

**Part III Form 2  
Section 11. ANNUAL REPORT.**

<b>Drinking-Water System Number:</b>	WW No. 240000075
<b>Drinking-Water System Name:</b>	Vermilion Water Treatment Plant
<b>Drinking-Water System Owner:</b>	VALE INCO Limited
<b>Drinking-Water System Category:</b>	Municipal and Private Water Works
<b>Period being reported:</b>	January 1st 2008 to December 31st 2008

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [<input checked="" type="checkbox"/>] No [ ]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [<input checked="" type="checkbox"/>] No [ ]</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <p><b>Hardcopy Address:</b> VALE INCO Limited 155 Balsam Street c/o Copper Cliff Sewage Treatment Plant Copper Cliff, Ontario, P0M 1N0</p> <p><b>Web Address:</b> <a href="http://www.greatersudbury.ca">www.greatersudbury.ca</a></p>	<p><b><u>Complete for all other Categories.</u></b></p> <p>Number of Designated Facilities served: <input type="text" value="0"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [<input checked="" type="checkbox"/>]</p> <p>Number of Interested Authorities you report to: <input type="text" value="0"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [<input checked="" type="checkbox"/>]</p>
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**Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report**

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
Vermilion Distribution system	260006789
The Vermilion Water Treatment Plant also supplies water to the plumbing works system that is owned and operated by VALE INCO Ltd for use by its employees and its process.	

**Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?**

Yes [] No [ ]

**Indicate how you notified system users that your annual report is available, and is free of charge.**

**Public access/notice via the web**

[www.greatersudbury.ca](http://www.greatersudbury.ca)

**Public access/notice via a newspaper**

[ ] **Public access/notice via Public Request**

[ ] **Public access/notice via a Public Library**

**Public access/notice via other method**

VALE INCO Limited – Copper Cliff Sewage Treatment Plant Office – by appointment call (705) 682-6548

### **Describe your Drinking-Water System**

In 1972, INCO Limited constructed the INCO Vermillion Water Treatment Plant, in order to produce process water for the INCO mining operations as well as potable drinking water for INCO staff and the surrounding communities. In 2007, INCO became CVRD INCO and a name change to Vale Inco was completed late in the year. The VALE INCO Vermillion Water Treatment Plant is designed for a total production capacity of 82,000 m<sup>3</sup>/day (21.7M USGPD) and is supplied with surface water from the Vermilion River.

All process equipment is installed inside a heated and ventilated building, except for the caustic and alum storage tanks that are installed outside. The water treatment plant consists of the following main elements:

- One rapid mix tank;
- One hydraulic retention time tank;
- One PULSATUBE sludge blanket type clarifier;
- Five AQUAZUR V gravity sand filters;
- One clearwell located below the filters;
- Treated and backwash water vertical turbine pumping station;
- Air scouring blower and air instrument compressor room;
- Chemical storage and dosing system;
- External heat traced caustic and alum storage tanks;
- Liquefied Chlorine (tonners) stored and used in Chlorination room;
- Plant control room and laboratory room.

### **PROCESS FLOW DESCRIPTION**

1. Raw water is pumped from the Vermilion River to the VALE INCO Vermillion WTP.
2. Raw water flow control is achieved with a by-pass pipe and control valve. The by-pass control valve automatically adjusts based on the water level in the clarifier. When the level in the clarifier rises, the by-pass flow control valve opens to decrease the flow to the plant. The by-pass is connected to the U-drain of the WTP.

**List all water treatment chemicals used over this reporting period**

- Aluminium Sulphate
- Sodium Hydroxide
- Liquefied Chlorine
- Hydrofluosilicic Acid
- Polyfloc CE1161P 35%
- Polyphosphate (Flogard 6102)
- Nalco 2 Liquid Flocculant

Were any significant expenses incurred to? *None*

- Install required equipment
- Repair required equipment
- Replace required equipment

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
No Notices / No Reports in 2008					

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	53	(N.D.) – (25)	(N.D.) – TNTC)	N/A	N/A
Treated	53	(N.D.) – (N.D.)	(N.D.) – (N.D.)	51	(N.D.) – (250)
Plumbing Works	102	(N.D.) – (N.D.)	(N.D.) – (N.D.)	102	(N.D.) – (TNTC)
N/A=Not Applicable				N.D. = Non Detectable TNTC= To Numerous To Count	

**Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.**

FINISHED WATER ANALYSIS				
OPERATOR BENCH ANALYSIS			CONTINUOUS MONITORS	
	Number of Grab Samples	Range of Results (min #)-(max #)	Number of Samples As Per Note Below	Range of Results (min #)-(max #)
<b>Turbidity</b>	746	(0.05 NTU)-(0.28 NTU)	8760	(0.00 NTU) - (100.0 NTU)
<b>Chlorine</b>	1762	(0.53)-(2.19) mg/L Free	8760	(0.01) - (4.71) mg/L Free
<b>Fluoride</b> (If the DWS provides fluoridation)	742	(0.10)-(0.99)	8760	(0.01) - (2.35)
<i>NOTE: For continuous monitors use 8760 as the number of samples.</i>				

**NOTE: Record the unit of measure if it is not milligrams per litre**

**Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.**

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
C of A #6136-7D4P9C Issue date: April 11, 2008 Table 5.1	SS U-Drain to Environment	June 25	3.4	Grab Sample Mg/L
		June 25	2.60	Composite Mg/L
		Aug 28	2.40	Grab Sample Mg/L
		Aug 28	<2.00	Composite Mg/L
		Sept 25	<2.00	Grab Sample Mg/L
		Nov 10	<2.00	Grab Sample Mg/L
		Nov 21	<2.00	Composite Mg/L
		Nov 21	<2.00	Grab Sample Mg/L
		Nov 22	25.20	Grab Sample Mg/L

**Summary of Inorganic parameters tested during this reporting period or the most recent sample results**

Parameter	Unit of Measure	MDL Method Detection Limit	Result Value Year 2008		Exceedance
Antimony	ug/L	0.5	<MDL	February 19	<i>Nil</i>
Arsenic	ug/L	1.0	<MDL	February 19	<i>Nil</i>
Barium	ug/L	1.0	13.9	February 19	<i>Nil</i>
Boron	ug/L	2.0	8.6	February 19	<i>Nil</i>
Cadmium	ug/L	0.10	<0.1 <MDL	February 19	<i>Nil</i>
Chromium	ug/L	1.0	< 1.0 <MDL	February 19	<i>Nil</i>
Lead	ug/L	1.0	< 1.0 <MDL	February 19	<i>Nil</i>
Mercury	ug/L	0.1	0.14	February 19	<i>Nil</i>
Selenium	ug/L	1.0	< 1.0 <MDL	February 19	<i>Nil</i>
Sodium	mg/L	0.05	10.5	May 5, 2008	<i>Nil</i>
Uranium	ug/L	1.0	< 1.0 <MDL	February 19	<i>Nil</i>
Fluoride	mg/L	0.10	0.26	May 5, 2008	<i>Nil</i>

Parameter	Unit of Measure	Result Value Year 2008				Exceedance
		Feb 19	May 5	Sept 2	Nov 21	
Nitrite	mg/L	0.05	0.05	0.05	0.05	<i>Nil</i>
		<MDL	<MDL	<MDL	<MDL	
Nitrate	mg/L	0.15	<0.1	<0.1	0.13	<i>Nil</i>
Nitrate + Nitrite	mg/L	0.15	<0.1	<0.1	0.13	<i>Nil</i>

**Summary of Organic parameters sampled during this reporting period or the most recent sample results**

Parameter	Result Value Year 2008				Unit of Measure	Exceedance
	Feb 19	May 5	Sept 2	Nov 21		
Alachlor	<0.4 <MDL				ug/L	Nil
Aldicarb	<0.69 <MDL				ug/L	Nil
Aldrin + Dieldrin	<0.004 <MDL				ug/L	Nil
Atrazine + N-dealkylated metabolites	<0.9 <MDL				ug/L	Nil
Azinphos-methyl	<0.30 <MDL				ug/L	Nil
Bendiocarb	<1.4 <MDL				ug/L	Nil
Benzene	<0.25 <MDL				ug/L	Nil
Benzo(a)pyrene	<0.01 <MDL				ug/L	Nil
Bromoxynil	<0.61 <MDL				ug/L	Nil
Carbaryl	<1.4 <MDL				ug/L	Nil
Carbofuran	<1.4 <MDL				ug/L	Nil
Carbon Tetrachloride	<0.25 <MDL				ug/L	Nil
Chlordane (Total)	<0.004 <MDL				ug/L	Nil
Chlorpyrifos	<0.30 <MDL				ug/L	Nil
Cyanazine	<0.30 <MDL				ug/L	Nil
Diazinon	<0.03 <MDL				ug/L	Nil
Dicamba	<0.24 <MDL				ug/L	Nil
1,2-Dichlorobenzene	<0.25 <MDL				ug/L	Nil
1,4-Dichlorobenzene	<0.25 <MDL				ug/L	Nil
Dichlorodiphenyltrichloroethane (DDT) + metabolites	<0.005 <MDL				ug/L	Nil
1,2-Dichloroethane	<0.25 <MDL				ug/L	Nil
1,1-Dichloroethylene (vinylidene chloride)	<0.25 <MDL				ug/L	Nil
Dichloromethane	<0.25 <MDL				ug/L	Nil
2,4-Dichlorophenol	<0.053 <MDL				ug/L	Nil
2,4-Dichlorophenoxy acetic acid (2,4-D)	<0.24 <MDL				ug/L	Nil
Diclofop-methyl	<0.24 <MDL				ug/L	Nil
Dimethoate	<0.3 <MDL				ug/L	Nil
Dinoseb	<0.061 <MDL				ug/L	Nil
Diquat	<7.0 <MDL				ug/L	Nil
Diuron	<6.9 <MDL				ug/L	Nil
Glyphosate	<10.0 <MDL				ug/L	Nil
Heptachlor + Heptachlor Epoxide	<0.00055 <MDL				ug/L	Nil
Lindane (Total)	<0.00041 <MDL				ug/L	Nil
Malathion	<0.30 <MDL				ug/L	Nil
Methoxychlor	<0.0011 <MDL				ug/L	Nil
Metolachlor	<0.20 <MDL				ug/L	Nil
Metribuzin	<0.20 <MDL				ug/L	Nil
Monochlorobenzene	<0.25 <MDL				ug/L	Nil
Paraquat	<1.00 <MDL				ug/L	Nil
Parathion	<0.20 <MDL				ug/L	Nil
Pentachlorophenol	<0.053 <MDL				ug/L	Nil

**Summary of Organic parameters sampled during this reporting period or the most recent sample results**

Parameter	Result Value Year 2008				Unit of Measure	Exceedance
	Feb 19	May 5	Sept 2	Nov 21		
Phorate	<0.30 <MDL				ug/L	<i>Nil</i>
Picloram	<0.061 <MDL				ug/L	<i>Nil</i>
Polychlorinated Biphenyls(PCB)	<0.069 <MDL				mg/L	<i>Nil</i>
Prometryne	<0.2 <MDL				ug/L	<i>Nil</i>
Simazine	<0.30 <MDL				ug/L	<i>Nil</i>
<b>THM ug/L</b>	29.5	58.1	96.5	44.3	<b>Latest annual average 57.1</b>	<i>Nil</i>
Temephos	<19 <MDL				ug/L	<i>Nil</i>
Terbufos	<0.20 <MDL				ug/L	<i>Nil</i>
Tetrachloroethylene	<0.25 <MDL				ug/L	<i>Nil</i>
2,3,4,6-Tetrachlorophenol	<0.053 <MDL				ug/L	<i>Nil</i>
Triallate	<0.20 <MDL				ug/L	<i>Nil</i>
Trichloroethylene	<0.25 <MDL				ug/L	<i>Nil</i>
2,4,6-Trichlorophenol	<0.053 <MDL				ug/L	<i>Nil</i>
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	<0.061 <MDL				ug/L	<i>Nil</i>
Trifluralin	<0.20 <MDL				ug/L	<i>Nil</i>
Vinyl Chloride	<0.25 <MDL				ug/L	<i>Nil</i>

**MDL = Method Detection Limit**

**List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.**

Parameter	Result Value	Unit of Measure	Date of Sample
None of the samples exceeded half the standard prescribed in Schedule 2 Of Ontario Drinking Water Quality Standards			

**(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)**