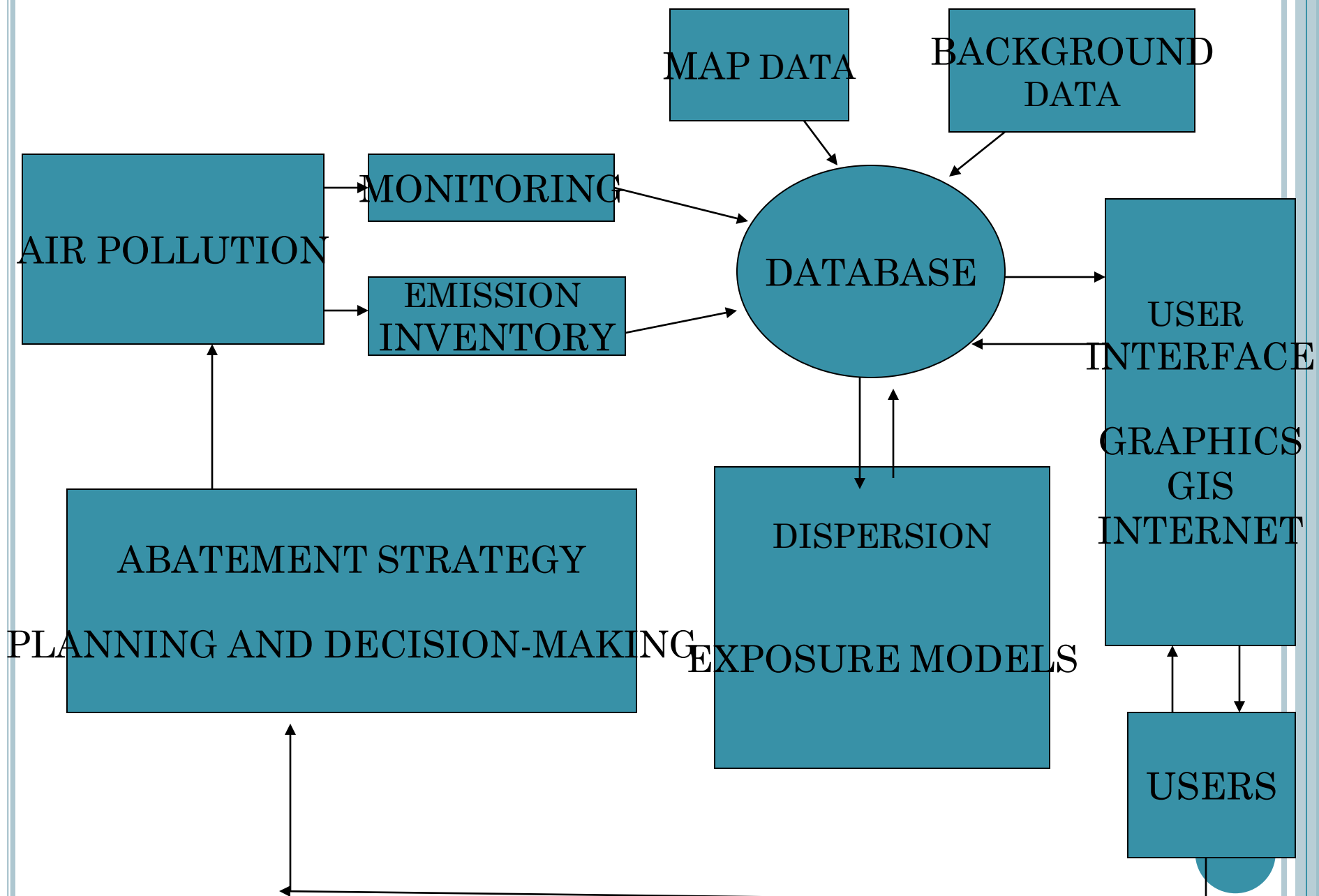




REPUBLIC ACT 8749 OR THE CLEAN AIR ACT OF 1999

AIR QUALITY MANAGEMENT IN THE PHILIPPINES

**TERESITA PERALTA
EMB-DENR**



ELEMENTS OF THE AIR QUALITY MANAGEMENT SYSTEM

Source NILU 2001

EMISSION INVENTORIES

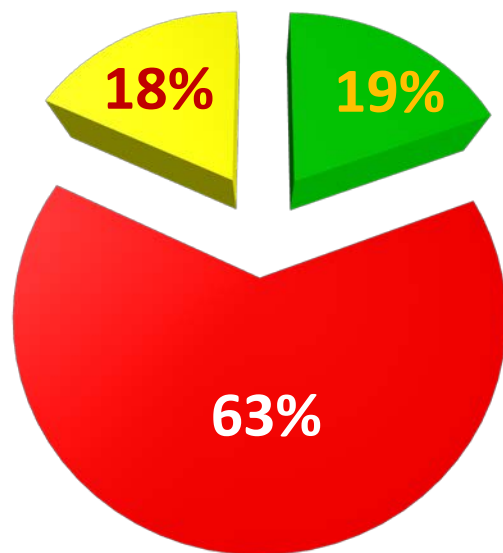
1. Stationary

2. Mobile

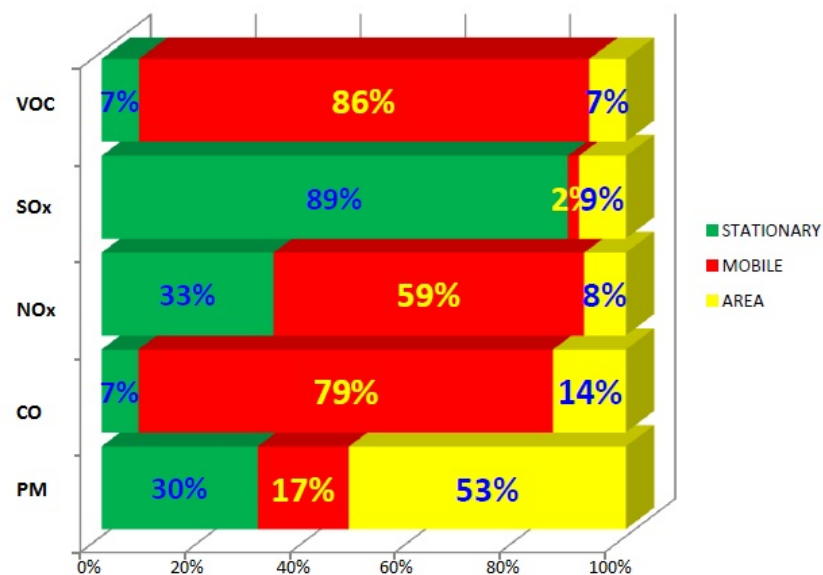
3. Area



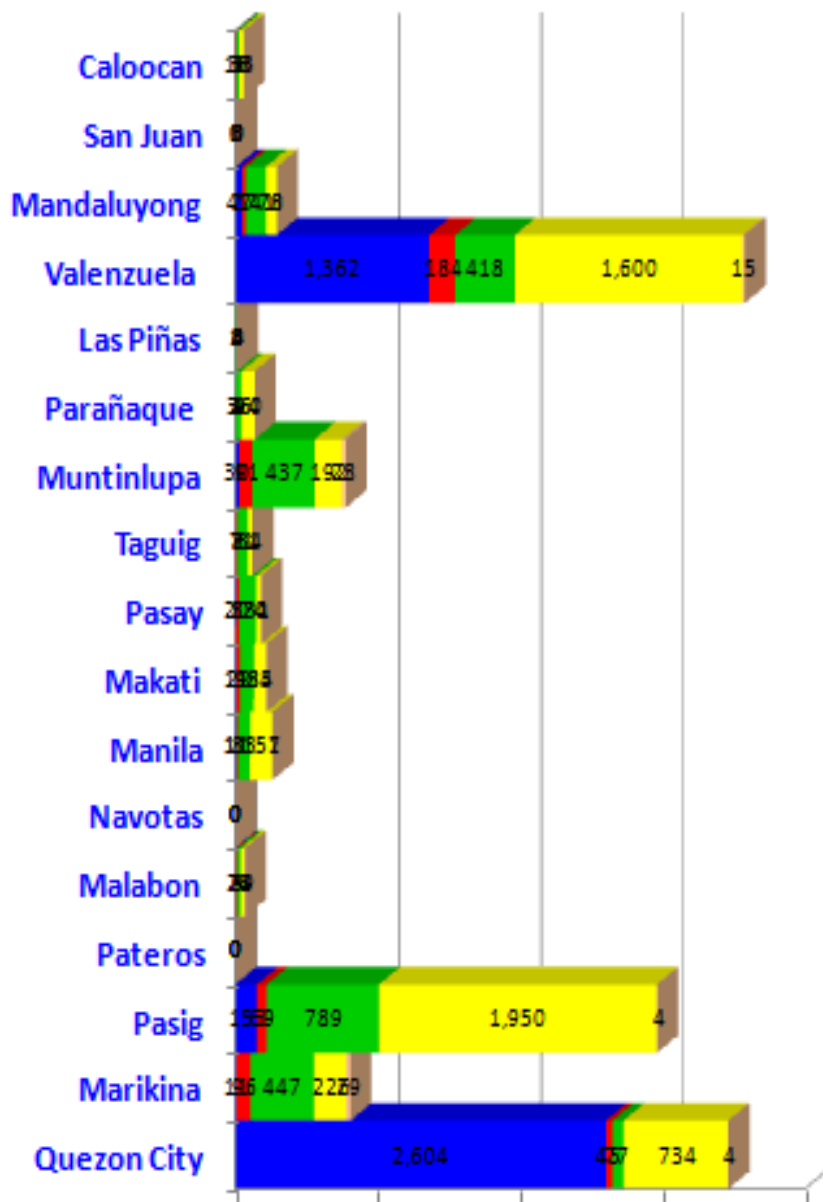
NATIONAL EMISSION INVENTORY, 2009



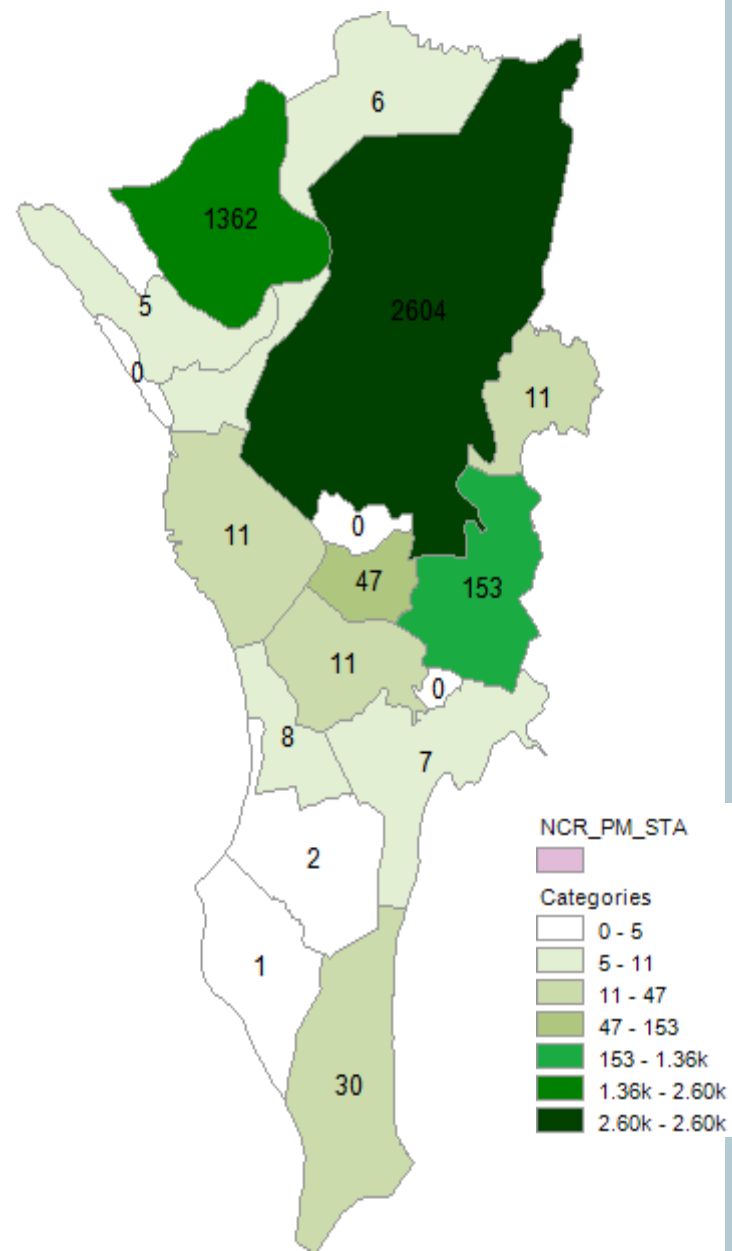
■ STATIONARY ■ MOBILE ■ AREA



2012 NCR-EMISSION INVENTORY (PM) STATIONARY SOURCE



■ PM
■ CO
■ NOX
■ SOX
■ VOC



AIR QUALITY MONITORING

Methods in Air Quality Monitoring

- USEPA 40 CFR, Part 50, Part 53 and Part 58
- FRM and FEM



AIR QUALITY MONITORING



Suspended particulate matter is a major concern in Metro Manila and other urban areas in the Philippines.

TSP

**TOTAL
SUSPENDED
PARTICULATE MATTER**

PM10

**PARTICULATE MATTER
10 MICRON AND
SMALLER**

PM2.5

**PARTICULATE
MATTER 2.5 MICRON
AND SMALLER**

TSP

TOTAL SUSPENDED PARTICULATE

TSP – small airborne particles such as dust, fume and smoke with diameters less than 100 micrometers

HIGH-VOLUME SAMPLER



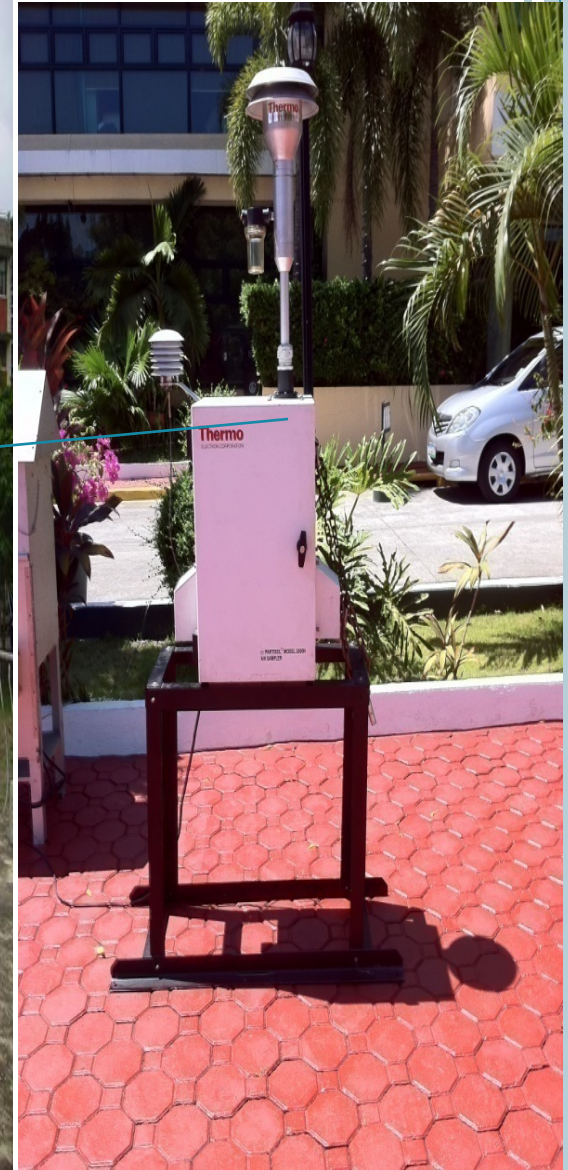
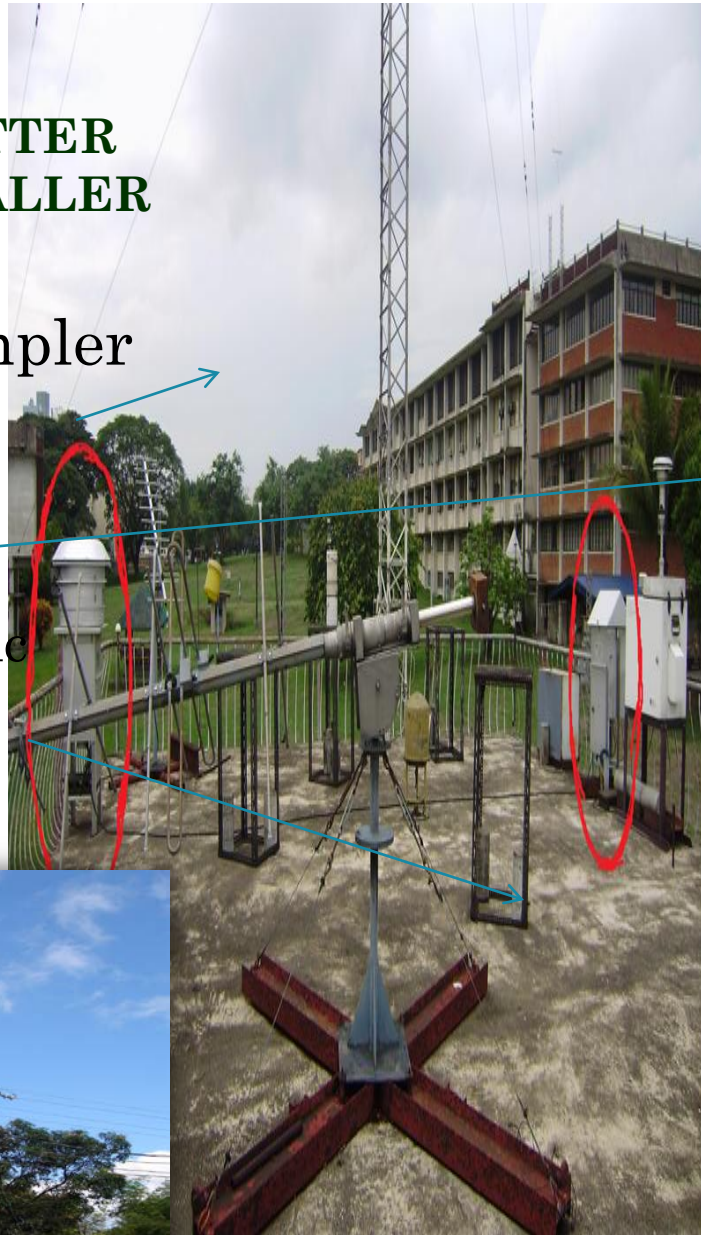
PM10

PARTICULATE MATTER
10 MICRON AND SMALLER

High-Volume Sampler

Partisol Sampler

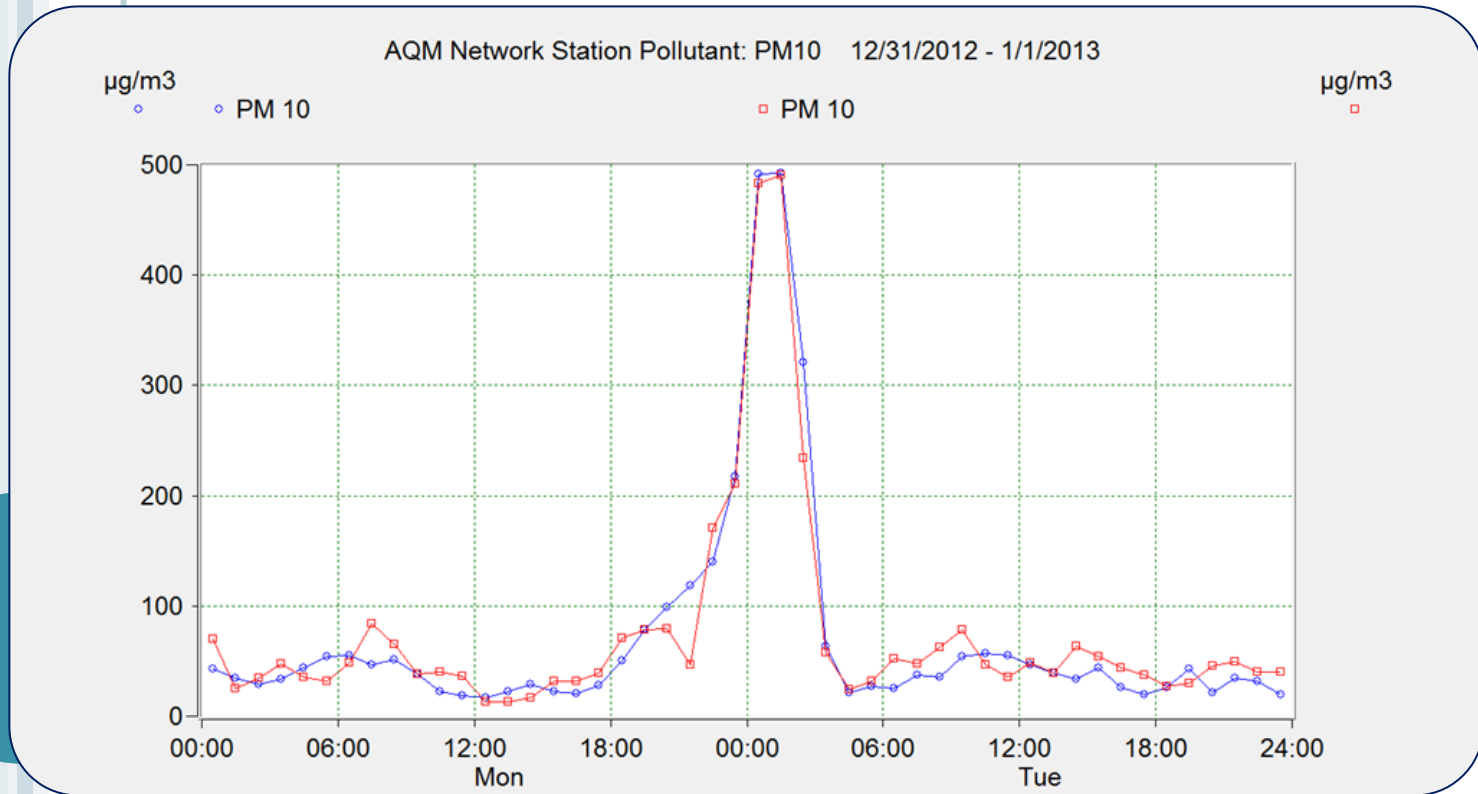
Continuous Automatic
Monitoring Station



PM 10 Concentration

NEW YEAR CELEBRATION

Monitoring result Dec 31, 2012 – Jan 1, 2012



DPWH Cmpd, Quezon City



De La Salle University, Taft, Manila

PM_{2.5}

PARTICULATE MATTER 2.5
MICRON AND SMALLER



CONTINUOUS AUTOMATIC MONITORING STATIONS

CRITERIA POLLUTANTS

PM 10/2.5

SULFUR DIOXIDE

NITROGEN DIOXIDE

CARBON MONOXIDE

OZONE

Other Gases

BENZENE, XYLENE,

TOLUENE



COMPONENTS OF AQMS SYSTEM

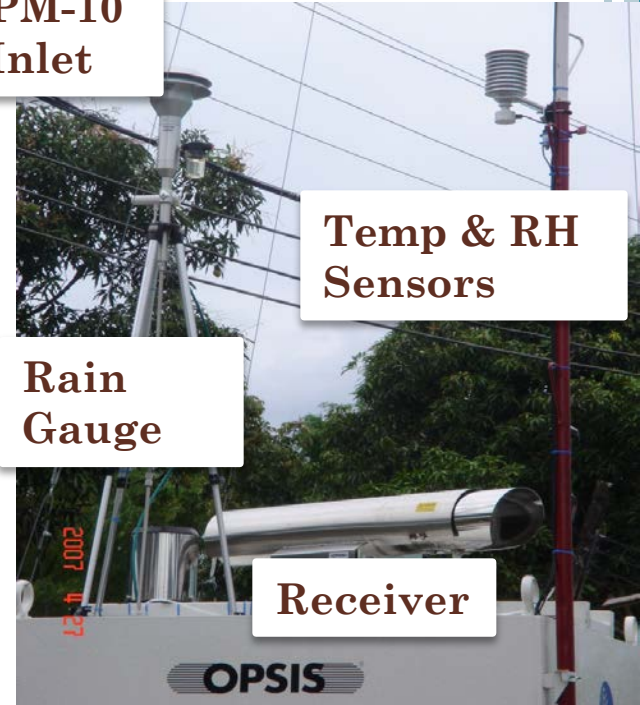
Wind Direction/Speed



Met Tower



PM-10 Inlet



Temp & RH Sensors

Rain Gauge



Receiver

Emitter



AC Units



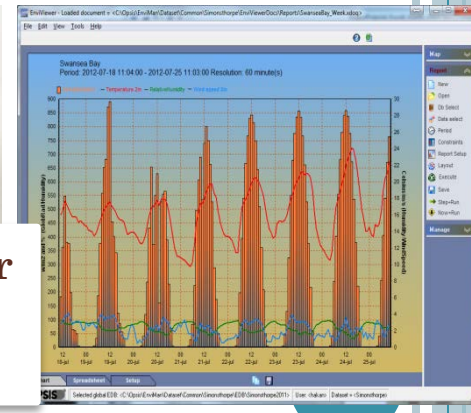
Fiber Optic & Signal Cables



WebBlogger
Broadband
connection



Station's Control Unit &
Data Evaluation System





19" Instrument Rack

DOAS Analyzer

UPS

Particulate Control Unit

Particulate Vacuum Pump

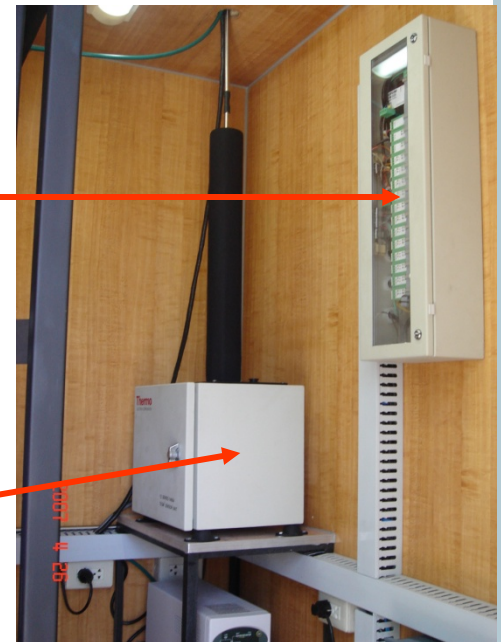
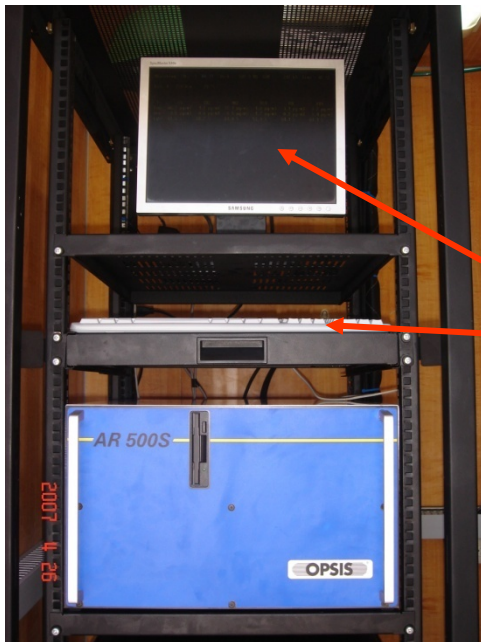


CO Analyzer

Signals Input / Output Box

LCD Monitor & Keyboard

Particulate Sensor Unit



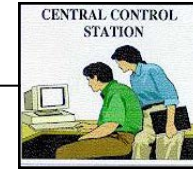
COMMUNICATION SOLUTION

10 Open-path Stations

Location: EMB 1/2/3/4A/5/8/9/11/12/13

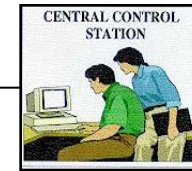


**FTP
SERVE
R**



EMB CENTRAL

EnvViewer



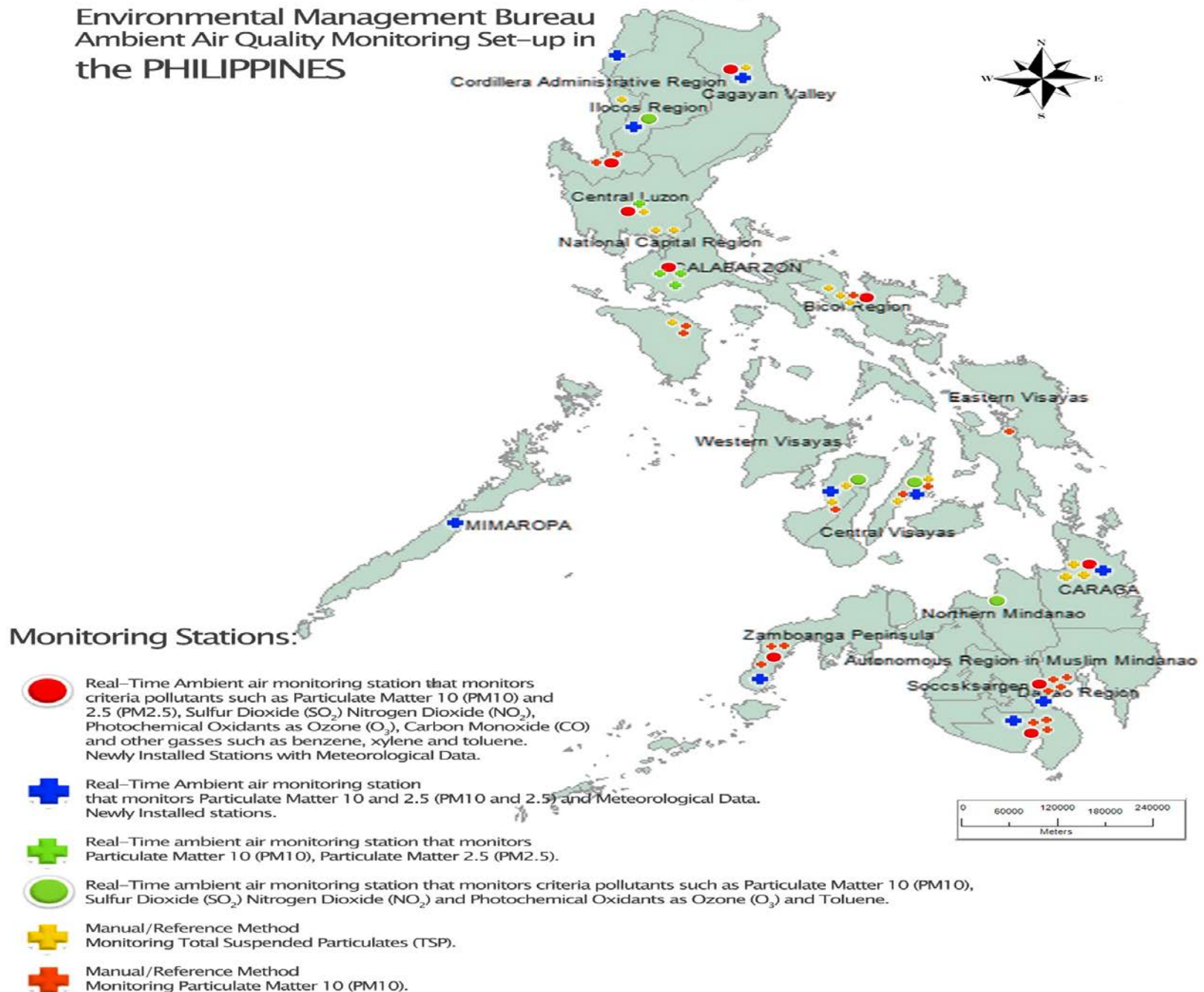
EMB Regions

View Data through Web Browser

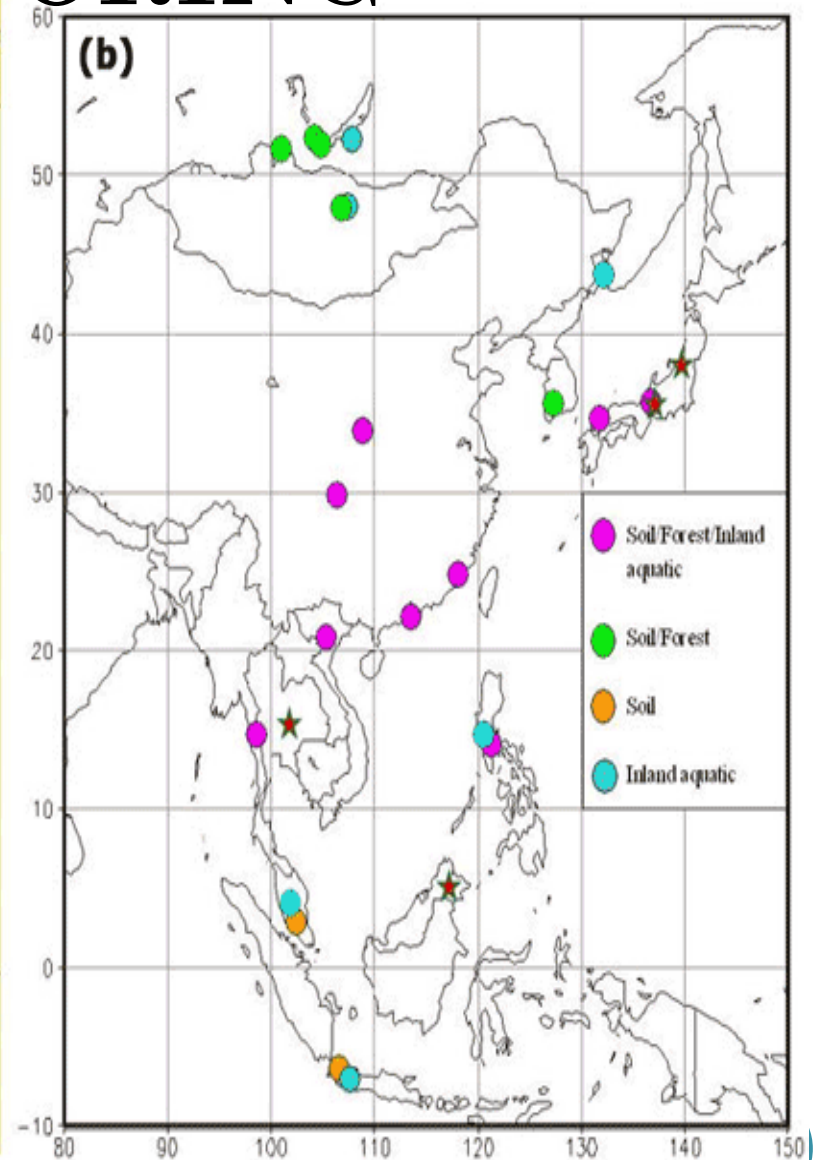
**WT256LT WebLogger
Internet Broadband**

**WT256 will interface all PM analyzers and MET sensors.
Will send data from all analyzers and MET sensors in operation.
Will export data to any FTP.
No need software at client if using webpage for data presentation.**

Environmental Management Bureau Ambient Air Quality Monitoring Set-up in the PHILIPPINES



EANET MONITORING





WET, DRY , INLAND SOIL AND VEGETATION MONITORING



STACK EMISSION MONITORING



40 CFR PART 60
USEPA

COMPLIANCE INSPECTION

- Permit to Operate
 - Temporary Permit to Operate (P/O)
 - 5-year (P/O)
- Self-Monitoring Reports
 - Stack testing
 - Ambient Monitoring
- Complaints



PERMIT TO OPERATE

Air Pollution Source

Installations

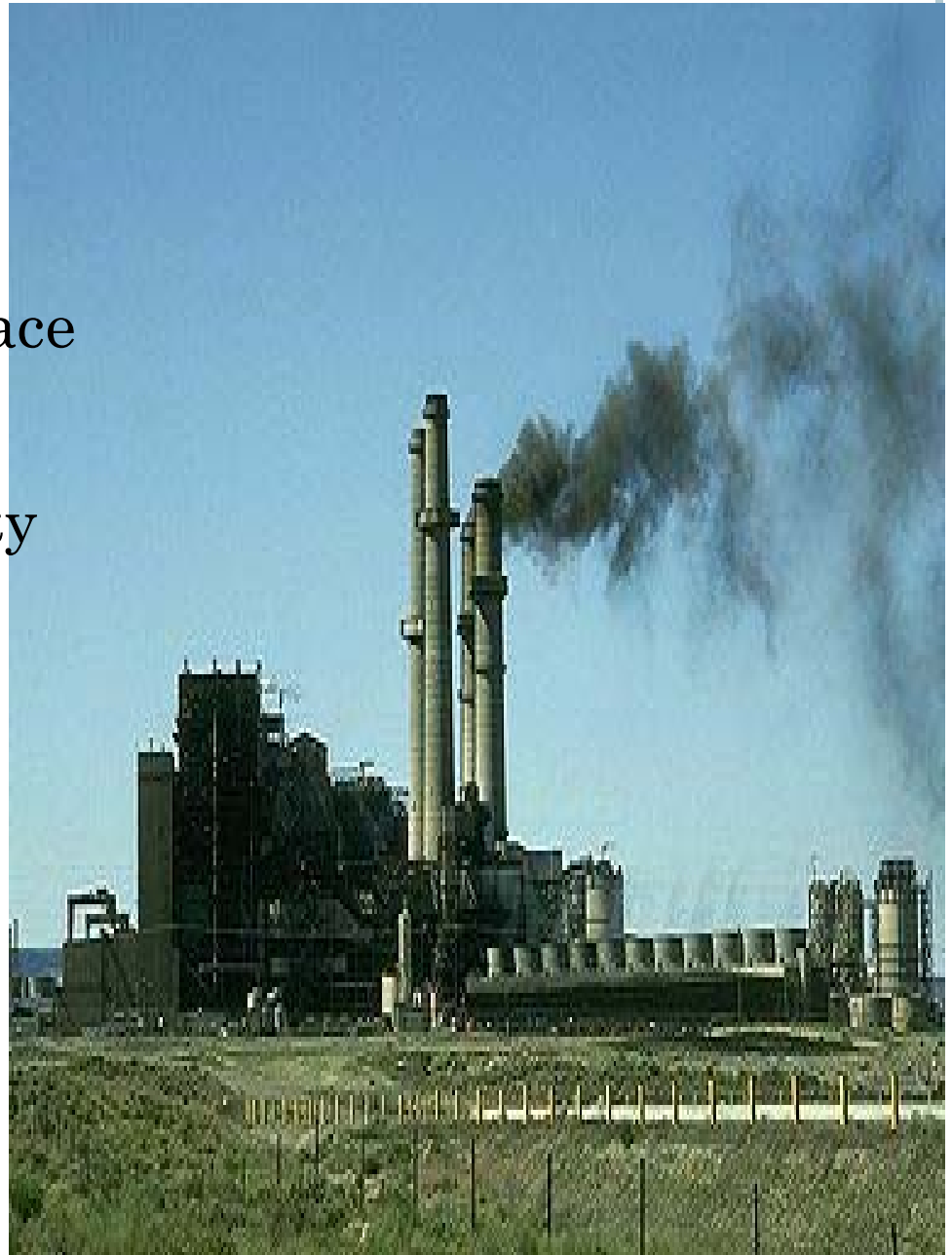
(boiler, generator set, furnace etc.)

Air Pollution Control Facility

(smoke stack, electrostatic precipitator, scrubber etc.

- National Source Emission Standards

NO_x, SO_x, Particulate Matter, CO, heavy metals- Hg, etc.



AMBIENT AIR MONITORING

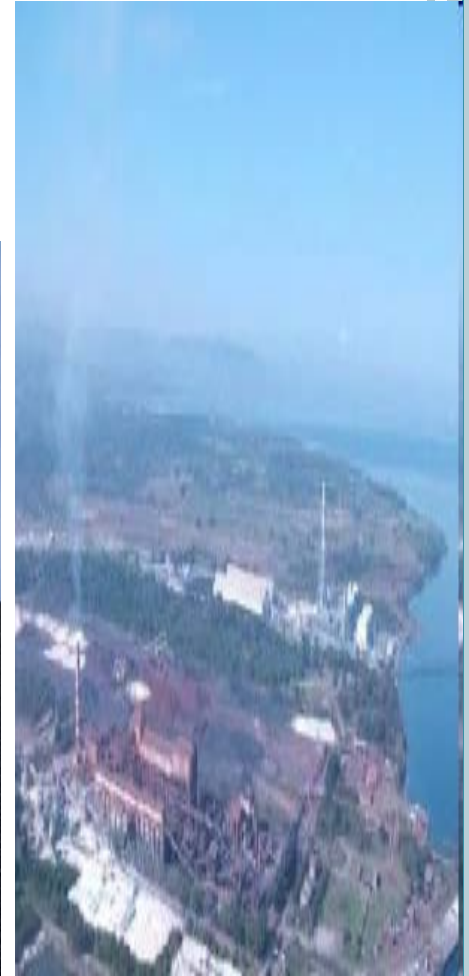
- National Ambient Air Quality Standards for Source Specific Air Pollutants from Industrial Sources

(SO₂, NO₂, Lead, PM, Hg etc.)

Manual and/or Automatic

Inspection (validate reports submitted)

- Accredited firms for stack
- Manual testing for ambient air monitoring
- Calibration reports and audit for automatic stations



THE STOCKHOLM CONVENTION

- Legal instrument which addresses the international community's call for urgent actions to reduce or eliminate releases of Persistent Organic Pollutants (POPs).
- An agreement to end the production and use of the world's most poisonous chemicals... the "Dirty Dozen" and "New POPs including Endosulfan"
- Inventory of Dioxin and furans (monitoring in ambient and stack)



FUTURE PLANS

- Mercury monitoring in ambient using real time or manual?
- Procurement of mercury sampling equipment (check whether automatic sampler or manual)
- Use of screening method to check mercury in-situ?

