Monitoring means periodical analyzing one or more of the environmental parameters, a particular feature, a particular group of living groups, in a given area to determine the status or the changes over time.

The interpretations made in the monitoring studies are **not made over instantaneous measurements**. It is performed over repeated measurements of the relevant parameter with successive analyses within a given time interval.

Monitoring data is critical for situations that closely concern human and environmental health. These efforts are very effective in terms of public opinion.

The fact that a facility or industrial enterprise is built following applicable laws and regulations does not mean that it will comply with them, whether they know it or unknowingly when it starts its activities.

Also, through monitoring studies, not only the facilities that emit pollutants and create byproducts/waste products that may pose risks to the environment and human health, but also the capacity and efficiency of the facilities whose main job is treatment can be evaluated.

Monitoring activities can be classified in 5 ways

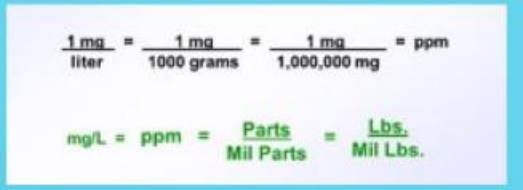
1. Visual monitoring: The cost is quite low. Visible elements such as emission gas release, the release of colored wastes to water soources (e.g. textile industrial wastewater) can be monitored directly.

2. Process Monitoring

Monitoring of the processes and process-related laws for depuration, decomposition and/or burning. It can be easily integrated into automation systems. It's a very effective method. The cost is low.

3. Resource monitoring:

This type of monitoring is based on the determination that the products or products formed as a result of the activities of any facility do not contain or contain toxic substances that are harmful to the atmosphere, water, soil and human health of gas, solid or liquid wastes.



4. Environmental Monitoring

In this type of monitoring, the amount of pollutants released to the environment in a given area is examined. Sometimes animal and plant tissues may also need to be examined. The cost is high, requiring trained personnel as well as high technological equipment.

5. Biological monitoring (Biomonitoring)

This type of monitoring is based on the study of the effects of pollutants released into the environment on various plants and animals and their possible effects on human health. These effects are not easy to observe unless the pollutant is extremely toxic or reaches acute lethal doses. Sometimes these effects can be observed months or even years later.

Design of Monitoring Studies

It should be noted that

- The duration and timing,

- Sampling frequency

- Sampling design (including key experts)

- Parameters to be measured; standart methods

are crucial for monitoring studies.

Keeping the measured and recorded values in a database are very important for stakeholders to be able to access the data easily.

In this context, storage of data on the internet or intranet provides a great convenience.

In order to interpret the raw data in a realiable way, appropriate statistical tools should be used. In this context, frequency distribution analyses, variance and covariance analyses, cluster analysis, multiple regression analyses, key components analysis, time series analysis, dynamic models are among the techniques frequently applied.

To reduce the risk of errors in monitoring studies;

1. Use of standardized and majority-accepted sampling techniques.
2. To observe spatial and temporal variables in the evaluation of environmental parameters.
3. Apply standard methods for analysis
4. Taking precautions against contamination
5. Using appropriate statistical methods for extreme values.
6. Storage and certification of data