

PERMIT GVA0086

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:

PKM Canada Marine Terminal Limited Partnership (the "Permittee")

To Authorize:

the discharge of air contaminants to the air from a Bulk Commodities Receiving, Storage and Shipping Terminal

Located at:

1995 1st Street W, North Vancouver, BC V7P 1A8

Effective Period:

The terms and conditions set out in the Permit apply to the existing or planned works as of June 03, 2020 and this Permit will expire on March 31, 2036.

All previous versions of this Permit are invalid.

Issued:

November 30, 1992

Amended:

June 03, 2020

Kathy Preston, Ph.D., P.Eng.

Assistant 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 16: Copper concentrate shed discharging through 7 Ventilation Fans equipped with filters.

MAXIMUM EMISSION FLOW RATE: **510** m³/min MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

- 1. 3.6 mg/m³ Copper
- 2. 10% Opacity

WORKS AND PROCEDURES:

Each ventilation fan must be equipped with a Purolator Merv 8 pre filter and BC Air Filter Merv 14 Rigid cell filter.

<u>Stack Information</u>: Height - 7 fans at 7.8 m; Effective Diameter - 5 fans at 0.20 m and 2 fans at 0.30 m; Exit Temperature (°C) - Ambient; Non-circular and vertical discharge.

The discharge flow rate restriction is the sum of all fan exhaust discharge flow rates. The discharge flow rate of a single 0.20 diameter ventilation fan must not exceed 56.6 m³/min. The discharge flow rate of a single 0.30 diameter ventilation fan must not exceed 113.3 m³/min.

Fully enclosed building equipped with external doors that must be closed during copper concentrate handling activities. The doors must only be open for the time required for one truck or other machinery to enter or exit the building.

The building is equipped with an internally discharging baghouse.

Issued:

November 30, 1992

Amended:

June 03, 2020

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EMISSION SOURCE 17: Zinc/lead concentrate shed discharging through 4 ventilation fans equipped with filters.

MAXIMUM EMISSION FLOW RATE: 453 m³/min MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

- 1. 3.6 mg/m³ Trace Metals: Class I (Pb, Sb, Cu, Mn, V, Zn) Issued permit with only list PB and ZN
- 2. 10% Opacity

WORKS AND PROCEDURES:

Each ventilation fan must be equipped with a Purolator Merv 8 pre filter and BC Air Filter Merv 14 Rigid cell filter.

<u>Stack Information</u>: Height - 4 fans at 7.8 m; Effective Diameter - 0.30 m; Exit Temperature (°C) - Ambient; Non-circular and vertical discharge.

The discharge flow rate restriction is the sum of all fan exhaust discharge flow rates. The discharge flow rate of each ventilation fan must not exceed 113.3 m³/min.

Fully enclosed building equipped with external doors that must be closed during zinc/lead/ferrous granules (slag) concentrate handling activities. The doors must only be open for the time required for one truck or other machinery to enter or exit the building.

The building is equipped with an internally discharging baghouse.

<u>EMISSION SOURCE 18</u>: Zinc, lead, copper ore concentrates and ferrous granules (slag) rail and truck loading and unloading building discharging through a Baghouse Exhaust(s).

MAXIMUM EMISSION FLOW RATE: 963 m³/min MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

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

WORKS AND PROCEDURES:

Donaldson Company Inc. Baghouse (232RFW10) and related appurtenances together with good operating practices.

Site Baghouse ID: 165

issued:

November 30, 1992

Amended:

June 03, 2020

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Stack Information: Height - 9 m; Effective Diameter - 1.05 m; Exit Temperature (°C) - Ambient; Noncircular and horizontal discharge.

Fully enclosed building equipped with internal and external doors, for truck and other machinery transport, that must be closed during loading and unloading activities. The doors must only be open when one truck or other machinery enter or exit the building. The building also has an entrance and exit, for rail transport, that must be equipped with plastic curtains.

The building is equipped with an internally discharging baghouse.

Truck washes must be used for outbound trucks to minimize tracking of fugitive dust.

EMISSION SOURCE 19: Zinc, lead, copper ore concentrates and ferrous granules (slag) storage buildings (7 buildings) discharging through roof vents.

MAXIMUM EMISSION FLOW RATE: The rate of discharge is that resulting from passive ventilation of the storage buildings.

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

10% Opacity

WORKS AND PROCEDURES:

Buildings with Site ID: Shed 1, Lead Shed, Zinc Shed and Shed 6 Fully enclosed buildings equipped with external doors that must be closed during mineral concentrate handling activities. The doors must only be open for the time required for one truck or other machinery to enter or exit the building. All vents must be equipped with Duraflow Matrix Ridge Vent filters (60RVA20MET) and related appurtenances together with good operating practices.

Buildings with Site ID: Shed 8 & Shed 10

Fully enclosed buildings equipped with roof vents and external doors that must be closed during mineral concentrate handling activities. The doors must only be open for the time required for one truck or other machinery to enter or exit the building.

Building with Site ID: Shed 7

Storage building enclosed on three sides (south side not enclosed) with roof vents.

The permittee must take immediate action to reduce particulate matter emissions if an opacity exceedance or upset condition is observed, as per the approved Fugitive Dust Mitigation Action Plan.

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November 30, 1992

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All buildings are equipped with internally discharging cartridge filters, within the building and at conveyor transfer points, to minimize dust within the storage buildings.

Truck washes must be used for outbound trucks to minimize tracking of fugitive dust.

<u>EMISSION SOURCE 20</u>: Zinc, lead, copper ore concentrates and ferrous granules (slag) ship loading (Berth 1) discharging through a Marine Vessel Hold(s).

MAXIMUM EMISSION FLOW RATE: The rate of discharge is that resulting from the displaced air from loading operations.

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

1. 20% Opacity. The opacity may exceed 20% for the first 15 minutes of loading activities but must not exceed 40% during this period.

WORKS AND PROCEDURES:

Maximum Annual Throughput (Aggregate): 2,175,000 tonnes/year Maximum Daily Throughput (Aggregate): 21,750 tonnes/day

Cleveland Cascade Chute ship loader and related appurtenances must be used to control product loading speed and minimize product drop heights to control visible dust emissions during all ship loading and hatch trimming operations together with good operating practices.

Enclosed tubular conveyance system and related appurtenances together with good operating practices.

The permittee must take immediate action to reduce particulate matter emissions if an opacity exceedance or upset condition is documented, as per the approved Fugitive Dust Mitigation Action Plan.

EMISSION SOURCE 21: Zinc, lead, copper ore concentrates and ferrous granules (slag) conveyance system discharging through conveying system feed hopper.

MAXIMUM EMISSION FLOW RATE: The authorized maximum rate of discharge is that resulting from the offloading operations of the grab bucket clam dropping contents into the dock hopper MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

1. 20% Opacity. The opacity may exceed 20% for the first 15 minutes of loading activities but must not exceed 40% during this period.

Issued:

November 30, 1992

Amended:

June 03, 2020

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WORKS AND PROCEDURES:

Maximum Annual Throughput (Aggregate): 800,000 tonnes/year Maximum Daily Throughput (Aggregate): 21,750 tonnes/day

Grab bucket clam and conveyor feed hopper equipped with water sprays and related appurtenances to minimize product drop heights, together with good operating practices.

The permittee must take immediate action to reduce particulate matter emissions if an opacity exceedance or upset condition is observed, as per the approved Fugitive Dust Mitigation Action Plan.

EMISSION SOURCE 22: Distillate tanker truck loading & unloading rack discharging through tanker truck vents.

MAXIMUM EMISSION FLOW RATE: The authorized maximum rate of discharge is that resulting from displaced vapour venting during product loading.

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

WORKS AND PROCEDURES:

Maximum Daily Throughput: 660 m³/day

Maximum Annual Throughput Inbound: 1,297,725 m³/year * Maximum Annual Throughput Outbound: 533,602 m³/year**

- * Sum annual throughput for Emission Numbers 22, 23 & 24
- ** Sum annual throughput for Emission Numbers 22 & 23

Bottom loading/unloading methods utilizing reduced flow rates at start and finish to minimize vapour loss. The vapour pressure of material transferred shall not exceed 10 kPa at 21.1°C.

EMISSION SOURCE 23: Distillate rail car loading & unloading rack discharging through rail car vents.

MAXIMUM EMISSION FLOW RATE: The authorized maximum rate of discharge is that resulting from displaced vapour venting during product loading.

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

Issued:

November 30, 1992

Amended:

June 03, 2020

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WORKS AND PROCEDURES:

Maximum Daily Throughput: 7,212 m³/day

Maximum Annual Throughput Inbound: 1,297,725 m³/year * Maximum Annual Throughput Outbound: 533,602 m³/year**

- * Sum annual throughput for Emission Numbers 22, 23 & 24
- ** Sum annual throughput for Emission Numbers 22 & 23

Bottom or top loading/unloading methods utilizing reduced flow rates at start and finish combined with submerged loading for top 1/3 of tank car to minimize vapour loss. The vapour pressure of material transferred must not exceed 10 kPa at 21.1°C.

EMISSION SOURCE 24: Distillate ship loading arms discharging through a Marine Vessel Hold(s).

MAXIMUM EMISSION FLOW RATE: The authorized maximum rate of discharge is that resulting from displaced vapour venting during product loading. MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

WORKS AND PROCEDURES:

Maximum Daily Throughput: 34,341m³/day

Maximum Annual Throughput Inbound: 1,297,725 m³/year * Maximum Annual Throughput Outbound: 1,297,725 m³/year**

- * Sum annual throughput for Emission Numbers 22, 23 & 24
- ** Sum annual throughput for Emission Numbers 22, 23 & 24

Loading of products using good operating practices. The vapour pressure of material transferred must not exceed 10 kPa at 21.1°C.

EMISSION SOURCE 25: Distillate storage tanks discharging through fixed roof vents.

MAXIMUM EMISSION FLOW RATE: The authorized maximum rate of discharge is that resulting from vapour venting during tank filling, withdrawing and breathing MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

Issued:

November 30, 1992

Amended:

June 03, 2020

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WORKS AND PROCEDURES:

Maximum Annual Throughput: 1,297,725 m³/year

Tank conservation vents on cone roof steel storage tanks in good repair, together with good operating practices. The vapour pressure of materials stored in these tanks shall not exceed 10 kPa at 21.1°C.

EMISSION SOURCE 26: Sulphur, potash and fertilizer rail car dumper building discharging through rail car entrance and exit.

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from the rotary railcar dumper operation.

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

1. 20% Opacity

WORKS AND PROCEDURES:

Maximum Daily Throughput: 25,000 tonnes/day Maximum Annual Throughput: 6,250,000 tonnes/year

Rail unloading activities shall be conducted within an enclosed building (except for the building entrance and exit). The building entrance and exit must be equipped with plastic curtains.

The following dust suppression systems must be employed during railcar dumper/barrel rotation:

- Water curtain sprays at the building entrance and exit.
- A floor spray system that sprays water into the receiving hopper.
- A barrel spray system that consists of a spray bar affixed to the rotating element of the dumper, overtop of the rail car, that sprays water down onto the top surface of the cargo in the rail car as it is being tipped.

The following dust suppression systems must be employed continuously during active railcar unloading:

- Fogging sprays above the dumping operation that keep the airspace above the dumping operation saturated with water.

The permittee must take immediate action to reduce particulate matter emissions if an opacity exceedance or upset condition is observed, as per the approved Fugitive Dust Mitigation Action Plan.

Issued:

November 30, 1992

Amended:

June 03, 2020

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EMISSION SOURCE 27: Sulphur, potash and fertilizer conveyors discharging through a Transfer Point(s).

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from conveying and transfer operations.

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

1. 20% Opacity

WORKS AND PROCEDURES:

Maximum Daily Throughput: 145,000 tonnes/day*
Maximum Annual Throughput: 6,250,000 tonnes/year

Covered conveyors equipped with surfactant dust suppression sprayers (sulphur only) and transfer towers, together with good operating practices.

The permittee must take immediate action to reduce particulate matter emissions if an opacity exceedance or upset condition is observed, as per the approved Fugitive Dust Mitigation Action Plan.

Sulphur Products: Surfactant chemical suppression must be applied at the middle of conveyor 417 and conveyor 419. Corrosion inhibitor, which also controls dust, must be applied at the top of transfer tower 404.

<u>EMISSION SOURCE 28</u>: Sulphur and contaminated sulphur stockpiling, reclaiming and storage discharging from three sulphur storage areas.

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 h/v

MAXIMUM EMISSION QUALITY:

1. 20% Opacity

WORKS AND PROCEDURES:

Maximum Daily Throughput: 25,000 tonnes/day
Maximum Annual Throughput: 6,250,000 tonnes/year

The handling of sulphur through the combined methods of covered conveying, stockpiling via hollow, perforated towers and surfactant chemical dust suppression system, together with good operating practices.

Issued:

November 30, 1992

Amended:

June 03, 2020

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^{*}Sum of daily throughput for Emission Numbers 26, 29 & 30

The permittee must take immediate action to reduce particulate matter emissions if an opacity exceedance or upset condition is observed, as per the approved Fugitive Dust Mitigation Action Plan.

EMISSION SOURCE 29: Sulphur, potash and fertilizers ship loading (Berth 4 - West) discharging through a Marine Vessel Hold(s).

MAXIMUM EMISSION FLOW RATE: The rate of discharge is that resulting from the displaced air from loading operations.

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

1. 20% Opacity. The opacity may exceed 20% for the first 15 minutes of loading activities but must not exceed 40% during this period.

WORKS AND PROCEDURES:

Maximum Daily Throughput: 60,000 tonnes/day Maximum Annual Throughput: 6,250,000 tonnes/year

Ship loader equipped with a spoon for controlled product loading speed and minimal product drop heights during all ship loading and hatch trimming operations. Appropriate control procedures must be used for each product handled.

The permittee must take immediate action to reduce particulate matter emissions if an opacity exceedance or upset condition is observed, as per the approved Fugitive Dust Mitigation Action Plan.

EMISSION SOURCE 30: Sulphur, potash and fertilizer ship loading (Berth 4 - East) discharging through a Marine Vessel Hold(s).

MAXIMUM EMISSION FLOW RATE: The rate of discharge is that resulting from the displaced air from loading operations.

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

1. 20% Opacity. The opacity may exceed 20% for the first 15 minutes of loading activities but must not exceed 40% during this period.

WORKS AND PROCEDURES:

Maximum Daily Throughput: 60,000 tonnes/day Maximum Annual Throughput: 6,250,000 tonnes/year

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November 30, 1992

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Ship loader equipped with a spoon for controlled product loading speed and minimal product drop heights during all ship loading and hatch trimming operations. Appropriate control procedures must be used for each product handled.

The permittee must take immediate action to reduce particulate matter emissions if an opacity exceedance or upset condition is observed, as per the approved Fugitive Dust Mitigation Action Plan.

<u>EMISSION SOURCE 31</u>: Agricultural and wood products rail dumper building discharging through a Baghouse Exhaust(s).

MAXIMUM EMISSION FLOW RATE: **609** m³/min MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

- 1. 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Donaldson Company Inc. dust collector (RFW 232RF8) and related appurtenances together with good operating practices.

Site Baghouse ID: 581

Stack Information: Height - 9.1 m; Non-circular and horizontal discharge; Effective Diameter - 0.9 m; Exit Temperature (°C) - Ambient.

Rail car bottom unloading activities must be conducted within an enclosed building, with openings for rail car entrance and exit. Unloading operations must utilize methods to minimize the potential for fugitive dust generation.

Dust aspiration pick-up points must be located at the floor level and within the receiving hopper. The receiving hopper must also be equipped with baffles to minimize drop height to the conveyor. Downdraft air ventilation at the receiving hopper and floor level shall be maintained at all times during receiving activities.

Air with entrained dust particles from the receiving hopper and floor pickups must be collected and routed through ducts to the dust collector before exhausting to atmosphere.

The permittee must take immediate action to reduce particulate matter emissions if an opacity exceedance is observed at the building entrance or exit, as per the approved Fugitive Dust Mitigation Action Plan.

Issued:

November 30, 1992

Amended:

June 03, 2020

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EMISSION SOURCE 32: Agricultural and wood products rail dumper discharging through a Baghouse Exhaust(s).

MAXIMUM EMISSION FLOW RATE: 1416 m³/min MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

- 1. 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Air-Cure dust collector (484AC10) and related appurtenances together with good operating practices.

Site Baghouse ID: 587

Stack Information: Height - 9.1 m; Non-circular and horizontal discharge; Effective Diameter - 0.9 m; Exit Temperature ($^{\circ}$ C) - Ambient.

Rail car bottom unloading activities must be conducted within an enclosed building, with openings for rail car entrance and exit. Unloading operations must utilize methods to minimize the potential for fugitive dust generation.

Dust aspiration pick-up points must be located at the floor level and within the receiving hopper. The receiving hopper must also be equipped with baffles to minimize drop height to the conveyor. Downdraft air ventilation at the receiving hopper and floor level shall be maintained at all times during receiving activities.

Air with entrained dust particles from the receiving hopper and floor pickups must be collected and routed through ducts to the dust collector before exhausting to atmosphere.

The permittee must take immediate action to reduce particulate matter emissions if an opacity exceedance is observed at the building entrance or exit, as per the approved Fugitive Dust Mitigation Action Plan.

Issued:

November 30, 1992

Amended:

June 03, 2020

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EMISSION SOURCE 33: Agricultural and wood products enclosed belt conveyor and Storage Silos (A, B, C, D & E) discharging through a Baghouse Exhaust(s).

MAXIMUM EMISSION FLOW RATE: **569** m³/min MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

- 1. 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Donaldson Company Inc. baghouse (RFW 156GRF10) and related appurtenances together with good operating practices.

Site Baghouse ID: 582

Stack Information: Height - 30.5 m; Non-circular and horizontal discharge; Effective Diameter - 0.9 m; Exit Temperature (°C) - Ambient.

The fully enclosed conveyor and silos must be maintained under negative pressure.

EMISSION SOURCE 34: Agricultural and wood products enclosed conveyor and storage silos (N, O, P, Q & R) discharging through a Baghouse Exhaust(s).

MAXIMUM EMISSION FLOW RATE: 530 m³/min MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

- 1. 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Donaldson Company Inc. baghouse (RFW 156RF10) and related appurtenances together with good operating practices.

Site Baghouse ID: 583

Stack Information: Height - 30.5 m; Non-circular and horizontal discharge; Effective Diameter - 0.9 m; Exit Temperature (${}^{\circ}$ C) - Ambient.

The fully enclosed conveyor and silos must be maintained under negative pressure.

Issued:

November 30, 1992

Amended:

June 03, 2020

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EMISSION SOURCE 35: Agricultural and wood products enclosed belt conveyors and transfer points at transfer tower 565 discharging through a Baghouse Exhaust(s).

MAXIMUM EMISSION FLOW RATE: 623 m³/min MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

- 1. 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Donaldson Company Inc. baghouse (RFW 232RF8) and related appurtenances together with good operating practices.

Site Baghouse ID: 584

Stack Information: Height - 9.1m; Non-circular and horizontal discharge; Effective Diameter - 0.9 m; Exit Temperature ($^{\circ}$ C) - Ambient.

The fully enclosed conveyor must be maintained under negative pressure.

EMISSION SOURCE 36: Agricultural and wood products enclosed belt conveyor (511 - mid way bin vent) discharging through a dust collector.

MAXIMUM EMISSION FLOW RATE: 68 m³/min MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

- 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Donaldson Company Inc., CPV 6 Series dust collector with Powercore Ultra-WebSB filter pack.

Stack Information: Height - 5.0 m; Non-circular and horizontal discharge; Effective Diameter - 0.3 m; Exit Temperature $(^{\circ}C)$ - Ambient.

The fully enclosed conveyor must be maintained under negative pressure.

Issued:

November 30, 1992

Amended:

June 03, 2020

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<u>EMISSION SOURCE 37</u>: Agricultural and wood products enclosed belt conveyor (511 - head end bin vent) discharging through a dust collector.

MAXIMUM EMISSION FLOW RATE: **68** m³/min MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

- 1. 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Donaldson Company Inc., CPV 6 Series dust collector with Powercore Ultra-WebSB filter pack.

Stack Information: Height - 20.0 m; Non-circular and horizontal discharge; Effective Diameter - 0.3 m; Exit Temperature (°C) - Ambient.

The fully enclosed conveyor must be maintained under negative pressure.

EMISSION SOURCE 38: Agricultural and wood products enclosed belt conveyor (515 - head end bin vent) discharging through a dust collector.

MAXIMUM EMISSION FLOW RATE: **68** m³/min MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

- 1. 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Donaldson Company Inc., CPV 6 Series dust collector with Powercore Ultra-WebSB filter pack.

Stack Information: Height - 26.0 m; Non-circular and horizontal discharge; Effective Diameter - 0.3 m; Exit Temperature ($^{\circ}$ C) - Ambient.

The fully enclosed conveyor must be maintained under negative pressure.

Issued:

November 30, 1992

Amended:

June 03, 2020

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<u>EMISSION SOURCE 39</u>: Agricultural and wood products enclosed belt conveyor (517 - tail end bin vent) discharging through a dust collector.

MAXIMUM EMISSION FLOW RATE: **68** m³/min MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

- 1. 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Donaldson Company Inc., CPV 6 Series dust collector with Powercore Ultra-WebSB filter pack.

Stack Information: Height - 21.0 m; Non-circular and horizontal discharge; Effective Diameter - 0.3 m; Exit Temperature (°C) - Ambient.

The fully enclosed conveyor must be maintained under negative pressure.

<u>EMISSION SOURCE 40</u>: Agricultural and wood products enclosed belt conveyor (517 - head end bin vent) discharging through a dust collector.

MAXIMUM EMISSION FLOW RATE: **68** m³/min MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

- 1. 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Donaldson Company Inc., CPV 6 Series dust collector with Powercore Ultra-WebSB filter pack.

Stack Information: Height - 44.5 m; Non-circular and horizontal discharge; Effective Diameter - 0.3 m; Exit Temperature (°C) - Ambient.

The fully enclosed conveyor must be maintained under negative pressure.

Issued:

November 30, 1992

Amended:

June 03, 2020

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<u>EMISSION SOURCE 41</u>: Agricultural and wood products enclosed belt conveyor (561 - head end bin vent) discharging through a dust collector.

MAXIMUM EMISSION FLOW RATE: **68** m³/min MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

- 1. 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Donaldson Company Inc., CPV 6 Series dust collector with Powercore Ultra-WebSB filter pack.

Stack Information: Height - 29.0 m; Non-circular and horizontal discharge; Effective Diameter - 0.3 m; Exit Temperature (°C) - Ambient.

The fully enclosed conveyor must be maintained under negative pressure.

<u>EMISSION SOURCE 42</u>: Agricultural and wood products enclosed belt conveyor (564 - tail end bin vent) discharging through a dust collector.

MAXIMUM EMISSION FLOW RATE: 68 m³/min MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

- 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Donaldson Company Inc., CPV 6 Series dust collector with Powercore Ultra-WebSB filter pack.

Stack Information: Height - 18.0 m; Non-circular and horizontal discharge; Effective Diameter - 0.3 m; Exit Temperature (°C) - Ambient.

The fully enclosed conveyor must be maintained under negative pressure.

Issued:

November 30, 1992

Amended:

June 03, 2020

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<u>EMISSION SOURCE 43</u>: Agricultural and wood products enclosed belt conveyor (564 - head end bin vent) discharging through a dust collector.

MAXIMUM EMISSION FLOW RATE: 68 m³/min MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

- 1. 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Donaldson Company Inc., CPV 6 Series dust collector with Powercore Ultra-WebSB filter pack.

Stack Information: Height - 30.0 m; Non-circular and horizontal discharge; Effective Diameter - 0.3 m; Exit Temperature (°C) - Ambient.

The fully enclosed conveyor must be maintained under negative pressure.

<u>EMISSION SOURCE 44</u>: Agricultural and wood products enclosed belt conveyor (570 - tail end bin vent) discharging through a dust collector.

MAXIMUM EMISSION FLOW RATE: **68** m³/min MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

- 1. 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Donaldson Company Inc., CPV 6 Series dust collector with Powercore Ultra-WebSB filter pack.

Stack Information: Height -13.0 m; Non-circular and horizontal discharge; Effective Diameter - 0.3 m; Exit Temperature (°C) - Ambient.

The fully enclosed conveyor must be maintained under negative pressure.

Issued:

November 30, 1992

Amended:

June 03, 2020

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<u>EMISSION SOURCE 45</u>: Agricultural and wood products enclosed belt conveyor (570 - head end bin vent) discharging through a dust collector.

MAXIMUM EMISSION FLOW RATE: **68** m³/min MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

- 1. 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Donaldson Company Inc., CPV 6 Series dust collector with Powercore Ultra-WebSB filter pack.

Stack Information: Height - 40.0 m; Non-circular and horizontal discharge; Effective Diameter - 0.3 m; Exit Temperature (°C) - Ambient.

The fully enclosed conveyor must be maintained under negative pressure.

<u>EMISSION SOURCE 46</u>: Agricultural and wood products enclosed belt conveyor (574 - head end bin vent) discharging through a dust collector.

MAXIMUM EMISSION FLOW RATE: **68** m³/min MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUALITY:

- 1. 15 mg/m³ Particulate Matter
- 2. 10% Opacity

WORKS AND PROCEDURES:

Donaldson Company Inc., CPV 6 Series dust collector with Powercore Ultra-WebSB filter pack.

Stack Information: Height - 28.5 m; Non-circular and horizontal discharge; Effective Diameter - 0.3 m; Exit Temperature ($^{\circ}$ C) - Ambient.

The fully enclosed conveyor must be maintained under negative pressure.

issued:

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EMISSION SOURCE 47: Agricultural and wood products ship loading (Berth 5) discharging through a Marine Vessel Hold(s).

MAXIMUM EMISSION FLOW RATE: The rate of discharge is that resulting from the displaced air from loading operations.

MAXIMUM ANNUAL OPERATING HOURS: 8760 h/y

MAXIMUM EMISSION QUALITY:

1. 20% Opacity. The opacity may exceed 20% for the first 15 minutes of loading activities but must not exceed 40% during this period.

WORKS AND PROCEDURES:

Maximum Annual Throughput: 2,000,000 tonnes/year Maximum Daily Throughput: 28,000 tonnes/day

Cleveland Cascade Chute ship loader and related appurtenances must be used to controlled product loading speed and minimize product drop heights to control visible dust emissions during all ship loading and hatch trimming operations together with good operating practices.

Enclosed conveyance system and related appurtenances together with good operating practices.

The permittee must take immediate action to reduce particulate matter emissions if an opacity exceedance or upset condition is observed, as per the approved Fugitive Dust Mitigation Action Plan.

Issued: Amended: November 30, 1992

ded: June 03, 2020

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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.

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;
- 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% 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 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_x) are expressed as Sulphur Dioxide.
- 9. Nitrogen Oxides (NO_x) are expressed as Nitrogen Dioxide.

Issued:

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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.

Issued:

November 30, 1992

Amended:

June 03, 2020

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SECTION 3 – REPORTING REQUIREMENTS

A. MONITORING REQUIREMENTS AND REPORTING

Procedures and the BC Ministry of Environment Field Sampling Manual, as they may be amended from time to time. Any variance from these 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 must receive prior written approval from the District Director.

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

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

Issued: November 30, 1992 Amended: June 03, 2020

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Assistant District Director

REPORT TYPE	Stack	Stack
TEST METHOD	Those approved by Metro Vancouver, EPA Test Method 5	Those approved by Metro Vancouver
PARAMETER(S)	Particulate Matter	Particulate Matter
REQUIREMENT	Stack Test Report Submit a written report detailing the measured discharge rate and concentration of particulate matter in the emissions.	Stack Test Report Submit a written report detailing the measured discharge rate and concentration of particulate matter in the emissions. Emission sources to be sampled under this requirement are those identified by the permit holder in an approved Particulate Matter Testing Plan.
SUBSEQUENT DUE DATES	Every 3 years, on or before June 30 every third year.	Every 3 years, on or before December 31 every third year.
INITIAL DUE DATE	June 30, 2020	December 31, 2021
EMISSION SOURCE	18, 31, 32, 33, 34, 35	16, 17, 36, 37, 38, 39, 40, 41, 42, 45, 46

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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.

REPORT TYPE	Information - Other	Baghouse	Information - Other
REQUIREMENT	Complaint Summary Report All complaints regarding air emissions received directly by the Permittee for the previous calendar year from individuals in the neighbouring community shall be anonymized and submitted along with a summary of any follow-up actions taken or proposed. The complaint summary report is to be in a format approved by Metro Vancouver.	Baghouse and Dust Collector Report Written report summarizing frequency and results of all inspections and maintenance carried out on the baghouses and dust collectors. The report shall also include any actions, taken or proposed, to solve identified problems.	Daily Throughput Report Submit a written report summarizing the daily throughput rates in tonnes per day and materials loaded for each source for the preceding calendar quarter. Detailed records are to be maintained in a format approved in writing by the District Director.
SUBSEQUENT DUE DATES	On or before March 31 for each subsequent year.	On or before March 31 for each subsequent year.	Quarterly, on or before April 30, July 31, October 31 and January 31 of each year.
INITIAL DUE DATE	March 31, 2021	March 31, 2021	July 31, 2020
EMISSION	Facility	16, 18, 19, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 17	20, 21, 22, 23, 24, 28, 29, 30, 47, 26, 27

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REPORT TYPE	Other	Materials and Products
REQUIREMENT	Fugitive Dust Mitigation Action Plan Submit a written report, referred to as the Fugitive Dust Mitigation Action Plan Submit a written report, referred to as the Fugitive Dust Mitigation Action Plan (FDMAP), for review and written approval by the District Director, summarizing plant site fugitive particulate emission sources and an assessment of overall site operations and actions to minimize the release of fugitive dust emissions at the facility. The plan should include but not be limited to: opacity measurement surveys by trained staff, meteorological measurements, complaint handling protocols and any Standard Operating Procedures, such as reducing loading flow rates when loading dustier products. The plan should be updated annually and include a summary of measures and actions taken, changes in procedures and/or equipment, and recommendations for on-going improvement. Any changes to the plan to minimize fugitive emissions shall be documented and be subject to review and written approval by the District Director to determine whether additional actions and procedures are necessary for the protection of human health and the environment.	Materials and Products Report Written report providing details of the types and amounts of commodities received and loaded (ship) in the preceding calendar year.
SUBSEQUENT DUE DATES	On or before October 31 for each subsequent year.	On or before March 31 for each subsequent year.
INITIAL DUE DATE	October 31, 2020	March 31, 2021
EMISSION SOURCE	Facility	Facility

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EMISSION	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	REPORT TYPE
Facility	October 31, 2033	N/A	Technology Assessment Plan	Information -
			Submit a written technology assessment plan to the District Director, for review and written approval. The scope of the plan should include but not be limited to:	
			-An evaluation of Best Available Control Technology for all emissions sources at the facility. -Information on the feasibility of implementation, including approximate costs.	
			The methodology that will be used to conduct the technology assessment should be clearly described.	
Facility	July 31, 2034	N/A	Technology Assessment Report	Information -
			The permittee shall submit a written Technology Assessment report to the District Director, as per the approved Technology Assessment Plan. The report should include but not be limited to:	Other
			a. Proposed preferred emission control technology options,	
			b. Refined capital and operating costs,	
			c. Proposed emission limits based on implementing the preferred technology,	
			d. Dispersion modelling to support the proposed emission limits, and	
			e. Implementation schedule.	

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	REPORT TYPE
Facility	February 28, 2021	On or before February 28 for each subsequent year, ending February 28, 2023.	VOC Monitoring Data Report Written report, in a format approved by Metro Vancouver, summarizing Total VOC and benzene concentrations from the approved ambient monitoring program for the previous calendar year. The report shall also describe data quality assurance, calibration and maintenance of the approved ambient air quality equipment. Until such time as the air quality monitoring program is established, this report can consist of a progress report on establishing the monitoring program.	Information - Other
Facility	April 30, 2033	N/A	Dispersion Modelling Plan A dispersion model plan to assess mineral concentrate, particulate matter and distillate emissions using the current Metro Vancouver Dispersion Modelling Plan template as posted on Metro Vancouver website must be submitted to the District Director for written approval.	Dispersion Model
Facility	December 31, 2033	N/A	Dispersion Modelling Report Written report of air dispersion modelling of mineral concentrate, particulate matter and distillate emissions from the terminal to determine potential ambient impacts from the facility. The report shall include dispersion modelling for ambient concentrations of: a. Lead, copper and zinc. b. 24-hour and annual fine particulate matter (PM _{2.5}). c. 24-hour and annual inhalable particulate matter (PM ₁₀). d. Total VOC and benzene.	Dispersion Model

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EMISSION	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	REPORT TYPE
			The report should also include: a. Summary of maximum predicted concentrations at sensitive receptors.	
			b. Deposition levels of copper, lead and zinc.	·-
			c. Assessment of potential ambient impacts from the facility.	
			The Dispersion Modelling Report shall be submitted for review and written approval by the District Director. Dispersions modelling must be conducted in accordance with an approved Dispersion Modelling Plan.	

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:

Amend the monitoring and reporting requirement of any of the information required by this Permit including plans, programs and studies. اب ر<u>ن</u>

Require additional investigations, tests, surveys or studies.

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SECTION 4 – SITE PLAN

LEGAL DESCRIPTION OF DISCHARGE SITE: Municipality of North Vancouver, Parcel Identifier: 008-006-148 Lot 5 of Parcel "C", District Lot 264 and of the Bed and Foreshore of Burrard Inlet, Plan 13846" leased from B.C.R. Properties Ltd. and adjacent lands and water lots leased from the Vancouver Port Corporation.

Issued:

November 30, 1992

Amended:

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