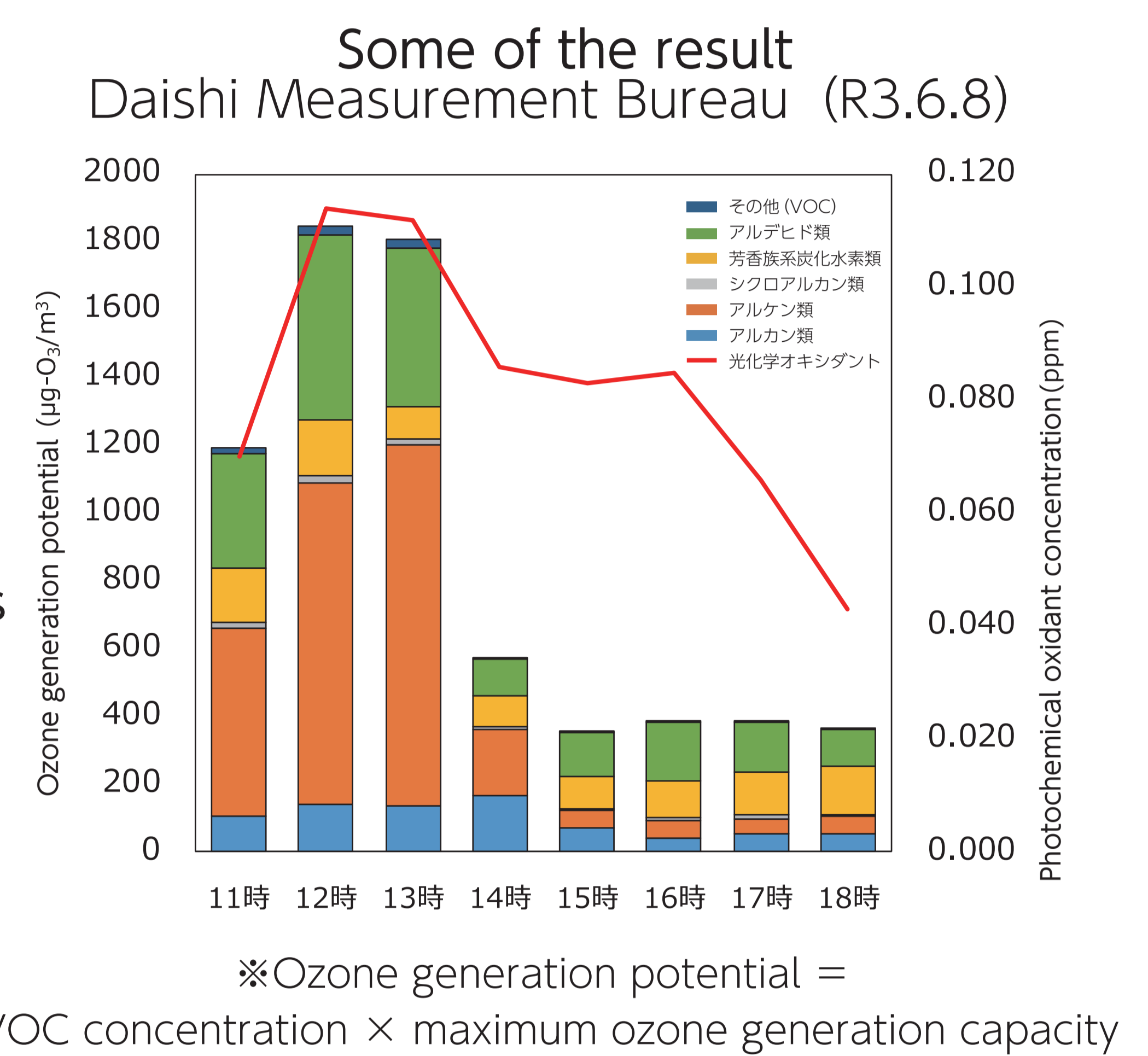
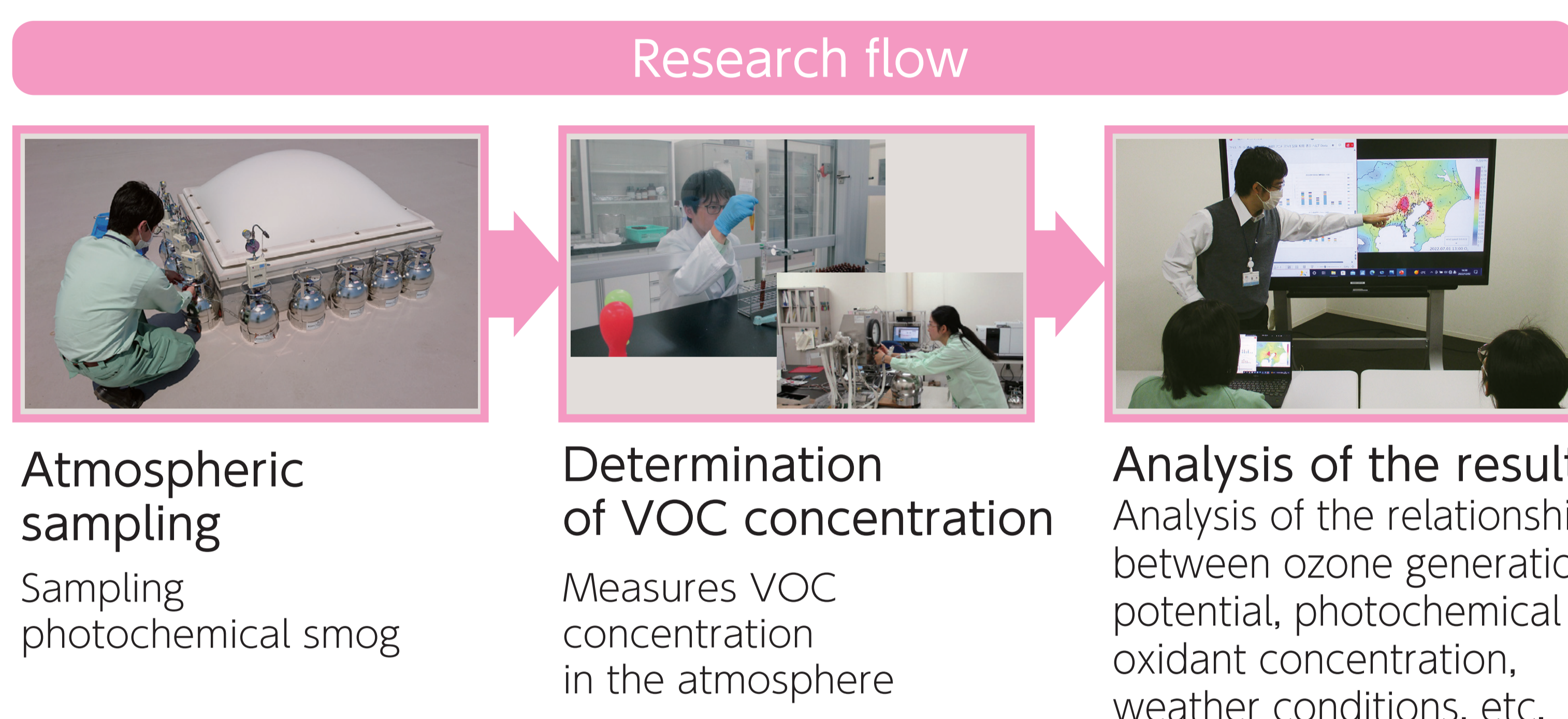


# Initiatives by the Environmental Research Institute

The Kawasaki City Environmental Research Institute conducts research based on reliable data and scientific knowledge. It also cooperates and collaborates with various stakeholders to solve environmental issues in Japan and overseas through environmental conservation efforts.

## Research on suppressing photochemical smog

In cooperation with surrounding municipalities, we are studying the relationship between photochemical oxidants and VOCs. We are working on estimating the VOCs that greatly affect photochemical oxidant production by measuring the concentration of each VOC in photochemical smog and calculating amount of oxidant produced (ozone production potential). The results will be used in Kawasaki City's efforts to control photochemical smog.



Estimate VOCs that affect photochemical oxidant formation

## Screening survey of chemicals related to life in rivers in the city

In recent years, various chemicals derived from daily life, such as pharmaceuticals, cosmetics, agricultural chemicals, and flame retardants, have been emitted into the environment. Some of them can negatively impact the environment. This survey aims to prevent problems caused by these chemicals by studying them in the environment



Number of substances detected per river

Site	Misawa River Ichino Bridge	Nikaryo Hon River Sekimae Bridge	Hirase River Hirase Bridge	Asao River Kochi Bridge	Yagami River Hiyoshi Bridge
Total peak detections	143	159	165	197	160

Top 10 substances in the Aso River and at Kochi Bridge

No	Detected value	Substance name	Uses and natural origin
1	4512337	2,4-Di-tert-amyphenol	Cosmetics
2	3472181	Galaxolides	Perfume
3	2536003	Cholesterol	Steroids
4	2487408	Sitosterol	Steroids
5	1764440	Bis(2-ethylhexyl) phthalate	Plasticizer
6	1464829	4-Hydroxy-3,5-di-tert-butylbenzenepropionic acid	Pharmaceutical Intermediates
7	1420403	Crotamitons	Medicine
8	1358470	Lidocaine	Medicine
9	1155020	Palmitic acid	Cosmetics
10	1136473	Tris(2-butoxyethyl)phosphate	Flame retardant

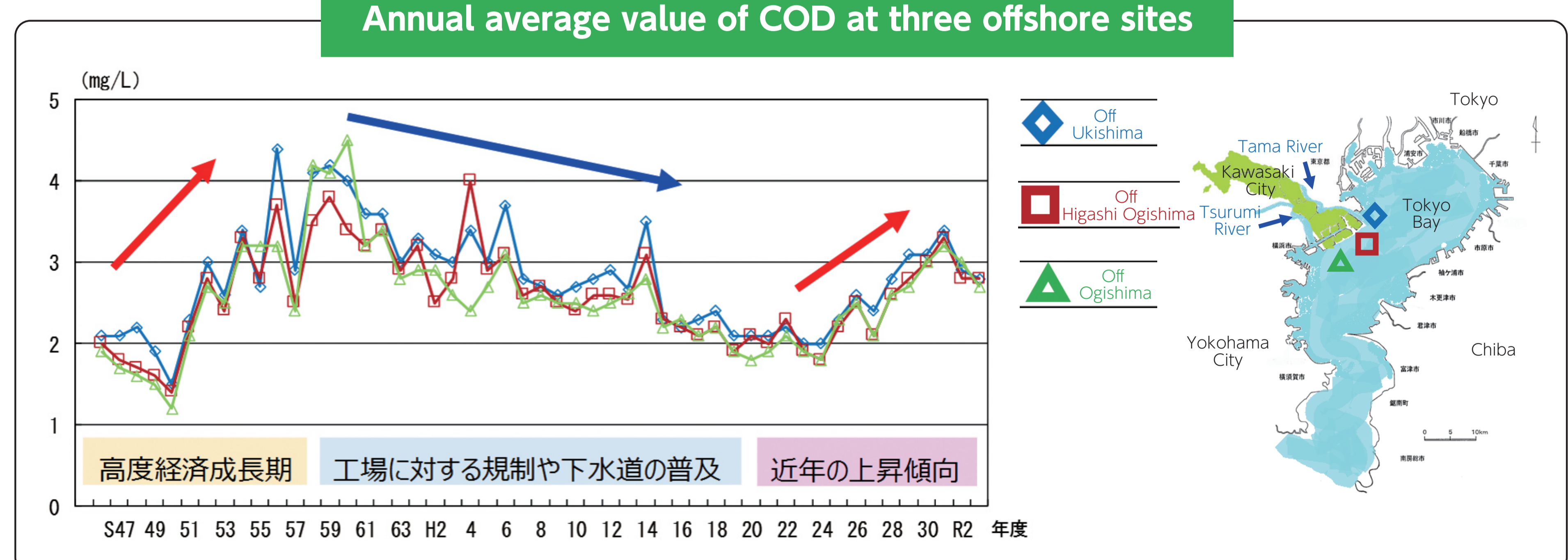
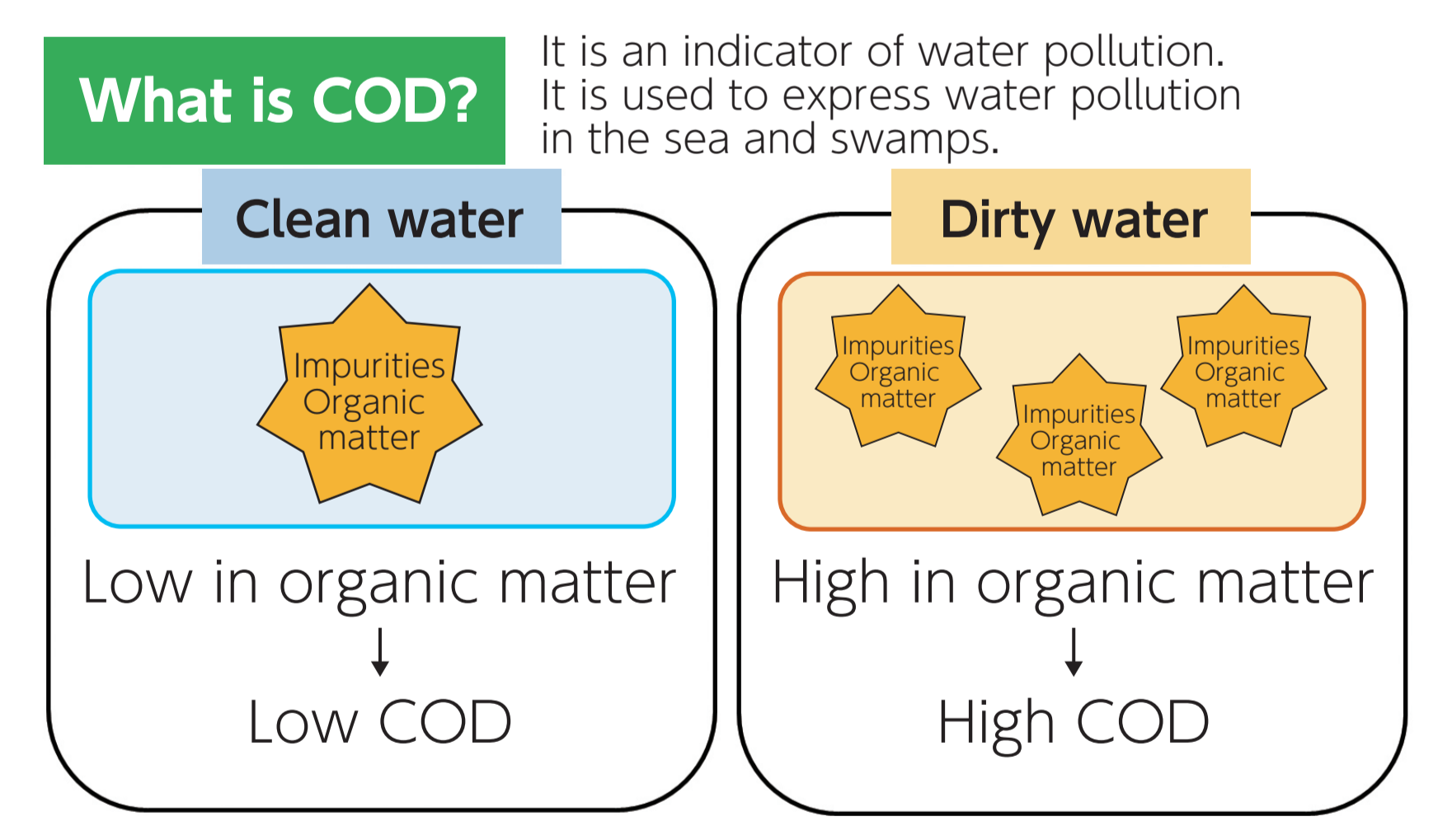
Analysis equipment used for surveys→

The table on the left shows the top 10 substances detected in the Aso River at Konchi Bridge, where the largest number of substances were detected by surveys of the five rivers in the city. The substances were found to be derived from cosmetics and pharmaceuticals, etc. used in daily life.

We will continue to conduct surveys in the city to understand the state of residual in the environment at an early stage and work to prevent problems.

## Analysis of Factors of COD Rise in Tokyo Bay

The water in Tokyo Bay became increasingly polluted from industrial and domestic waste during the period of high economic growth. Although regulations on factories and sewerage spread have greatly reduced the pollution, COD (chemical oxygen demand) has increased in recent years.



The figure on the right shows the reasons for increased COD. Focusing on secondary pollution caused by internal production, we investigated organic matter in Tokyo Bay and are currently analyzing the gathered data at research institutes.

