



TECHNICAL SUPPORT DOCUMENT

**Air Discharge Permit ADP 24-3652
Air Discharge Permit Application CO-1101**

Issued: July 24, 2024

CRC Marine Terminal

SWCAA ID - 2792

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ABBREVIATIONS

List of Acronyms

ADP	Air Discharge Permit	NSPS	New Source Performance Standard
AP-42	Compilation of Emission Factors, AP-42, 5th Edition, Volume 1, Stationary Point and Area Sources – published by EPA	PSD	Prevention of Significant Deterioration
ASIL	Acceptable Source Impact Level	RCW	Revised Code of Washington
BACT	Best available control technology	SCC	Source Classification Code
CAM	Compliance Assurance Monitoring	SDS	Safety Data Sheet
CAS#	Chemical Abstracts Service registry number	SQER	Small Quantity Emission Rate listed in WAC 173-460
CFR	Code of Federal Regulations	Standard	Standard conditions at a temperature of 68°F (20°C) and a pressure of 29.92 in Hg (760 mm Hg)
EPA	U.S. Environmental Protection Agency	SWCAA	Southwest Clean Air Agency
EU	Emission Unit	T-BACT	Best Available Control Technology for toxic air pollutants
mfr	Manufacturer	WAC	Washington Administrative Code
NOV	Notice of Violation/		

List of Units and Measures

µg/m ³	Micrograms per cubic meter	ppmvd	Parts per million by volume, dry
acfm	Actual cubic foot per minute	ppmw	Parts per million by weight
dscfm	Dry Standard cubic foot per minute	psig	Pounds per square inch, gauge
gr/dscf	Grain per dry standard cubic foot	scfm	Standard cubic foot per minute
MMBtu	Million British thermal unit	tph	Ton per hour
ppm	Parts per million	tpy	Tons per year
ppmv	Parts per million by volume		

List of Chemical Symbols, Formulas, and Pollutants

CO	Carbon monoxide	PM ₁₀	PM with an aerodynamic diameter 10 µm or less
CO ₂	Carbon dioxide	PM _{2.5}	PM with an aerodynamic diameter 2.5 µm or less
CO _{2e}	Carbon dioxide equivalent	SO ₂	Sulfur dioxide
HAP	Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act	SO _x	Sulfur oxides
NO _x	Nitrogen oxides	TAP	Toxic air pollutant pursuant to Chapter 173-460 WAC
O ₂	Oxygen	VOC	Volatile organic compound
O ₃	Ozone		
PM	Particulate Matter with an aerodynamic diameter 100 µm or less		

Terms not otherwise defined have the meaning assigned to them in the referenced regulations or the dictionary definition, as appropriate.

1. FACILITY IDENTIFICATION

Applicant Name: Columbia River Carbonates
Applicant Address: 300 North Pekin Road, Woodland, Washington 98674

Facility Name: CRC Marine Terminal
Facility Address: 1901 Dike Road, Woodland, Washington 98674

SWCAA Identification: 2792

Contact Person: Braden Wale, Engineering Manager

Primary Process: Crushed and Broken Limestone
SIC/NAICS Code: 1422 / Crushed and Broken Limestone
212312 / Crushed and Broken Limestone Mining and Quarrying

Facility Classification: Natural Minor

2. FACILITY DESCRIPTION

The Columbia River Carbonates (CRC) Marine Terminal facility imports bulk limestone (calcium carbonate) via barge and stockpiles the material onsite. Stored material is shipped offsite by truck.

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit application number CO-1101 (ADP Application CO-1101) dated May 31, 2024. CRC submitted ADP Application CO-1101 requesting approval of the following:

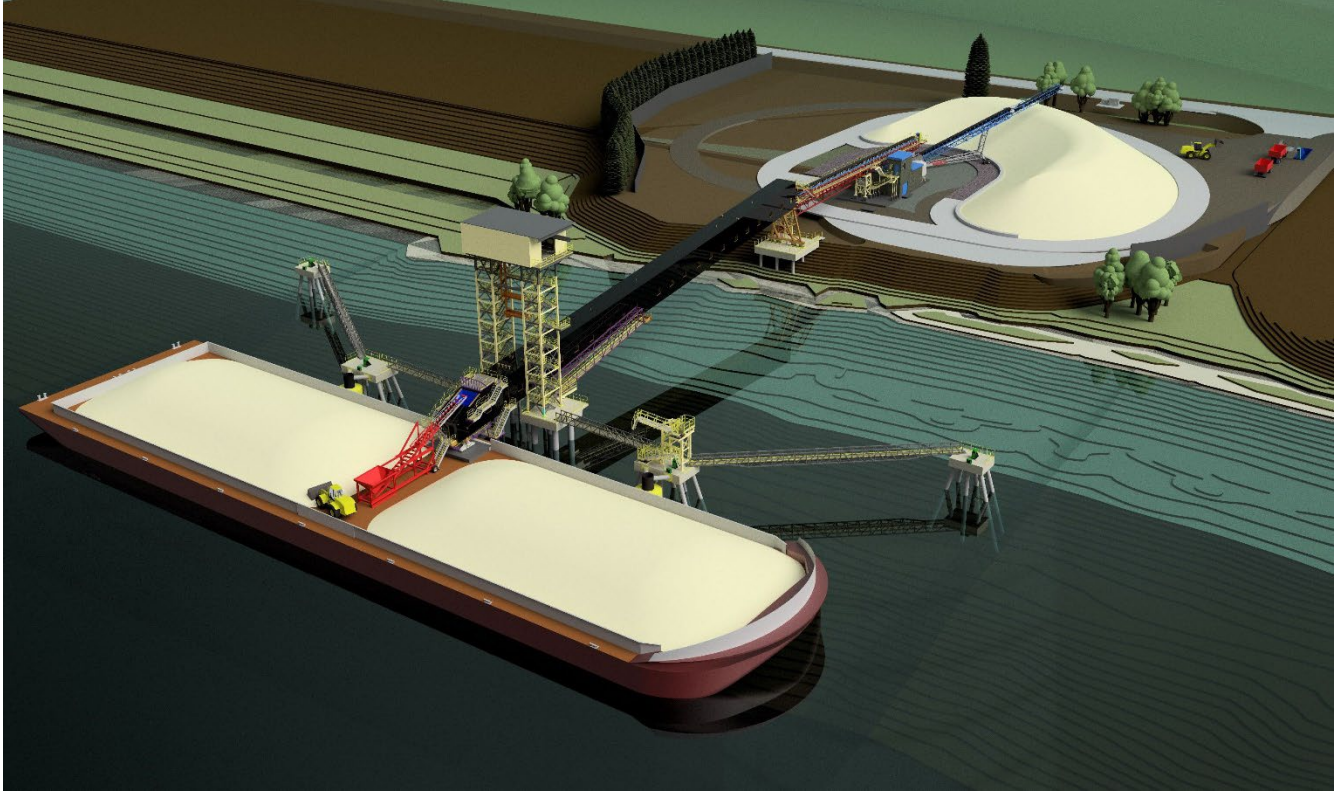
- Increase in permitted material throughput from 300,000 tpy to 525,600 tpy.

The current permitting action provides approval for bulk material handling and storage operations as proposed in ADP Application CO-1101.

ADP 24-3652 will supersede ADP 24-3630 in its entirety.

4. PROCESS DESCRIPTION

- 4.a. Bulk Material Handling and Storage (existing). Crushed limestone is received in bulk via barge. Material is loaded from the barge into a reclaim hopper using payloaders. Material is transferred from barge to shore with conveyors and stored in an open pile. Stored material is loaded out to trucks using payloaders. Material is not processed at the site (crushing, screening, etc.). Received material is generally damp. Water sprays and misting systems are used as necessary for dust control.



Barge Marine Terminal

5. EQUIPMENT/ACTIVITY IDENTIFICATION

- 5.a. Marine Receiving (existing). One marine pier is used to receive bulk material from barges. Wet suppression systems are used to control fugitive dust emissions.

Location: TBD

- 5.b. Material Handling and Storage (existing). Two conveyors and a radial stacker are used to transfer bulk material from the marine terminal to upland storage piles. Wet suppression systems are used to control fugitive dust emissions.

Location: TBD

- 5.c. Truck Loadout (existing). Bulk material is transferred from storage piles to trucks using payloaders. Wet suppression systems are used to control fugitive dust emissions.

Location: TBD

- 5.d. Equipment/Activity Summary.

ID No.	Equipment/Activity	Control Equipment/Measure
1	Marine Receiving	Low Pressure Wet Suppression
2	Material Handling and Storage	Low Pressure Wet Suppression
3	Truck Loadout	Low Pressure Wet Suppression

6. EMISSIONS DETERMINATION

Emissions to the ambient atmosphere from the material handling and storage operations proposed in ADP Application CO-1101 consist of particulate matter (PM).

Unless otherwise specified by SWCAA, actual emissions must be determined using the specified input parameter listed for each emission unit and the following hierarchy of methodologies:

- (a) Continuous emissions monitoring system (CEMS) data;
 - (b) Source emissions test data (EPA reference method). When source emissions test data conflicts with CEMS data for the time period of a source test, source test data must be used;
 - (c) Source emissions test data (other test method); and
 - (d) Emission factors or methodology provided in this TSD.
- 6.a. Material Handling and Storage (modified). Potential particulate matter emissions from material handling and storage operations are calculated based on a material throughput of 525,600 tpy, using Equation 1 from EPA AP-42 Section 13.2.4 "Aggregate Handling and Storage Piles" (11/06) and an estimated overall emission control efficiency of 80% (low pressure wet suppression). Annual emissions will be calculated from actual material throughput using the same methodology.

<u>Pollutant</u>	<u>Emissions</u>
PM	1.18 tpy
PM ₁₀	0.56 tpy
PM _{2.5}	0.084 tpy

Emissions from material handling and storage are calculated in accordance with the following equations:

$$\begin{aligned} \text{PM Emissions (lbs)} &= E_{\text{PM}} * T * (1-\text{CF}) \\ \text{PM}_{10} \text{ Emissions (lbs)} &= E_{\text{PM}_{10}} * T * (1-\text{CF}) \\ \text{PM}_{2.5} \text{ Emissions (lbs)} &= E_{\text{PM}_{2.5}} * T * (1-\text{CF}) \end{aligned}$$

Where: E = AP-42 emission factor equation with applicable particle size constant
 T = Material throughput (tons)
 CF = Control efficiency of transfer point (*see Section 6.b below*).

$$E = 0.0032 * k * [(U/5)^{1.3} / (M/2)^{1.4}] \text{ lb/ton} \quad \text{EPA AP-42, Section 13.2.4 - Equation 1}$$

Where: E = Emissions factor per transfer point (lb/ton)
 K = Particle size constant (PM - 0.74, PM₁₀ - 0.35, PM_{2.5} - 0.053)
 U = Mean wind speed (miles/hour)
 M = Material moisture content (%)

ADP Application CO-1101. CRC proposes to increase previously permitted material throughput from 300,000 tpy to 525,600 tpy. CRC is not proposing to make any change in the previously approved equipment or operating scheme.

- 6.b. Emissions Summary/Facility-wide Potential to Emit. Facility-wide potential to emit as calculated in the sections above is summarized below.

<u>Pollutant</u>	<u>Potential Emissions (tpy)</u>	<u>Project Increase (tpy)</u>
NO _x	0.00	0.00
CO	0.00	0.00
VOC	0.00	0.00
SO ₂	0.00	0.00
Lead	0.00	0.00
PM	1.18	0.51
PM ₁₀	0.56	0.24
PM _{2.5}	0.084	0.036
TAP	0.00	0.00
HAP	0.00	0.00
CO _{2e}	0.00	0.00

7. REGULATIONS AND EMISSION STANDARDS

Regulations that have been used to evaluate the acceptability of the proposed facility and establish emission limits and control requirements include, but are not limited to, the regulations, codes, or requirements listed below.

- 7.a. Revised Code of Washington (RCW) 70A.15.2040 empowers any activated air pollution control authority to prepare and develop a comprehensive plan or plans for the prevention, abatement and control of air pollution within its jurisdiction. An air pollution control authority may issue such orders as may be necessary to effectuate the purposes of the Washington Clean Air Act and enforce the same by all appropriate administrative and judicial proceedings subject to the rights of appeal as provided in Chapter 62, Laws of 1970 ex. sess.
- 7.b. RCW 70A.15.2210 provides for the inclusion of conditions of operation as are reasonably necessary to assure the maintenance of compliance with the applicable ordinances, resolutions, rules and regulations when issuing an Air Discharge Permit for installation and establishment of an air contaminant source.
- 7.c. Washington Administrative Code (WAC) 173-460 "Controls for New Sources of Toxic Air Pollutants" requires Best Available Control Technology for toxic air pollutants (T-BACT), identification and quantification of emissions of toxic air pollutants and demonstration of protection of human health and safety.
- 7.d. WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM₁₀, PM_{2.5}, lead, sulfur dioxide, nitrogen dioxide, ozone, and carbon monoxide in the ambient air, which shall not be exceeded.
- 7.e. SWCAA 400-040 "General Standards for Maximum Emissions" requires all new and existing sources and emission units to meet certain performance standards with respect to Reasonably Available Control Technology (RACT), visible emissions, fallout, fugitive emissions, odors, emissions detrimental to persons or property, sulfur dioxide, concealment and masking, and fugitive dust.
- 7.f. SWCAA 400-060 "Emission Standards for General Process Units" prohibits particulate matter emissions from all new and existing process units in excess of 0.1 grains per dry standard cubic foot of exhaust gas.
- 7.g. SWCAA 400-109 "Air Discharge Permit Applications" requires that an Air Discharge Permit application be submitted for all new installations, modifications, changes, or alterations to process and emission control equipment consistent with the definition of "new source". Sources wishing to modify existing permit terms may submit an Air Discharge Permit application to request such changes. An Air Discharge Permit must be issued, or written

confirmation of exempt status must be received, before beginning any actual construction, or implementing any other modification, change, or alteration of existing equipment, processes, or permits.

- 7.h. SWCAA 400-110 "New Source Review" requires that SWCAA issue an Air Discharge Permit in response to an Air Discharge Permit application prior to establishment of the new source, emission unit, or modification.
- 7.i. SWCAA 400-113 "Requirements for New Sources in Attainment or Nonclassifiable Areas" requires that no approval to construct or alter an air contaminant source shall be granted unless it is evidenced that:
- (1) The equipment or technology is designed and will be installed to operate without causing a violation of the applicable emission standards;
 - (2) Best Available Control Technology will be employed for all air contaminants to be emitted by the proposed equipment;
 - (3) The proposed equipment will not cause any ambient air quality standard to be exceeded; and
 - (4) If the proposed equipment or facility will emit any toxic air pollutant regulated under WAC 173-460, the proposed equipment and control measures will meet all the requirements of that Chapter.

8. RACT/BACT/BART/LAER/PSD/CAM DETERMINATIONS

The proposed equipment and control systems incorporate Best Available Control Technology (BACT) for the types and amounts of air contaminants emitted by the processes as described below:

New BACT Determinations

- 8.a. BACT Determination – Bulk Material Handling and Storage. The proposed use of low pressure wet suppression systems has been determined to meet the requirements of BACT for the type and quantity of emissions from bulk material handling and storage operations at this facility.

Previous BACT Determinations

- 8.b. BACT Determination – Bulk Material Handling and Storage (ADP 24-3630). The proposed use of low pressure wet suppression systems has been determined to meet the requirements of BACT for the type and quantity of emissions from bulk material handling and storage operations at this facility.

Other Determinations

- 8.c. Prevention of Significant Deterioration (PSD) Applicability Determination. The potential to emit of this facility is less than applicable PSD applicability thresholds. Likewise, this permitting action will not result in a potential increase in emissions equal to or greater than the PSD thresholds. Therefore, PSD review is not applicable to this action.
- 8.d. Compliance Assurance Monitoring (CAM) Applicability Determination. CAM is not applicable to any emission unit at this facility because it is not a major source and is not required to obtain a Part 70 permit.

9. AMBIENT IMPACT ANALYSIS

Conclusions

- 9.a. Operation of a marine receiving terminal, as proposed in ADP Application CO-1101, will not cause the ambient air quality requirements of Title 40 Code of Federal Regulations (CFR) Part 50 "National Primary and Secondary Ambient Air Quality Standards" to be violated.

- 9.b. Operation of a marine receiving terminal, as proposed in ADP Application CO-1101, will not cause the requirements of WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" or WAC 173-476 "Ambient Air Quality Standards" to be violated.
- 9.c. Operation of a marine receiving terminal, as proposed in ADP Application CO-1101, will not cause a violation of emission standards for sources as established under SWCAA General Regulations Sections 400-040 "General Standards for Maximum Emissions" and 400-060 "Emission Standards for General Process Units."

10. DISCUSSION OF APPROVAL CONDITIONS

SWCAA has made a determination to issue ADP 24-3652 in response to ADP Application CO-1101. ADP 24-3652 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards as discussed below.

- 10.a. Supersession of Previous Permits. ADP 24-3652 supersedes ADP 24-3630 in its entirety.
- 10.b. General Basis. Permit requirements for equipment affected by this permitting action incorporate the operating schemes proposed by the applicant in ADP Application CO-1101. Permit requirements established by this action are intended to implement BACT, minimize emissions, and assure compliance with applicable requirements on a continuous basis. Emission limits for approved equipment are based on the maximum potential emissions calculated in Section 6 of this Technical Support Document.
- 10.c. Monitoring and Recordkeeping Requirements. ADP 24-3652 establishes monitoring and recordkeeping requirements sufficient to document compliance with applicable emission limits, ensure proper operation of approved equipment and provide for compliance with generally applicable requirements. Specific monitoring requirements are established for material throughput.
- 10.d. Reporting Requirements. ADP 24-3652 establishes general reporting requirements for annual air emissions, upset conditions and excess emissions. Specific reporting requirements are established for material throughput. Reports are to be submitted on an annual basis.
- 10.e. Bulk Material Handling and Storage. Permit requirements for the proposed bulk material handling and storage operations are consistent with the operating scheme and material data submitted by the applicant. Visible emission limits have been established consistent with proper operation of the proposed equipment and wet suppression systems. This facility has been permitted assuming a maximum material throughput of 300,000 tpy.

11. START-UP AND SHUTDOWN/ALTERNATIVE OPERATING SCENARIOS/POLLUTION PREVENTION

- 11.a. Start-up and Shutdown Provisions. Pursuant to SWCAA 400-081 "Start-up and Shutdown", technology based emission standards and control technology determinations shall take into consideration the physical and operational ability of a source to comply with the applicable standards during start-up or shutdown. Where it is determined that a source is not capable of achieving continuous compliance with an emission standard during start-up or shutdown, SWCAA shall include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during start-up or shutdown.

The applicant did not identify any start-up and shutdown periods during which affected equipment is not capable of achieving continuous compliance with applicable technology determinations or approval conditions. To SWCAA's knowledge, this facility can comply with all applicable standards during startup and shutdown.

- 11.b. Alternate Operating Scenarios. SWCAA conducted a review of alternate operating scenarios applicable to equipment affected by this permitting action. The permittee did not propose or identify any applicable alternate operating scenarios. Therefore, none were included in the permit requirements.
- 11.c. Pollution Prevention Measures. SWCAA conducted a review of possible pollution prevention measures for the facility. No pollution prevention measures were identified by either the permittee or SWCAA separately or in addition to those measures required under BACT considerations. Therefore, none were included in the permit requirements.

12. EMISSION MONITORING AND TESTING

There are no formal emission monitoring or testing requirements for this facility.

13. FACILITY HISTORY

- 13.a. Previous Permitting Actions. SWCAA has previously issued the following Permits for this facility:

<u>Permit Number</u>	<u>Application Number</u>	<u>Date</u>	<u>Purpose</u>
24-3630	CO-1087	2/14/2024	Installation of a bulk material marine terminal.

- 13.b. Compliance History. A search of source records on file at SWCAA did not identify any outstanding compliance issues at this facility.

14. PUBLIC INVOLVEMENT OPPORTUNITY

- 14.a. Public Notice for ADP Application CO-1101. Public notice for ADP Application CO-1101 was published on the SWCAA internet website for a minimum of (15) days beginning on June 5, 2024.
- 14.b. Public/Applicant Comment for ADP Application CO-1101. SWCAA did not receive specific comments, a comment period request or any other inquiry from the public regarding this ADP application. Therefore, no public comment period was provided for this permitting action.
- 14.c. State Environmental Policy Act. Cowlitz County was the lead SEPA agency for the marine terminal project. Cowlitz County issued a revised Mitigated Determination of Non-Significance (Permit #13-06-0570) for the project on June 16, 2015.