RioTinto

Internet Reporting

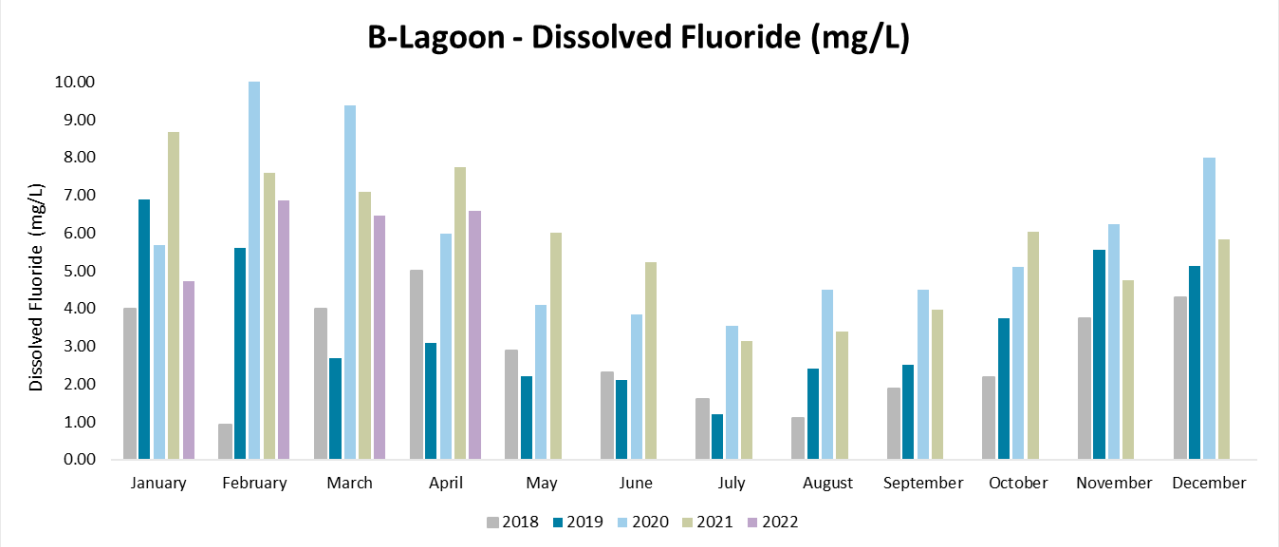
It was largely on the strength of Rio Tinto's voluntary pollution prevention (P2) planning process that the Province of British Columbia issued, in 1999, a "multimedia" environmental permit for our smelter operations. This was the first such permit ever issued in BC and establishes standards, and monitoring and reporting requirements, for a comprehensive range of emissions, effluents, and wastes. The P2 planning process is believed to have played a significant role in the more than 60 per cent reduction in environmental permit non-compliances achieved at the Kitimat smelter since 1996.

Permit reporting

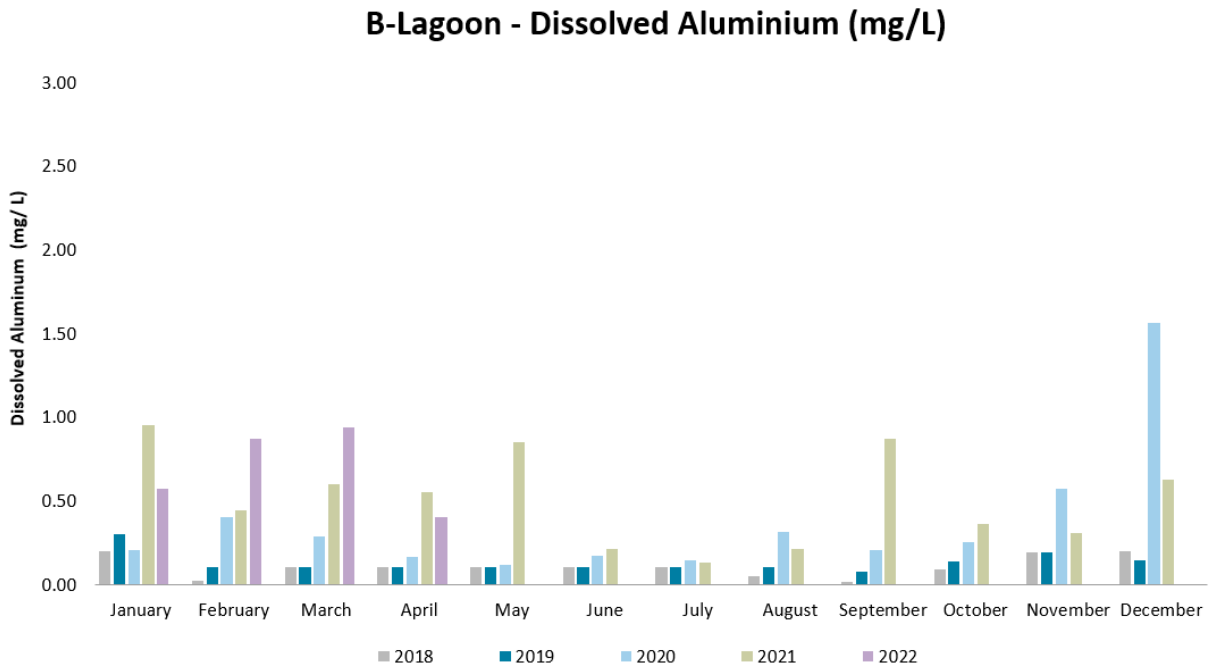
Rio Tinto's P2 Permit requires continuous reporting on several key parameters – from emissions to effluents, and other wastes. The following tables and graphs satisfy the P2 Permit clause 8.1.5 for internet reporting on the B-Lagoon, Reduction Roof vent Emissions, Sulphur dioxide emissions and emission control device upsets. Additional information on our environmental performance and improvement initiatives can be found in Rio Tinto's annual environmental report.

B - Lagoon

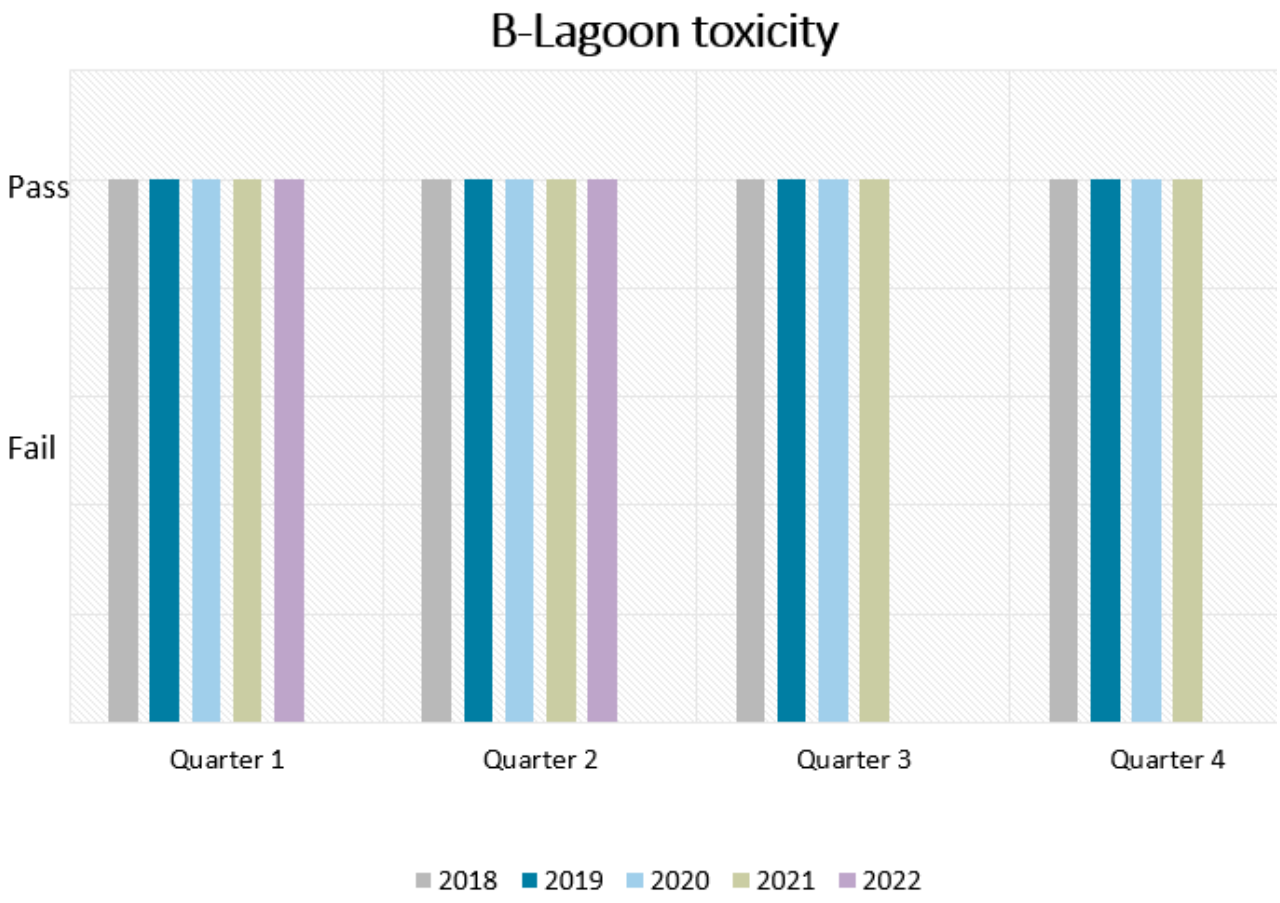
Permit section	Details
3.1 B Lagoon	Dissolved fluoride originates mainly from the leaching of a legacy (no longer used) landfill, as well as from raw-material losses. Ongoing housekeeping and storm water diversion work is conducted to reduce the fluoride concentration. B lagoon is sampled daily for dissolved fluoride and the results from the daily samples for each month are averaged and shown on the below graph. The permit limit for this parameter is 10.0 mg/L and it is applied to the daily results.



Permit section	Details
3.1 B Lagoon	Dissolved aluminium originates when alumina comes into contact with precipitation, as well as from raw material losses. B lagoon is sampled daily for dissolved aluminium and the results from the daily samples for each month are averaged and shown on the below graph. The permit limit for this parameter is 3.0 mg/L and it is applied to the daily results.

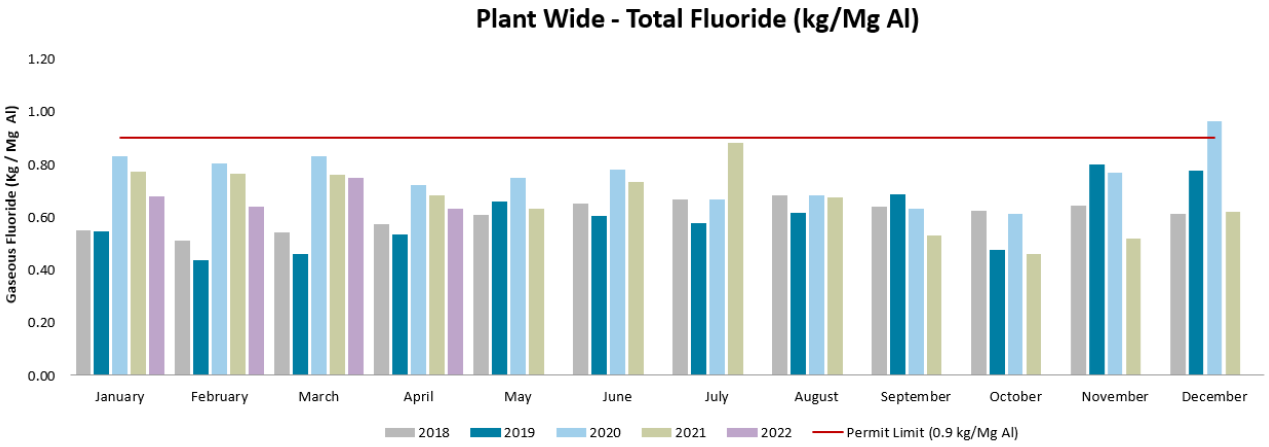


Permit section	Details
3.1 B Lagoon	The 96LC50 test measures the effect of the sampled water on rainbow trout over 96 hours. This test is completed quarterly and B lagoon and the test routinely passes with 100% survivability.

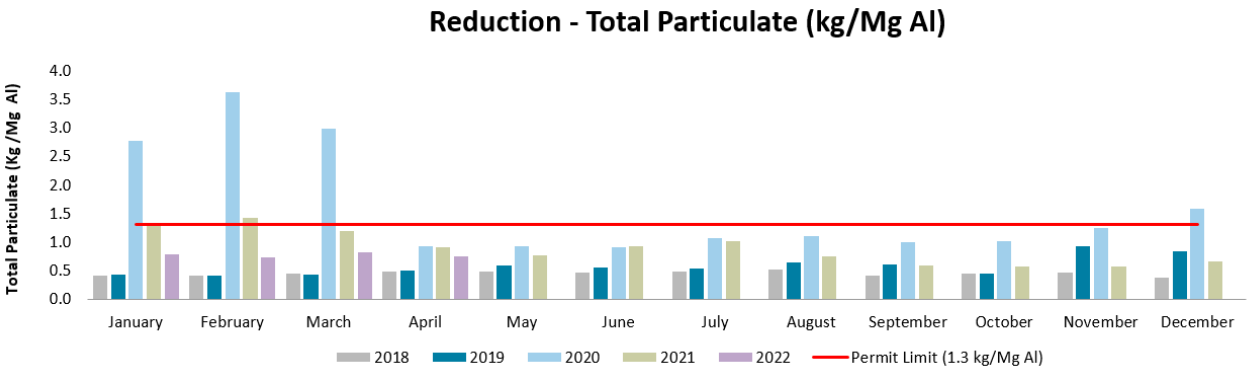


Prebake Potline Emissions

Permit section	Details
4.10 Fluoride Emissions	Fluoride total is produced during the electrolytic process. Majority of the fluoride emissions are captured and treated by the two gas treatment centres, however some fugitive emissions are released through the reduction building roof vents. The fugitive emissions are monitored and reported on a monthly basis against a monthly plant wide fluoride total permit limit of 0.9 kg of Ft/ Mg Al is used to determine compliance. The plant wide permit limit also includes sources of fluoride total from the gas treatment centers, the pallet storage building and the fume treatment center.

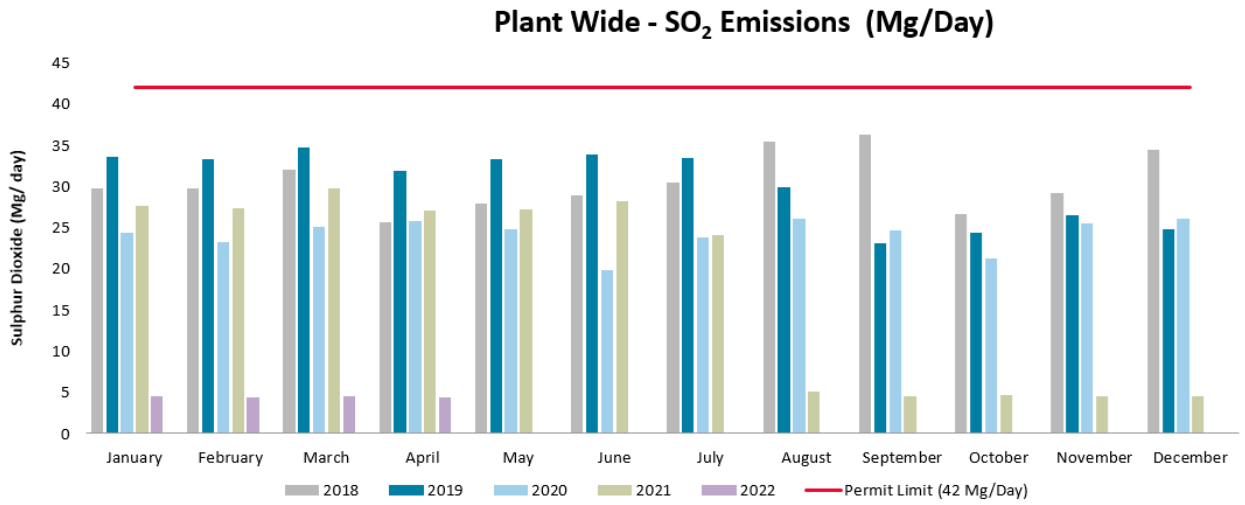


Permit section	Details
4.1.2.1 Prebake Potline Emissions	Total particulate are air-borne solids that are composed mainly of alumina and are produced during the electrolytic process. Most particulate emissions are captured by the two gas treatment centres, however some fugitive particulate emissions are released through the reduction building roof vents. The fugitive emissions are monitored and reported on a monthly basis against a monthly plant wide total particulate permit limit of 1.3 kg of TP/ Mg Al is used to determine compliance. This permit limit also includes sources of total particulate from the gas treatment centers.



Plant Wide Sulphur Dioxide

Permit section	Details
4.2 SO_2 emissions	Sulphur dioxide (SO2) originates from the green coke (a by-product of petroleum refining) used to manufacture anodes, and is released both during coke calcining, anode baking and anode consumption during the electrolytic process. The permit limit of 42 Mg/day and is displayed in the graph below.



Permit section	Details
TBA	Emission control devices are pieces of equipment that are designed to reduce contaminants emitted to the atmosphere from operations through scrubbing, filtration or incineration. Emission control devices are critical to reducing BC Works environmental footprint. At BC Works there are many minor emission control devices located throughout the operation as well as a number of critical devices such as the Fume Treatment Center (FTC), Gas Treatment Center (GTC), Liquid Pitch Incinerator (LPI) & Pyroscrubber. A upset of an emissions control device occurs when the operation continues to produce emissions, but the emissions control device is no longer treating the emissions. Upsets that occur are either planned or emergent: 1. **Planned Upsets:** This type of upset is typically planned in advance with a known occurrence date and duration. This type of planned upset is pre-approved by the Ministry of Environment and Climate Change Strategy. The purpose for an approved upset is typically due to maintenance in order to maintain asset integrity while ensuring the maintenance work is performed safely. 2. **Emergency Upsets:** This type of upset is unplanned due to unforeseen circumstances such as a power outage. The date and duration of these types of bypasses are not known until the root cause is rectified. BC works strives to reduce the number of upset hours by achieving regular planned maintenance, developing built in redundancies and upholding best practices for operational excellence.

2022: Planned Emission control device upset/bypass list

Date	Equipment	Upset Type	Duration	Reason for upset
March 10	GTC East	Planned	27 m	Electrical maintenance