

**Approval for Site-specific Standards Issued
Pursuant to s.35(1) of O. Reg. 419/05**

Approval Number: 501-20-rv0

Reference Number: 3421-BHMLV8

Issue Date: , 2020

Expiry Date: July 31, 2030

Site-specific
Standards Issued to: Glencore Canada Corporation

Site Location: Sudbury Smelter Complex
1 Longyear Drive, Falconbridge
District of Sudbury, Ontario
P0M 1S0

DEFINITIONS - TERMS

For the purpose of this site-specific standard approval for **cadmium** the following definitions apply:

- (1) *"Action Plan"* means the document entitled "Action Plan", dated April 2018 and amended in October 2019, submitted by the *Company* as part of its *Request*, including but not limited to the items summarized in Appendix 1 of this *Approval*.
- (2) *"Ambient TSP Monitoring Stations"* means the monitors and related equipment that measure ground level concentrations of *cadmium* within the City of Greater Sudbury and includes:
 - i. any monitor identified in Appendix 2 which includes the Edison and Pumphouse monitors operated and maintained by the *Company*; and
 - ii. any other such monitor identified in writing by the *District Manager* or the *EPB Director*.
- (3) *"Approval"* means this site-specific standard approval, approval number 501-20-rv0.
- (4) *"Cadmium"* means the contaminant identified by the Chemical Abstract System (CAS) number of 7440-43-9.
- (5) *"Company"* means Glencore Canada Corporation, carrying on business under the name of Sudbury Integrated Nickel Operations that is responsible for the construction or operation of the *Facility* and includes any successors and assigns in accordance with section 19 of the Environmental Protection Act.
- (6) *"Director"* means a person appointed under section 35 of the *Regulation* under the Environmental Protection Act.

- (7) “*District Manager*” means the District Manager of the appropriate local district office of the *Ministry*, where the *Facility* is geographically located.
- (8) “*EPB Director*” means the Director of the *Ministry’s* Environmental Permissions Branch.
- (9) “*Environmental Compliance Approval*” means the Environmental Compliance Approval number 7530-93ZKPV issued on February 6, 2013, as amended from time to time.
- (10) “*Environmental Management System and Community Engagement Report*” means the annual report referred in the *Environmental Compliance Approval*.
- (11) “*Facility*” means the entire operation located on the property referred to as the Sudbury Smelter Complex as defined in the *Environmental Compliance Approval*.
- (12) “*Ministry*” means the ministry of the government of Ontario responsible for the Environmental Protection Act and includes all officials, employees or other persons acting on its behalf.
- (13) “*Ministry Review Report*” means the report dated April 2020 that provides a written review by *Ministry* staff of the Request by the *Company* for site-specific standard for *cadmium*, 24-hour averaging period.
- (14) “*Measured level*” is as set out in this *Approval*.
- (15) “*Regulation*” means Ontario Regulation 419/05: Air Pollution – Local Air Quality under the Environmental Protection Act as amended from time to time.
- (16) “*Request*” means the request dated April 23, 2018 made under section 32 of the *Regulation* and submitted by the *Company* with respect to the *cadmium* standard listed in Schedule 3 of the *Regulation* and includes,
- i. the request for site-specific standard dated April 23, 2018, and signed by Chad Pearson, Superintendent of Environment, of the *Company*;
 - ii. an Emission Summary and Dispersion Modelling Report dated October 2016;
 - iii. updated cadmium emissions and dispersion modelling information dated March 3, 2020;
 - iv. a Technology Benchmarking Report dated April 2018;
 - v. a Public Consultation Report dated April 2018 summarizing the public meeting (held on February 28, 2018);
 - vi. an *Action Plan* report dated April 2018; and
 - vii. other supporting information.
- (17) “*TSP*” means suspended particulate matter less than 44 microns in diameter.

GROUNDS FOR APPROVAL

In accordance with section 35 of the *Regulation*,

A. I, the *Director*, am satisfied that:

1. The *Request* is consistent with subsection 32(1), paragraph 8.1 of the *Regulation*.
2. The requirements of section 32 of the *Regulation* have been met.
3. The *Request* satisfies the requirements of section 33 and other relevant portions of the *Regulation*.
4. Pursuant to subsection 34 (1.1) of the *Regulation*, the *Company* was not required to hold a public meeting or comply with subsections 34 (2) to (4). Nevertheless, the *Company* conducted a public meeting on February 28, 2018 respecting the *Request*.

B. Based on the above conclusions and the information that I have reviewed, including the *Request*, the *Ministry Review Report* and various interactions with the *Company*, I am of the opinion that:

1. The *Company* cannot comply with section 20 of the *Regulation* with respect to the *cadmium* standard of $0.025 \mu\text{g}/\text{m}^3$ over a 24-hour averaging period listed in Schedule 3 of the *Regulation* because it is not technically and economically feasible for the *Company* to comply.
2. For the applicable time period set out in Table 1 below, the site-specific *cadmium* standard is the minimum change necessary to enable the *Company* to comply with section 20 of the *Regulation*.
3. The conditions imposed are appropriate having considered the following as per section 35(12) of the *Regulation*:
 - a. The nature of *cadmium*;
 - b. The frequency with which the inability to comply with section 20 referred to in subclause 35 (1)(b)(i) of the *Regulation* would occur; and
 - c. Whether there are any acute effects associated with the contaminant.
4. There is no public interest reason sufficient to require denial of the *Request*.
5. Compliance with this *Approval* will result in improvements to reduce discharges to air.

C. The *Company* was provided a copy of a draft of the *Approval* on April 14, 2020 and provided an opportunity to make written submissions to the *Director* during the period that ended 30 days after the draft was given.

SITE-SPECIFIC STANDARD(S) APPROVED

Pursuant to s.35 (4), (4.1) and (5) of the *Regulation*, with respect to discharges from the *Facility*, references in the *Regulation* to a standard set out in Schedule 3 for *cadmium* shall be deemed, for the applicable time period set out in Table 1, to be references to the corresponding site-specific standard set out in Table 1.

Table 1: Site-Specific Standard for the Facility

Contaminant	Contaminant Chemical Abstract System No.	Applicable Time Periods	Site-specific Standard	Site-specific Standard Averaging Period
<i>Cadmium</i>	7440-43-9	From the date of this <i>Approval</i> to December 31, 2021	0.180 µg/m ³	24-hour
<i>Cadmium</i>	7440-43-9	January 1, 2022 to July 31, 2030	0.061 µg/m ³	24-hour

NOTES: µg/m³ means micrograms per cubic meter

CONDITIONS

You are hereby notified that this *Approval* is issued to you subject to the conditions outlined below pursuant s.35 (6) of the *Regulation*. Please note that s.35 (7) of the *Regulation* states that the approved site-specific standard for *cadmium* for the 24-hour averaging period applies only if the following conditions are complied with.

Condition 1: Cadmium Emissions – Measured Level

- 1.1. Within 60 days of becoming aware of the circumstances described in Condition 1.2 or by such later date as the *EPB Director* may specify in writing, the *Company* shall submit a report to the *District Manager* and *EPB Director* that includes the following information:
 - 1.1.1. An analysis of what caused the concentration of *cadmium* to exceed the level identified in Table 2 of this *Approval*;
 - 1.1.2. A review of whether or not the exceedence is likely to continue once the *Action Plan* has been implemented;
 - 1.1.3. An assessment of additional equipment, technical methods and operational measures that are available to further minimize the likelihood of measurements above the level in Table 2; and
 - 1.1.4. A proposed schedule to implement the actions identified in items 1.1.2 and 1.1.3 above.
- 1.2. The circumstance mentioned in Condition 1.1 is,
 - 1.2.1. A concentration of *cadmium* measured by any of the *Ambient TSP Monitoring Stations* exceeds the level set out in Table 2; and
 - 1.2.2. In the preceding 12-month period from the date of the exceedence mentioned in Condition 1.2.1, any of the *Ambient TSP Monitoring Stations* measured at least one exceedence of *cadmium* level set out in Table 2.

Condition 2: Written Summary of Action Plan Implementation

- 2.1 The *Company* shall prepare a written summary of the measures taken each calendar year to implement the *Action Plan*, including a description of each measure taken, the date of implementation of each measure taken and proposed dates for the implementation of measures yet to be taken.
- 2.2 Unless another date has been specified in writing by the *EPB Director*, the *Company* shall submit an electronic copy of the summary to both the *District Manager* and the *EPB Director* no later than March 31 of each year following the calendar year that is being summarized.

Table 2: Measured Level of Cadmium, Above Which, Trigger Action

Contaminant	Contaminant Chemical Abstract System No.	Applicable Dates	Measured Level	Averaging Period
Cadmium	7440-43-9	From the date of this <i>Approval</i> to December 31, 2021	0.15 µg/m ³	24-Hour
Cadmium	7440-43-9	January 1, 2022 to July 31, 2030	0.05 µg/m ³	24-Hour

NOTES: µg/m³ means micrograms per cubic meter

Condition 3: *Environmental Management System and Community Engagement Report*

3.1 Unless another date has been specified in writing by the *EPB Director*, the *Company* shall submit an electronic copy of the *Environmental Management System and Community Engagement Report* to both the *District Manager* and the *EPB Director* no later than March 31 of each year following the calendar year that the report was prepared for.

Condition 4: Demonstration of Compliance

4.1 The *Company* shall submit an Emission Summary and Dispersion Modelling Report prepared in accordance with section 26 of the *Regulation* to the *EPB Director* no earlier than July 1, 2026 and no later than August 1, 2026. The approved dispersion model used to prepare the report shall be used with meteorological data referred to in paragraph 3 of subsection 13 (1) of the *Regulation*, the *Director's* approval of which does not expire before the date that the report is submitted.

4.2 The report submitted pursuant to Condition 4.1 must demonstrate compliance with the cadmium site-specific standard set out in Table 1 of this *Approval*.

REASONS FOR CONDITIONS

Under subsection 35(6), the *Director* may impose conditions on a site-specific standard approval.

Condition 1: Cadmium Emissions – Measured Level

Condition 1 was included to ensure that all actions taken by the *Company* will result in minimizing the frequency of exceedences of *cadmium*. The measured level of 0.15 µg/m³ in Table 2 for the period until December 2021 is based on the maximum measured concentration of the monitoring results from 2011-2019 for the *Ambient TSP Monitoring Stations*. The measured level of 0.05 µg/m³ for the period January 2022 to July 2030 is based on consideration of reduction in point of impingement concentrations due to the implementation of the *Action Plan*.

Condition 2: Written Summary of Action Plan Implementation

Condition 2 was included to require the *Company* to provide follow up verification that steps outlined in the *Action Plan* are implemented and periodically reviewed to ensure continuous improvement to address exposure to *cadmium*.

Condition 3: Environmental Management System and Community Engagement Report

Condition 3 was included to ensure public involvement and transparency of the operating conditions of the *Facility* under the site-specific standard *Approval*. Awareness by the public of the actions taken or proposed to be taken by the *Company* will promote reduction of the frequency of exposures to *cadmium*.

Condition 4: Demonstration of Compliance

Condition 4 was included to ensure that compliance with the cadmium site-specific standard is demonstrated using proper meteorological data.

EXPIRY

In accordance with s.35 (9) of the *Regulation*, this *Approval* shall expire on July 31, 2030 after which the standard set out in Schedule 3 to the *Regulation* for the 24-hour averaging period will apply to discharges of *cadmium* from the *Facility*.

The above noted *Request* is approved under Section 35 of the *Regulation*.

DATED AT TORONTO this day of _____, 2020

Heather Malcolmson

Director

Ontario Regulation 419/05 – Section 35

C:

Brian Cameron, District Manager, Ministry of the Environment Conservation and Parks,
Sudbury Office

Chris Ransom, Glencore Canada Corporation

Appendix 1: Summary of Action Plan Items

Technology	Item
<ul style="list-style-type: none"> • Secondary Hooding on all Converters and discharge of Secondary Gas and Matte Granulation Tundish (MG1) emissions to a new 65m Stack. • Discharge of Primary Gas from Primary Hoods on all Converters and Matte Granulation emissions (MG2 and MG3) to existing 93m Main Stack. 	Installation of secondary fans
	Installation of secondary hoods
	Installation of new 65m stack
	Redirection of gas streams from matte granulation (MG2 and MG3) to 93 m stack and (MG1) to the new 65 m stack
	Commissioning of the Secondary Gas System and System Optimization
Investigate Emissions from Roaster Roof Fans	Action Plan evaluation- Source testing of the main cadmium emission sources (including the 93 m main stack, new 65m stack and the Converter Aisle Monovent) and update of the Emission Summary and Dispersion Modelling Report
Investigate Emissions from Roaster Roof Fans	Evaluate technology options in the Roaster Roof Fan area
	Engineering assessment of Roaster Roof Fan emissions

Appendix 2: Map of Glencore's Sudbury Smelter Complex *Ambient TSP Monitoring Stations*

