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 (t-CO_2e)	FY2017	FY2018
Scope 1	0.22	0.39
Scope 2	28.60	22.65
Total	28.82	23.04

- **CO_2 conversion factor of greenhouse gas emissions**
  Electric power: 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—FY2017 Actual Performance, announced by the Ministry of Environment and the Ministry of Economy, Trade and Industry (Dec. 27, 2018).
  Fuel: The factors announced by the IPCC in 2006 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 of FY2018 are verified.

b) Water

Water withdrawal (thousand m^3)	FY2017	FY2018
Municipal water	178	260
Ground water	225	203
Total	403	463
Discharge (thousand m^3)	**FY2017**	**FY2018**
Total water discharge (sewage)	440	470
Recycled water	143	168
(Ratio)	(32.5%)	(35.7%)
Reused water	0	0
(Ratio)	(0%)	(0%)

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)

Sewage line	Item	Unit	Measurement value (average)	
			FY2017	FY2018
No.2	n-hexane (mineral oil)	mg/l	ND	0.1
	n-hexane (animal/plant oil)	mg/l	5.3	5.4
No.3	BOD	mg/l	24.4	22.5
	SS	mg/l	18.3	24.5
	n-hexane (mineral oil)	mg/l	ND	ND
	n-hexane (animal/plant oil)	mg/l	1.8	2.0
	Cu	mg/l	ND	ND
	Zn	mg/l	0.003	0.016
	Fe	mg/l	0.07	0.04
	Mn	mg/l	0.04	0.01
	Cr	mg/l	ND	0.001
	T-P	mg/l	1.4	1.5
	Pb	mg/l	ND	ND
	Fluorine	mg/l	0.6	1.2
	Ammonia compound, Nitrous acid, Nitric acid	mg/l	13.1	18.8
	Ammonia nitrogen	mg/l	15	22.4
	Nitrous acid (NO2)	mg/l	7.1	2.6
	I2 (amount iodine consumed)	mg/l	4.1	9.1
No.5	n-hexane (mineral oil)	mg/l	ND	ND
	n-hexane (animal/plant oil)	mg/l	5.6	5.3
No.8	BOD	mg/l	1.5	0.7
	SS	mg/l	0.5	0.2
	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	0.07	0.06
	Fe	mg/l	0.001	0.004
	Mn	mg/l	ND	ND
	Cr	mg/l	ND	ND
	T-P	mg/l	0.001	ND
	Pb	mg/l	ND	ND

	Fluorine	mg/l	0.02	0.03
	Ammonia compound, Nitrous acid, Nitric acid	mg/l	0.40	0.4
	Ammonia nitrogen	mg/l	ND	15.8
	Nitrous acid (NO2)	mg/l	0.40	0.6
	I2 (amount iodine consumed)	mg/l	2.0	0.3
No.9	BOD	mg/l	121	125
	SS	mg/l	73	78
	n-hexane (mineral oil)	mg/l	ND	ND
	n-hexane (animal/plant oil)	mg/l	5.6	4.9
	Cu	mg/l	ND	ND
	Zn	mg/l	0.05	0.05
	Fe	mg/l	0.07	0.1
	Mn	mg/l	ND	ND
	Cr	mg/l	ND	ND
	T-P	mg/l	8	6.5
	Fluorine	mg/l	0.03	ND
	Pb	mg/l	ND	0.05
	Ammonia compound, Nitrous acid, Nitric acid	mg/l	23.4	27.4
	Ammonia nitrogen	mg/l	56.2	19
	I2 (amount iodine consumed)	mg/l	48.6	39.3
	Nitric acid (NO3)	mg/l	1.2	0.2

ND: No Detection (Below the detection limit)
-: Unmeasured

c) Waste

Waste (tons)	FY2017	FY2018
All solid waste generated	2,607	2,649
Reused or recycled	2,607	2,649
Landfilled	58	54
Sent to waste-to-energy	235	102
Incineration	52	55
Other disposal facilities (material recycle)	2,262	2438
Discards that have been reduced (from a defined base year: previous year)	133	-42

d) Toxics

FY2018 PRTR data (kg)

No.	Name	Emissions to atmosphere	Transfer to waste	Removed/ consumed
374	hydrogen fluoride and its water-soluble salts	0	0	14,179
438	Methylnaphthalene	34	0	6,338

FY2017 PRTR data (kg)

No.	Name	Emissions to atmosphere	Transfer to waste	Removed/ consumed
374	hydrogen fluoride and its water-soluble salts	0	0	11,853
438	Methylnaphthalene	34	0	6,780

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