

### 3. From Industrial Pollution to Urban Living Pollution (1970 onward)

#### The City of Kawasaki Led Japan in Pollution Control Measures

In the 1970s, declaring that the quality of citizens' life was its top priority, the City of Kawasaki embarked on a program to prevent pollution, provide relief for those whose health had been damaged, and to preserve and recover the natural environment. In 1970 the City strengthened measures against the sources of air pollution, concluding air pollution prevention pacts with 39 factories that together accounted for 90% of petroleum consumption in Kawasaki. In 1972 a new Kawasaki city Pollution Prevention Ordinance came into effect, to serve as the root and trunk of Kawasaki's air pollution administration. With this ordinance, Kawasaki became the first City in Japan to introduce total pollutant volume controls. Total volume controls are regulations on total allowable volumes of pollutants, including gases emitted by factories and pollutants in the air. These controls were significantly more effective than previous regulations, which permitted each type of pollutant provided it stayed below a certain threshold, and demanded that factories implement stringent anti-pollution measures. With the promulgation of this ordinance, the City of Kawasaki established itself as a leader in promoting pollution prevention measures in Japan, both by the national government and by municipalities nationwide. To reflect the views of citizens in the City's anti-pollution measures, in 1972 the City of Kawasaki established pollution monitoring conferences, in which citizens were invited to participate, in each ward of the City.



Pollution monitoring conference

#### Establishment of Kawasaki Pollution Research Institute and Pollution Monitoring Center [Kawasaki municipal research institute for environmental protection][Pollution Monitoring Center]

The City of Kawasaki established the Kawasaki Pollution Research Institute in 1971, with a mission to analyze, measure and research pollution prevention measures. Its aim was to understand pollution phenomena scientifically and improve technology for preventing pollution. The following year, the City opened the Kawasaki Pollution Monitoring Center, introducing a permanent system for monitoring the air environment and sources of pollution. This Center provided a full-fledged monitoring system for measuring air pollution in multiple locations in Kawasaki 24 hours a day and tracking emissions of airborne pollutants from large-scale plants.



Kawasaki Pollution Research Institute



Asao Air monitoring Station



Air monitoring equipment

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#### Efforts by Companies

As public awareness of environmental issues grew and government regulations on pollution tightened, private businesses invested aggressively to prevent pollution, developing a wide range of pollution prevention technologies to conform to emissions standards. Companies also began training engineers holding qualifications in pollution prevention, known as on-site pollution prevention managers, thereby building the technological foundations for anti-pollution measures. Thanks to the efforts of both the City of Kawasaki and private enterprise, by the late 1970s industrial pollution from factories and other workplaces had improved considerably. In 1979 all areas of the City of Kawasaki met environmental standards for sulfur dioxide levels.

Examples of engineering solutions by private companies

- Installation of pollution-prevention equipment  
Scrubbing pollutants before their emission from the factory
- Improving the quality of fuel used  
Use of low-sulfur fuel oil, switching to combustion of LNG, etc.
- Improvement of manufacturing processes  
Development of technologies that are both economical and good for improving the environment
- Introduction of energy-saving technology  
Development of energy-saving technology that burns fuel efficiently



Smoke scrubbing equipment



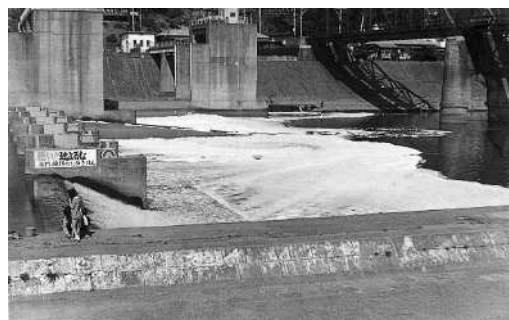
Wastewater treatment equipment



Trend in emission volumes of air pollutants at factories and other workplaces

#### Emergence of Urban Living Pollution

Years of blistering economic growth brought affluence and convenience to the lives of the Japanese people. Migration into the cities was also surging. In 1973, a year after being declared an ordinance-designated city (a designation generally accorded to cities in Japan with population of 500,000 or more), Kawasaki's population reached one million. Along with this breakneck growth came problems such as increasing automobile traffic and household wastewater volume. As a result, air pollution along major roads worsened, while rivers became polluted, as evidenced by the spread of white foam from detergent in household wastewater. Kawasaki was facing a new problem: urban living pollution. Another emerging problem for society was the pollution of groundwater with hazardous chemicals.



Foam in the Tama River



Trash floating in the Tama River