PERMIT GVA0081

Pursuant to
Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008
and BC Environmental Management Act

Neptune Bulk Terminals (Canada) Ltd.

located at
1001 Low Level Road, North Vancouver, BC V7A 2P9

is authorized to discharge air contaminants to the air from
a bulk commodities receiving, storage and shipping terminal

subject to the requirements in this Permit for the emission sources and works existing or planned on
October 1, 2013.

Contravention of any of these requirements is a violation of the bylaw
and may result in enforcement action.

All previous versions of this Air Quality Management Permit are hereby rescinded and rendered null and void.

Issued: November 30, 1992
Amended: October 1, 2013

R.H. (Ray) Robb, P. Eng.
District Director
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:** Enclosed rotary dumper handling coal discharging through one stack (104).

MAXIMUM EMISSION FLOW RATE: 1650 m³/min  
MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:
1. 20 mg/m³ Particulate Matter
2. 10% Opacity.

WORKS AND PROCEDURES:
Peabody Venti-Slot high energy water scrubber and related appurtenances, together with good operating practices.

**EMISSION SOURCE 07:** Conveyors, surge bin, and transfer points on the coal handling system associated with Berth No. 1 discharging through conveyor transfer areas located in the Berth No. 1 area of the terminal.

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from conveying and transfer operations  
MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:
1. 20% Opacity.
2. Particulate: None past the plant boundary such that pollution occurs.

WORKS AND PROCEDURES:
Conveyors, four enclosed reciprocating feeders, and the enclosed product flooded transfer surge bin together with the maintenance of adequate material moisture for dust suppression and good operating practices.

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EMISSION SOURCE 11: Conveyors, a surge bin, transfer points, and covered storage buildings handling dry bulk commodities to Berth Nos. 2 & 3 discharging through 4 stacks (208, 209, 210 & 727).

MAXIMUM EMISSION FLOW RATE: 2475 m³/min
MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:
1. 20 mg/m³ Particulate Matter
2. 10% Opacity.

WORKS AND PROCEDURES:
All transfer points will be under partial vacuum and ventilate to a Hosakawa Micron (Ducon) Dynamic Wet Scrubber (210), and Entoletor Centrifield Wet Scrubbers (208, 209 & 727) and related appurtenances together with good operating practices.

EMISSION SOURCE 14: Loading of marine vessel with coal from two ship loaders located in the Berth No. 1 area discharging through marine vessel holds and Berth No. 1 ship loading equipment.

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from the loading operations, as well as displacement air from the ship's holds
MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:
1. 20% Opacity.
2. Particulate: None past the plant boundary such that pollution occurs.

WORKS AND PROCEDURES:
Water sprays, the maintenance of adequate material moisture for dust suppression and related appurtenances together with good operating practices.

EMISSION SOURCE 15: Loading of marine vessel with dry bulk commodities from two ship loaders located in the Berth No. 2 area discharging through marine vessel holds at Berth No. 2 ship loader.

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from the loading operations, as well as displacement air from the ship's holds
MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:
1. 20% Opacity.
2. Particulate: None past the plant boundary such that pollution occurs.

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WORKS AND PROCEDURES:
Berth No. 2 east & west ship loader spouts. The procedures to control the discharge of air contaminants shall include good operating practices.

EMISSION SOURCE 16: Offloading of phosphate rock associated with Berth No. 3 receiving hoppers located in the Berth No. 3 area of the terminal with dry filtration system vent.

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from the unloading operations, as well as displacement air from the ship’s holds
MAXIMUM ANNUAL OPERATING HOURS: 5000 hrs/yr
MAXIMUM ANNUAL PHOSPHATE ROCK THROUGHPUT: 2500000 tonnes/yr

MAXIMUM EMISSION QUALITY:
1. 20% Opacity.
2. Particulate: None past the plant boundary such that pollution occurs.

WORKS AND PROCEDURES:
Water sprays, three Mac Process cartridge dust collectors (380-1, -2, -3) and related appurtenances together with the maintenance of adequate material moisture for dust suppression and good operating practices.

EMISSION SOURCE 17: Conveying, stacking, storage and reclaiming of coal discharging from coal storage area and coal handling equipment.

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from the stacking and reclaiming operations as well as stockpile wind erosion effects
MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:
1. 20% Opacity.
2. Particulate: None past the plant boundary such that pollution occurs.

WORKS AND PROCEDURES:
A water spray truck, water sprays on the stacker reclaimers, and automatically activated water spray poles to maintain adequate material moisture at all times. The procedures to control the discharge of air contaminants shall include the use of good operating practices.

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EMISSION SOURCE 18: Conveyors and transfer points associated with Berth No. 3 used to transport phosphate rock discharging through conveyer transfer areas located in the Berth No. 3 area of the terminal.

MAXIMUM EMISSION FLOW RATE: 480 m³/min
MAXIMUM ANNUAL OPERATING HOURS: 5000 hrs/yr
MAXIMUM ANNUAL PHOSPHATE ROCK THROUGHPUT: 2500000 tonnes/yr

MAXIMUM EMISSION QUALITY:
1. 20 mg/m³ Particulate Matter
2. 10% Opacity.

WORKS AND PROCEDURES:
Covered conveyors and enclosed transfer points together with the maintenance of adequate material moisture for dust suppression and a Mac Process cartridge dust collector (380-7) and related appurtenances together with good operating practices.

EMISSION SOURCE 19: One phosphate rock storage building discharging through two dry filtration system vents.

MAXIMUM EMISSION FLOW RATE: 3400 m³/min
MAXIMUM ANNUAL OPERATING HOURS: 5000 hrs/yr
MAXIMUM ANNUAL PHOSPHATE ROCK THROUGHPUT: 2500000 tonnes/yr

MAXIMUM EMISSION QUALITY:
1. 20 mg/m³ Particulate Matter
2. 20% Opacity.

WORKS AND PROCEDURES:
Building and headbox dampers, two Mac Process Cartridge Dust Collectors (380-5, -6) together with the maintenance of adequate material moisture for dust suppression and good operating practices.

EMISSION SOURCE 20: Phosphate rock loadout building discharging through dry filtration system vent.

MAXIMUM EMISSION FLOW RATE: 900 m³/min
MAXIMUM ANNUAL OPERATING HOURS: 5000 hrs/yr
MAXIMUM ANNUAL PHOSPHATE ROCK THROUGHPUT: 2500000 tonnes/yr

MAXIMUM EMISSION QUALITY:
1. 20 mg/m³ Particulate Matter
2. 10% Opacity. May be exceeded for a total of 3 min/hour to a maximum of 30%.

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WORKS AND PROCEDURES:
Four railcar loader spouts aspirated to a Mac Process cartridge dust collector (380-8) American Air Filter baghouse and related appurtenances.

**EMISSION SOURCE 21:** Enclosed dry bulk commodities dumper building discharging through 1 stack (202) and Rail car entrance and exit.

MAXIMUM EMISSION FLOW RATE: 1500 m³/min
MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:
1. 20 mg/m³ Particulate Matter
2. 10% Opacity.

WORKS AND PROCEDURES:
Rail car bottom unloading through a veer type hopper and a Hosakawa Micron (Ducon) Dynamic Wet Scrubber No. 202 and related appurtenances together with good operating practices.

**EMISSION SOURCE 22:** Conveyors, transfer points and ship loading spouts handling dry bulk commodities on Berth Nos. 2 & 3 discharging through four stacks controlling emissions from the conveyor transfer areas and ship loading spouts located in the Berth Nos. 2 & 3 area of the terminal (240, 241, 728 & 740).

MAXIMUM EMISSION FLOW RATE: 1350 m³/min
MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:
1. 20 mg/m³ Particulate Matter
2. 10% Opacity.

WORKS AND PROCEDURES:
Three Hosakawa Micron (Ducon) Dynamic Wet Scrubbers (240, 241 & 728), and Entoleter Centrifield (740), three cascade chutes and related appurtenances together with good operating practices.

**EMISSION SOURCE 23:** Dry bulk commodities dumper and transfer point for conveyors 33 and 34 discharging through two stacks (622 & 636).

MAXIMUM EMISSION FLOW RATE: 1780 m³/min
MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr
GREATER VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

MAXIMUM EMISSION QUALITY:
1. 20 mg/m³ Particulate Matter
2. 10% Opacity.

WORKS AND PROCEDURES:
Two Hosakawa Micron (Ducon) Dynamic Wet Scrubbers (622 & 636) and related appurtenances together with good operating practices.

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SECTION 2 – GENERAL REQUIREMENTS AND CONDITIONS

A. AMENDMENTS
The terms and conditions of this permit may be amended, as authorized by applicable legislation. New and modified sources must receive authorization prior to start-up.

B. POLLUTION
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.

C. STANDARD CONDITIONS AND DEFINITIONS
Unless otherwise specified, the following applies to this permit:

1. Gaseous volumes are corrected to standard conditions of 20° Celsius & 101.325 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
   - 8% O₂ for wood fuel
   - 15% O₂ for turbines
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 6 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 hrs/yr and to those periods during which the primary authorized fuel is not available. Fuel oil sulphur content shall not exceed 15 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 (SOx) are expressed as Sulphur Dioxide.
9. Nitrogen Oxides (NOx) are expressed as Nitrogen Dioxide.
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 hrs/yr for an emission source is equivalent to authorization for continuous operation of the emission source for an entire calendar year, including leap years.

D. HEATING, VENTILATION, AIR CONDITIONING AND INTERNAL COMBUSTION ENGINES

Air contaminants discharged from any natural gas-fired heating, ventilation or air conditioning systems for buildings and any internal combustion engines 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.

E. AUTHORIZED WORKS AND PROCEDURES

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

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

F. BYPASSES

The discharge of contaminants which have bypassed authorized control works during non-emergency conditions is prohibited unless approval has been obtained in writing from the District Director.

G. EMERGENCY PROCEDURES

In the event of an emergency that prevents compliance with a requirement(s) of this permit, that requirement(s) shall be suspended for such time as the emergency continues or until otherwise directed by the District Director, provided that:

1. Due diligence was exercised in relation to the process, operation or event that caused the emergency and that the emergency occurred notwithstanding this exercise of due diligence;

2. The District Director is notified at the first available opportunity of the emergency 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. Due diligence is exercised in shutting down related processes and/or taking action to restore compliance in the shortest possible time frame, unless specified otherwise in this permit or by written notice from the District Director.

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Notwithstanding 1, 2 and 3 above, the District Director may specify contingency actions to be implemented to protect human health and the environment while authorized works and/or standard operating procedures are being restored.

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.
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 3 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@metrovancouver.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.

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DUE DATE</th>
<th>FREQUENCY</th>
<th>REQUIREMENT</th>
<th>PARAMETER(S)</th>
<th>TEST METHOD</th>
<th>REPORT TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>March 31, 2014</td>
<td>Yearly</td>
<td>The measured discharge rate and concentration of particulate in the emissions of one of the wet scrubbers 208, 209, 210 &amp; 727. One to be sampled</td>
<td>Particulate Matter</td>
<td>Those approved by the District Director</td>
<td>Stack</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DUE DATE</th>
<th>FREQUENCY</th>
<th>REQUIREMENT</th>
<th>PARAMETER(S)</th>
<th>TEST METHOD</th>
<th>REPORT TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>March 31, 2014 Yearly</td>
<td>The measured discharge rate and concentration of particulate in the emissions of one of the scrubbers 240, 241, 728 &amp; 740. One to be sampled annually on a rotating schedule such that each is sampled once every four years.</td>
<td>Particulate Matter</td>
<td>Those approved by the District Director</td>
<td>Stack</td>
<td></td>
</tr>
<tr>
<td>21, 23</td>
<td>March 31, 2014 Yearly</td>
<td>The measured discharge rate and concentration of particulate in the emissions of one of the scrubbers 202, 622 &amp; 636. One to be sampled annually on a rotating schedule such that each is sampled once every three years.</td>
<td>Particulate Matter</td>
<td>Those approved by the District Director</td>
<td>Stack</td>
<td></td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>EMISSION SOURCE</th>
<th>DUE DATE</th>
<th>FREQUENCY</th>
<th>REQUIREMENT</th>
<th>REPORT TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility</td>
<td>March 31, 2014</td>
<td>Yearly</td>
<td>Written report detailing the types and amounts of principal products produced and principal raw materials used in the preceding calendar year.</td>
<td>Materials and Products</td>
</tr>
<tr>
<td>Facility</td>
<td>October 31, 2013</td>
<td>Quarterly</td>
<td>The monitoring of total suspended particulate in the ambient air in the vicinity of the terminal shall be conducted using a high volume particulate sampler located on the roof of the terminal's electrical substation office and shall be operated by Neptune Bulk Terminals. Results shall be reported in micrograms of particulate per cubic metre of air (µg/m³) for each 24-hour period sampled according to the National Air Pollution Surveillance Network (NAPS) schedule provided by Metro Vancouver. All equipment and data is subject to audit(s) by Metro Vancouver.</td>
<td>Information - Other</td>
</tr>
<tr>
<td>11, 22, 23</td>
<td>March 31, 2014</td>
<td>Yearly</td>
<td>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.</td>
<td>Scrubber</td>
</tr>
<tr>
<td>18, 20</td>
<td>March 31, 2014</td>
<td>Yearly</td>
<td>Written report due indicating baghouse inspection frequency, baghouse condition and action taken or proposed to solve any problems detected.</td>
<td>Baghouse</td>
</tr>
</tbody>
</table>

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District Director

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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 any monitoring or reporting requirement in this Permit including plans, programs and studies.
2. Require additional investigations, tests, surveys or studies.

<table>
<thead>
<tr>
<th>EMISSION SOURCE</th>
<th>DUE DATE</th>
<th>FREQUENCY</th>
<th>REQUIREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility</td>
<td>October 31, 2013</td>
<td>Quarterly</td>
<td>All verifiable complaints regarding air emissions received directly by the Permittee for the previous calendar quarter from individuals in the neighbouring community shall be anonymized and submitted along with a summary of any follow-up actions taken or proposed.</td>
</tr>
</tbody>
</table>

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District Director

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SECTION 4 – SITE PLAN

LEGAL DESCRIPTION OF DISCHARGE SITE: The land from which the air contaminants are discharged is "City of North Vancouver, including
(i) parcel X, a 34.42 acres comprising a portion of D.L. 272 (N.W.D.) and reclaimed portion of the bed of Burrard Inlet as shown on drawing 4-N-2-607
(ii) parcel Y, a 26.07 acres comprising a portion of D.L. 272 (N.W.D.) and reclaimed portion of the bed of Burrard Inlet as shown on drawing 4-N-2-607
(iii) parcel Z, a 7.67 acres comprising a portion of D.L. 272 (N.W.D.) and reclaimed portion of the bed of Burrard Inlet as shown on drawing 4-N-2-607
(iv) parcel F, a 1471 m2 area fronting Block 26, D.L. 273 (N.W.D.) as shown on drawing 85-60
(v) parcel G, a 3612 m2 area as shown on drawing 85-62
(vi) parcel H, a 56 m2 area as shown on drawing 85-62
(vii) parcel A, a 401 m2 area as shown on sketch S2012-097
(viii) parcel B, a 3354 m2 area as shown on sketch S2012-097
(ix) parcel C, a 1397 m2 area as shown on sketch S2012-097"

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