

Chemtrade's North Vancouver chlor-alkali facility is one of Canada's largest providers of liquid chlorine – accounting for 40 per cent of all liquid chlorine available in Canada. Regionally, this equates to over 70 per cent of the liquid chlorine available in BC and Alberta. **Why is this important?** A study conducted by [Statistics Canada in 2015](#) found that 96 per cent of Canadian communities relied on chlorine to treat its municipal water supply, which supplies over 30.7 million Canadians.

Knowing the significant role that Chemtrade liquid chlorine plays in supporting safe drinking water for millions of Canadians, and the growing uncertainty in North American trade, we need to start having conversations now regarding how to maintain our potential future operations and secure maintain our Canadian supply chain of this critical product.

In this issue:

- *LOI reached with Port of Vancouver*
- *Answering your questions on our rail operations*
- *Planned community support and events*
- *Ways to stay in touch*

Letter of Intent (LOI) reached with Port of Vancouver

Our facility is located partly on land that we lease from the Port of Vancouver (the Port) and partly on land that we own. Our current lease with the Port expires in 2032, and within the lease is a restriction on chlorine production beyond mid-2030.

For almost two years, we have been engaging with the Port to secure a pathway to continued operations of our facility, which is the largest manufacturer of liquid chlorine in Canada, critical for safe drinking water treatment.

In April, we were happy to share that we (Chemtrade) and the Port have entered into a non-binding Letter of Intent (LOI) to extend our land lease until December 31, 2044.

However, this is only one step in the process to securing our long-term operations.

As part of our work to secure long-term operations, we developed a comprehensive safety improvement program that included several proposed capital projects. These projects are aimed at both increasing safety and significantly reducing risk for the community.



Above: Salt + Water + Electricity = Chlorine, a look at our cellhouse in North Vancouver

Below: Looking at our salt storage on site. We barge in solar-dried ocean salt from the Baja region of Mexico for the production of our chlorine



In approaching the District of North Vancouver (the District) to secure a development permit for these proposed improvements, we learned that the application was sufficient to trigger the need to apply for rezoning.

Why do you need to apply for rezoning?

Our facility has been safely operating since 1957. A bylaw passed by the District in 1984 restricted the manufacturing of certain goods, including liquid chlorine, and our facility has been operating as a legal non-conformity since that time. We have been grandfathered up to this point.

To be clear, we are not changing anything about our operations. We are applying for rezoning to have the production of chlorine added as an allowable activity for our facility. If that application is approved, we can then apply for development permits and move forward with our proposed capital safety improvements.

What are the proposed safety improvements?

The proposed capital safety improvements include eliminating bulk storage of liquid chlorine, moving all chlorine loading activities to a closed building that would use a scrubber to remove any chlorine from the air should a leak occur during the rail loading process, and installing seismic sensors.

In 2024, we commissioned an updated risk assessment for our facility using the latest modelling technology and best practice approach. BakerRisk, an independent third-party company, is developing the updated risk mapping, taking into consideration site modernization projects completed since 2010, operational changes that have reduced the volume of liquid chlorine stored on site, and our proposed safety improvements (learn more at www.askchemtrade.ca/safety).

The updated quantitative risk curves (QRAs), while still being finalized as we continue to provide updated engineering information, show a significant reduction in risk for the community. Outside of the largest curve, known as the one in a million, or 10^{-6} (*ten to the minus six line*, shown in light blue below), the risk to the community is extremely low and land outside of this curve has no restrictions for development because of risk from plant operations.



Above left: QRA curves developed in 2006

Above right: Updated draft QRA curves showing projected risk following completion of proposed safety projects and reduction of on-site chlorine storage

Taking a deep dive into our rail operations

One area we receive questions about is our rail operations and the safety measures we take related to loading, storing cars on site, and shipping our products.

Let's start with the vital role rail plays in shipping chlorine

In Canada, the only way to transport liquid chlorine is by rail. Given this, movement of chlorine is highly regulated to ensure the safe movement of chlorine from loading, through to delivery to customers.

The location of our facility is critical, as the Port of Vancouver is the only port in North America connected to three Class 1 railways that service the Pacific Coast: Canadian National (CN), Canadian Pacific Kansas City (CPKC) and BNSF (Burlington Northern Santa Fe Railway Company). Our location allows us to have access to the rail system for the movement of chlorine, and other products, from our facility to our customers.

Within our site, we have a rail switching yard, several hundred metres of track, three railcar loading areas, and a railcar repair facility. We make it a priority to maintain the rail tracks on our site and ensure that railcars are stored and moved safely. We have a dedicated team of employees who focus on the maintenance, movement, and coordination of railcars on our site.

We should also add that our facility is home to the primary CHLOREP (which stands for Chlorine Emergency Response) team in BC and Alberta. The team is made up of our employees, who have received specialized training in how to respond to hazardous material spills. The team is ready and able to respond to spills, whether they are Chemtrade products or not.

What about the railcars used to ship chlorine?

Chemtrade maintains and operates a fleet of leased next-generation railcars, all meeting the latest regulatory specifications and industry standards for the shipment of our chlorine. Our cars are inspected when they arrive at site, then again before they are loaded. If any defects are found during either pre-loading inspection, the cars are immediately pulled into our onsite railcar shed for repair. The cars are inspected again after loading to ensure they are safely sealed and ready for transport.

Our cars also have a regular maintenance schedule, with a full car overhaul scheduled for every three years. In general, the life span of a chlorine railcar is approximately 25 years.

The cars themselves have several layers of protection – from roll-over protection bars to increased shell thickness.

Significant design improvements for safety and regulatory requirements

- Pressure tested cars approved to transport products up to 600 PSI pressure rating
- Pressure release device or pressure release valve (PRD or PRV) for chlorine set to 375 PSI with chlorine in the car usually around 60 PSI
- Minimum tank shell thickness increased 25% to 0.981"
- Minimum tank head thickness increased 44% to 1.136"
- Protective Housing thickness (rollover protection) increased 67% to 1.25"
- Addition of 0.5" head shields



How many railcars do you store on site?

While we have the space to store up to 270 railcars at our site at any given time, the number of cars on site can vary from one day to the next.

We looked at data from full years 2023, 2024 and the beginning of 2025, to determine some averages, and using this data, we have determined that on average, we have approximately 251 railcars on our site. Within that however, we can go even deeper to provide additional details.

The average number of rails cars that are sitting empty on our site at any given time is 159, which accounts for over 63 per cent (63.3%) of the total cars on site. In comparison, at any given time, we have an average of 32 cars containing liquid chlorine on our site, representing just under 13 per cent (12.7%) of all cars on our site. The remaining 24 per cent (24%) of railcars are a combination of those that contain caustic soda (27 cars) and hydrochloric acid (28 cars).

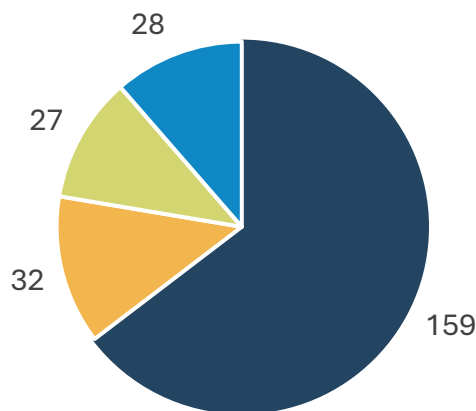


Above: One of our rail car loading areas on site

Below: aerial of site showing rail area



Average of 251 railcars on site



■ Empty railcars

■ Liquid chlorine railcars

■ Caustic soda railcars

■ Hydrochloric Acid



Let's talk about chlorine storage, and if we anticipate an increase in either the number of chlorine cars stored on site, or chlorine car rail traffic after we move to a "produce and ship" operating model.

Currently we safely store up to 93 tonnes of liquid chlorine on site (down from over 1,600 tonnes stored on site in the year 2000) within our storage tanks. As part of our planned improvements, we will be moving to a "produce and ship" model, which will reduce onsite storage to approximately four tonnes, which is equivalent to the chlorine within our piping system.

Our facility has the capacity to fill up to five chlorine cars per day – although the number actually filled varies depending on demand. The change in our operation from site storage to produce and ship will not materially impact the number of chlorine railcars onsite or shipping rates since the total production volume will remain unchanged.

Upcoming community events

We are excited to sponsor several initiatives in the community in the coming months and continue to offer public tours of the facility. As part of our rezoning application, we will be hosting both virtual and in-person engagement opportunities, anticipated to be in early fall. We will be sharing all of the events we are sponsoring or participating in on our website – www.AskChemtrade.ca, and through this newsletter.

We hope to see you at one of these upcoming events:

- **Blueridge Good Neighbor Day**, May 25, 2025, 11:00 a.m. – 3:00 p.m.
<https://blueridgeca.org/blueridge-good-neighbour-day/>
- **District of North Vancouver Fire Charity Barn Burner Dance**, June 14, 2025
 - <https://dnvfirecharity.ca/events>
- **Sign up for our public tour program**
 - Contact Amy Jonsson at ajonsson@chemtradelogistics.com

Ways to contact us

We would love to hear from you, and there are several ways to contact us:

- **Visit or newly updated www.AskChemtrade.ca** where you will be able to submit questions, find up-to-date information, and send us a message directly.
- Reach out to our Director, Corporate Communications Amy Jonsson at ajonsson@chemtradelogistics.com who will be able to answer questions or connect you with someone who can.
- Visit our Facebook page (<https://www.facebook.com/chemtrade>) and send us a message that way.



The Chemtrade team at the June 2024 Open House