EPEAT 4.7.2.1 Public disclosure of key environmental aspects

The following data shows key environmental aspects in the Hirooka office having complete responsibility for the design and manufacture of printers and scanners. (Fiscal Year: From April to next March)

a) Greenhous Gas (GHG) Emissions

Greenhouse gas emissions (Thousand t-CO_2e)	FY2022	FY2023
Scope 1	8.67	8.06
Scope 2	0*	0*
Total	8.67	8.06

CO_2 conversion factor of greenhouse gas emissions

- Electric power: Disclose market-based emissions. We use the adjusted emissions factors for the load serving entities (i.e., utilities) from which our sites purchase electricity, pursuant to Load Serving Entity Emission Factors announced by the Ministry of Environment and the Ministry of Economy, Trade, and Industry. The emission factor is set to zero for the amount of renewable electricity certificates and J-Credits utilized.
  *April 2021: Switch to 100 % renewable electricity completed
- Fuel: The factors announced by the IPCC in 2019 were used for both domestic and overseas data.
- GHGs other than CO_2: Equivalents were calculated based on 100-year GWP values in the Fifth Assessment Report of the IPCC.

Third-party verification of GHG emissions
Scopes 1 and 2 GHG emissions are verified.

b) Water

Water withdrawal (thousand m^3)	FY2022	FY2023
Municipal water	434	474
Ground water	209	202
Total	644	676
Discharge (thousand m^3)	**FY2022**	**FY2023**
Total water discharge (sewage)	601	624
Recycled water	202	199
(Ratio)	(23.9%)	(22.7%)
Reused water	0	0
(Ratio)	(0%)	(0%)

- Recycled ratio=recycled water / (water withdrawal “Total” + recycled water)

* Totals do not add up in some cases due to rounding off of fractions.

Third-party verification of water
Water withdrawal is verified.

Quality of water discharge

The following table shows the water quality measurement values of the main substances in the five drainage ports for manufacturing process and living use in the Hirooka office. (No.2, 3, 5, 8, 9, 10, 11, 12)

Sewage line	Item	Unit	Measurement value (average)	
			FY2022	FY2023
No.2	n-hexane (mineral oil)	mg/l	ND	ND
	n-hexane (animal/plant oil)	mg/l	5.1	10.4
No.3	BOD	mg/l	13.4	11.4
	SS	mg/l	19	15
	n-hexane (mineral oil)	mg/l	ND	ND
	n-hexane (animal/plant oil)	mg/l	0.6	0.7
	Cu	mg/l	ND	ND
	Zn	mg/l	0.0	0.01
	Fe	mg/l	0.0	0.01
	Mn	mg/l	ND	ND
	Cr	mg/l	ND	ND
	T-P	mg/l	1.1	0.8
	Pb	mg/l	ND	ND
	Fluorine	mg/l	0.3	0.5
	Ammonia compound, Nitrous acid, Nitric acid	mg/l	11.5	10.4
	I2 (amount iodine consumed)	mg/l	0.6	1.6
No.5	n-hexane (mineral oil)	mg/l	ND	ND
	n-hexane (animal/plant oil)	mg/l	3.45	3.49
No.8	BOD	mg/l	0.6	0.6
	SS	mg/l	0.0	0.1
	n-hexane (mineral oil)	mg/l	ND	ND
	n-hexane (animal/plant oil)	mg/l	ND	ND
	Cu	mg/l	ND	ND
	Zn	mg/l	0.1	0.1
	Fe	mg/l	0.0	0.02
	Mn	mg/l	ND	ND
	Cr	mg/l	ND	ND
	T-P	mg/l	ND	ND
	Pb	mg/l	ND	ND
	Fluorine	mg/l	0.0	0.1
	Ammonia compound, Nitrous acid, Nitric acid	mg/l	0.6	0.6
	I2 (amount iodine consumed)	mg/l	0.5	1.1
No.9	BOD	mg/l	121.8	125.6
	SS	mg/l	113.3	136.9

	n-hexane (mineral oil)	mg/l	ND	ND
	n-hexane (animal/plant oil)	mg/l	3.3	3.4
	Cu	mg/l	0.0	ND
	Zn	mg/l	0.1	0.1
	Fe	mg/l	0.1	0.1
	Mn	mg/l	ND	ND
	Cr	mg/l	ND	ND
	T-P	mg/l	7.2	6.2
	Pb	mg/l	ND	0.002
	Fluorine	mg/l	ND	ND
	Ammonia compound, Nitrous acid, Nitric acid	mg/l	57.0	49.1
	I2 (amount iodine consumed)	mg/l	21.9	15.5
No.10	BOD	mg/l	4.5	5.5
	SS	mg/l	3.8	3.5
	n-hexane (mineral oil)	mg/l	ND	ND
	n-hexane (animal/plant oil)	mg/l	ND	ND
	Cu	mg/l	ND	ND
	Zn	mg/l	ND	0.003
	Fe	mg/l	ND	0.003
	Mn	mg/l	0.0	0.003
	Cr	mg/l	ND	ND
	T-P	mg/l	0.1	0.1
	Pb	mg/l	ND	ND
	Fluorine	mg/l	1.0	1.1
	Ammonia compound, Nitrous acid, Nitric acid	mg/l	37.8	32.0
	I2 (amount iodine consumed)	mg/l	0.7	0.5
No.11	BOD	mg/l	142.9	137.4
	SS	mg/l	107.7	103.3
	n-hexane (mineral oil)	mg/l	ND	ND
	n-hexane (animal/plant oil)	mg/l	1.9	2.0
	Cu	mg/l	0.0	0.003
	Zn	mg/l	0.0	0.035
	Fe	mg/l	0.0	0.01
	Mn	mg/l	ND	ND
	Cr	mg/l	ND	ND
	T-P	mg/l	6.3	6.3
	Pb	mg/l	ND	ND
	Fluorine	mg/l	0.0	ND
	Ammonia compound, Nitrous acid, Nitric acid	mg/l	109.7	66.2
	I2 (amount iodine consumed)	mg/l	26.7	26.1
No.12	BOD	mg/l	190.3	164.8

	SS	mg/l	136.7	130.5
	n-hexane (mineral oil)	mg/l	ND	ND
	n-hexane (animal/plant oil)	mg/l	1.5	1.6
	Cu	mg/l	0.0	ND
	Zn	mg/l	0.0	0.03
	Fe	mg/l	0.0	0.01
	Mn	mg/l	ND	ND
	Cr	mg/l	ND	ND
	T-P	mg/l	8.7	7.6
	Pb	mg/l	ND	ND
	Fluorine	mg/l	0.0	ND
	Ammonia compound, Nitrous acid, Nitric acid	mg/l	169.0	95.4
	I2 (amount iodine consumed)	mg/l	31.0	32.5

ND: No Detection (Below the detection limit)

c) Waste

Waste (tonnes)	FY2022	FY2023
All solid waste generated	2,661	2,487
Reused or recycled	2,661	2,487
Landfilled	10	7
Sent to waste-to-energy	467	455
Incineration	45	51
Other disposal facilities (material recycle)	2,139	1,973
Discards that have been reduced (from a defined base year: previous year)	163	174

d) Toxics

FY2023 PRTR data (kg)

No.	Name	Emissions to atmosphere	Transfer to waste	Removed/ consumed
374	Hydrogen fluoride and its water-soluble salts	26	0	26,444
677	Tetramethylammonium Hydroxide	13	0	1,335
746	N-Methyl-2-Pyrrolidone	53	1,006	11

FY2022 PRTR data (kg)

No.	Name	Emissions to atmosphere	Transfer to waste	Removed/ consumed
374	Hydrogen fluoride and its water-soluble salts	0	0	25,490

The calculation and protocols used are the Japanese Pollutant Release and Transfer Register (PRTR).
More details can be found on: http://www.env.go.jp/en/chemi/prtr/about/index.html