



## PERMIT GVA0007

**Pursuant to:**

Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008  
and the BC Environmental Management Act, S.B.C 2003, c.53

**Issued to:**

Superior Plus LP  
(the "Permittee")

**To Authorize:**

the discharge of air contaminants to the air from  
Sodium Chlorate Manufacturing Plant

**Located at:**

100 Forester Street, North Vancouver, BC V7H 1W4


**Effective Period:**

The terms and conditions set out in the Permit apply to the existing or planned works as of  
March 06, 2019 and this permit will expire on November 30, 2033.

All previous versions of this Permit are invalid.

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Issued: December 14, 1992  
Amended: March 06, 2019

  
Kathy Preston, Ph.D., P.Eng.  
Assistant District Director

**METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT**

**SECTION 1 – AUTHORIZED EMISSION SOURCES**

Authorization to discharge air contaminants from the authorized Emission Sources and Works listed below is subject to the specified terms and conditions.

Approximate locations of the emission sources are shown on the Site Plan in section 4.

**EMISSION SOURCE 11: No. 7 cell line discharging through a scrubber exhaust.**

MAXIMUM EMISSION FLOW RATE: **70** m<sup>3</sup>/min

MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

1. 15 mg/m<sup>3</sup> Chlorine

WORKS AND PROCEDURES:

A scrubbing system consisting of a titanium counter-current packed column scrubber using brine as the scrubbing solution and a fibreglass counter-current packed column scrubber using sodium hydroxide as the scrubbing solution, and other related appurtenances together with good operating practices. Emission Source 11 is not authorized when Emission Source 17 is operating.

Stack Information:

Height (m) 13.7

Diameter (cm) 20.3

Exit temperature (°C) 42

**EMISSION SOURCE 12: Sodium chlorate dryer discharging through a scrubber exhaust.**

MAXIMUM EMISSION FLOW RATE: **120** m<sup>3</sup>/min

MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

1. 50 mg/m<sup>3</sup> Sodium Chlorate

WORKS AND PROCEDURES:

A cyclonic vane scrubber using water as the scrubbing solution and other related appurtenances together with good operating practices. Emission Source 12 is not authorized when Emission Source 17 is operating.

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Stack Information:

Height (m) 22.9  
Diameter (cm) 40.6  
Exit Temperature (°C) 30

**EMISSION SOURCE 13: Environmental ventilation system discharging through a scrubber exhaust.**

MAXIMUM EMISSION FLOW RATE: **114** m<sup>3</sup>/min  
MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

1. 15 mg/m<sup>3</sup> Chlorine

WORKS AND PROCEDURES:

A PVC counter-current packed column scrubber using sodium hydroxide as the scrubbing solution and related appurtenances together with good operating practices.

Stack Information:

Height (m) 13.7  
Diameter (cm) 43.2  
Exit temperature (°C) 51

**EMISSION SOURCE 14: No. 8 cell line discharging through a scrubber exhaust.**

MAXIMUM EMISSION FLOW RATE: **185** m<sup>3</sup>/min  
MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

1. 15 mg/m<sup>3</sup> Chlorine

WORKS AND PROCEDURES:

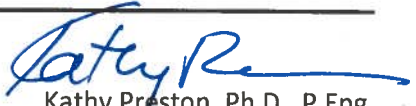
A scrubbing system consisting of a titanium counter-current packed column scrubber using brine as the scrubbing solution and a 2 stage titanium counter-current packed column scrubber using sodium hydroxide as the scrubbing solutions, and related appurtenances together with good operating practices. Emission Source 14 is not authorized when Emission Source 17 is operating.

Stack Information:

Height (m) 13.4  
Diameter (cm) 50.8  
Exit Temperature (°C) 46

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**EMISSION SOURCE 15: Fluid bed dryer discharging through a scrubber exhaust.**

MAXIMUM EMISSION FLOW RATE: **175** m<sup>3</sup>/min  
MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:  
1. 50 mg/m<sup>3</sup> Sodium Chlorate

WORKS AND PROCEDURES:  
An impingement plate scrubber using water as the scrubbing solution and other related appurtenances together with good operating practices. Emission Source 15 is not authorized when Emission Source 17 is operating.

Stack Information:  
Height (m) 18.3  
Diameter (cm) 40.6  
Exit temperature (°C) 36

**EMISSION SOURCE 16: Hydrogen compressor pressure control vents discharging through a Stack(s).**

MAXIMUM EMISSION FLOW RATE: **255** m<sup>3</sup>/min  
MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y


MAXIMUM EMISSION QUALITY:

WORKS AND PROCEDURES:  
No air contaminants shall be emitted from this source into the atmosphere except during a nitrogen purge of the line 7 and/or line 8 compressor recycle loops or during pressure control of line 7 and/or 8 compressor recycle loops. Consequently, emissions from Emission Source 16 will have been diverted from Emission Sources 11 and/or 14 and passed through the control works authorized for Emission Sources 11 and 14. The maximum emission quality restrictions specified for Emission Sources 11 and 14, of 15 mg/m<sup>3</sup> chlorine apply to Emission Source 16.

Stack Information:  
Height (m) 9.4  
Diameter (cm) 50.8  
Exit temperature (°C) 24

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**EMISSION SOURCE 17: Emergency and maintenance diesel boiler discharging through a Stack(s).**

MAXIMUM EMISSION FLOW RATE: **33.8** m<sup>3</sup>/min  
MAXIMUM ANNUAL OPERATING HOURS: **500** h/y  
MAXIMUM PRIMARY BURNER INPUT FIRING RATE: **6.33** GJ/h

MAXIMUM EMISSION QUALITY:

1. 10% Opacity.

WORKS AND PROCEDURES:

Good Combustion & Operating Practices.


Emission Source 17 purpose is to only operate during periods of scheduled annual maintenance or emergency natural gas or power disruptions to prevent sodium chlorate solution from crystallizing. Emission Sources 11, 12, 14 and 15 must not operate during operation of Emission Source 17. Only ultra-low sulphur diesel fuel must be used.

Stack Information:

Height (m)	3.66
Diameter (cm)	40.6
Exit temperature (°C)	252

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**SECTION 2 – GENERAL REQUIREMENTS AND CONDITIONS**

**A. AUTHORIZED WORKS, PROCEDURES AND SOURCES**

Works and procedures, which this permit authorizes in order to control the discharge of air contaminants, shall be employed during all operating periods of the related sources. The Permittee shall regularly inspect and maintain all such works, procedures and sources.

The District Director must be provided with reasonable notice of any changes to or replacement of authorized works, procedures or sources. Any changes to or replacement of authorized works, procedures or sources must be approved by the District Director in advance of operation. For certainty, this does not include routine maintenance or repair.

The discharge criteria described in Section 1 of this permit are applicable on the issued or last amended date of this permit unless specified otherwise. If a date different to the issued or last amended date is specified, the existing works, procedures and sources must be maintained in good operating condition and operated in a manner to minimize emissions.

**B. NOTIFICATION OF MONITORING NON-COMPLIANCE**

The District Director must be notified immediately of any emission monitoring results, whether from a continuous emissions monitor or periodic testing, which exceed the quantity or quality authorized in Section 1 of this permit. Notification shall be made to Metro Vancouver's 24-hour number: 604-436-6777, or to [regulationenforcement@metrovancouver.org](mailto:regulationenforcement@metrovancouver.org).

**C. POLLUTION NOT PERMITTED**

Notwithstanding any conditions in this permit, no person shall discharge or allow or cause the discharge of any air contaminant so as to cause pollution as defined in the Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008 and the Environmental Management Act.

**D. BYPASSES**

The discharge of air contaminants that have bypassed authorized control works is prohibited unless advance approval has been obtained and confirmed in writing from the District Director.


**E. EMERGENCY PROCEDURES**

In the event of an emergency or condition beyond the control of the Permittee that prevents effective operation of the authorized works or procedures or leads to unauthorized discharge, the Permittee shall:

1. Comply with all applicable statutory requirements;
2. Immediately notify the District Director of the emergency or condition and of contingency actions invoked or planned to mitigate adverse impacts and restore compliance; Notification shall be made to Metro Vancouver's 24-hour number: 604-436-6777; and
3. Take appropriate remedial action for the prevention or mitigation of pollution.

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The District Director may specify contingency actions to be implemented to protect human health and the environment while authorized works are being restored and/or corrective actions are being taken to prevent unauthorized discharges.

If an emergency situation results in a "spill" as defined in the Environmental Management Act Spill Reporting Regulation, the spill shall also be reported immediately to the Provincial Emergency Program by telephoning 1-800-663-3456.

### **F. AMENDMENTS**

The terms and conditions of this permit may be amended, as authorized by applicable legislation. New works, procedures or sources or alterations to existing works, procedures or sources must receive authorization in advance of operation.

### **G. STANDARD CONDITIONS AND DEFINITIONS**

Unless otherwise specified, the following applies to this permit:

1. Gaseous volumes are corrected to standard conditions of 20 degrees Celsius (°C) and 101.325 kilo Pascals (kPa) with zero percent moisture.
2. Contaminant concentrations from the combustion of specific fuel types are corrected to the following Oxygen content, unless specified otherwise:
  - 3% O<sub>2</sub> for natural gas and fuel oil; or
  - 8% O<sub>2</sub> for wood fuel
3. Where compliance testing is required, each contaminant concentration limit in this permit will be assessed for compliance based on a valid test using test methods approved by the District Director.
4. Visual opacity measurements are made at the point of maximum density, nearest the discharge point and exclude the effect of condensed, uncombined water droplets. Compliance determinations are based on a six-minute average in accordance with the United States Environmental Protection Agency (US EPA) Method 9: Visual Determination of the Opacity of Emissions from Stationary Sources. Continuous Emission Monitor System (CEMS) opacity compliance determinations are based on a one-hour average (taken from the top of each hour).
5. If authorized in Section 1 of this permit, standby fuel use is restricted to a maximum of 350 hours per year and to those periods during which the primary authorized fuel is not available. Fuel oil sulphur content shall not exceed 15 milligrams per kilogram (mg/kg) and emissions during fuel oil firing shall not exceed 10% opacity.
6. Definitions in the Environmental Management Act and Air Quality Management Bylaw apply to terminology used in this permit.
7. Threshold Limit Values (TLV) refer to the Time Weighted Average (TWA) exposure limits for substances specified in the American Conference of Governmental Industrial Hygienists Threshold Limit Values handbook, current on the latest date that this permit issuance or amendment came into effect.
8. Sulphur Oxides (SO<sub>x</sub>) are expressed as Sulphur Dioxide.
9. Nitrogen Oxides (NO<sub>x</sub>) are expressed as Nitrogen Dioxide.

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10. The Canadian Council of Ministers of the Environment (CCME) "Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Aboveground Storage Tanks (PN1180)" shall be adhered to for all applicable tanks unless otherwise stated in this permit.
11. Authorized 'Maximum Annual Operating Hours' of 8760 hours per year for an emission source is equivalent to authorization for continuous operation of the emission source for an entire calendar year, including leap years.

### **H. RECORDS RETENTION**

All records and supporting documentation relating to this permit must be kept for at least three years after the date of preparation or receipt thereof, and be made available for inspection within 48 hours of a request by an Officer.

### **I. HEATING, VENTILATION, AIR CONDITIONING AND INTERNAL COMBUSTION ENGINES**

Air contaminants discharged from any natural gas-fired heating, ventilation or air conditioning system for buildings and any internal combustion engine located at the discharge site shall be maintained and operated in a manner prescribed by the manufacturer to ensure good combustion of the fuel with minimum discharge of air contaminants.

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**SECTION 3 – REPORTING REQUIREMENTS**

**A. MONITORING REQUIREMENTS AND REPORTING**

Unless otherwise approved in writing by the District Director prior to any sampling or analysis, all measurements shall be performed by an independent agency in accordance with Metro Vancouver Air Emissions Sampling Program Manual of Methods and Standard Operating Procedures and the BC Ministry of Environment Field Sampling Manual, as they may be amended from time to time. Any variance from these procedures must receive prior written approval from the District Director.


A minimum of 5 working days advance notice must be given prior to taking measurements required by this Monitoring and Sampling Program. Notification must be given to the Metro Vancouver Environmental Regulation & Enforcement Division (phone 604-436-6777, Fax 604-436-6707, email [regulationenforcement@metrovancover.org](mailto:regulationenforcement@metrovancover.org)).

Unless otherwise specified, sampling shall be performed under operating conditions representative of the previous 90 calendar days of operation. All field data and calculations must be submitted with monitoring results and they shall be reported in the metric units which are used in this permit. These submissions shall include process data relevant to the operation of the source of the emissions and the performance of the emission control works.

The Permittee shall conduct the following monitoring and sampling and submit electronic reports of the results to the District Director by the dates specified below using a password enabled web based application provided by Metro Vancouver.

EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
11, 13, 14	September 30, 2019	On or before September 30 for each subsequent year.	Submit a written report detailing the measured discharge rate and concentration of specified parameters in the emissions.	Chlorine	EPA Test Method 26	Stack

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
12, 15	March 31, 2019	On or before March 31 for each subsequent year.	Submit a written report detailing the measured discharge rate and concentration of specified parameters in the emissions.	Sodium Chlorate	Metro Vancouver AQ02/02/1.00M	Stack

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**B. INFORMATION REPORTING REQUIREMENTS**


The Permittee shall submit electronic reports containing the required information to the District Director by the dates specified below using a password enabled web based application provided by Metro Vancouver.

EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	REPORT TYPE
16, 17, 11, 12, 14, 15, 13	March 31, 2019	On or before March 31 for each subsequent year.	Submit a written report detailing the total number of hours and days air contaminants were emitted during the preceding calendar year. Records are to be maintained in a written bound log or other format approved by the District Director, and made available for inspection for a minimum period of three years.	Operating Period
Facility	March 31, 2019	On or before March 31 for each subsequent year.	Submit a written report detailing the types and amounts of principal products produced and principal raw materials used in the preceding calendar year.	Materials and Products
11, 14	March 31, 2019	On or before March 31 for each subsequent year.	Submit a written report summarizing frequency and results of all inspections and maintenance carried out on the scrubber(s). The report shall also include any actions, taken or proposed, to solve identified problems.	Scrubber
Facility	March 31, 2019	On or before March 31 for each subsequent year.	<b>Preventative Maintenance Summary Report</b> Submit a written summary report based upon preventative maintenance carried out in the preceding year.	Information - Other

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**C. AMENDED OR ADDITIONAL REQUIREMENTS**

Based on the results of the monitoring program, including the stack sampling results or any other information, the District Director may:

1. Amend the monitoring and reporting requirement of any of the information required by this Permit including plans, programs and studies.
2. Require additional investigations, tests, surveys or studies.

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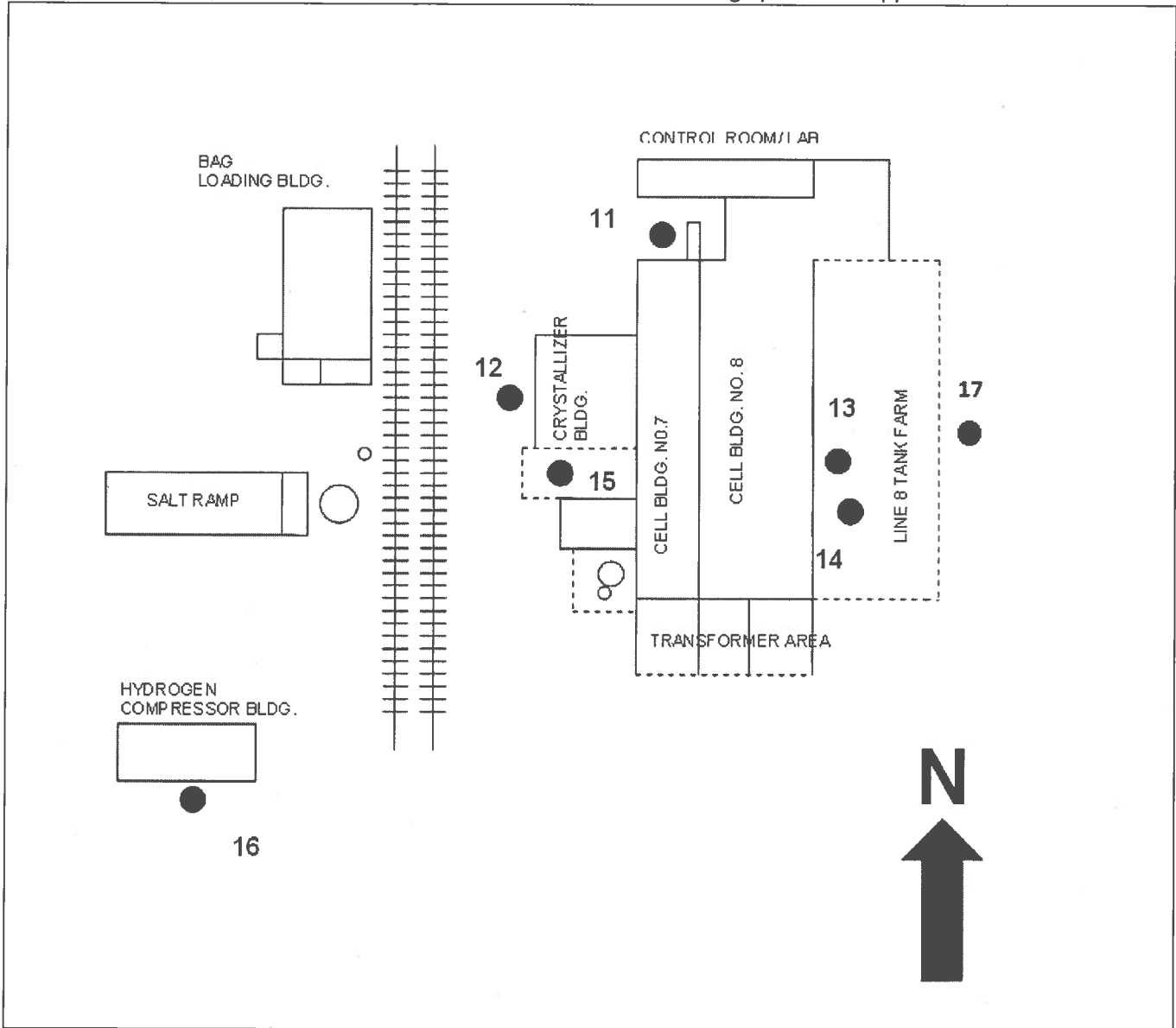


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**SECTION 4 – SITE PLAN**

LEGAL DESCRIPTION OF DISCHARGE SITE: Consolidated lots consisting of lot 3 (explanatory plan 5078) except: Part subdivided by Plan LMP50161 Block X District Lots 611 Group 1 Plan 9510 & Lot L

The following site plan is not to scale and the locations of the discharge points are approximate.



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