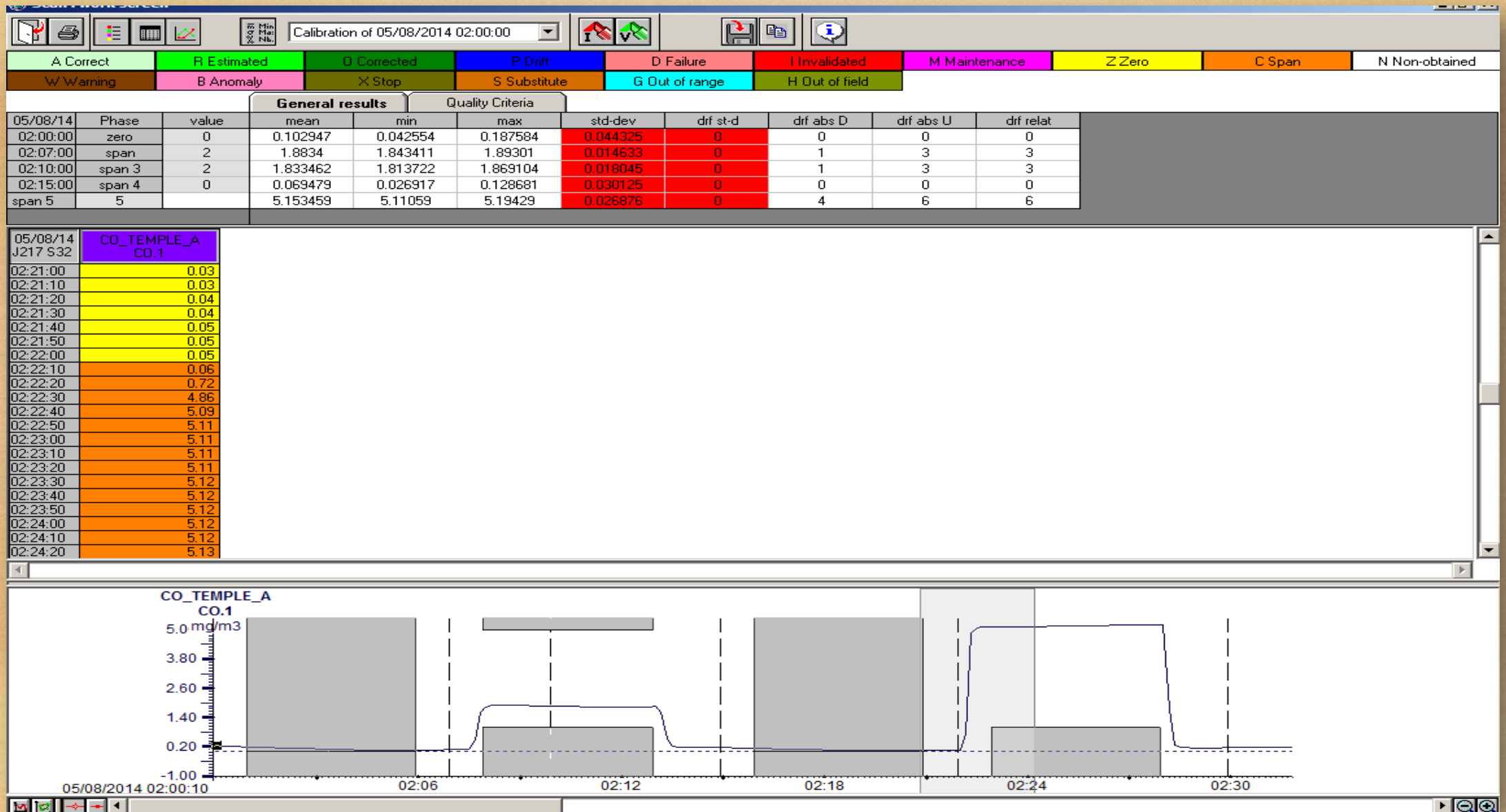
Sector Wise Monitoring (Power plants)



Online Remote Calibration performed at Care Air Centre(TNPCB)



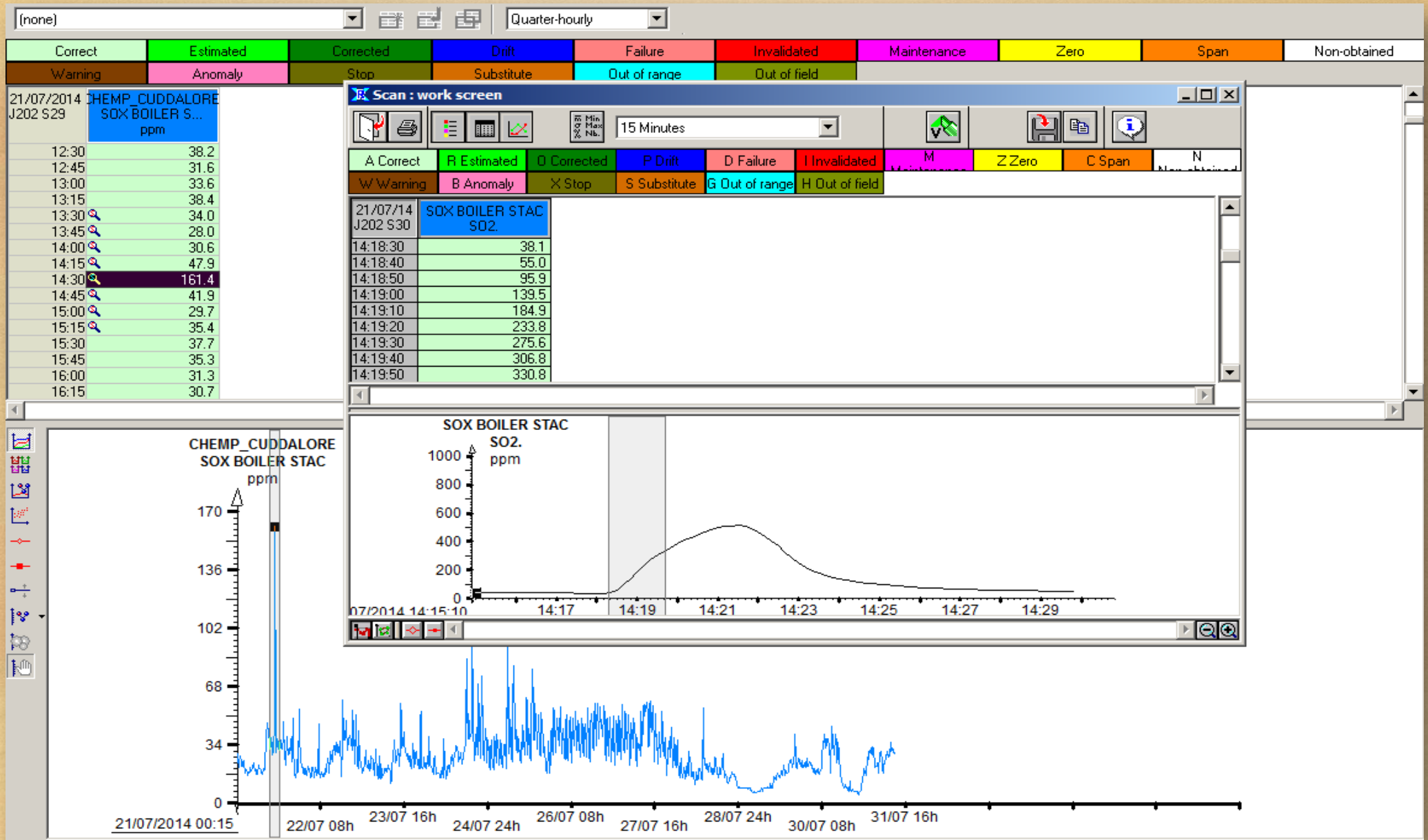
Calibration Details



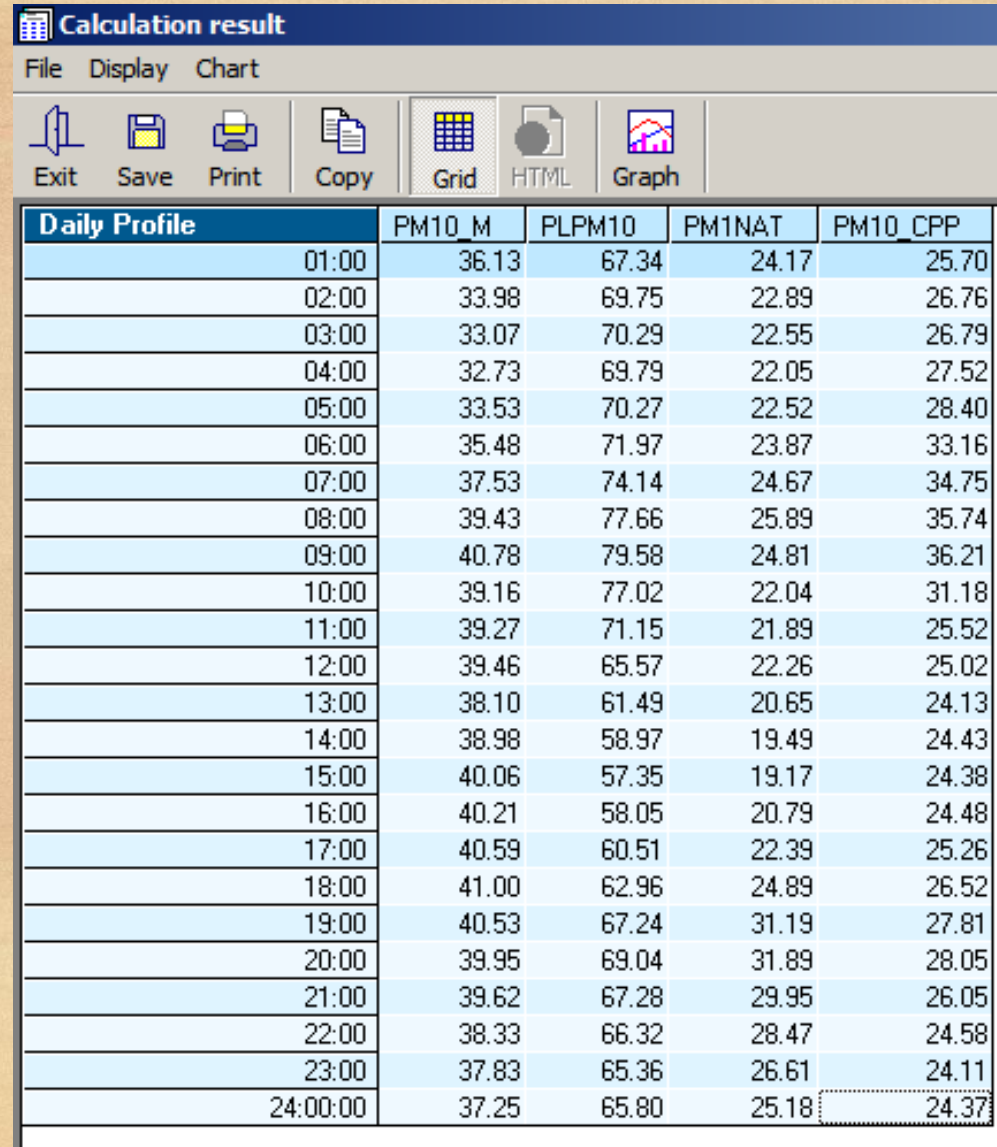
Report on Calibration

ZERO (PHASE I)													
Date and Time	Standard value	Measured value	min	max	st-dev	st-dev dr	abs dr lo	abs dr hi	rel drift	IPD1	IPD2	IPD3	IPD4
	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3
05/08/2014 02:00:00	0.00	0.10	0.04	0.19	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SPAN GAS-2 mg/m³ (PHASE II)													
Date and Time	Standard value	Measured value	min	max	st-dev	st-dev dr	abs dr lo	abs dr hi	rel drift	IPD1	IPD2	IPD3	IPD4
	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3
05/08/2014 02:07:00	2.00	1.88	1.84	1.89	0.01	0.00	1.00	3.00	3.00	0.00	0.00	0.00	0.00
ZERO (PHASE III)													
Date and Time	Standard value	Measured value	min	max	st-dev	st-dev dr	abs dr lo	abs dr hi	rel drift	IPD1	IPD2	IPD3	IPD4
	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3
05/08/2014 02:15:00	0.00	0.07	0.03	0.13	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SPAN GAS-5 mg/m³ (PHASE IV)													
Date and Time	Standard value	Measured value	min	max	st-dev	st-dev dr	abs dr lo	abs dr hi	rel drift	IPD1	IPD2	IPD3	IPD4
	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3
05/08/2014 02:17:00	5.00	5.15	5.11	5.19	0.03	0.00	4.00	6.00	6.00	0.00	0.00	0.00	0.00

Data- Exceedance



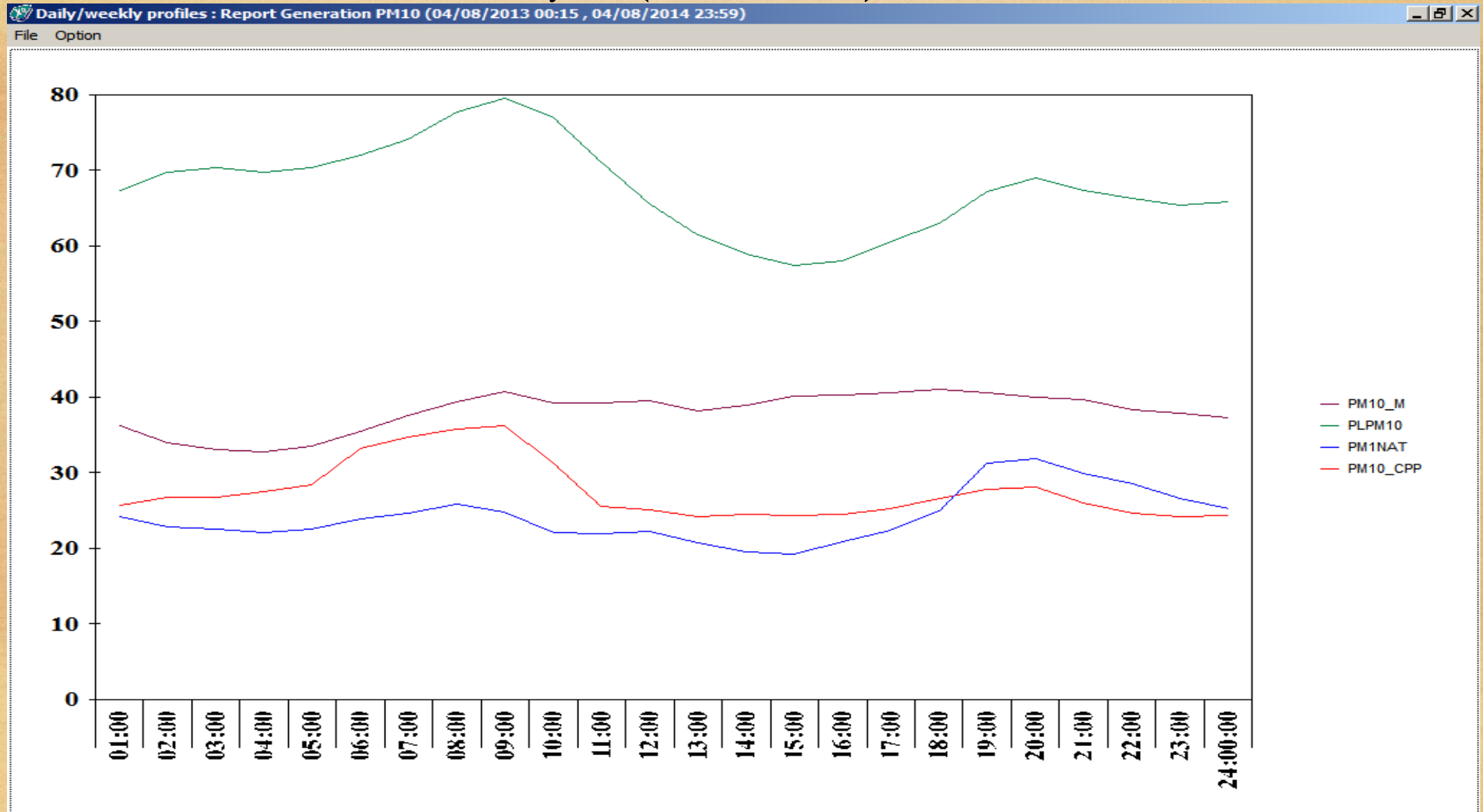
Daily profile Report of different Analyser model and make in a Industry Area.



The screenshot displays a software window titled "Calculation result" with a menu bar containing "File", "Display", and "Chart". Below the menu bar is a toolbar with icons for "Exit", "Save", "Print", "Copy", "Grid", "HTML", and "Graph". The main area of the window contains a table with the following data:

Daily Profile	PM10_M	PLPM10	PM1NAT	PM10_CPP
01:00	36.13	67.34	24.17	25.70
02:00	33.98	69.75	22.89	26.76
03:00	33.07	70.29	22.55	26.79
04:00	32.73	69.79	22.05	27.52
05:00	33.53	70.27	22.52	28.40
06:00	35.48	71.97	23.87	33.16
07:00	37.53	74.14	24.67	34.75
08:00	39.43	77.66	25.89	35.74
09:00	40.78	79.58	24.81	36.21
10:00	39.16	77.02	22.04	31.18
11:00	39.27	71.15	21.89	25.52
12:00	39.46	65.57	22.26	25.02
13:00	38.10	61.49	20.65	24.13
14:00	38.98	58.97	19.49	24.43
15:00	40.06	57.35	19.17	24.38
16:00	40.21	58.05	20.79	24.48
17:00	40.59	60.51	22.39	25.26
18:00	41.00	62.96	24.89	26.52
19:00	40.53	67.24	31.19	27.81
20:00	39.95	69.04	31.89	28.05
21:00	39.62	67.28	29.95	26.05
22:00	38.33	66.32	28.47	24.58
23:00	37.83	65.36	26.61	24.11
24:00:00	37.25	65.80	25.18	24.37

Hourly Profile of PM₁₀ in Industry Area for Period of 1year(2013-2014)



TAMILNADU POLLUTION CONTROL BOARD

Water Quality WATCH CENTER



EFFLUENT MONITORING

Vision of Water Quality Watch

1. To build a Real Time Monitoring System for Water Pollution Monitoring in terms of quantitative measurements and qualitative measurements.
2. To monitor operations of Effluent Treatment plants, performance evaluation of waste water recovery system, and reject management system.
3. To ensure Zero Liquid Discharge System (ZLDS) of IETPs and CETPs.
4. To monitor member unit as part of CETPs.
5. Monitoring of water quality of river and water bodies.

Water Quality Monitoring & Parameters

1. Effluent Discharge from Industries

- BOD, COD, TSS, pH, Temp, Flow

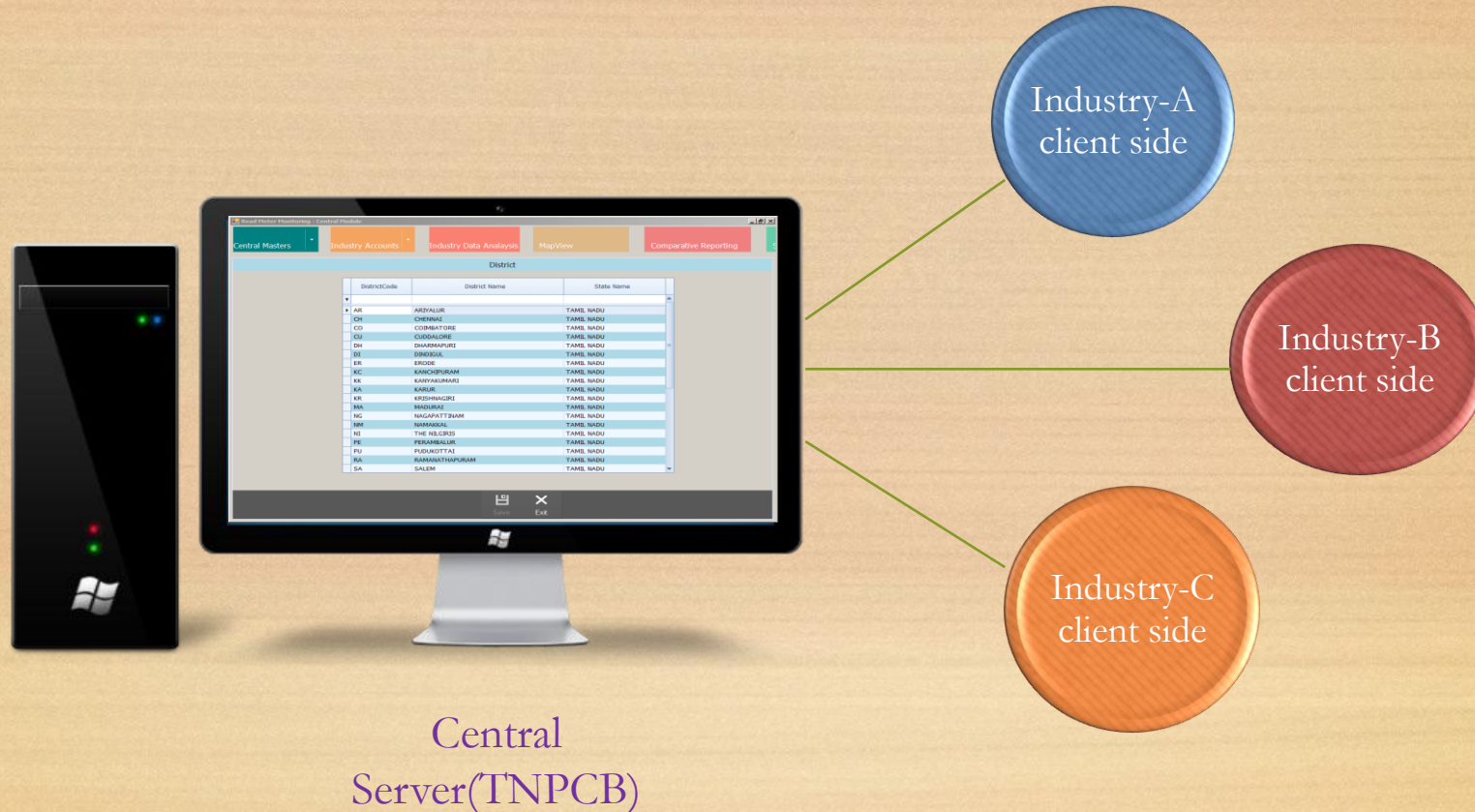
2. ZLDS Units

- Water, Energy, Steam, DO, pH, TDS, Pressure, Tank Level

3. Rivers & Water Bodies

- Temperature, TDS, DO, pH, Depth

- In August 2015 the TNPCB has introduced an new client-server environment for WQW
- WQW is exclusively for effluent monitoring , the data are in cumulative basis.



Water Quality Trend Graph – TSS in mg/Litre

Readmeter Server - Industry Analysis - TNPL - KARUR

Select Unit ZLDS Monitoring Trend Chart Data Density Alerts Manager Graphical Report

Meter Type

Select All

BOD

COD

Flow

PH

TSS

Select Template

Meters

Select All

BOD

COD

Flow

pH

Period

From 05-Sep-15 12:00 AM

To 24-Sep-15 11:59 PM

7 Days 30 Days 90 Days

Frequency

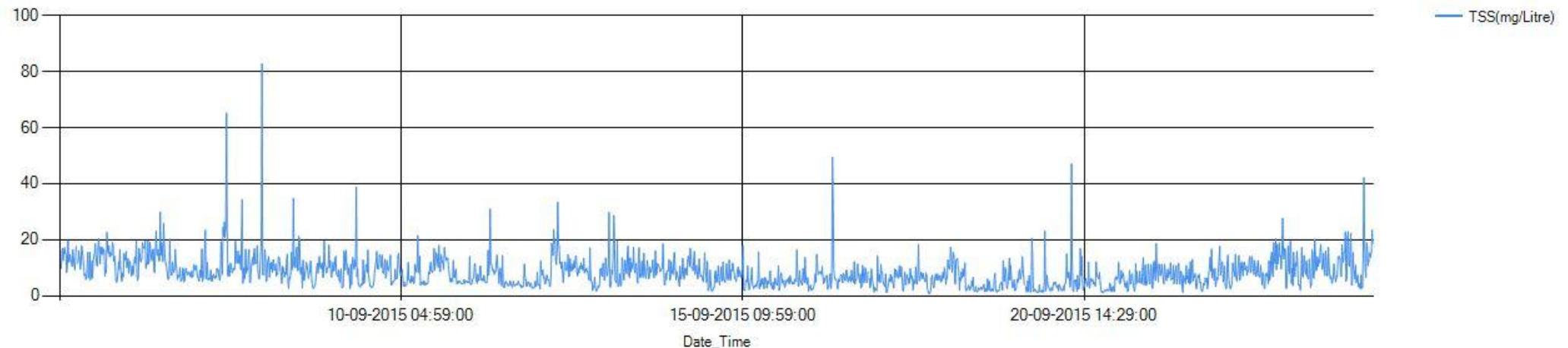
Every 15 Minute(s)

Report

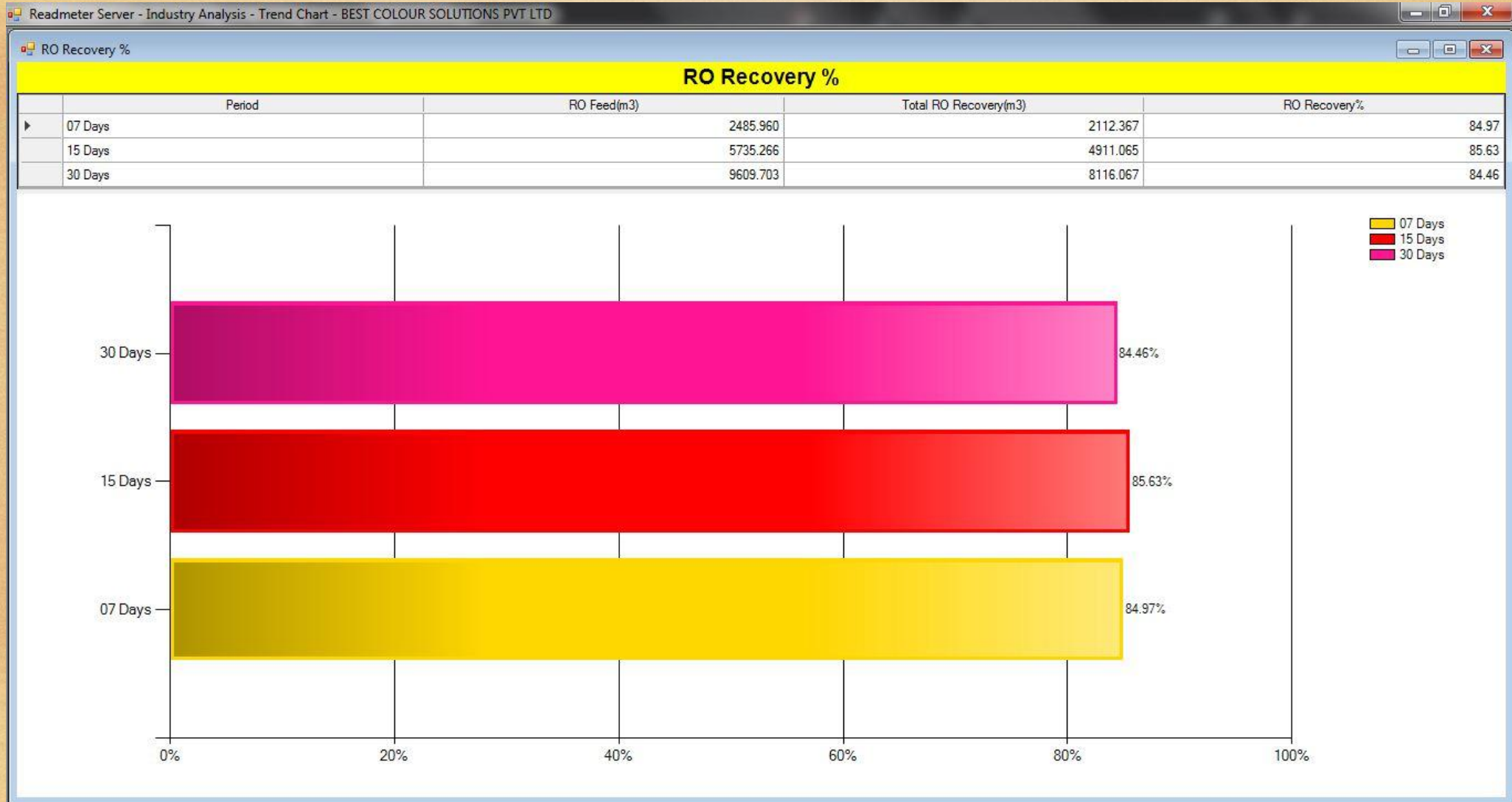
From : 05-Sep-15 12:00 AM To : 24-Sep-15 11:59 PM @ 15 Minute(s) Data Consolidation

	Date_time	BOD(mg/Litre)	COD(mg/Litre)	Flow(m3/hr)	pH(pH)	TSS(mg/Litre)
▶	05-09-15 12:14 AM	6.904	152.927	944.813	7.534	12.188
	05-09-15 12:29 AM	6.896	151.260	960.802	7.531	9.858
	05-09-15 12:44 AM	6.915	155.169	977.167	7.540	15.679
	05-09-15 12:59 AM	6.929	156.044	986.792	7.538	16.906
	05-09-15 01:14 AM	6.901	153.231	955.979	7.527	12.640
	05-09-15 01:29 AM	6.904	155.454	881.854	7.536	15.881
	05-09-15 01:44 AM	6.959	156.267	852.198	7.544	17.196

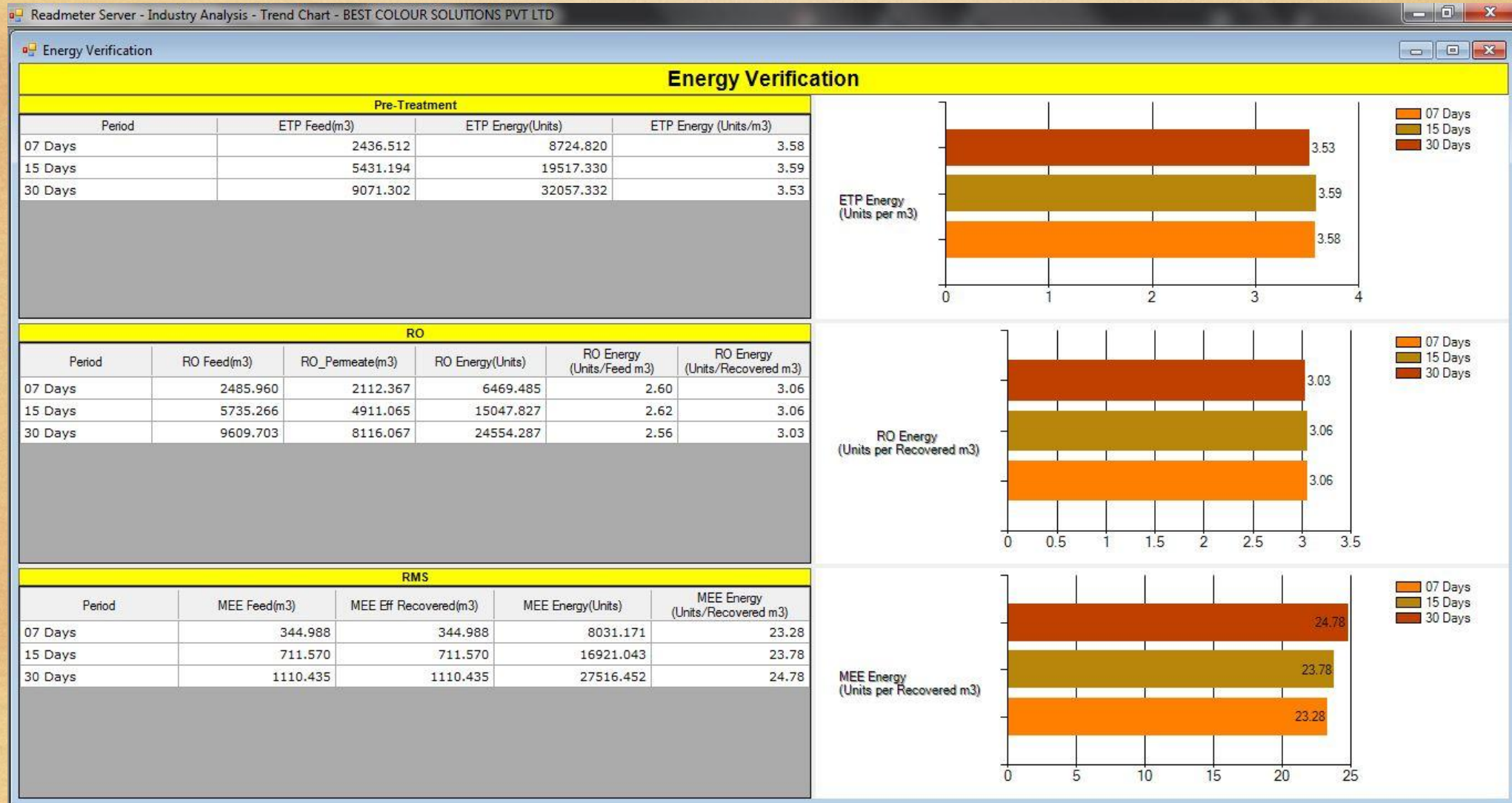
MF Report



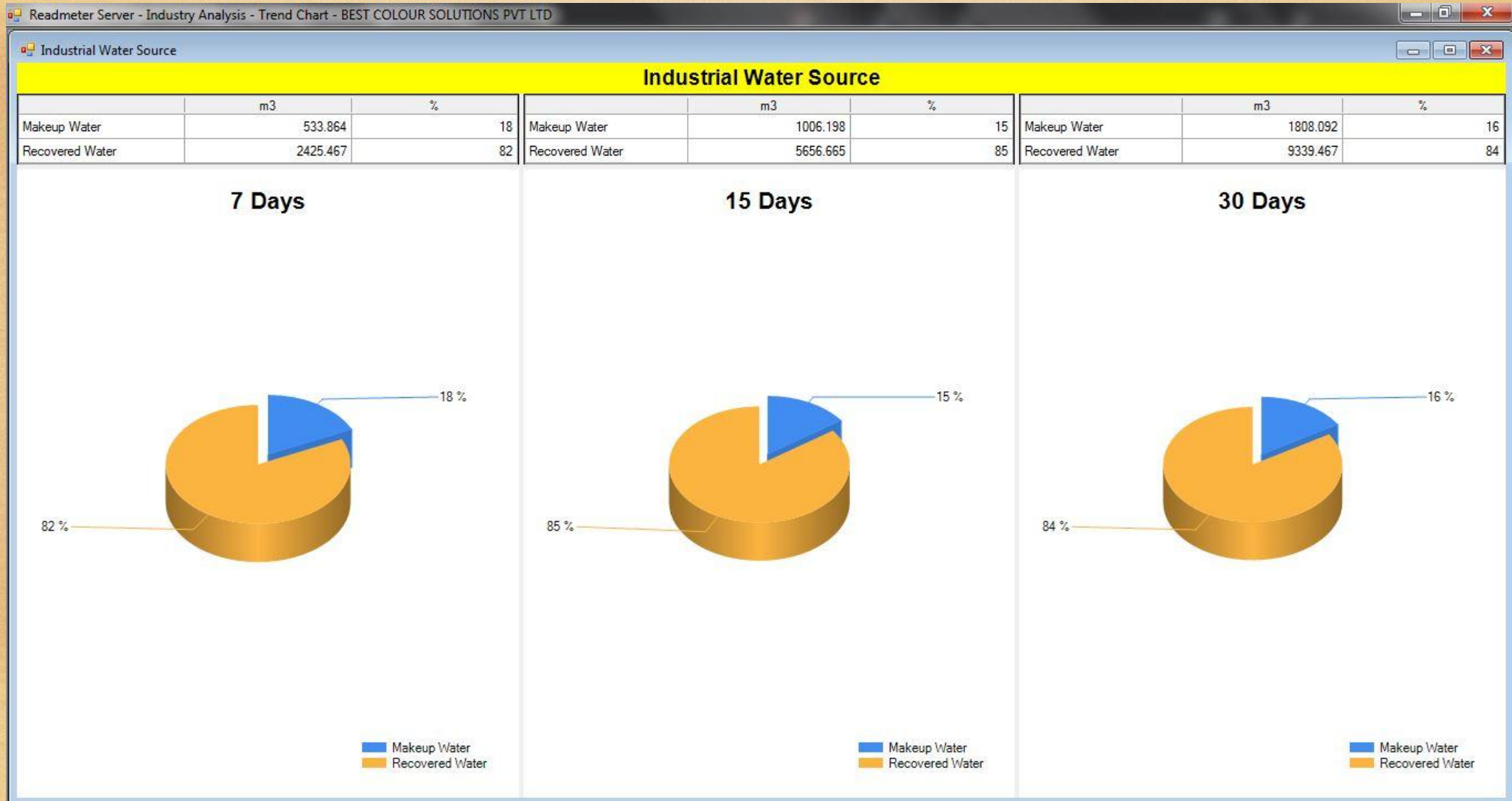
ZLDS Performance – RO Recovery



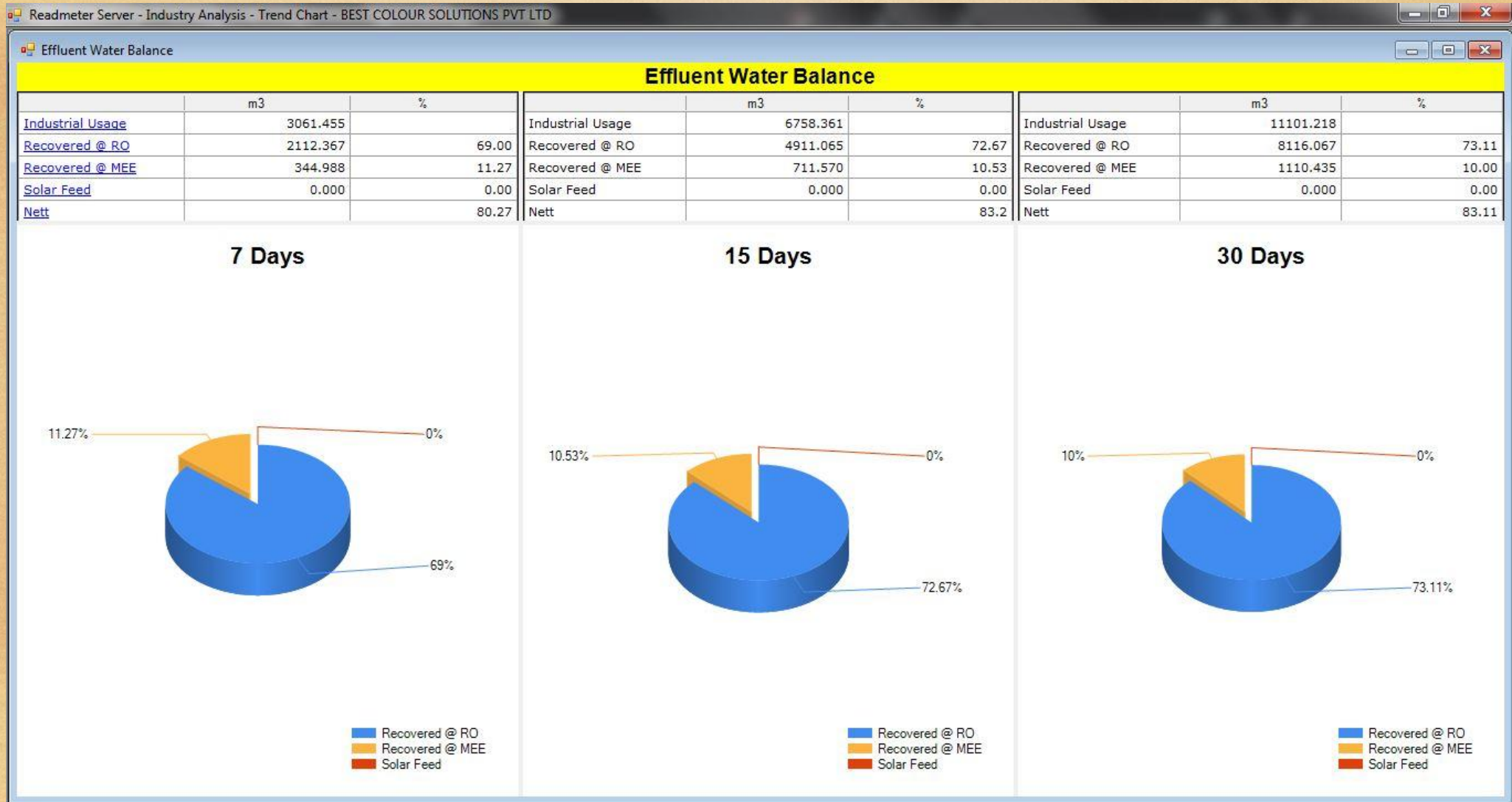
ZLDS Performance – Energy Audit



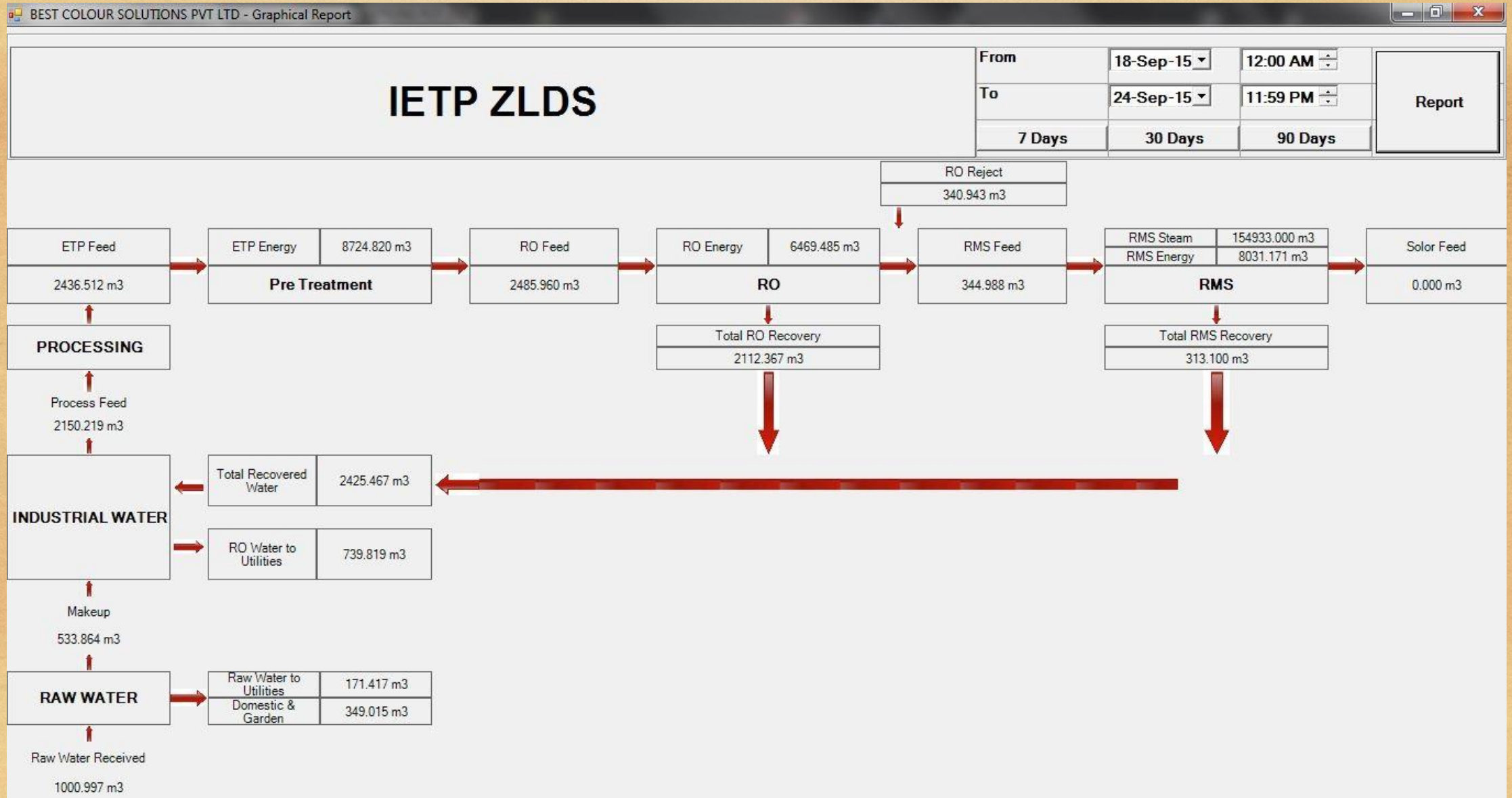
ZLDS Performance and Industrial and makeup water



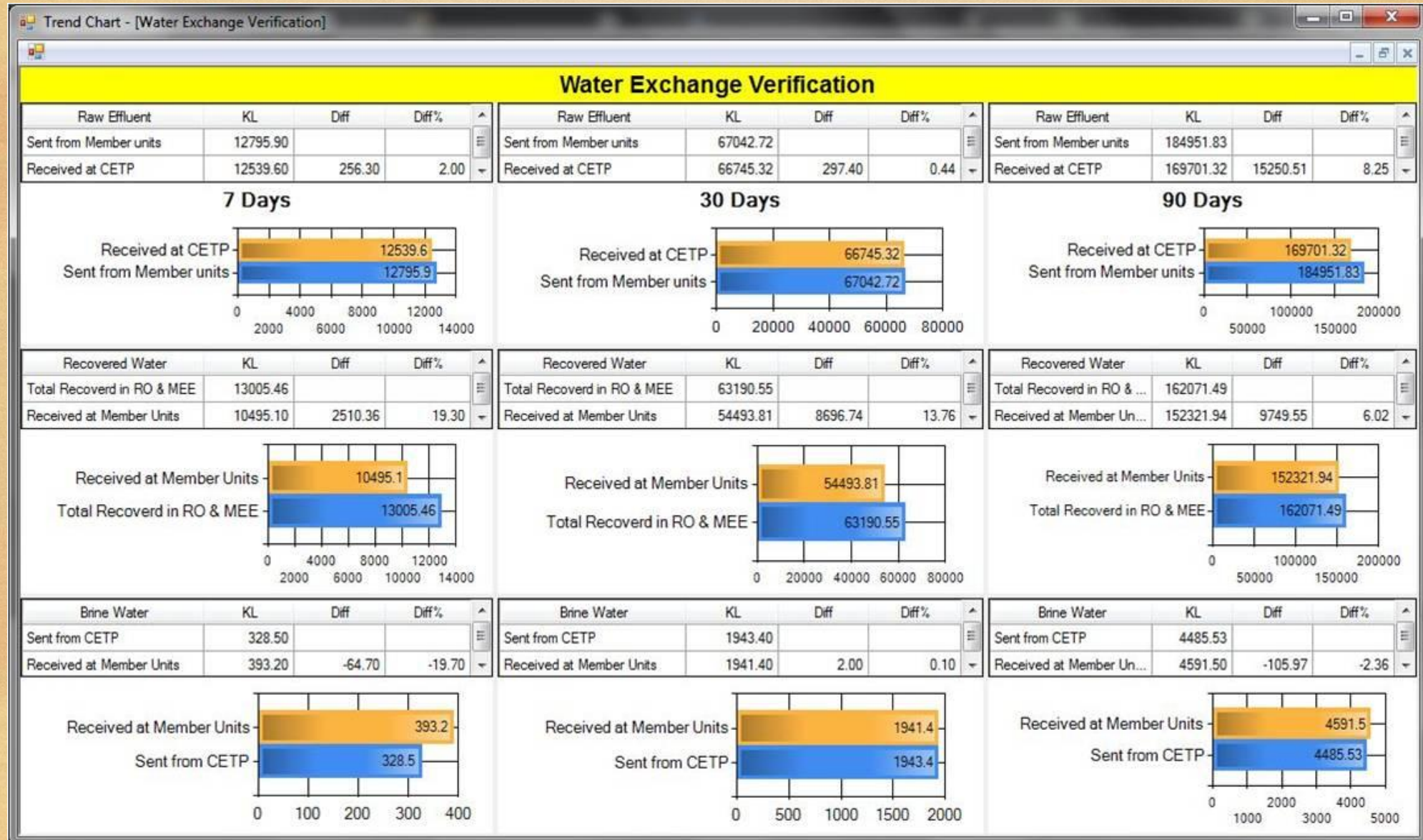
ZLDS Performance – Water Balance



ZLDS Performance – Full Schematic

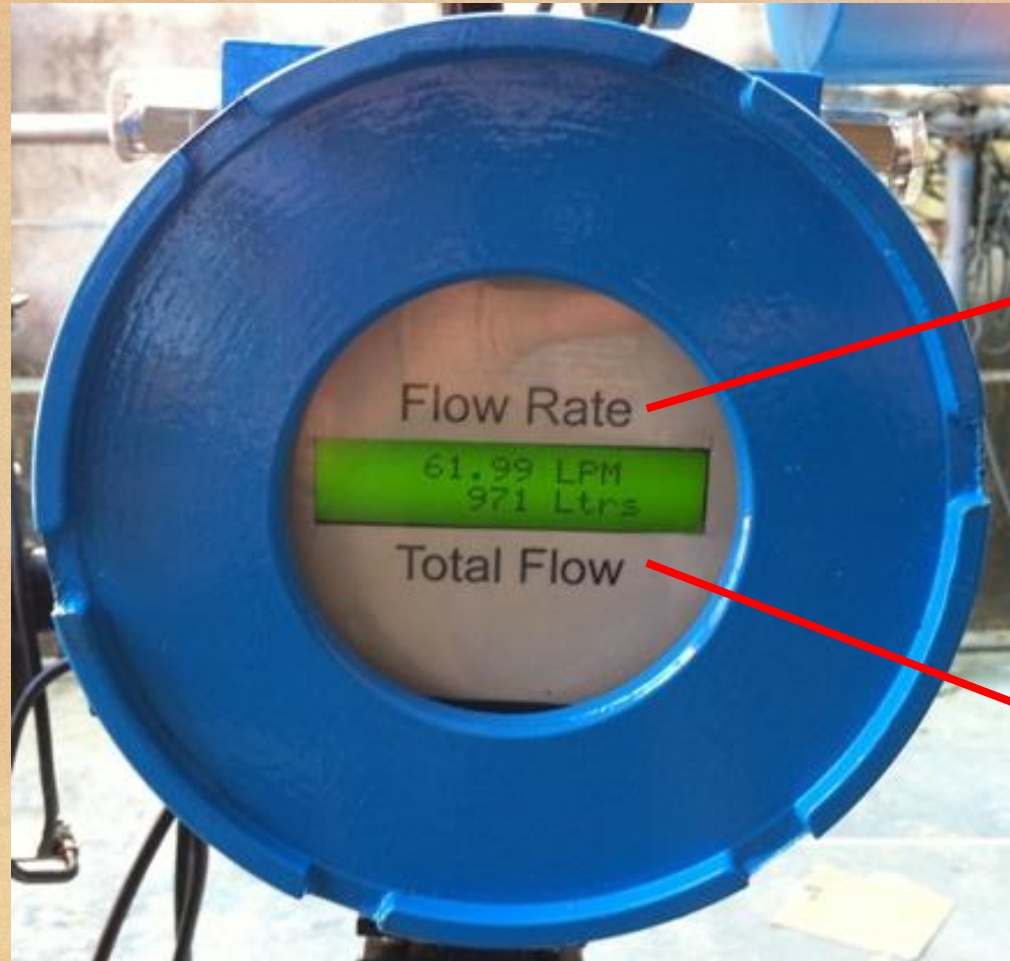


Water Exchange Verification between CETP & Member Units



Quantitative Monitoring

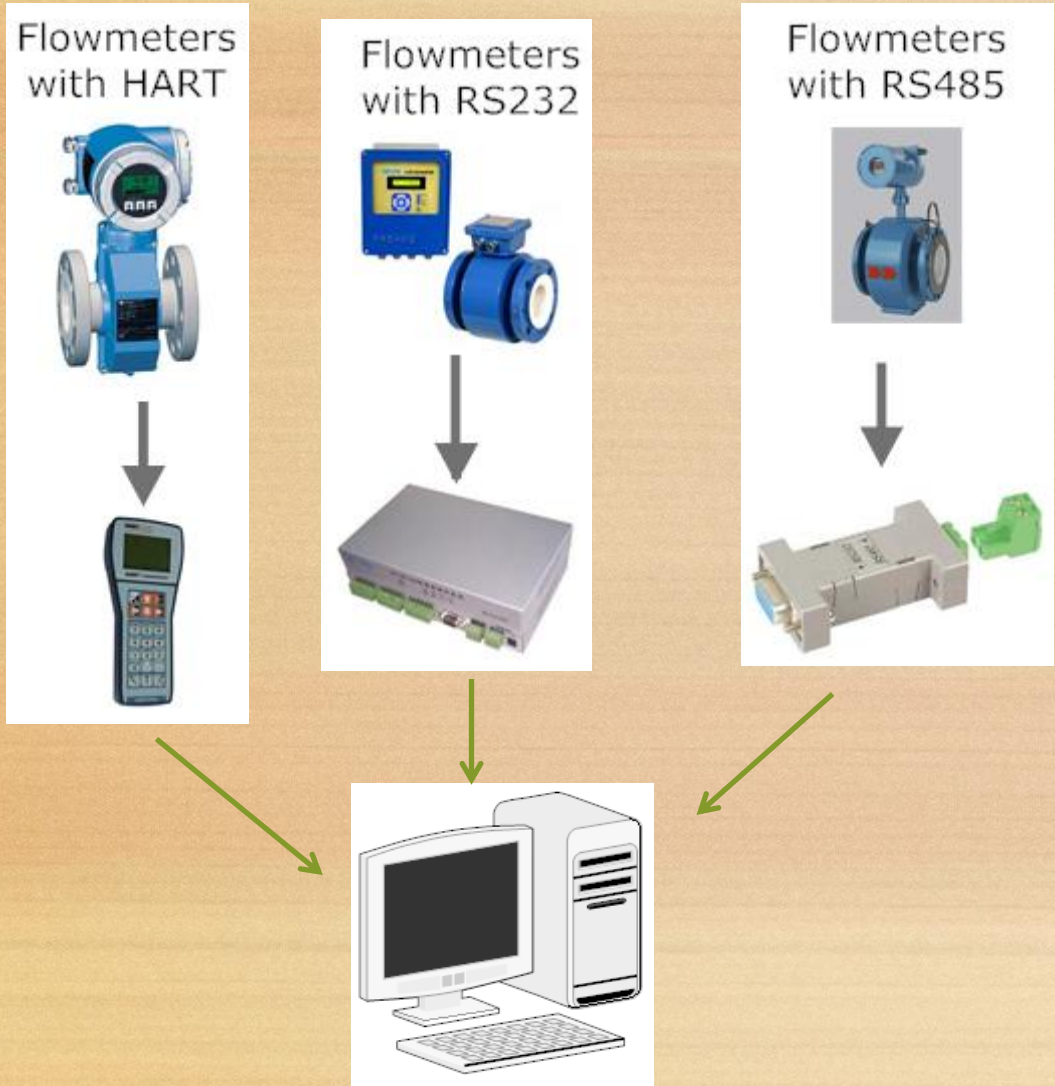
Electro Magnetic Flow Meter (EMFM)



Instantaneous Value

Cumulative Value

Digital Communication Technology



Both
Flow Rate & Total Flow
can be read from
Flow Meter to Computer
(without conversion)

Issues in online Monitoring

- No Quality analyser
- Connecting thru in between logic
- Manipulating data
- Sensors are sold as analyser in Indian market for cheap price to convince the regulator.
- No trained manpower
- Limited knowledge CEMS management
- Lack of resources to understand the same
- Avoidance of CEMS regime

Basic Requirement of Today in Industries perspective

- Cheap analyser
- Easy un-interrupted data transfer system
- Training
- To conduct Calibration of the analyser with required frequency
- To maintain necessary logs
- Conducting Third party trial and Audits
- Manpower availability

Today requirement in Regulators perspective

- Training
- Understanding CEMS and data management
- Calibration and data Validation
- Establishment of Online monitoring centers
- Generation of Reports
- Preparation of Report for Pollution Mitigation and Management
- Web publishing and Management etc
- Technical manpower



Thank You

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