



PERMIT GVA0543

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:

National Silicates Partnership dba National Silicates
(the "Permittee")

To Authorize:

the discharge of air contaminants to the air from
a chemical processing and storage plant

Located at:

8160 130th Street, Surrey, BC V3W 8J9

Effective Period:

The terms and conditions set out in the Permit apply to the existing or planned works as of
March 01, 2016 and this permit will expire on July 31, 2030.

All previous versions of this Permit are hereby rescinded and rendered null and void.

Issued: December 16, 1993
Amended: March 01, 2016


Darren Beirsto, B.Sc.
Assistant District Director

GREATER 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 01: Nineteen inorganic chemical storage tanks discharging through conservation vents.

MAXIMUM EMISSION FLOW RATE: The rate of discharge is that resulting from vapour venting during tank filling and breathing

MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:

1. Odorous Air Contaminant(s): None past the plant boundary such that the District Director determines that pollution has occurred.
2. Chemical Contaminants: The maximum allowable emission concentration (EC) for each emitted chemical contaminant with a Threshold Limit Value (TLV) is such that the sum of the individual EC/TLV ratios for all such contaminants in any single emission is less than 10.

WORKS AND PROCEDURES:

Conservation vents together with good operating practices, including high level sensors, interlocking alarms and related appurtenances to prevent overfilling.

EMISSION SOURCE 02: One sulphuric acid storage tank discharging through conservation vents.

MAXIMUM EMISSION FLOW RATE: The rate of discharge is that resulting from vapour venting during tank filling and breathing

MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:


1. Odorous Air Contaminant(s): None past the plant boundary such that the District Director determines that pollution has occurred.
2. Chemical Contaminants: The maximum allowable emission concentration (EC) for each emitted chemical contaminant with a Threshold Limit Value (TLV) is such that the sum of the individual EC/TLV ratios for all such contaminants in any single emission is less than 10.

WORKS AND PROCEDURES:

Conservation vents together with good operating practices.

Issued: December 16, 1993

Amended: March 01, 2016


Darren Beirsto, B.Sc.
Assistant District Director

Permit GVA0543

GREATER VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

EMISSION SOURCE 03: Two sodium silicate blowdown tanks & one hot process water tank discharging through a demister.

MAXIMUM EMISSION FLOW RATE: The rate of discharge is that resulting from vapour venting during tank filling and breathing

MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:

1. Odorous Air Contaminant(s): None past the plant boundary such that the District Director determines that pollution has occurred.

WORKS AND PROCEDURES:

All tank emissions are vented to a Demister Mist Eliminator and related appurtenances together with good operating practices.

EMISSION SOURCE 04: Dry sodium silicate storage and handling discharging to the environment.

MAXIMUM EMISSION FLOW RATE: The rate of discharge is that resulting from vapour venting during steam vessel filling with sodium silicate glass and the handling of sodium silicate glass

MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:

1. Particulate Matter: None past the plant boundary such that the District Director determines that pollution has occurred.

WORKS AND PROCEDURES:

Good operating practices.

EMISSION SOURCE 06: Magnesium sulphate reaction tank discharging through scrubber exhaust.

MAXIMUM EMISSION FLOW RATE: 298 m³/min

MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:

1. 21 mg/m³ Sulphur Dioxide
2. 7 mg/m³ Sulphuric Acid
3. Odorous Air Contaminant(s): None past the plant boundary such that the District Director determines that pollution has occurred.
4. Chemical Contaminants: The maximum allowable emission concentration (EC) for each emitted chemical contaminant with a Threshold Limit Value (TLV) is such that the sum of the individual EC/TLV ratios for all such contaminants in any single emission is less than 10.

Issued: December 16, 1993

Amended: March 01, 2016


Darren Beirsto, B.Sc.
Assistant District Director

Permit GVA0543

GREATER VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

WORKS AND PROCEDURES:

McCarthy Robinson/Sly #250 Impinjet Wet Scrubber and related appurtenances, together with good operating practices.

EMISSION SOURCE 07: Magnesium Oxide silo discharging through a Baghouse Exhaust(s).

MAXIMUM EMISSION FLOW RATE: **20 m³/min**
MAXIMUM ANNUAL OPERATING HOURS: **364 hrs/yr**

MAXIMUM EMISSION QUALITY:

1. 50 mg/m³ Particulate Matter
2. 10% Opacity.

WORKS AND PROCEDURES:

Semco Model TRBV-160 STL top removable bin-vent filter baghouse and related appurtenances, together with good operating practices.

EMISSION SOURCE 08: One sodium hydroxide storage tank discharging through conservation vents.

MAXIMUM EMISSION FLOW RATE: **The rate of discharge is that resulting from vapour venting during tank filling and breathing**

MAXIMUM ANNUAL OPERATING HOURS: **8760 hrs/yr**

MAXIMUM EMISSION QUALITY:

1. Odorous Air Contaminant(s): None past the plant boundary such that the District Director determines that pollution has occurred.
2. Chemical Contaminants: The maximum allowable emission concentration (EC) for each emitted chemical contaminant with a Threshold Limit Value (TLV) is such that the sum of the individual EC/TLV ratios for all such contaminants in any single emission is less than 10.

WORKS AND PROCEDURES:

Conservation vents together with good operating practices.

Issued: December 16, 1993
Amended: March 01, 2016


Darren Beirsto, B.Sc.
Assistant District Director

Permit GVA0543

GREATER VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

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 permit holder 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 modification 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@metrovancover.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.

Issued: December 16, 1993
Amended: March 01, 2016


Darren Beirsto, B.Sc.
Assistant District Director

Permit GVA0543

GREATER VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

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% O₂ for natural gas and fuel oil; or
 - 8% O₂ 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 provincial "Source Testing Code for the Visual Measurement 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_x) are expressed as Sulphur Dioxide.
9. Nitrogen Oxides (NO_x) are expressed as Nitrogen Dioxide.

Issued: December 16, 1993
Amended: March 01, 2016


Darren Bearsto, B.Sc.
Assistant District Director

Permit GVA0543

GREATER VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

10. The Canadian Council of Ministers of the Environment (CCME) "Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Aboveground Storage Tanks (June 1995, CCME-EPC-87E)" 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.

Issued: December 16, 1993
Amended: March 01, 2016


Darren Beairsto, B.Sc.
Assistant District Director

Permit GVA0543

GREATER VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

SECTION 3 – REPORTING REQUIREMENTS

A. MONITORING REQUIREMENTS AND REPORTING

Unless otherwise approved 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 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).

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 permit holder 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
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Issued: December 16, 1993
Amended: March 01, 2016


Darren Beirsto, B.Sc.
Assistant District Director

Permit GVA0543


GREATER VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

B. INFORMATION REPORTING REQUIREMENTS

The permit holder 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
06	March 31, 2016	On or before March 31 for each subsequent year.	Written report detailing the scrubber inspection protocol, frequency, and condition of the scrubber and the remedial action undertaken or proposed to resolve any problems detected for the scrubber.	Scrubber
07	March 31, 2016	On or before March 31 for each subsequent year.	Written report indicating inspection frequency, bag condition and action taken or proposed to solve any problems detected for the baghouses.	Baghouse
Facility	March 31, 2016	On or before March 31 for each subsequent year.	Written report providing details of the types and amounts of principal products produced and principal raw materials used in the preceding calendar year.	Materials and Products
07	March 31, 2016	On or before March 31 for each subsequent year.	Written report providing details of the total number of hours and days operated in the preceding calendar year. Detailed records are to be maintained in a written bound log or other format approved by the District Director.	Operating Period

Issued: December 16, 1993
Amended: March 01, 2016


Darren Beirsto, B.Sc.
Assistant District Director

Permit GVA0543


GREATER VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

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.

Issued: December 16, 1993
Amended: March 01, 2016



Darren Beirsto, B.Sc.
Assistant District Director

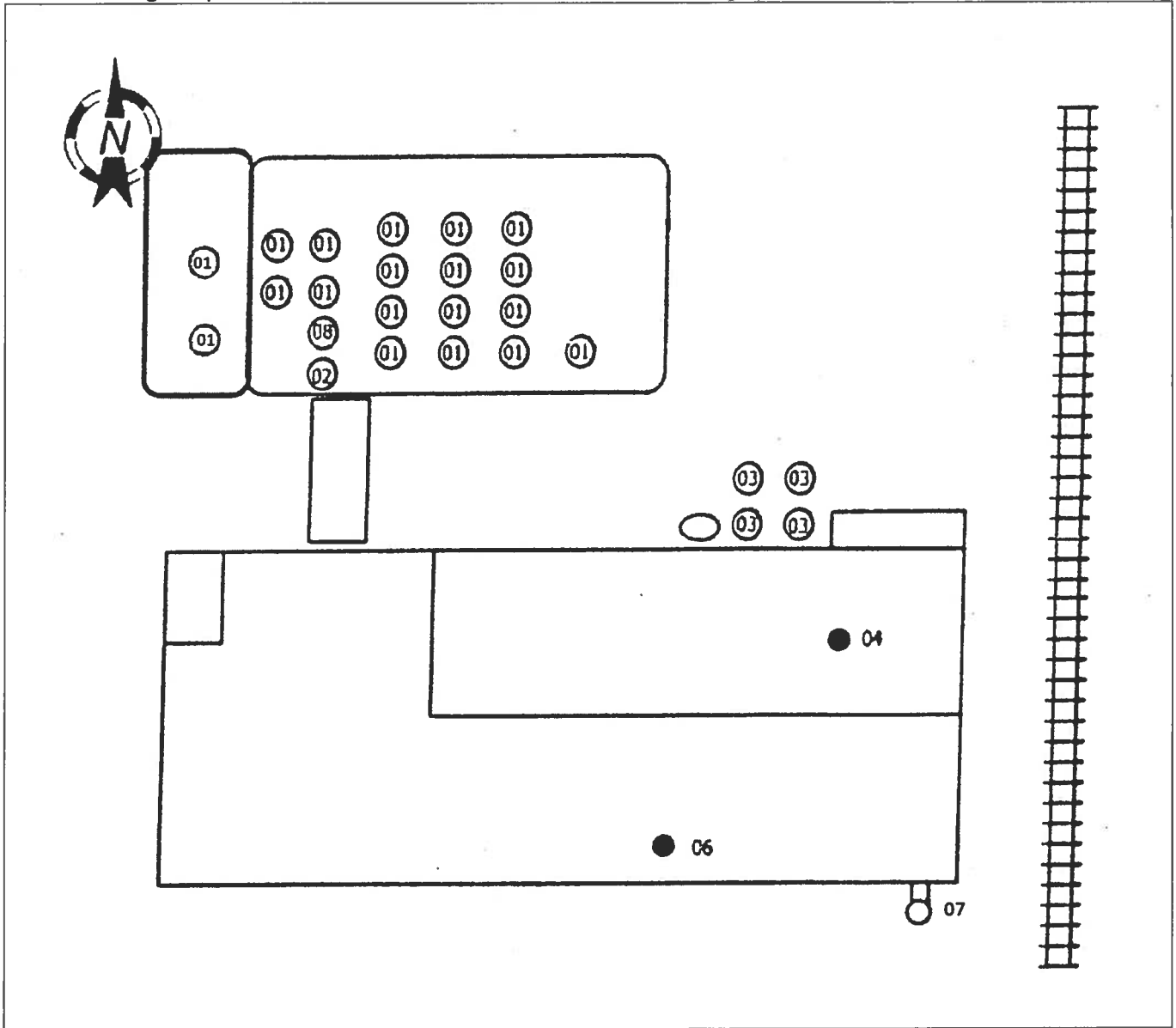
Permit GVA0543

GREATER VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT


SECTION 4 – SITE PLAN

LEGAL DESCRIPTION OF DISCHARGE SITE: LOT1 SECTION 29 TOWNSHIP 2 NEW WESTMINSTER DISTRICT
PLAN LMP34009

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



Issued: December 16, 1993
Amended: March 01, 2016


Darren Beirsto, B.Sc.
Assistant District Director

Permit GVA0543