

## Efforts are being made to reduce the amount of chemical substances used/discharged, based upon the idea of risk management.

### ■ Concept

The Ricoh Group categorizes and controls chemical substances that are regulated in various countries around the world according to whether they are to be prohibited, reduced, or controlled. As for chemical substances classified as those to be reduced, particular efforts are made for reduction based on a concept of risk management. According to this concept, the environmental impact is determined by calculating the amount of chemical substances used/discharged and the environmental impact potential<sup>1</sup> which is set according to the significance of environmental impact of each substance. Additionally, the Group sets a standard to prevent environmental risk from occurring. Based on the standard, each business site strives to prevent percolation or outflow to the environment. They also have a system established for immediate detection and purification of contamination, if any. As for soil and underground water contamination, the Group promptly sets up efforts for understanding environmental liabilities<sup>2</sup> that could affect its finan-

cial accounting.

1. Value set by Ricoh, taking toxicity, carcinogenicity, and the possibility of ozone depletion into consideration.

2. See pages 49 and 50.

### ■ Targets for Fiscal 2007

- ◎ Completely eliminate chlorine organic solvents used in manufacturing organic photoconductors at manufacturing contractors as well as at Ricoh manufacturing divisions.
- ◎ Complete the examination of soil and underground water at Ricoh's non-production sites and leased land (Ricoch and affiliates in and outside of Japan).
- ◎ Make and implement plans to improve sites where pollution is detected.

### ■ Review of Fiscal 2007

Ricoh completely attained its target to eliminate the use of chlorine organic solvents in the consignment production of organic photoconductors by the end of fiscal 2005. As for companies that joined the Ricoh Group after that time, however, efforts for complete elimination are

currently being promoted. The use of environmentally-sensitive substances was reduced 52.5%<sup>3</sup> from fiscal 2000, while the amount emitted decreased 88.8%<sup>4</sup> from fiscal 2000 (Graph ①). In fiscal 2007, the reuse of waste organic photoconductor edge coating remover (closed recycling) and the promotion of non-coating manufacturing accelerated the reductions.

3 & 4. The figures have been converted using an environmental impact coefficient.

### ■ Future Activities

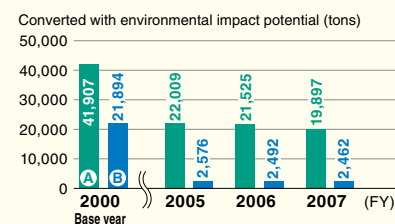
We will continue our efforts to reduce the use and emissions of chemical substances so that they will not increase even though business operations will be significantly expanded. In fiscal 2008, we plan to continue the efforts we have made so far to reduce them. In addition, efforts will be made to upgrade the levels of risk assessment and management of chemical substances and risk communication.

### <The Entire Ricoh Group>

#### Changes in the Amount Used and Discharged of Ricoh Target Substances for Reduction

##### ① The Ricoh Group (Production)

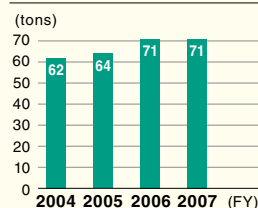
###### A Amount used B Amount discharged



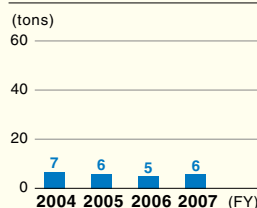
#### Changes in the Amount of NOx, SOx and BOD

##### ② The Ricoh Group (Production)

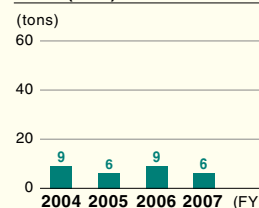
###### Air (NOx)



###### Air (SOx)



###### Water (BOD)<sup>5</sup>



5. Represents total emissions directly released into public-use water areas.

\* The Ricoh target substances for reduction are defined as the PRTR substances designated by four electric/electronic industrial associations in Japan between fiscal 1998 and fiscal 2000. Coverage of chemical substances by Ricoh may differ slightly from those provided by the PRTR Law. As for the uses and emissions of respective substances, please refer to our Web site at <http://www.ricoh.com/environment/data/index.html>

\* Graphs ① and ② do not include data for Ricoh Printing Systems, Shanghai Ricoh Digital Equipment, and Yamanashi Electronics.

\* Data for the previous years were corrected as shown in graph ①.

#### Segment Environmental Accounting of Pollution Prevention Activities at Business Sites (The Entire Ricoh Group)

Costs			Effects			
			Economic benefits		Effect on environmental conservation	
Item	Main cost	Costs	Items	Benefits	Items	Amount
Business area cost	Pollution prevention cost	¥242.4 million	Reduction in social cost	¥210.3 million	NOx .....	8.6 tons
					SOx .....	0.6 tons
					BOD .....	3.4 tons
			Amount of risk avoidance effect (incidental effect)	¥2,069.5 million	PRTR substances .....	33.4 tons (calculated with the conversion potential)

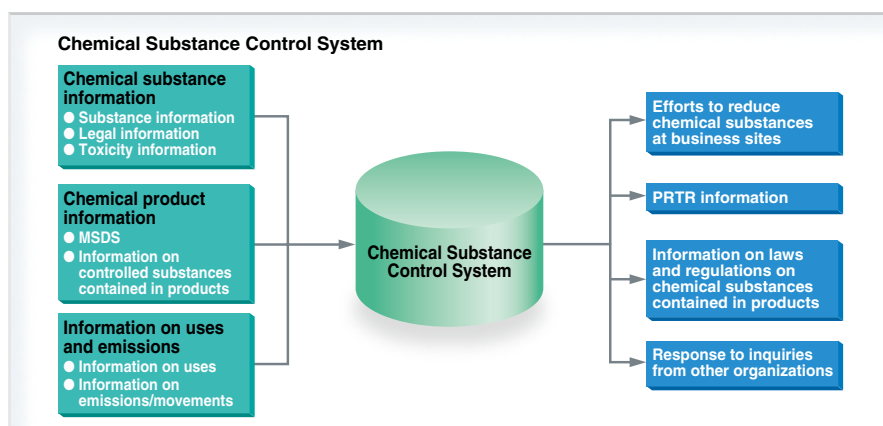
\* PRTR substances refer to the Ricoh target substances for reduction.

## Chemical Substance Control

### Chemical Substance Control and Information Disclosure

#### <Ricoh Group (Global)>

The Ricoh Group uses its chemical substance control system to monitor data on chemical substances used, discharged, and disposed of at business sites. The system is designed to promote reduction in the use of chemical substances, to prepare materials for PRTR reporting, and to speedily respond to inquiries from around the world concerning the amount of chemical substances used.



## Establishment of All-Site Soil Contamination Risk Management System/Efforts Concerning Asbestos and PCBs

### Surveys at 1,022 Non-Production Sites Completed

#### <Ricoh Group (Global)>

The Ricoh Group has established Basic Policies Concerning Soil and Underground Water Contamination and Standards for the Management of Risks Related to Soil and Underground Water Contamination. According to the policies and standards, each site monitors the current situation and prepares a scenario for implementation, including estimates of future costs for completing purification. In addition, the Group started surveying the history of all Group business sites—including both the production and non-production sites of subsidiaries of Ricoh's subsidiaries—in fiscal 2004 and established a soil contamination risk management system. The survey of owned and leased land at 1,022 non-production sites worldwide was completed in September 2006. The history of business activities and the use of chemical substances were surveyed at non-production sites for sales, distribution, services, and technological development, as well as production sites of subsidiaries of Ricoh's subsidiaries. The topsoil was surveyed at the five sites that had used chemical substances that could lead to contamination to confirm that there were no contamination risks. As a result of completing the

surveys, the Ricoh Group now understands and manages soil contamination risks at all its sites including production sites. In the future, efforts will be made to continue and improve management and surveying of new business sectors acquired by Ricoh through M&A, etc.

### Asbestos and PCBs

#### <Ricoh (Japan)>

As for asbestos used at Ricoh's business sites and facilities, a survey was conducted on sprayed asbestos, which showed that it has been applied in seven places at three business sites. Measures to prevent dispersal, such as containment and enclosure, have been taken at all sites and it has been confirmed that it is at a level that would not negatively affect human beings, neither people in the neighborhood nor employees. We will continue our systematic efforts for improvement and removal. In the meantime, Ricoh has surveyed all of the PCB-containing products held by Ricoh, and has managed them and completed notification in compliance with laws and regulations. Ricoh plans to complete their disposal by fiscal 2016 (excluding low-density PCBs). As for the Ricoh Group as a whole, it is currently revising the range of management, with regard to the

amount contained and properties/condition. The Group will set appropriate management levels in consideration of social interests, trends in laws and regulations of other countries, the costs of surveys and management, and the ideal future the Group should pursue as a corporate goal.

### Petroleum Pollutants Also Covered by Investigation; Decontamination Completed

#### <Ricoh UK Products Ltd. (U.K.)>

Ricoh UK Products Ltd. (RPL), a manufacturing subsidiary in the U.K., conducted an investigation into groundwater contamination by petroleum in March 2007 by drilling 12 new locations, in addition to the ongoing monitoring of groundwater contamination by chemical substances. The investigation revealed contamination beneath a manufacturing facility that exceeded the environmental standards specified by the Department for Environment, Food and Rural Affairs of the U.K. To remove the contamination promptly, RPL started decontamination work in September 2007 using equipment to remove oil. The work was completed in January 2008. A third-party organization verified that the contamination level had been reduced to less than 1 mg/l (unit to be confirmed), half of the standard value.

#### Ricoh Group's Basic Policies Concerning Soil and Underground Water Contamination

- (1) Top priority is given to controlling impact on the living environment in the neighborhood.
- (2) Efforts will be made to carry out surveys and measures to cope with contamination caused by the Ricoh Group's business activities.
- (3) Laws, regulations, and ordinances set by national and local governments shall be observed.
- (4) Efforts will be made to establish risk communication with local governments and residents.
- (5) Soil is checked for contamination when land is purchased/transferred or rented/returned.



Oil remover

**① Survey Results of Underground Water Pollution and Purification Efforts at the Ricoh Group's Production Sites (as of March 2008)**

Business site		Pollutant	Survey result (mg/ℓ)	Standard value in Japan (mg/ℓ)	Measures in implementation
Japan	Ricoch Ohmori Office	Cis-1,2-dichloroethylene	0.057	0.04	<ul style="list-style-type: none"> <li>• Pumping up underground water</li> <li>• Purification with iron powder deoxidizer</li> <li>• Regular monitoring</li> </ul>
		Trichloroethylene	0.13	0.03	
		Tetrachloroethylene	0.044	0.01	
	Ricoch Optical Industries	Cis-1,2-dichloroethylene	0.19	0.04	<ul style="list-style-type: none"> <li>• Pumping up underground water</li> <li>• Bioremediation</li> <li>• Regular monitoring</li> </ul>
		Trichloroethylene	0.22	0.03	
		Tetrachloroethylene	0.23	0.01	
	Ricoch Elemex, Okazaki Plant	Cis-1,2-dichloroethylene	0.033	0.04	<ul style="list-style-type: none"> <li>• Pumping up underground water</li> <li>• Neutralization of soil gas</li> <li>• Regular monitoring</li> </ul>
		Trichloroethylene	1.4	0.03	
		1,1-dichloroethylene	0.4	0.02	
		Hexavalent chromium	1.7	0.05	
		Cadmium	0.073	0.01	
	Ricoch Elemex, Ena Plant	Cis-1,2-dichloroethylene	0.57	0.04	
		Trichloroethylene	2.9	0.03	
		Hexavalent chromium	0.14	0.05	
		Fluorine	1.3	0.8	
	Ricoch Keiki	1,1-dichloroethylene	0.044	0.02	<ul style="list-style-type: none"> <li>• Pumping up underground water</li> <li>• Bioremediation</li> <li>• Regular monitoring</li> </ul>
Outside of Japan	Ricoch Electronics Inc., Irvine Plant (U.S.A.)	Cis-1,2-dichloroethylene	0.03		<ul style="list-style-type: none"> <li>• Pumping up underground water</li> <li>• Regular monitoring</li> <li>• Neutralization of soil gas</li> </ul>
		Trichloroethylene	0.095		
		Tetrachloroethylene	4.7		
	Ricoch Industrie France S.A.S. (France)	Tetrachloroethylene	0.37		<ul style="list-style-type: none"> <li>• Pumping up underground water</li> <li>• Regular monitoring</li> </ul>
	Ricoch UK Products Ltd. (U.K.)	Cis-1,2-dichloroethylene	12.0		<ul style="list-style-type: none"> <li>• Pumping up underground water</li> <li>• Regular monitoring</li> <li>• Original regiochemistry oxidation</li> <li>• Oil removal</li> </ul>
		Trichloroethylene	2.7		
		Tetrachloroethylene	16.0		
		Vinyl chloride	0.29		

- Contamination cases that seem to be attributable to natural causes are excluded.
- The highest densities recorded at the monitored wells are shown in the above survey results.
- The areas surrounding all business sites are not affected by pollutants.
- For a list of business sites, including those that do not have any contamination records, please visit our Web site at <http://www.ricoh.com/environment/data/index.html>

## Understanding Environmental Liabilities

### <Ricoch Group (Global)>

Companies are responsible for environmental contamination and anything that can lead to environmental contamination, whether caused by their past, current, or future business activities, and they must make efforts into the future to prevent contamination or its expansion, while at the same time take necessary measures such as purification and repair. The Ricoh Group has endeavored to keep the local residents and employees from suffering health damage caused by soil/underground water contamination, asbestos, PCBs, etc., while promoting measures to prevent any negative effect on the environment and the ecosystem. Additionally in fiscal

2007, the Group organized a project through cooperation among the accounting, environment, and facility divisions to appropriately reflect the impact on corporate performance of the purification and repair obligation that should be assumed by companies (environmental liabilities) in financial accounting and obtaining the support of external consultants. Under the project, the Group carefully examined possible environmental costs needed for future surveys and measures in relation to soil contamination, asbestos, and PCBs, and estimated (1) the amount of asset retirement obligations calculated in compliance with the accounting standards (costs needed for future retirement of assets), (2) the amount

that could become liabilities in financial accounting in the future in compliance with laws or contracts, and (3) the costs of purification and monitoring the Ricoh Group will carry out according to its own policies, although such purification or monitoring is not required by laws or contracts. As for soil contamination, surveys had been completed and the implementation scenario prepared by each site included the condition at that time and estimates of future costs up to the completion of purification, which allowed us to calculate the costs to be paid by the Group as a whole. As for asbestos and PCBs, the surveys at Ricoh have been completed, while those for the Group as a whole are still under

way. The estimated future expenditure of asset retirement obligations of the Ricoh Group recognized as of the end of fiscal 2007 was ¥490 million (¥260 million after discounts, calculated according to the accounting principles), and we confirmed that the amount was immaterial to the financial accounting.

Besides the liabilities in financial accounting, we also confirmed that ¥1,240 million could become liabilities in the future in compliance with laws and/or contracts, while ¥1,220 million could become necessary for purification and monitoring carried out as the Group's voluntary efforts. These liabilities are not

likely to cause a significant impact on the financial condition or business performance of the Ricoh Group. However, it is important to keep environmental liabilities (including possible liabilities) transparent and control and reduce them. The Group will continue disclosing them in an appropriate manner.

Expert  
interview

## INTERVIEW

Ms. Miki Mitsunari, Mizuho Information & Research Institute, Inc.

**Promptly beginning disclosure of environmental liabilities, where corporate attitude toward the environment is important.**

### Figures showing corporate responsibility and determination in environmental purification

Environmental liabilities refer to the cost that companies have to pay in the future in relation to the environment. Accounting that requires the recognition of the future cost for purification of soil contamination etc. as liabilities was stipulated in the U.S. in the 1990s, and it then spread to other countries. In a broad sense, environmental liabilities include the cost of lawsuits in relation to the environment, as well as the possible cost that companies will have to pay to reduce greenhouse gas emissions to levels below the fixed limits when such limits are set in the future. The environmental liabilities reported in financial accounting, however, include only part of the future cost for environmental measures in many cases, and differ depending upon the regulations of respective accounting standards. In Japan, the Accounting Standard for Asset Retirement Obligations was established on March 31, 2008, and will be applied from fiscal 2010. The standard sets criteria for the retirement cost of fixed assets, which includes the cost for measures to cope with soil contamination and asbestos. Such disclosure is required because companies need to recognize the cost for measures to address environmental contamination as liabilities and report their financial competence in their accounting. In other words, such disclosure is designed to express the will of companies to engage themselves appropriately in purification and other measures to stakeholders such as shareholders and investors. In addition, the cost for environmental measures that is reported in financial statements as liabilities will be directly reflected in decision-making in management, which will accelerate the purification of contamination and other countermeasures in society as a whole.

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### Cooperation between the accounting and environment divisions essential for the calculation

At the request of Ricoh, I joined the Environmental Liabilities Calculation Project in October 2007. As the Ricoh Group had completed soil contamination surveys on a global level, we could finish specifying environmental liabilities, discovering all the risks, and estimating the cost for retirement of assets in a very short period, although these processes usually impose the heaviest workload. My main role was to organize the collected data referring to the accounting rules. I learned a lot, knowing that estimated amounts differ depending upon the purification levels. For the calculation of environmental liabilities, it is essential for the accounting and environmental divisions to cooperate with each other, and at Ricoh, they did so quite smoothly. We discovered that the amount of environmental liabilities in compliance with the accounting standard was small because Ricoh had promoted voluntary purification activities. Efforts for environmental liabilities have started at only some of the companies. I would like Ricoh to continue setting precedents for prompt decision-making and effective management.

#### Implementation Flow and Roles of the Environmental Liabilities Calculation Project

