

**Environmental Engineering
Consolidated Division**

Recycle engineering department

Recycle-promoting municipal solid waste incineration equipments

Kubota's recycle-promoting solid waste incineration facilities have changed to the system, which can maximize recycling rate under the concept of "Waste is valuable resource."

It is possible to generate electric power of maximum 7500 kW, which is equivalent to the electric power con-

sumption in twenty thousand family, recovering heat energy in wastes incineration as much as possible, in the Mobarra solid wastes incineration plant, completed in March 2001, in Utsunomiya-city.

What is more, incineration ash generat-

ing after wastes incineration turns into slag by melting furnace installed in the plant. This slag, an one third in volume compared with ash, is reusable for construction material because of its stable glass-like state.

Rainwater fallen on the roofs of the plant is stored in the tank, and used effectively as alternative to groundwater.



Mobarra solid wastes incineration plant in Clean Center in Utsunomiya-city



Central control room

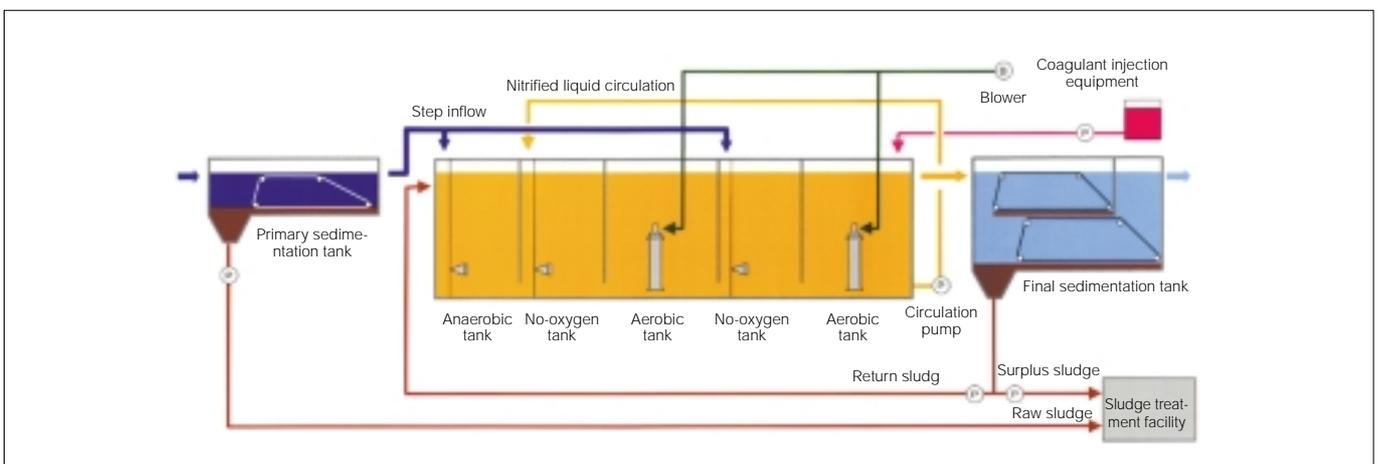
Advanced sewage treatment system

While sewage becomes popular, water quality conservation at higher level using sewage treatment system is demanded to create safer and more comfortable water environment. Removal measures of nitrogen and phosphorous from sewage water is fully promoting to meet stricter environmental quality stan-

dard of water especially in inland seas surrounded by big cities such as Tokyo Bay and Seto Inland Sea. Advanced treatment system removing nitrogen and phosphorous, constructed by Kubota, is now fully operating in Chiba city. Operation results of this system, based on biological treatment with low

operation cost, are drawing the attention. The system also adopts two steps method, which enable to do advanced treatment in compact facility. The system contributes to water quality conservation such as red tide measures and so on.

Drinking water and sewage engineering department



Dioxins decomposition units

Water-environment Engineering Department

We at Kubota developed unique dioxins decomposition units with original "photochemical technology" (PAT. 2874126). Dioxins in water can be decomposed under detective limit by the unit.

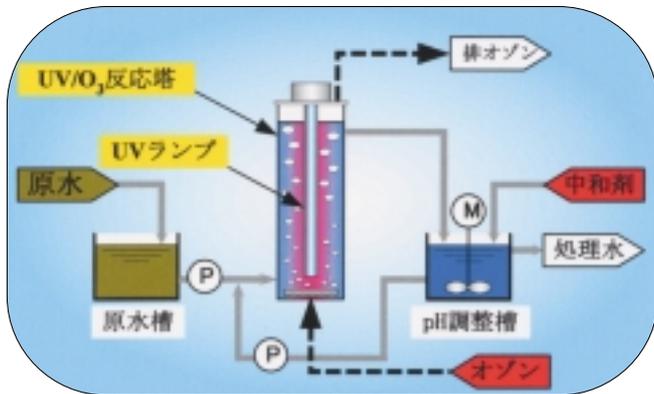
Despite high dioxins decomposition performance, the units can be operated with low running cost, under the ordinary tempera-

ture and atmospheric pressure. The units have been being operated for leachate treatment as the first dioxins decomposition equipment in Japan. A few leachate treatment plants with the dioxins decomposition units are under construction.

The units can also solve high concentration dioxins contamination problem like a scrubber waste. Kubota's "photochemical technology" is highly estimated and adopted in "The technologies manual for decomposing and treating high concentration dioxins contamination" edited by Ministry of the Environment.

In addition, the units were adopted to treat dioxins public water (ponds) for Toyono-gun contaminated site clean up project, the first dioxins contaminated site remediation project in Japan.

Dioxins concentration in treated water was under 0.1 pg-TEQ / ℓ whose value was one tenth of environmental quality standard for public water bodies decided by "Law Concerning Special against Dioxins."



Basic Flow of Photochemical Decomposition Unit



Dioxins Decomposition Tower

Kubota's internal carbonization equipment

We at Kubota have put a newly developed carbonization system, exceeding conventional composting technologies in performance, into practical use as sludge recycling technology, leading other companies, to meet recycle-oriented society.

Dehydrated sludge from the night soil

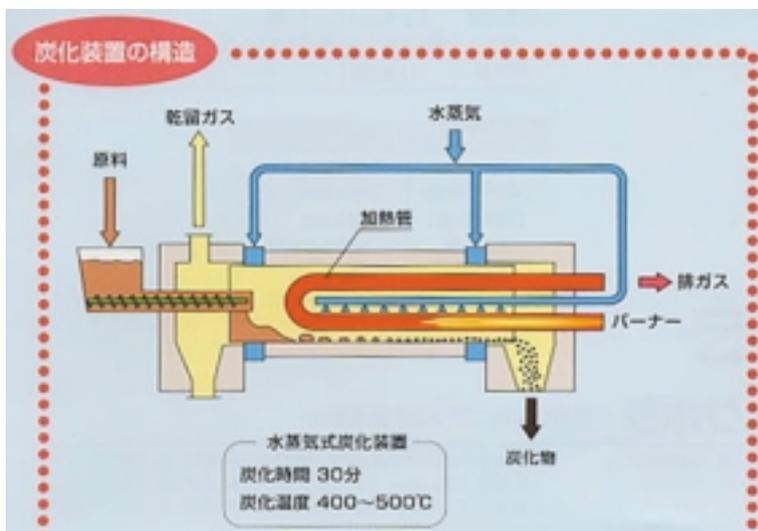
treatment facility has been treating, at a rate of 160kg/h (water content : 73%), in the carbonization equipments, started the operation in July 2000, in Yamabe Environment and Sanitation Center of Yamabe Environment and Sanitation Association in Nara prefecture.

Kubota's internal carbonization equipment has many merits such as fuel consumption reduction by effective heat use, high speed treatment by contact of raw material with high temperature steam and so on.

Carbonized product has also some merits such as a one eighth in volume

compared with raw material, no offensive odor and easy handling.

The product is officially authorized and registered as ordinary fertilizer, and is used effectively by local people.



Yamabe Environment and Sanitation Center of Yamabe Environment and Sanitation Association in Nara prefecture