

Sulfur Dioxide SO₂ Emissions at Red Dog – Factsheet

NANA



Teck

Overview

Sulfur Dioxide (SO₂) is naturally present at Red Dog Mine due to the metallurgical characteristics of the ore and associated waste rock. As these materials are excavated and exposed to air, oxygen can react with these sulfur- and iron-rich materials in a process known as oxidization. This reaction can generate heat and result in SO₂ release.

Red Dog made significant progress to lower SO₂ risk at site through intensive mitigation efforts in partnership with NANA, external experts and the federal Mine Safety and Health Administration (MSHA).

This includes



Strengthening SO₂ monitoring systems



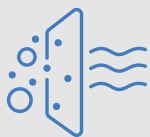
Cooling reactive material with water and snow to reduce SO₂ generating reaction



Raising fresh air intakes for buildings to higher elevation



Relocating highly reactive waste rock to permanent underwater storage



Installing activated carbon air filters and automatic shut off controls triggered by SO₂ thresholds in HVAC systems



Providing personnel with appropriate respirators and personal protective equipment

The Mine Safety and Health Administration (MSHA) inspections and monitoring show that emission levels are within federal mine safety and health standards for SO₂ exposures and there are no community health concerns related to SO₂ at Red Dog.

Who may be sensitive to the effects of SO₂?

The impacts of SO₂ may be determined by several factors including dose (amount), duration (time), and method of contact. Other considerations include age, sex, diet, family history, lifestyle, and health. Young children, elderly people, and people with chronic respiratory diseases may be more sensitive to the effects of SO₂.

Under low concentrations, less than 5ppm (parts per million), inhaling SO₂ can cause irritation to the nose, eyes, throat, and lungs.

Those with preexisting respiratory conditions may

experience symptoms at concentrations as low as 0.25ppm.

Red Dog Mine follows the stricter guidelines set by the National Institute for Occupational Safety and Health (NIOSH), rather than the standards set by OSHA and MSHA.

- NIOSH exposure limits are 10 hours TWA (Time Weighted Average) at 2ppm or STEL (Short Term Exposure Limit) of 15 minutes at 5ppm, while OSHA and MSHA's exposure limit for TWA are 8 hours at 5ppm.

How is Red Dog prioritizing the safety of site personnel?

- At Red Dog, the safety and health of the personnel on site is our top value. To protect the continued health and safety of personnel, Red Dog works closely with the federal Mine Safety and Health Administration (MSHA), as well as external experts, to monitor emission levels and take action to reduce SO₂ emissions at site.

This includes:

- Expanding monitoring capabilities by installing indoor and outdoor stationary monitors.

- Displaying real time SO₂ levels throughout site for personnel to view.
- Modifying facility air intakes and installing filters in air handling units.

In the event SO₂ levels exceed Red Dog safety and health limits, emergency response personnel have protocols in place to move personnel from an area of higher concentration to safe muster areas of low concentration until the SO₂ levels reduce sufficiently.

What progress has Red Dog made in lowering SO₂ risks at site?

- Waste rock stockpiles in Main Pit Dump #4 (MPD4) were identified as hot spots for SO₂ emissions. To mitigate these emissions, we are cooling hot spots with water and snow, and excavating and transferring reactive material to the Main Pit Water Reservoir (MPWR) for permanent underwater storage.
- All air handlers have been moved to recirculation mode with only the minimal make up air being drawn to maintain positive pressure in the facilities. This helps reduce the potential

for SO₂ ingress into site facilities.

- Air intakes for the Personnel Accommodation Complex (PAC) were relocated to reduce ingress of SO₂ into living accommodations.
- Activated carbon filters were installed in the air handlers units to support enhanced SO₂ removal
- Enhanced media filtration systems have been installed in the HVAC.

For more information and updates about SO₂ at Red Dog

Visit www.teck.com/RedDogUpdate.

For questions or concerns

Contact Red Dog Community Relations at rd-ca@teck.com or call (907) 758-5168.