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De: [Ryan Abel](#)

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À: [Suncor Base Mine Extension Project \(IAAC/AEIC\)](#)

Cc: [Ryan Abel](#); [Bori Arrobo](#); [Bois, Claudette \(IAAC/AEIC\)](#);

Sujet: Fort McKay First Nation's Air Quality Permissible Levels

Confidentialité: Normale

Pièces jointes:

[FORT MCKAY FIRST NATION AQ Permissible Levels March 2018v3.pdf](#);

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Dear Sir/Madam,

On behalf of the Fort McKay First Nation, please find attached Fort McKay's Air Quality Objectives (AQ Permissible Levels) as mentioned in comments we submitted on May 1, 2020 with respect to Suncor's Initial Project Description (reference #43 on the registry). This document is of course subject to being updated from time-to-time based on data and scientific literature that we are regularly reviewing.

If you have any questions, please don't hesitate to contact me.

Sincerely,

Learn about the Moose Lake Plan. Visit <http://www.mooselaketgether.ca>

**Ryan Abel**  
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**FORT MCKAY**  
FIRST NATION

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**Fort McKay's Ambient Air Quality Permissible Levels (March, 2018 v3)**

<b>Substance</b>	<b>Averaging Period</b>	<b>Permissible Level</b> ( $\mu\text{g}/\text{m}^3$ at 25°C and 101.325 kPa unless noted) (ppb values in brackets)	<b>Basis</b>	<b>Comment</b>
Sulphur Dioxide (SO <sub>2</sub> )	1 hour	130 <sup>1,2</sup> (50 ppb)	Canadian Ambient Air Quality Standard (CAAQS) for SO <sub>2</sub> (2017)	The level is based on a 50 ppb concentration which is the concentration level separating the "yellow" and "orange" management levels. The permissible level is not to be exceeded on more than 3 days per year.
	24 hour	20 <sup>3</sup> (7.6 ppb)	WHO (2005)	Not to be exceeded more than 6 times per year.
	Annual	6.5 <sup>1</sup> (2.5 ppb)	The Canadian Ambient Air Quality Standard (CAAQS) for SO <sub>2</sub> (2017)	The level is a based on 2.5 ppb which is the middle of the "yellow" management levels. The permissible level is a never to be exceeded level and is well below annual SO <sub>2</sub> levels measured in Fort McKay since 1998.
Nitrogen Dioxide (NO <sub>2</sub> )	1 hour	58 <sup>4,5</sup> (31 ppb)	Canadian Ambient Air Quality Standard (CAAQS) for NO <sub>2</sub> (2017)	The level is based on a 31 ppb concentration which is the concentration level separating the "yellow" and "orange" management levels. The permissible level is not to be exceeded on more than 3 days per year.
	Annual	13 <sup>4,5</sup> (7 ppb)	The Canadian Ambient Air Quality Standard (CAAQS) for NO <sub>2</sub> (2017)	The level is a based on 7 ppb which is the concentration level separating the "yellow" and "orange" management levels. The permissible level is a never to be exceeded level.

<b>Substance</b>	<b>Averaging Period</b>	<b>Permissible Level</b> ( $\mu\text{g}/\text{m}^3$ at 25°C and 101.325 kPa unless noted) (ppb values in brackets)	<b>Basis</b>	<b>Comment</b>
Ozone (O <sub>3</sub> )	8 hr daily maximum mean (May – September period)	110 <sup>6</sup> (56 ppb)	Canadian Ambient Air Quality Standards (CAAQS) for Ozone	The level is based on 56 ppb which is the proposed concentration level separating the “yellow” and “orange” management levels. The permissible level should not be exceeded on more than 3 days per year excluding influences from forest fires
Particulate Matter (PM <sub>2.5</sub> )	24 hr	19 <sup>7</sup> (N/A)	Canada Ambient Air Quality Standard (CAAQS) for PM <sub>2.5</sub>	The level is based on 19 $\mu\text{g}/\text{m}^3$ which is the concentration level separating the “yellow” and “orange” management levels and is a level that should not be exceeded on more than 7 days per year excluding influences from forest fires
	Annual	6.4 <sup>7</sup> (N/A)	Canada Ambient Air Quality Standard for PM <sub>2.5</sub>	The level is based on the concentration level separating the “yellow” and “orange” management levels which is 6.4 $\mu\text{g}/\text{m}^3$ . The permissible level is a never to be exceeded level excluding periods when there are forest fire influences
Particulate Matter (PM <sub>10</sub> )	99 <sup>th</sup> % 24 hr	33 <sup>3</sup> (N/A)	WHO (2005)	The level is two-thirds of the Guideline value which reflects the approach used in setting CAAQS management levels. A never to be exceeded level excluding influences from forest fires.

Substance	Averaging Period	Permissible Level ( $\mu\text{g}/\text{m}^3$ at 25°C and 101.325 kPa unless noted) (ppb values in brackets)	Basis	Comment
	Annual	13 <sup>3</sup> (N/A)	WHO (2005)	The level is two-thirds of the Guideline value which reflects the approach used in setting CAAQS management levels. A never to be exceeded level excluding influences from forest fires.
Carbon Monoxide (CO)	1 hour	15,000 <sup>6</sup> (13,000)	AAAQO (2013)	A never to be exceeded level.
	8 hour	6,000 <sup>6</sup> (5,000)	AAAQO (2013)	A never to be exceeded level.
Benzene	1 hour	30 <sup>6</sup> (9.0)	AAAQO (2013)	A never to be exceeded level.
	Annual	3 <sup>6</sup> (0.9)	AAAQO (2013)	A never to be exceeded level.
Total Reduced Sulphur (TRS) and Odour Events	1hour	1 ppb <sup>8</sup>	Fort McKay's Experience with Odours and TRS Levels	Level is based on experience in Fort McKay that odours are generally present when TRS levels are above 1 ppb and are often present at lower TRS levels.

<sup>1</sup> Based on the 2017 Canadian Council of Ministers of the Environment (CCME) Canadian Ambient Air Quality Standards (CAAQS) for SO<sub>2</sub> and past and current SO<sub>2</sub> levels in Fort McKay.

<sup>2</sup> The USEPA limit for SO<sub>2</sub> was considered in setting the permissible level but the SO<sub>2</sub> CAAQS is more stringent than the USEPA 1 hour standard (see EPA. 2010. *Primary National Ambient Air Quality Standard for Sulfur Dioxide*. US Environmental Protection Agency. 40 CFR Parts 50, 53, and 58. [EPA-HQ-OAR-2007-0352; RIN 2060-A048. <http://www.epa.gov/air/sulfurdioxide/pdfs/20100602final.pdf>]

<sup>3</sup> Based on 2005 WHO Air Quality Guideline update ([www.euro.who.int/\\_\\_data/assets/pdf\\_file/0008/147851/E87950.pdf](http://www.euro.who.int/__data/assets/pdf_file/0008/147851/E87950.pdf))

<sup>4</sup> Based on the 2017 Canadian Council of Ministers of the Environment (CCME) Canadian Ambient Air Quality Standards (CAAQS) for NO<sub>2</sub> and past and current NO<sub>2</sub> levels in Fort McKay.

<sup>5</sup> The USEPA limit for NO<sub>2</sub> was considered in setting the number but the NO<sub>2</sub> CAAQS is more stringent than the USEPA 1 hour standard (see EPA 2010. *Primary National Ambient Air Quality Standards for Nitrogen Dioxide*. US

Environmental Protection Agency. 40 CFR Parts 50 and 58 [EPA–HQ–OAR–2006–0922; FRL 9107–9] RIN 2060–AO19 [http://www.epa.gov/ttn/naaqs/standards/nox/s\\_nox\\_cr\\_fr.html](http://www.epa.gov/ttn/naaqs/standards/nox/s_nox_cr_fr.html)

<sup>6</sup>Based on Alberta Ambient Air Quality Objectives (August 2013) (<http://aep.alberta.ca/air/legislation/ambient-air-quality-objectives/documents/AmbientAirQualityObjectives-Aug2013.pdf>)

<sup>7</sup>Based on the Canadian Ambient Air Quality Standards for Ozone and PM<sub>2.5</sub> announced for 2020 (December 12, 2012) (<http://ec.gc.ca/default.asp?lang=En&n=56D4043B-1&news=A4B2C28A-2DFB-4BF4-8777-ADF29B4360BD>)

<sup>8</sup>The TRS permissible level is an indicator of when odours would generally be expected to occur based on a correlation between noted odour events in Fort McKay and TRS readings at WBEA air monitoring station #1 in Fort McKay. Depending on the nature of the odorants emitted, odours may occur at TRS levels below the permissible level and TRS is therefore a very imprecise measure of odour potential and the possible intensity and character of odours. The general criteria and expectation for odours in Fort McKay is that nuisance odours related to industrial emissions will be infrequent and only occur during plant upset events or short-term planned and managed non-routine plant emission events.