ENVIRONMENTAL REPORT 2019







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ENVIRONMENTAL REPORT

This report introduces various initiatives including our Responsible Care (RC) activities in fiscal 2018.

Until the year before last we used the name "RC Report", but we changed it to "Environmental Report" last year.

Guidelines used as reference:

- · Environmental Reporting Guidelines 2012 by Ministry of the Environment
- Guide to Matters Noted in Environmental Reports (3rd Edition) by Ministry of the Environment

Report period:

April 1, 2018 - March 31, 2019

Including some information from FY2019 and about plans

Reporting departments: All Kureha Ecology Management departments

Disclaimer

This report includes plans and forecasts. Changes in various conditions could render these forecasts inaccurate. Please note that some of the figures in the tables and graphs presented here have been revised from previous fiscal years considering changes to calculation methods and other factors.

Corporate Philosophy

- 1. We tirelessly endeavor to achieve a harmonious relationship between people, society and the global environment.
- 2. We contribute to the enrichment and growth of the society by providing safe products and services.
- 3. We grow and develop ourselves with the community in which we operate.
- 4. We comply with laws and regulations, practice high ethical standards and operate in transparent manners as a trusted corporate citizen.
- 5. We develop and nurture a corporate culture which values the individuality and diversity of our employees, and optimizes creativity and teamwork within.
- 6. We bring passion to researching and developing technologies that are ahead of the times.

Management System Basic Policy



Strengthening the trust placed in us by stakeholders in the community and other businesses and striving to improve corporate value by observing laws, regulations, and voluntary standards by utilizing an integrated management system to engage in activities concerning quality, the environment, and occupational safety and health.



- Aiming to improve the quality of the products and services we provide and enhance customer satisfaction.
- Leveraging our experience as an environmental business to preserve the environment.
- Creating safe and secure workplaces through proactive safety and health activities.

Responsible Care Policy (Kureha Group Policy)

- 1 Observe international rules and laws
- 2 Respect the environment and work safely
- Provide society with safe products
- Manage and put to good use information about the environment and safety
- 5 Forge a stronger relationship with society

■ Diagram of Kureha Group RC Committee



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About Responsible Care (RC)

Responsible Care involves continuously conducting self-improvement activities aimed at preserving "the environment, safety, and health" through all aspects of a chemical's lifecycle - from the development of chemicals to their disposal and recycling following their manufacture, distribution, usage, and final consumption - as well as maintaining an open dialogue with the community. This is done based on the principle of business operators who manufacture or handle chemicals making decisions and accepting responsibility. The Kureha Group publicly announced in 1995 that it would conduct RC activities.

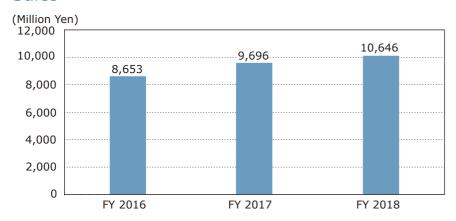
Business Overview

Company Profile

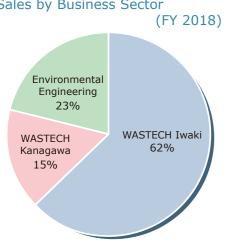
Company Name	Kureha Ecology Management Co., Ltd.
Headquarters	30 Shitanda, Nishiki-machi, Iwaki-shi, Fukushima, 974-8232 Japan
Main Business Sites	Headquarters, WASTECH Iwaki, WASTECH Kanagawa
Established	December 1, 1971
Paid-in Capital	¥240 million
Employees	385 (as of March 31, 2019)

Business Overview and Results

Sales



Sales by Business Sector





In April 2019, we acquired 100% of the shares of Himeyuri Total Work Co., Ltd., which operates final disposal sites (leachate-controlled type) in Iwaki City, Fukushima Prefecture. We will strive to contribute to society while responding to various environmental problems by providing consistent services from collection and transportation of industrial waste to intermediate treatment and final disposal.

Chisato Sasaki

Management Planning Division MP Department $\operatorname{MP} \stackrel{\cdot}{\operatorname{Section}} \stackrel{\cdot}{\operatorname{Manager}}$

Environmental Considerations Related to Our Business Activities

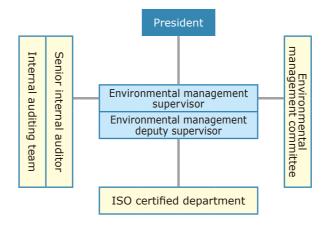
Usage of an Environmental Management System (EMS)

We held the Environmental Management Committee once a month to grasp the progress of our environmental activities.

Environmental objectives of ISO 14001 in FY2018

Environmental Objectives	Goal	Result	Description
Maintain good relationship with external stakeholders	Community beautification activities: more than 10 times / year	Achieved	As part of communication with the local community, we implemented 10 beautification activities around the company and achieved the goal.
Reduce problems at the time of arrival of waste due to waste ordering information by 5% from the previous year	FY2017 result: 193→ FY2018 target: 184 or less	Achieved	The target was achieved with 148 cases (23% reduction from FY2017).
<iwaki department="" processing=""> Zero of environmental com- plaints; Maintain efforts on envi- ronmental complaints</iwaki>	Zero	Not achieved	The target was not achieved because we had one complaint about odor caused by us.
<kanagawa depart-<br="" processing="">ment> Zero of environmental complaints; Maintain efforts on environmental complaints</kanagawa>	Zero	Achieved	The target was achieved through regular cleaning and inspection of the chimney and the flue.
"Zero"environmental accidents in external construction	Zero	Achieved	We achieved the target by carrying out local construction works using an environmental impact check sheet.

Framework for Initiatives

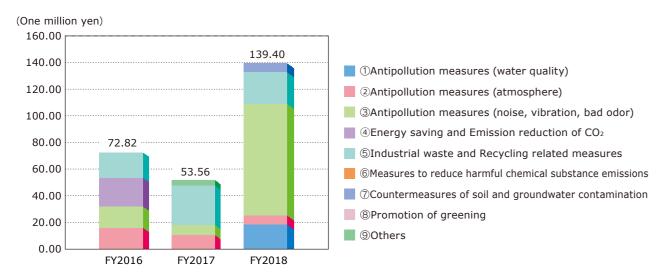


Internal Control Concerning Environmental Reporting Reliability

We conduct internal audits of ISO 14001 once a year at all departments in the scope of certification. Since we newly acquired ISO 9001: 2015 version in FY 2016, we conducted both internal audits in accordance with both standards. In addition, examination by an external organization was conducted in June 2018.

Economic Aspects of Environment-Conscious Management

Investment in Environmental Measures



Investment in Environmental Measures

In FY2018, we invested in environmental measures that were 2.6 times the previous year. While continuing antipollution measures of (1), (2) and (3) above (water quality, air, noise, vibration, bad odor), we took especially positive antipollution measures for (3) (noise, vibration and bad odor) in FY2018. In addition, as an industrial waste & recycling related measures, we invested in longer service life of some equipment by changing materials.

Investment in Environmental Measures

(M	ill	lion	yen)	١

Threstment in Environmental Measures		
2016	2017	2018
0.00	0.60	18.90
17.11	10.52	6.87
15.45	8.01	83.52
23.20	0.00	0.00
17.06	30.46	23.73
0.00	0.00	0.00
0.00	0.00	6.38
0.00	0.00	0.00
0.00	3.97	0.00
	0.00 17.11 15.45 23.20 17.06 0.00 0.00	0.00 0.60 17.11 10.52 15.45 8.01 23.20 0.00 17.06 30.46 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

Compliance with Environmental Regulations

FY2018 Compliance with environmental laws and regulations

We have stated "Compliance with laws, regulations and voluntary standards" in the basic management system policy. In order to comply with laws and regulations, we use the international standard IS014001, which was certified in 1998, to register laws and regulations, and to assess compliance. As a result of the assessment, we have confirmed that the compliance is maintained in FY2018.

List of major environmental laws and regulations

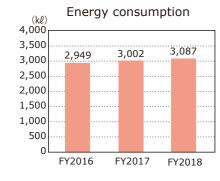
No	Names of Laws, Regulations etc	Contents (in relation with)	
	Air Pollution Control Act	Prevention measures of air and water pollutions	
	Water Pollution Control Act Act on Special Measures concerning Countermeasures	Measurement, investigation, notification related to air and water pollutions	
	against Dioxins	Related to odor control measures	
1	Act on Confirmation、etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of	Measurement, investigation and	
	Improvements to the Management Thereof	notification related to malodorous substances and industrial waste	
	Environmental Regulations of Fukushima Prefecture, Kanagawa Prefecture, Iwaki City and Kawasaki City	Prevention measures for vibration noise,	
	Agreement on Pollution Prevention (Iwaki City)	etc.	
		Maintenance & management standards for waste treatment facilities	
		Standards for storage of industrial waste and specially controlled industrial waste	
2	Waste Disposal and Cleaning Laws	Permission standards for collection and transportation business of industrial waste, specially controlled industrial waste	
		Status report on industrial waste management including issuance of management slip	
		Regular inspection of industrial waste treatment facilities by the government	
3	Ministerial Ordinance for Establishing Criteria of Industrial Waste Containing Metals	Criteria related to landfill disposal of cinders and dewatered sludge	
4	Act on Promotion of Global Warming Countermeasures	Report on greenhouse gas emissions	
5	Fire Service Act	On-site inspection by the government of dangerous goods storage etc.	
6	Act on Rationalizing Energy Use	Obligation of regularly report on energy usage by specific companies	
7	Guidelines for Mercury Waste	Environmentally appropriate treatment of mercury waste	
8	Guidelines for Collecting and Transporting of Low-concentration PCB Waste, Guidelines for Processing of Low-concentration PCBs	Standards for collection, transportation and treatment of low-concentration PCB waste	
9	Act on Rational Use and Appropriate Management of Fluorocarbons	Report on the amount of CFC destruction	



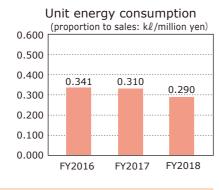
Input



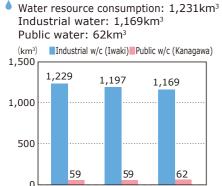
Energy consumption (crude oil equivalent) 3,087kℓ



In FY2018 energy consumption increased by 2.8% compared to FY2017, but the unit energy consumption decreased by 6.5%.



Water resource **consumption**



FY2017

FY2018

Raw material consumption 10,977 t



Waste treatment



WASTECH Iwaki



Output



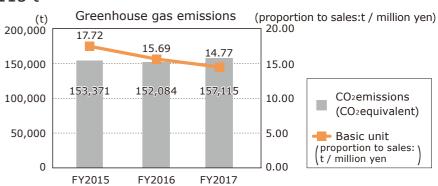
Final disposal volume 24,412 t



The amount of waste discharged after intermediate treatment was reduced to 1/4 of the amount of waste received.

In addition, 8% of the waste discharged was recycled to contributed to resource recv-

Greenhous 157,115 t Greenhouse gas emissions (CO2 equivalent)





Wastewater produced 1,169km³

Since WASTECH Kanagawa uses a closed system (a system that recycles wastewater without letting it go outside), the amount of wastewater is only for WASTECH Iwaki.



The WASTECH Division will continue to promote proposals of industrial waste treatment that take advantage of the characteristics of Iwaki and Kanagawa facilities. In addition, we will endeavor to reduce environmental impact by continuing efforts such as the reliable treatment of persistent substances as well as greenhouse gas reduction through power supply of energy-from-waste.

> Yukihiro Ohoka WASTECH Division Manager of WASTECH Planning

WASTECH Iwaki



In the Unit 7 and Unit 8 incinerators of WASTECH Iwaki, we detoxify various kinds of waste such as sludge containing chlorine and silicon, waste plastics, waste acid, waste alkali and medical waste.



Unit 7 incinerator



Unit 8 incinerator



pretreats various difficult-to-treat wastes according to their physical properties and conditions in order to ensure stable operation of the incinerators and reliable disposal of waste.

The pretreatment section systematically

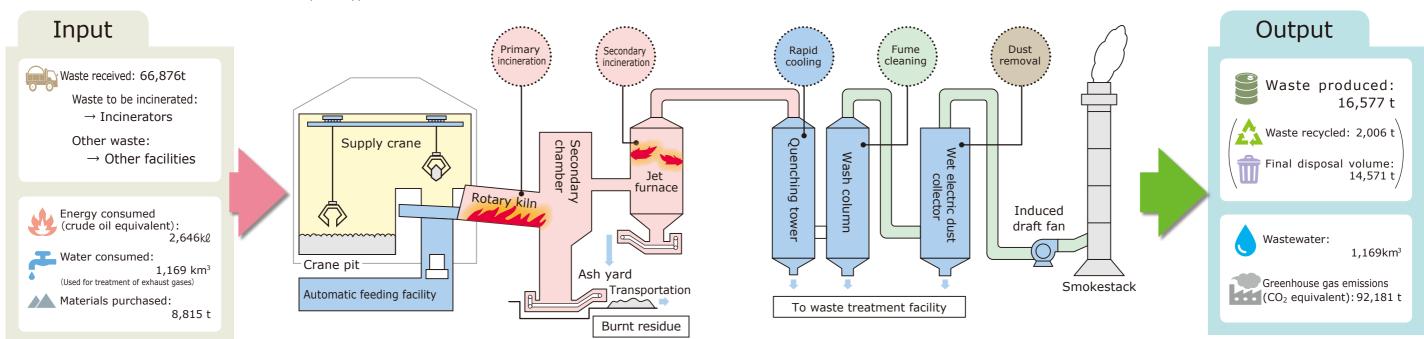
All of us are determined to to work with safety as the top priority.

Norihiro Shirado

Operating Director / Deputy Division Manager of WASTECH Division Iwaki Processing Dept., Pretreatment Section Manager

Unit 7 & 8 Incinerators

Rotary kiln type



Unit 7 incinerator

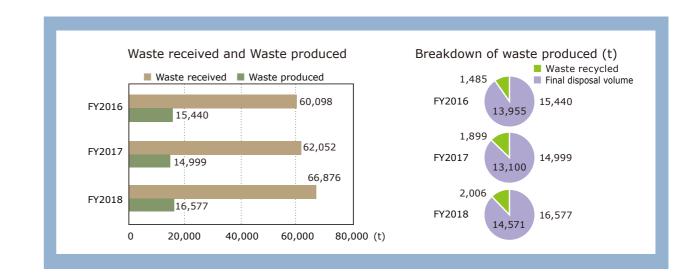
Incineration of sludge: 182 m³/ day
Incineration of waste oil: 110 m³ / day
Incineration of waste plastics: 104 t / day
Decomposition of cyanide compound: 202 m³ / day
Incineration of industrial waste: 238 t / day

Unit 8 incinerator

Incineration of sludge: 182 m^3 / day Incineration of waste oil: 118 m^3 / day Incineration of waste plastics: 104 t / day Decomposition of cyanide compound: 266 m^3 / day Incineration of industrial waste: 238 t / day



Weigh Station



WASTECH Kanagawa



At WASTECH Kanagawa, we handle industrial waste safely and use exhaust heat effectively to generate electricity. We are trying to contribute to minimization of fossil fuel use by making full use of operation know-how so that we can supply more electricity from a wide variety of waste materials with different calorific values and properties.



We were certified as "Low CO2 Kawasaki Brand 2018" by Kawasaki City because we operate "Industrial Waste Treatment with Power Generation Facilities Using Exhaust heat from Waste Incineration". I am determined to continue to engage in business activities as a member of a company that contributes to society.

Kouichi Yamanobe

WASTECH Division, Kanagawa Processing Department, Processing Technology Section Manager



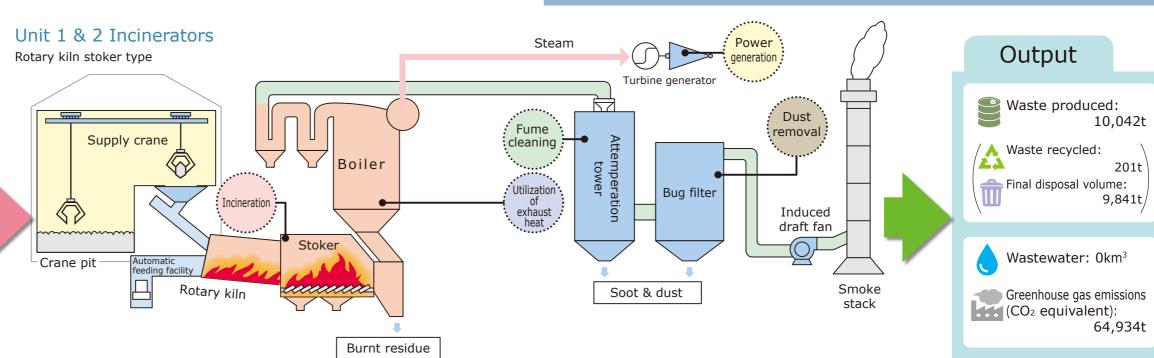
Input Waste received: 40,212 t Waste to be incinerated: → Incinerators Other waste: → Other facilities Energy consumed (crude oil equivalent): 298 kl Water consumed: 62km³ Materials purchased: 2,162 t

Total of Unit 1 & 2 incinerators Incineration of mixture: 140 t / day Incineration of sludge: 112 m / day Incineration of waste oil: 150 m³ / day

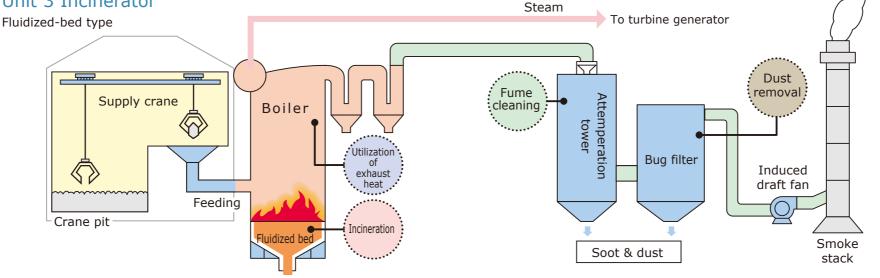
Incineration of waste plastics: 80 t / day Incineration of other industrial wastes: 230 t / day

Unit 3 incinerator

Incineration of mixture: 70 t / day Incineration of sludge: 48 m³ / day Incineration of waste oil: 75 m³ / day Incineration of waste plastics: 40 t / day Incineration of other industrial wastes: 115 t / day



Unit 3 Incinerator



(Note) In WASTECH Kanagawa, we use a closed system (a system that reuses wastewater without discharging it outside).

Kawasaki Logistics Center



This is a waste transshipment and storage facility adjacent to WASTECH Kanagawa. Waste carried in by small vehicles will be transported to WASTECH Iwaki by our large vehicles for disposal. We operate the facility considering transportation efficiency.

13 12

Recovery of incombustible materials



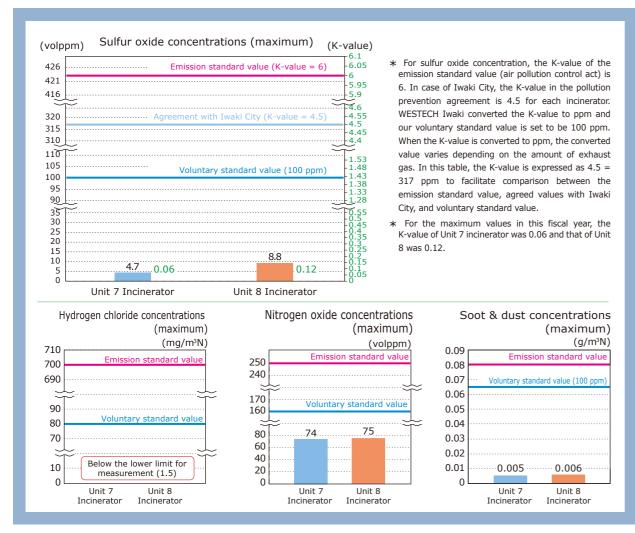
Measured and Analyzed Values

of Various Discharged Materials



The concentrations of sulfur oxide, hydrogen chloride, nitrogen oxide, and soot & dust of the incinerators' exhaust gas in FY2018 are below the voluntary standard values owing to appropriate maintenance of waste disposal facilities, and compliant with the emission standards of laws & regulations.

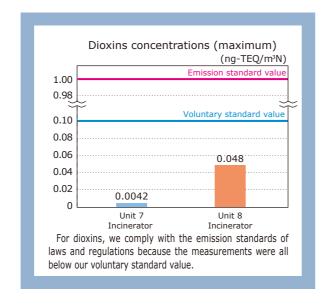
* The emission standard values are the emission standard values in the Air Pollution Control ACT.

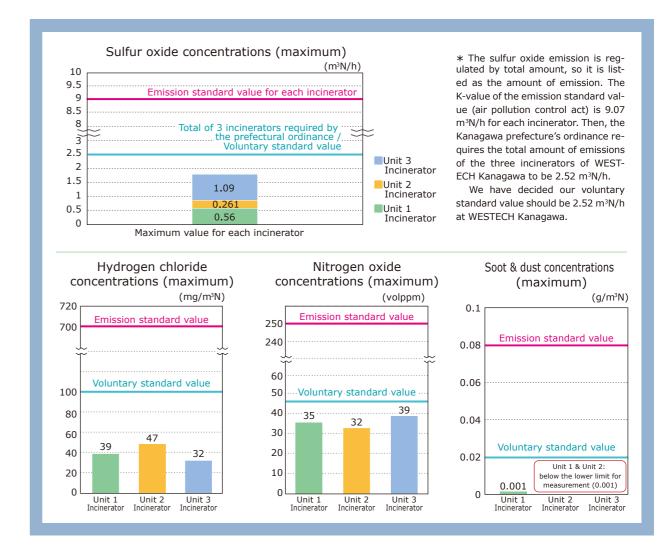


Release and transfer of chemical substances

There are 31 substances applicable to Pollutant Release and Transfer Register Law (PRTR Law), and we properly submitted notifications. In this report we picked up dioxins, among priority substances and benzene, trichloroethylene and tetrachloroethylene among designated substances of the Supplementary Provisions to the Air Pollution Control Act.

Transfer of dioxins:		Release of benzene:		
1,304 mg-TEQ/year		5.8 kg/year		
	Release of trichloroethylene: 5.8 kg/year	Release of tetrachloroeth- ylene: 5.8 kg/year		

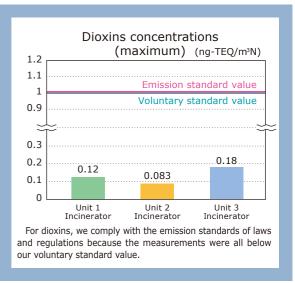




Release and transfer of chemical substances

There is 1 substance applicable to Pollutant Release and Transfer Register Law (PRTR Law), and we properly submitted a notification.

Transfer of dioxins: 7,945 mg-TEQ / year



Detoxification of Low-Concentration PCB Waste Treatment

Detoxification overview

We are processing safely and surely at the following facilities that have been certified as harmless by the Minister of the Environment.

Topic	Details	
Facility name	Unit 7 incinerator (rotary kiln incinerator) Unit 8 incinerator (rotary kiln incinerator, fixed bed incinerator)	
Facility types	Facilities that incinerate waste polychlorinated biphenyl or other polychlorinated biphenyl contaminants or material processed from polychlorinated biphenyl	
Facility location	WASTECH Iwaki	
Waste collection and transport?	Yes	



Building for pretreatment of housing/ chassis/enclosure



Fixed-bed incinerator

We can treat all the low-concentration PCB wastes in the table below.

	Low cond	centration PCB waste			
	Waste electronic equipment, etc. with trace-level PCB contamination	Waste containing low-concentration PCBs			
Low-concentration	Insulation oil with trace-level PCB contamination	Waste oil containing low-concentration PCBs			
PCB waste oil	Electrical equipment or insulating oil (used in OF cables) with PCB micro contamination	Waste oil, etc. with a PCB concentration of $5,000 \text{ mg/kg}$ or less (mainly fluid)			
	Trace-level PCB contaminants	Low concentration PCB contaminants			
Low-concentration PCB waste	Objects contaminated through insulation oil with trace-level PCB contamination	Sludge with PCB concentrations of 5,000 mg/kg or less; and PCB contaminated unwanted substances including paper waste, wood waste, textile waste, plastic waste, scrap metal, ceramic waste, and unwanted substances such as concrete chunks (including scrap metal) with PCB concentrations of 5,000 mg/kg or less			
	Trace-level PCB treated materials	Treated materials containing low-concentration PCBs			
Low concentration PCB-treated Materials	Objects treated in order to dispose of	These are treated to dispose of PCB waste, and have a PCB concentration of 5,000 mg/kg or less (for scrap metal, etc., the PCB concentration of deposits is considered)			

The trace PCB contaminants include waste electrical devices (bodies)

One-stop Solution of KUREHA ECOLOGY MANAGEMENT

















We can provide total service of low-concentration PCB disposal from collection & transportation to disposal to any site in Japan. Our knowledgeable salesperson will be able to respond from the on-site examination to the completion of the process in one stop. If you have any problems, please contact us!

Yusuke Takashima

Sales Division, Low-concentration PCB Sales Department Low-concentration PCB Sales Section Chief

W.I.L. Center*Note

*Note: "W.I.L. Center" stands for Wastec Iwaki Logistics Center.

We started operation of W.I.L. Center in April 2019.

We can dismantle large-sized waste electrical equipment up to 30t quickly and safely without dismantling it at your site.



You can carry in waste electrical equipment without dismantling for storing and dismantling

it in this center.





We have reduced work time and improved waste storage capacity through workability improvement by use of machinery and utilization of storage space. Therefore we can provide faster and more flexible disposal services.

Even if you cannot carry it out from the site, we can dismantle it on site before carrying it out.

We will continue to make efforts to contribute to the promotion of detoxification of safe and appropriate low-concentration PCB waste through the processing technology we have cultivated in addition to the operation of the W.I.L. Center.



Setting up a temporary installation for dismantling



waste electrical equipment



Dismantling of waste electrical equipment



Packing style before carrying out

Sales Division, Low-concentration PCB Sales Department Low-concentration PCB Sales Section Chief

Environmental Engineering Business



The Environmental Sales Department provides customers in Japan and overseas with environmental plant facilities that make use of our unique technologies. We aim to protect global environment and create a recycling-oriented society in providing services through promotion of environmental impact reduction.

Masaya Sakaguchi

Environment Engineering Division, Environment Sales Department, Environment Plant Sales Section, Assistant Manager

VOC effluent gas treatment equipment

Solvent recovery, deodorization, and effluent gas treatment system

[GASTAK]

Our GASTAK is revolutionary exhaust gas treatment equipment aimed at recovering the organic solvent contained in the exhaust gas and removing harmful and malodorous substances in the exhaust gas.

We contribute to environmental preservation of the earth through the manufacture and delivery of environmental equipment.



GASTAK

"Convertek"
Excerpt from Converting Technical
Institute's magazine

Water treatment equipment

Calcium hydroxide solution injection equipment, [HONESTLIMER]

The calcium hydroxide solution injection device called "HONESTLIMER" for water suppliers has been introduced at water purification plants throughout the country. This device prevents the corrosion of and dramatically extends the service life of water facilities (water purification and distribution equipment), improving water quality and creating safe and delicious water.

Calcium hydroxide solution injection equipment
(Photo: courtesy of the Tokyo Metropolitan Government Bureau of Waterworks, Nagasawa Purification





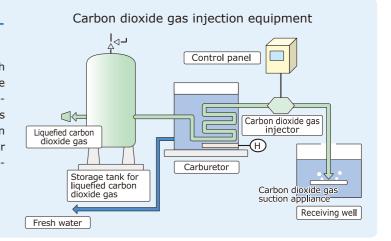
The Environmental Technology Department provides reliable and advanced services through an integrated system including planning, basic design, detailed design, construction management, trial operation, and after-sales service of environment-related equipment.

Kenzo Nemoto

Environmental Engineering Division, Environmental Technology Department
Water Environment Technology Section Manager

Carbon dioxide gas injection equipment

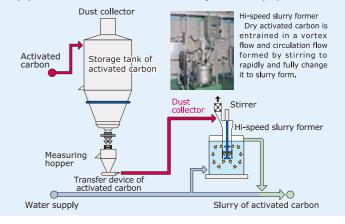
When purifying raw water with a high pH, it is necessary to properly control the raw water's pH during performing coagulation. There are many types of chemicals used to lower pH values, but our injection equipment uses carbon dioxide gas for its superiority in terms of safety and handling.



Dry powdered activated carbon injection equipment

Dry powdered activated carbon injection equipment stores and injects dry powdered activated carbon useful for removing oils and taste and odor causing substances such as mold smells in raw water.

Dry powdered activated carbon injection equipment



(SHALLOW CLEAN)

Water bloom, which is caused by cyanobacteria in lakes, marshes, and reservoirs as a result of the eutrophication of rivers, lakes, and marshes, is becoming a problem. "SHALLOW CLEAN" focuses on light as an essential element of water bloom, and blocks out all but the necessary minimum of light on a section of a water surface to control abnormal growth of algae without destroying the water's ecosystem.



Rebuilding Safety Culture

In FY2018, we undertook "Rebuilding Safety Culture" as a safety and health management policy.

In order to objectively comprehend the current state of our safety culture, we conducted interviews by rank at Processing Departments both Iwaki and Kanagawa with the help of Director Masahide Wakakura from Japan Safety Competency Center. We were able to identify the weak points by having them talk about the problems they felt at each level. In the future, we will try to not only improve the identified weaknesses but also improve the overall safety culture.

Regarding the safety management system, we had all managers take the training legally required for a safety supervisor to be appointed if they have never attended the training so that all the department managers could acquire knowledge on safety management. In the future, we will extend it to section managers for them to deepen the understanding of what is necessary for safety management and aim to improve our safety management system.

In addition, we collect information on accidents of other companies that may also occur in our business from newspapers and the Internet. We deploy the information throughout the company to identify a source of hazard (risk) in risk prediction and risk assessment. We aim to increase our risk sensitivity.

We will carry out safety and health activities with the utmost importance on "safety is the top priority" so that not only every employee but everyone involved can live a safe life with a smile on face together with his/her family.

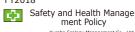


Highlighted Activities in FY2018

- 1 Identify disaster-risk areas and implement protective measures
- 2 Identify weaknesses in safety culture using external knowledge
- 3 Strengthen safety management system
- 4 Enhance safety education
- ⑤ Special patrols by the president and directors
- 6 Establish pointing and calling thoroughly
- In-house broadcast to raise safety awareness



FY2018



- Let's build a safety culture with united efforts for safe & health activities based on the principal phi-
- · Let's create a workplace culture that "always follow and make others follow what is decided"!
- ·Let's create a workplace where ev-







President patrol at WASTECH Kanagawa

•Certification of Occupational Health and Safety (ISO 45001)

In order to further improve our safety level, we prepared to acquire the certification in accordance with the standardization of the occupational safety and health management system ISO45001. In March 2019, we received an examination by a registered certification body, and were certified in April 2019. In the future, we will make effective use of the management system, create a workplace where no one feels pains, and promote the rebuilding of the safety culture.







Safety and Health Activities

Pointing and Calling

"Pointing and calling" is an act of pointing a work target at each division of work or action and uttering the name or action to be performed. This is said to be effective in increasing tension and concentration.

We have also adopted this "pointing and calling", and we persuade everyone to do it in many situations, such as when driving a vehicle or walking in the factory. In addition, we encourage our partner companies working in our factory to do it.

As a result of enlightenment and education for thorough implementation of pointing and calling, it was done almost every opportunity. We will continue to make efforts to keep it done that way.

Point and Call Rates (WASTECH Iwaki)

Target people Year(FY)	2016	2017	2018
Workers	99.0	99.8	99.9
Forklift drivers	99.6	100.0	100.0
Large vehicle drivers	99.4	99.5	99.7
Passenger vehicle drivers	100.0	98.6	100.0
2 / 4-ton vehicles	99.3	98.8	99.2

Check by pointing Prevent mistakes.

Emergency Drills and Safety Patrols

At WASTECH Iwaki, we conducted a comprehensive disaster prevention drill assuming a chemical injury and a fire with a help of the Nakoso Fire Department.

In the drill for responding to a chemical injury accident, under the scenario that "one worker who had responded to a leak trouble suffered a chemical injury and we rescued and transferred him to the hospital", each team moved briskly.

Then, we moved on to a drill assuming a fire and conducted fire extinguishing activities and water discharge drills under the scenario that "combustibles ejected from drums were ignited by static electricity and fires occurred".

WASTECH Iwaki Disaster Prevention Drill (October 3, 2018)









At WASTECH Kanagawa, we conducted drills assuming the occurrence of an earthquake directly below the Tokyo metropolitan area and associated fires.

In the training assuming the occurrence of a major earthquake, we used a scenario that "an earthquake of seismic intensity of 6 (magnitude 7.2) occurred in the Tokyo metropolitan area; while making efforts to inspect facilities and prevent secondary disasters, we should confirm employee safety and collected information on tsunamis, etc." with a purpose of making sure each unit could appropriate actions.

Then, we moved on to a drill assuming the occurrence of a fire. Under a scenario that "a fire broke out in the vicinity of the inlet of the incinerator operating under smaller load in response to the earthquake when it became unstable in combustion and a fire broke out in the storage pit because of fire sparks of the first fire" we conducted fire extinguishing drills.

WASTECH Kanagawa Disaster Prevention Drill (September 29, 2018)

Result of Patrol, Identified Near-misses (Potential Disasters)

We conduct factory patrols by managers every month. Because members from multiple departments participate in patrol, we can discover dangerous locations and conditions from various perspectives to take safety measures against them.

In FY2018, many pointed out about the dangers of the footsteps in the factory (the risk of falling due to steps), which is shown also in the table below about accidents (excluding traffic accidents).

Accident Occurred

Category Year(FY)		2016	2017	2018
Personal disaster	Fatal accident	0	1	0
	Lost time accident	0	1	0
	Non-lost time accident	1	0	0
	Minor injury	1	2	6
	Major Near-Miss	0	0	0
Prop	perty damage accident	8	10	10
Traf	fic accident	19	18	19
Oth	ers	1	0	0
Total		30	32	35



Based on the basic philosophy of "Safety takes priority over everything", we have been working on safety culture assessments for the purpose of rebuilding it, reviewing the safety management system, expanding internal education opportunities and patrols by executives, etc. There is no end to safety efforts. We will continue to implement various initiatives in the future.

Katsura Murooka

Environmental Safety Division, Environmental Safety Department Safety and Health Section Manager

Near Misses (Nearly Escaped Accidents)

real moses (really Escaped recidents)					
Year(CY)	2016	2017	2018		
Injuries when sandwiched	22	28	29		
Caught-in injuries	1	4	1		
Fall injuries	230	253	237		
Falls from height	25	38	22		
Puncture wounds or lacerations	42	43	48		
Contusions	59	85	104		
Falling/flying objects	40	45	53		
Eye injuries	13	18	17		
Chemical burns	107	90	76		
Electric shocks	0	0	1		
Traffic accidents	434	465	392		
Equipment damage	11	17	29		
Other accidents	37	58	68		
Total	1,021	1,144	1,077		

•To Rebuild Safety Culture - Lecture by Safety Consultant -

We had a lecture by an occupational safety consultant at our head office. Director Masahide Wakakura from Japan Safety Competency Center served as a lecturer and 72 employees attended

He gave a lecture on the theme of improving safety in the industry that handles waste and explained the cases of occupational accidents that occurred in the past and their causes. In addition, Mr. Wakakura described the key points for building a safety culture with examples from his own experience of being involved in building the "security assessment system".





October 23, 2018

With Local Communities

Exchange Meeting with Communities





At WASTECH Iwaki, we regularly hold exchange meetings with the people in the four surrounding areas.

We regard it a very meaningful opportunity for the community people to understand our business and for us to receive various opinions and questions.

In the future, as a member of the community, we will continue to conduct business activities so that we can coexist with the communities and continue to contribute to them.

Kureha Group CSR Forum (Regional Meeting)





November 30, 2018



We had a CSR forum for the Kureha Group at the Kureha Iwaki Plant.

We introduced our activity under the title of "WASTECH Iwaki: Initiatives for Safe and Secure Operations".

After the meeting, we invited them for a plant tour, and many participated in it.

Elementary School Students Visited WASTECH Iwaki – Learned What Industrial Waste Disposal Is -



On two days in October, we invited energetic children from Iwaki City Nishiki Elementary School (4th graders) for WASTECH Iwaki tour. We introduced the flow and equipment of industrial waste disposal and described the importance of waste disposal.

Although the theme of "industrial waste disposal" was not familiar to the children, they said, "I enjoyed it!" "I want to work here!" when we asked them about their impression after the tour.

We will continue to provide a place for environmental learning in the future.

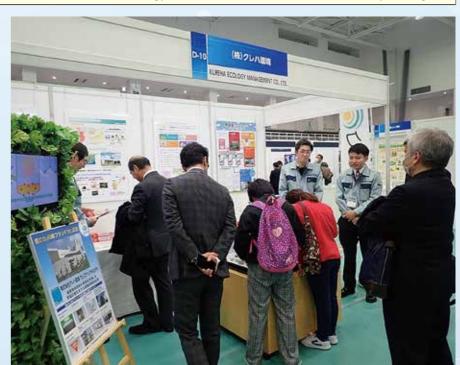
October 2 and 12, 2018



Participated in Kawasaki International Environmental Technology Exhibition ~ "Environmental Education Easy to Image" ~

We participated in the 11th Kawasaki International Environmental Technology Exhibition held at Culttz Kawasaki (Kawasaki City) again this year. Many people visited our booth; they are not only government officials and companies but also general public including elementary and junior high school students and visitors from overseas.

We described the importance of CO₂ reduction through waste power generation and the proper treatment of industrial waste.



February 7-8, 2019

Various Initiatives

Eliminate Illegal Dumping ~ Iwaki City Illegal Dumping Prevention Activities ~



As a member of the Fukushima Industrial Resource Recycling Association, Iwaki Regional Council, we participated in the Iwaki City illegal dumping waste prevention activity again this year.

We sent six employees including three new employees and they worked together with about 90 participants, wearing the vest printed "Illegal dumping, do not do it, do not let it and do not forgive it", removing waste and illegal dumping and promoting awareness.





June 1, 2018

METI, Business Classification Evaluation System: Obtained S-class for 4 Consecutive Years

The results of the "Evaluation System for Business Classification" by the Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry (METI) were released, and we were evaluated as an energy-saving excellent business operator (Class-S). (FY2018 report)

We were selected as Class-S for the fourth consecutive year since the start of the program in 2016

This system evaluates all business operators who submit periodic reports on the Energy Saving Act by dividing them into four classes: S, A, B, and C. Business operators that have received Class-S are published on the website of Agency for Natural Resources and Energy.



(Our Efforts for Energy Conservation**)**

We use waste oil and recycled oil to contribute to saving fossil fuel resources such as heavy oil. In addition, by operating the incinerators under optimal operating conditions, we are improving combustion efficiency (= energy saving).

Furthermore, WASTECH Kanagawa generates electricity using exhaust heat from waste disposal process. The generated power is not only used in the facility but also sold.

We will continue to work on energy conservation with the aim of operating business with less energy.

Certified as "Low CO₂ Kawasaki Brand '18" ~ Contributing to CO₂ reduction through waste power generation ~

In the "Low CO₂ Kawasaki Brand" project that Kawasaki City is working on, our WASTECH Kanagawa's "Waste treatment with power generation equipment using exhaust heat from waste incineration" was certified as a brand.

At WASTECH Kanagawa's incineration facility, exhaust heat generated during the incineration of waste is collected by a boiler to generate electricity. By using the generated electricity in the site, we can reduce the amount of power used derived from fossil fuels (purchased power). As a result, the purchased power can be reduced by approximately 94% compared to other incineration facilities without power generation equipment.





Awards Ceremony on February 7, 2019

From left, Mr. Fukuda (Mayor of Kawasaki), Mr. Natake (former President), Mr. Adachi (Chairman of the Low CO₂ Kawasaki Brand Promotion Council)

• Waste Power Generation (Thermal Recovery) at WASTECH Kanagawa

WASTECH Kanagawa has a power generation capacity of 4,800kW at maximum on account of thermal recovery that uses the exhaust heat from the three incinerators.

We use the generated power in WASTECH Kanagawa and sell surplus power. We return surplus energy to society in the form of electric power, contributing to the reduction of environmental impact.

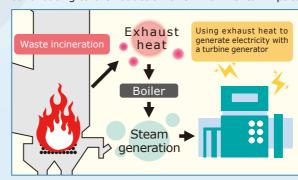


Image of thermal recovery



20,000

20,000

20,000

20,000

19,698

19,391

18,972

9,046

9,046

9,567

15,000

10,507

10,345

10,032

5,000

FY2016

FY2017

FY2018

Generated at Kanagawa

Pefinition of colors

Used at Iwaki
Used at Kanagawa

*This graph indicates that the power generated at WESTECH Kanagawa is

Waste power generation and

power consumption

almost equal to the total power consumption of (WESTECH Kanagawa + WESTECH Iwaki).

Turbine Generator

Various Initiatives

Lecture on "Responsibility of Waste Generator"
~ Deeper Understanding of Responsibility Associated with Disposal Contracts ~







November 8, 2018

We invited our company's advisory lawyers, Mr. Toshiaki Shibata and Ms. Mari Shibata, as lecturers to hold the 5th Lecture on "Responsibility of Waste Generator" for our business partners including waste generators, waste collectors and transporters, disposal operators and so on. More than 120 people attended the lecture.

We hold this lecture every year since 2014 to facilitate deeper understanding of laws and regulations related to waste disposal as well as compliance awareness.

Let's be a company that will be always selected by our customers! ~ Certification system of an excellent industrial waste disposal company ~

[What is the certification system of an excellent industrial waste disposal company?]

This is a system in which prefectural governments and ordinance-designated cities review and certify high-quality industrial waste disposal companies that conform to stricter standards than normal permit standards. The system started with the amendment of the Waste Management Law on April 1, 2011. In accreditation, in addition to the examination of regular waste treatment business, the items below are specifically reviewed: (1) legal compliance, (2) business transparency, (3) environmental considerations, (4) electronic manifest and (5) soundness of the financial structure before the competent local government gives certification.



[Our acquisition status]

We obtained this certification about industrial waste disposal business (special management) in Iwaki City and collection and transportation businesses in other 22 prefectures. Furthermore, we newly acquired certification for industrial waste disposal business (special management) in Kawasaki City on May 1, 2018.

[Merit of obtaining excellent certification]

A company that has acquired certification can appeal to its customers and clients that it is a certified company by placing a mark of "Excellent" on the upper right of the license issued. In addition, it can receive preferential treatment such as extending the validity period as an industrial waste disposal operator.

We will continue to make further efforts so that we can continue to obtain the certification of excellence.

Let's prevent accidents by learning about the attitude of professional drivers! ~ The Transportation Section took safe driving training ~





We had a safe driving training by Yamato Staff Supply for our employees of the Transportation Section at our head office. In this safe driving training, the former safety instructor of Yamato Transport instructed us about safe driving methods and accident prevention efforts which are being carried out in Yamato Transport. In the first half, safety instruction was given in the form of lecture, and in the second

half, basic driving operations that were often forgotten over the long period of driving such as vehicle characteristics and dangerous locations were reminded while using actual vehicles.

We will continue training on safe driving and keep safe and secure during collection and transportation.



September 29, 2018

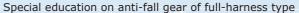
Let's enrich our knowledge and increase our safety! ~ Special education for anti-fall gear of full-harness type ~

We had special education on anti-fall gear of full-harness type at the head office and WASTECH Kanagawa.

The Occupational Safety and Health Law was amended in June 2018 (enforced on February 1, 2019). The amendment newly stipulated that anti-fall gear of full-harness type should be used for high-place work and that special education should be given to the workers who use the anti-fall gear of full-harness type. In response to the amendment we had this session in which we learned how to use and inspect the gear correctly, examples of occupational accidents at high-place work and related laws and regulations.

We will make every effort to work safely with correct knowledge and correct usage of the gear.









Various Initiatives

WASTECH Kanagawa Agrees to "Kanagawa Declaration Zero Plastic Waste"

Kanagawa Prefecture, which promotes SDGs (Sustainable Development Goals), stated "Kanagawa's Declaration of Zero Plastic Waste" with the aim of zeroing up plastic waste that is not recycled as early as possible until 2030.

WASTECH Kanagawa agrees to this Declaration and implements the following specific initiatives for zero plastic waste.

~ Details of WASTECH Kanagawa's Efforts toward Zero Plastic Waste ~

- 1.Employees of WASTECH Kanagawa will have environmental learning.

 Communication by e-mail to encourage them to reduce plastic waste and Posters of enlightenment in the site.
- 2.We will stop using plastic bags to be distributed at the 11th Kawasaki International Environmental Technology Exhibition and use recycled paper bags instead. In addition, we will not provide plastic bags for factory visitors.

Not only the employees of WASTECH Kanagawa who agreed with the declaration, but each of us living on the earth is required to take action to reduce plastic waste. It is important to think about what you can do and take an action.





Our Material Recycling

We recycle some of our own waste discharged after intermediate treatment by outsourcing.

The photo shows an example of the use of recycled products provided by CHUO DENKI KOGYO CO., LTD. (contractor).



Consistent Service from Beginning to Final Disposal ~ Made Himeyuri total work Co., Ltd. Wholly Owned Subsidiary ~

On April 1, 2019, we acquired all the shares of Himeyuri total work Co., Ltd. and made it a wholly owned subsidiary.

We have made efforts to protect the global environment through collection, transportation and intermediate treatment of industrial waste. By acquiring a company that operates the final disposal site as a wholly owned subsidiary, we have a system that can provide consistent services from collection and transportation of industrial waste to intermediate processing and final disposal, further meeting the needs of customers and residents.

Going forward, we will continue to strive to protect the global environment through appropriate disposal of waste and aim to become a company that develops with the local community.



Himeyuri total work Co., Ltd. Office Building



Leachate treatment facility with the latest denitrification technology



Heitarou tertiary disposal site completed in 2018

We will continue to make constant efforts as a company rooted in the community that treasures the harmony between people, society and the global environment.

History	
December 1971	Establishment of Kureha Kompo Co., Ltd.
October 1975	Changed to Kureha Gyomu Co., Ltd.
March 1977	Permission was acquired to conduct operations to collect, transport, and dispose of industrial waste in Fukushima Prefecture
July 1984	Changed to Kureha Kankyo Co., Ltd.
October 1986	Unit 7 incinerator was developed, installed, and operated in-house
May 1993	The Unit 8 incinerator is developed, installed, and operated in-house
March 1998	ISO14001 certification is acquired
April 1998	Unit 7 incinerator was renewed in-house
April 2006	The company name was changed to Kureha Ecology Management Co., Ltd.
June 2006	Paid-in capital increased to ¥240 million
April 2010	The Kanagawa Plant was opened
April 2011	ThThe Kawasaki Logistics Center was opened
April 2012	The Environmental Solutions Unit was opened
April 2014	WASTECH Park becomes WASTECH Iwaki and the Kanagawa Plant became WASTECH Kanagawa
March 2017	ISO9001 certification was acquired
April 2019	Himeyuri total work Co.,Ltd. became our wholly owned subsidiary W.I.L. Center was opened ISO45001 certification was acquired

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For engineering-related inquiries
Environmental Sales Department

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This report is also published on our website: http://www.kurekan.co.jp/en/





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