

**Toxics Reduction Act Public Annual Report 2018**

The legal and trade names of the owner and the operator of the facility, the street address of the facility and, if the mailing address of the facility is different from the street address, the mailing address.(See below)	Vale Canada Limited		
Facility NPRI identification number	444		
The identification number assigned to the facility by the Ministry of the Environment for the purposes of Ontario Regulation 127/01.	444		
Number of full-time employees	475		
North American Industry Classification System (NAICS) - 2, 4, and 6 digit codes	33	14	10
If applicable, the name, position and telephone number of the individual who is the contact at the facility for the public: Public Contact (if applicable)	Ms. Mary Dubel		
Title	Superintendent - Environment		
Phone Number	705-682-5563		
Address of the facility	Copper Cliff Smelter Complex		
Facility Name	18 Rink Street		
Address 1	Copper Cliff		
Address 2	Ontario		
City	P0M 1N0		
Province			
Postal Code			
UTM coordinates, x and y	X	493502	Y 5143518
Datum	NAD83		
Legal name of Canadian parent company, if your facility is a subsidiary of a Canadian parent company	Vale		
Parent company name	200 Bay Street, Royal Bank Plaza		
Address 1	Suite 1600 , South Tower, P.O. Box 70		
Address 2	Toronto		
City	Ontario		
Province	M5J 2K2		
Postal Code	100		
Percent Ownership			

Substance:	Arsenic (and its compounds)	
CAS Number:	NA-02	
On a facility-wide basis:	Kilograms	
Amount that entered the facility as the substance itself or as a constituent of another substance:	Range 100,000 to 1,000,000	
The amount of substance that was created:	0	
The amount of substance that was contained in product:	Range 100,000 to 1,000,000	
On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a>		

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Substance:	Cadmium (and its compounds)
CAS Number:	NA-03
On a facility-wide basis:	Kilograms
Amount that entered the facility as the substance itself or as a constituent of another substance:	Range 1,000 to 10,000
The amount of substance that was created:	0
The amount of substance that was contained in product:	Range 1,000 to 10,000
On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a>	

Substance:	Carbon monoxide
CAS Number:	630-08-0
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	0
The amount of substance that was created:	Range 100 to 1,000
The amount of substance that was contained in product:	0
On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a>	

Substance:	Chromium (and its compounds)
CAS Number:	NA-04
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	Range 100 to 1,000
The amount of substance that was created:	0
The amount of substance that was contained in product:	Range 100 to 1,000
On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a>	

Substance:	Cobalt (and its compounds)
CAS Number:	NA-05
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	Range 1,000 to 10,000
The amount of substance that was created:	0
The amount of substance that was contained in product:	Range 1,000 to 10,000
On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a>	

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Substance:	Copper (and its compounds)
CAS Number:	NA-06
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	Range 10,000 to 100,000
The amount of substance that was created:	0
The amount of substance that was contained in product:	Range 10,000 to 100,000
On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a>	

Substance:	Dioxins and furans - total
CAS Number:	NA - D/F
On a facility-wide basis:	Grams
Amount that entered the facility as the substance itself or as a constituent of another substance:	0
The amount of substance that was created:	0
The amount of substance that was contained in product:	0
On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a>	

Substance:	Hexachlorobenzene
CAS Number:	118-74-1
On a facility-wide basis:	Grams
Amount that entered the facility as the substance itself or as a constituent of another substance:	0
The amount of substance that was created:	Range 10 to 100
The amount of substance that was contained in product:	0
On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a>	

Substance:	Lead (and its compounds)
CAS Number:	NA-08
On a facility-wide basis:	Kilograms
Amount that entered the facility as the substance itself or as a constituent of another substance:	Range 100,000 to 1,000,000
The amount of substance that was created:	0
The amount of substance that was contained in product:	Range 100,000 to 1,000,000
On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a>	

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Substance:	Nickel (and its compounds)
CAS Number:	NA-11
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	Range 10,000 to 100,000
The amount of substance that was created:	0
The amount of substance that was contained in product:	Range 10,000 to 100,000
On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a>	

Substance:	Nitrogen oxides (expressed as NO <sub>2</sub> )
CAS Number:	1104-93-1
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	0
The amount of substance that was created:	Range 100 to 1,000
The amount of substance that was contained in product:	0
On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a>	

Substance:	Total Particulate Matter
CAS Number:	NA - M08
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	0
The amount of substance that was created:	Range 100 to 1,000
The amount of substance that was contained in product:	0
On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a>	

Substance:	PM10 - Particulate Matter <=10 Microns
CAS Number:	NA - M09
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	0
The amount of substance that was created:	Range 100 to 1,000
The amount of substance that was contained in product:	0
On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a>	

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Substance:	PM2.5 - Particulate Matter <= 2.5Microns
CAS Number:	NA - M10
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	0
The amount of substance that was created:	Range 100 to 1,000
The amount of substance that was contained in product:	0
<p>On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a></p>	

Substance:	Selenium (and its compounds)
CAS Number:	NA-12
On a facility-wide basis:	Kilograms
Amount that entered the facility as the substance itself or as a constituent of another substance:	Range 10,000 to 100,000
The amount of substance that was created:	0
The amount of substance that was contained in product:	Range 10,000 to 100,000
<p>On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a></p>	

Substance:	Sulphur dioxide
CAS Number:	7446-09-5
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	0
The amount of substance that was created:	Range 100,000 to 1,000,000
The amount of substance that was contained in product:	0
<p>On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a></p>	

Substance:	Butane
CAS Number:	68551-21-3
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	0
The amount of substance that was created:	Range 1 to 10
The amount of substance that was contained in product:	0
<p>On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a></p>	

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Substance:	Hexane
CAS Number:	92112-69-1
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	0
The amount of substance that was created:	Range 1 to 10
The amount of substance that was contained in product:	0
<p>On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a></p>	

Substance:	Pentane
CAS Number:	8031-35-4
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	0
The amount of substance that was created:	Range 1 to 10
The amount of substance that was contained in product:	0
<p>On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a></p>	

Substance:	Propane
CAS Number:	91052-96-9
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	0
The amount of substance that was created:	Range 1 to 10
The amount of substance that was contained in product:	0
<p>On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a></p>	

Substance:	Sulphuric Acid
CAS Number:	7664-93-9
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	0
The amount of substance that was created:	Range 100,000 to 1,000,000
The amount of substance that was contained in product:	Range 100,000 to 1,000,000
<p>On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <a href="http://www.ec.gc.ca/inrp-npri/default.asp?lang=en">http://www.ec.gc.ca/inrp-npri/default.asp?lang=en</a></p>	

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Substance:	Zinc (and its compounds)
CAS Number:	NA-14
On a facility-wide basis:	Tonnes
Amount that entered the facility as the substance itself or as a constituent of another substance:	Range 100 to 1,000
The amount of substance that was created:	0
The amount of substance that was contained in product:	Range 100 to 1,000

On-site releases from the facility to air, water and land, as well as on and off-site disposal and off-site recycling can be viewed by searching for this facility at <http://www.ec.gc.ca/inrp-npri/default.asp?lang=en>

As of June 1st, 2017, I certify that I have read the toxic substance reduction accounting report for As, Cd, CO, Co, Cu, Cr, Dioxins and Furans, Hexachlorobenzene, Ni, NOx, Pb, TPM, PM10, PM2.5, Se, SO<sub>2</sub>, Sulphuric Acid, VOCs and Zn and I am familiar with its contents and to my knowledge the information contained in the TRA accounting report is factually accurate and the report complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under the Act.

The original version of this report is signed off by: Highest Ranking Employee:	Mr Jean-Stephane Presello
Title:	Smelter Manager
Phone Number:	(705) 682-6432