TECHNICAL SUPPORT DOCUMENT

Air Discharge Permit 23-3618
Air Discharge Permit Application CO-1085

Issued: December 11, 2023

Western Cascade Container

SWCAA ID – 2552

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Southwest Clean Air Agency

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ABBREVIATIONS

List of Acronyms

ADP.....Air Discharge Permit

AP-42 .....Compilation of Emission Factors, AP-42, 5th Edition, Volume 1, Stationary Point and Area Sources – published by EPA

ASIL.....Acceptable Source Impact Level

BACT.....Best available control technology

BART .....Best Available Retrofit Technology

CAM .....Compliance Assurance Monitoring

CAS#.....Chemical Abstracts Service registry number

CFR.....Code of Federal Regulations

EPA.....U.S. Environmental Protection Agency

EU .....Emission Unit

LAER.....Lowest achievable emission rate

MACT.....Maximum Achievable Control Technologies

mfr.....Manufacturer

NESHAP.....National Emission Standards for Hazardous Air Pollutants

NOV.....Notice of Violation/

NSPS.....New Source Performance Standard

PSD .....Prevention of Significant Deterioration

RACT.....Reasonably Available Control Technology

RCW .....Revised Code of Washington

SCC.....Source Classification Code

SDS .....Safety Data Sheet

SQER .....Small Quantity Emission Rate listed in WAC 173-460

Standard .....Standard conditions at a temperature of 68°F (20°C) and a pressure of 29.92 in Hg (760 mm Hg)

SWCAA .....Southwest Clean Air Agency

T-BACT.....Best Available Control Technology for toxic air pollutants

WAC .....Washington Administrative Code

List of Units and Measures

µg/m³.....Micrograms per cubic meter

µm .....Micrometer (10^{-6} meter)

acfm.....Actual cubic foot per minute

bhp.....Brake horsepower

dscfm.....Dry Standard cubic foot per minute

g/dscm.....Grams per dry Standard cubic meter

gpm .....Gallon per minute

gr/dscf .....Grain per dry standard cubic foot

hp.....Horsepower

hp-hr.....Horsepower-hour

kW.....Kilowatt

MMBtu.....Million British thermal unit

MMcf .....Million cubic feet

ppm .....Parts per million

ppmv .....Parts per million by volume

ppmvd .....Parts per million by volume, dry

ppmw.....Parts per million by weight

psig.....Pounds per square inch, gauge

rpm .....Revolution per minute

scfm.....Standard cubic foot per minute

tph .....Ton per hour

tpy .....Tons per year

List of Chemical Symbols, Formulas, and Pollutants

C_3H_8 .....Propane
CH_4.....Methane
CO .....Carbon monoxide
CO_2.....Carbon dioxide
CO_2e.....Carbon dioxide equivalent
H_2S .....Hydrogen sulfide
HAP.....Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act
HCl.....Hydrochloric acid
Hg.....Mercury
N_2O .....Nitrous oxide
NH_3 .....Ammonia
NO_2 .....Nitrogen dioxide
NO_x .....Nitrogen oxides
O_2 .....Oxygen
O_3 .....Ozone
PM.....Particulate Matter with an aerodynamic diameter 100 µm or less
PM_{10} .....PM with an aerodynamic diameter 10 µm or less
$PM_{2.5}$ .....PM with an aerodynamic diameter 2.5 µm or less
SO_2 .....Sulfur dioxide
SO_x .....Sulfur oxides
TAP .....Toxic air pollutant pursuant to Chapter 173-460 WAC
TGOC.....Total Gaseous Organic Carbon
TOC.....Total Organic Carbon
TSP.....Total Suspended Particulate
VOC .....Volatile organic compound

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:	Western Cascade Container, LLC
Applicant Address:	PO Box 818 Kelso, WA 98626
Facility Name:	Western Cascade Container
Facility Address:	2401 Talley Way Kelso, WA 98626
SWCAA Identification:	2552
Contact Person:	Marc Moody
Primary Process:	Metal Coatings
SIC/NAICS Code:	3479: Coating, Engraving, and Allied Services 332812: Metal Coating, Engraving, and Allies Services
Facility Latitude and Longitude:	46° 06' 59.58" N 122° 53' 33.10" W
Facility Classification:	Natural Minor

2. FACILITY DESCRIPTION

Western Cascade Container (Western Cascade) operates a container painting facility in Kelso, Washington. The company designs and builds metal containers per customer specifications.

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit (ADP) application number CO-1085 dated October 17, 2023. Western Cascade Container submitted ADP application CO-1085 requesting the following:

- Increase emission limits expecting to double current usage for future growth.

ADP 23-3618 will supersede ADP 19-3366 in its entirety.

4. PROCESS DESCRIPTION

4.a. Spray Coating Application. Before shipping products to customers, the products are cleaned with solvent, painted, and safety and identification labels are applied.

5. EQUIPMENT/ACTIVITY IDENTIFICATION

5.a. Spray Room. One warehouse building, measuring 66' long by 36' wide by 24' high. The spray room exhausts at a rated flow of 8,500 acfm. Exhaust streams are filtered with a single layer of Mystical Sky Filter paint arrestors, 36" x 100' fiberglass rolls (98.8% arrestance efficiency). The facility uses a Titan RX-80 airless spray gun.

Stack Latitude:	46° 06' 59.58" N
Stack Longitude:	122° 53' 33.10" W
Stack Diameter:	24″
Stack Height:	28′ above ground level

5.b. Equipment/Activity Summary.

ID No.	Equipment/Activity	Control Equipment/Measure
1	Spray Room	High Efficiency Filtration, High Transfer Efficiency Spray Equipment

6. EMISSIONS DETERMINATION

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.

Nothing precludes the use, including the exclusive use of any credible evidence or information relevant to identifying or quantifying emissions if methods identified above, in the ADP, or elsewhere in this TSD have not provided adequate quantification of actual emissions.

6.a. Spray Room. Volatile organic compounds (VOC) and toxic and hazardous air pollutant (TAP/HAP) emissions are calculated using a mass balance approach, using the facility-wide usage of surface coating products. VOC and TAP/HAP emissions for each product are determined by taking the percent VOC (or percent volatiles minus water and exempt) and percent TAP and multiplying by the usage (by weight). VOC and TAP/HAP content and product density are found in the Safety Data Sheet (SDS) or the Technical Data Sheet (TDS) for the product.

Example. Given a specific coating with a density of 8.5 lb/gal, a VOC content of 7.5 lb/gal, and a toluene content of 2%, assuming 10 gal/yr of usage, emissions of toluene can be determined:

10 gal/yr × 8.5 lb/gal density = 85 lb/yr total usage
10 gal/yr × 7.5 lb/gal VOC = 75 lb/yr VOC
85 lb/yr total usage × 2% toluene = 1.7 lb/yr toluene

The SDS may specifically list the solids content (as lb/gal or %), but if not, the solids content can be inferred by taking the total density of the product minus the total VOC of the product (this method provides a conservative maximum). Using the solids content of each product, the particulate matter and particulate matter smaller than 10 microns (PM and PM_{10}) emissions can be determined assuming a 65% transfer efficiency by using high volume low pressure (HVLP) guns and the control efficiency of the filter media. All of the emitted PM is assumed to be PM_{10} and particulate matter smaller than 2.5 microns ($PM_{2.5}$) is assumed to be 78% of the PM/PM_{10}, by weight, based on data from Version 2.0 of EPA's Particulate Matter Calculator for SCC 40200101.

Example. Given 10 gal/yr usage of a coating with a density of 7.1 lb/gal with 20% solids and assuming a transfer efficiency of 65% with filter arrestance of 99%, emissions of PM_{10} and $PM_{2.5}$ can be determined:

10 gal/yr × 7.1 lb/gal × 20% × (100% − 65%) × (100% − 99%) = 0.05 lb/yr PM_{10}
0.05 lb/yr PM_{10} × 78% = 0.04 lb/yr $PM_{2.5}$

A list of the products in use, the SDS or TDS, and expected annual usage was updated for this ADP application. It is recognized that the actual usage of products will vary. Emission estimates were based on the provided information using the procedures listed above. Emissions are determined to be as follows:

Pollutant	Emissions
VOC	3.00 tpy
PM/PM_{10}	0.05 tpy
$PM_{2.5}$	0.04 tpy
TAP	2.50 tpy
HAP	1.80 tpy

Emissions must be determined by mass balance procedures as outlined above. Alternate emission calculation methodologies may be accepted or specified by SWCAA.

6.b. Emissions Summary

Air Pollutant	Potential to Emit (tpy)	Project Impact (tpy)
NO_x	0.00	--
CO	0.00	--
VOC	3.00	1.94
SO_2	0.00	--
PM	0.05	0.03

Air Pollutant	Potential to Emit (tpy)	Project Impact (tpy)
PM_{10}	0.05	0.03
$PM_{2.5}$	0.04	0.03

Pollutant	CAS Number	Category	Facility-wide Emissions (lbs/yr)	WAC 173-460 SQER (lbs/yr)
Benzene	71-43-2	HAP/TAP A	0.2	20
Butyl Acetate	123-86-4	HAP/TAP B	40	43,748
Ethyl Benzene	100-41-4	HAP/TAP B	600	43,748
Methanol	67-56-1	HAP/TAP B	10	43,748
MEK	78-93-3	TAP B	1,350	43,748
Toluene	108-88-3	HAP/TAP B	20	43,748
Trimethylbenzene, 124	95-63-6	TAP B	45	43,748
Xylene	1330-20-7	HAP/TAP B	3,000	43,748

7. REGULATIONS AND EMISSION STANDARDS

Regulations have been established for the control of emissions of air pollutants to the ambient air. Regulations applicable to the proposed facility 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 following regulations, codes, or requirements. These items establish maximum emissions limits that could be allowed and are not to be exceeded for new or existing facilities. More stringent limits are established in this Permit consistent with implementation of Best Available Control Technology (BACT):

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 (RCW 70A.15) 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. This law applies to the facility.

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 ADP for installation and establishment of an air contaminant source. This law applies to the facility.

7.c. Washington Administrative Code (WAC) 173-460 "Controls for New Sources of Toxic Air Pollutants" requires BACT for toxic air pollutants (T-BACT), identification and

quantification of emissions of toxic air pollutants and demonstration of protection of human health and safety.

The facility emits TAPs; therefore, this regulation applies to the facility.

7.d. WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM_{10}, $PM_{2.5}$, lead, SO_2, NO_x, ozone, and CO in the ambient air, which must not be exceeded. The facility emits PM_{10}, $PM_{2.5}$, SO_x, NO_x, and CO; therefore, certain sections of this regulation apply. The facility does not emit lead; therefore, the lead regulation section does not apply.

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, SO_2, concealment and masking, and fugitive dust. This regulation applies to the facility.

7.f. SWCAA 400-040(1) "Visible Emissions" requires that emissions of an air contaminant from any emissions unit must not exceed twenty percent opacity for more than three minutes in any one hour at the emission point, or within a reasonable distance of the emission point. This regulation applies to the facility.

7.g. SWCAA 400-040(2) "Fallout" requires that emissions of PM from any source must not be deposited beyond the property under direct control of the owner(s) or operator(s) of the source in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material is deposited. This regulation applies to the facility.

7.h. SWCAA 400-040(3) "Fugitive Emissions" requires that reasonable precautions be taken to prevent the fugitive release of air contaminants to the atmosphere. This regulation applies to the facility.

7.i. SWCAA 400-040(4) "Odors" requires any source which generates odors that may unreasonably interfere with any other property owner's use and enjoyment of their property to use recognized good practice and procedures to reduce these odors to a reasonable minimum. This source must be managed properly to maintain compliance with this regulation. This regulation applies to the facility.

7.j. SWCAA 400-040(8) "Fugitive Dust Sources" requires that reasonable precautions be taken to prevent fugitive dust from becoming airborne and to minimize emissions. This regulation applies to the facility.

7.k. SWCAA 400-060 "Emission Standards for General Process Units" requires that all new and existing general process units do not emit PM in excess of 0.23 g/Nm^3_{dry} (0.1 gr/dscf) of exhaust gas. The facility has general process units; therefore, this regulation applies to the facility.

7.l. SWCAA 400-109 "Air Discharge Permit Applications" requires that an ADP 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 ADP application to request such changes. An ADP 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. This regulation applies to the facility.

7.m. SWCAA 400-110 "New Source Review" requires that SWCAA issue an ADP in response to an ADP application prior to establishment of the new source, emission unit, or modification. The new units meet the definition of a new source; therefore, this regulation applies to the facility.

7.n. SWCAA 400-113 "Requirements for New Sources in Attainment or Nonclassifiable Areas" requires that no approval to construct or alter an air contaminant source will 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) BACT 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 BACT for the types and amounts of air contaminants emitted by the processes, as described below:

Previous BACT Determination(s)

8.a. BACT Determination – Spray Coating. The use of high efficiency particulate filters, high transfer efficiency spray coating equipment, and vertical atmospheric dispersion of exhaust streams has been determined to meet the requirements of BACT and T-BACT for spray coating operations at this facility.

Western Cascade did not submit a BACT analysis for control of VOC emissions from the coating operations. A review of currently available technology suggests oxidation and biofiltration are readily available controls for these types of emissions. However, use of an oxidizer generates a significant amount of NO_X and CO emissions through combustion of natural gas and has high capital, operating, and maintenance costs. Biofiltration requires a steady stream of emissions that cannot be assured at this facility. And the amount of VOC is minimal for any kind of control.

Based upon a review of previous BACT determinations, the high cost of controls and the fact that the feasible control alternatives would either generate CO and NO_x emissions and utilize substantial amounts of natural gas, or are technically impractical due to irregular emission streams, these controls were eliminated from consideration in the BACT analysis.

BACT for the control of particulate matter from paint overspray requires at least 98% capture consistent with 40 CFR 63 Subpart HHHHHH, which establishes a BACT "floor" for similar spray coating activities. Note that this subpart is not applicable to this facility.

8.b. Prevention of Significant Deterioration (PSD) Applicability Determination. 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.c. 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 (Title V) permit.

9. AMBIENT IMPACT ANALYSIS

9.a. Criteria Air Pollutant Review. Emissions of NO_x, CO, PM, VOC (as a precursor to O_3), and SO_2 are emitted at levels where no adverse ambient air quality impact is anticipated.

9.b. Toxic Air Pollutant Review. The new increase proposed in ADP application CO-1085 will not affect the type of TAP emissions from the spray room. Previously approved BACT measures at the facility will limit emissions of Class A and B toxic air pollutants to below the applicable Small Quantity Emission Rates (SQER) or Acceptable Source Impact Level (ASILs) specified in WAC 173-460.

Conclusions

9.c. Increase of facility throughput and emissions, as proposed in ADP application CO-1085, will not cause the ambient air quality requirements of 40 CFR 50 "National Primary and Secondary Ambient Air Quality Standards" to be violated.

9.d. Increase of facility throughput and emissions, as proposed in ADP application CO-1085, 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.e. Increase of facility throughput and emissions, as proposed in ADP application CO-1085, will not violate emission standards for sources as established under SWCAA General Regulations Sections 400-040 "General Standards for Maximum Emissions," 400-050 "Emission Standards for Combustion and Incineration Units," and 400-060 "Emission Standards for General Process Units."

10. DISCUSSION OF APPROVAL CONDITIONS

SWCAA has made a determination to issue ADP 23-3618 in response to ADP application CO-1085. ADP 23-3618 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards, as discussed below.

10.a. Supersession of Previous Permits. ADP 23-3618 supersedes ADP 19-3366 in its entirety. Compliance will be determined under this ADP, not previously superseded ADPs. Existing approval conditions for units not affected by this project have been carried forward unchanged.

10.b. General Basis. Permit requirements for equipment affected by this permitting action incorporate the operating schemes proposed by the applicant in the ADP application. Emission limits for approved equipment are based on maximum potential emissions as calculated in Section 6 of this TSD.

10.c. Monitoring and Recordkeeping Requirements. ADP 23-3618 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 spray room differential pressure, material/fuel consumption, hazardous waste disposal, and spray room maintenance activities.

10.d. Reporting Requirements. ADP 23-3618 establishes general reporting requirements for annual air emissions, upset conditions, and excess emissions. Specific reporting requirements are established for material consumption, fuel consumption, and hazardous waste disposal. Reports are to be submitted on an annual basis. In addition, Western Cascade must notify SWCAA prior to the use of new HAP/TAP containing production materials at the facility. Such notification allows SWCAA to assess the potential adverse air quality impact of the proposed material change. Material changes that result in significant air quality impacts may be subject to formal review prior to implementation.

10.e. Spray Coating Operations. Permit requirements for spray coating operations are intended to minimize emissions and prevent nuisance odors by requiring process enclosure and high efficiency spray equipment with exhaust stream filtration. Visible emissions are limited to 0% opacity. Exhaust gases must be discharged vertically to provide optimum atmospheric dispersion. Good work practices have been required for the purposes of minimizing fugitive emissions from support activities.

Emission limits for the spray coating operations were based on the potential emission calculations in Section 6. Because the coating products used at this facility are likely to change over time, emissions of individual TAPs were limited to the SQER listed in WAC 173-460 or the VOC limit, whichever is smaller. Emissions of TAPs not reviewed under this action at rates greater than the applicable SQER will require New Source Review.

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 must 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 will include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during start-up or shutdown.

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 approval conditions.

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 separate or in addition to those measures required under BACT considerations. Therefore, none were included in the approval conditions.

12. EMISSION MONITORING AND TESTING

No emission monitoring or testing requirements were established as part of this permitting action.

13. FACILITY HISTORY

13.a. Previous Permitting Actions. The following past permitting actions have been taken by SWCAA for this facility:

Permit	Application	Date Issued	Description
19-3366	CO-1015	October 3, 2019	Permitted a new metal coating facility.

13.b. Compliance History. The following compliance issues have been identified for this facility within the past five years:

NOV	Date	Violation
10047	March 14, 2019	Operation of an unpermitted facility.

14. PUBLIC INVOLVEMENT OPPORTUNITY

14.a. Public Notice for ADP Application CO-1085. Public notice for ADP application CO-1085 was published on the SWCAA website for a minimum of fifteen (15) days beginning on October 30, 2023.

14.b. Public/Applicant Comment for ADP Application CO-1085. SWCAA did not receive specific comments, a comment period request, or any other inquiry from the public or the applicant regarding ADP application CO-1085. Therefore, no public comment period was provided for this permitting action.

14.c. State Environmental Policy Act. After review of the SEPA Checklist for this project, SWCAA has determined that it is exempt from SEPA requirements pursuant to WAC 197-11-800(3) and has issued Determination of SEPA Exemption 23-045. This project only involves repair, remodeling, maintenance, or minor alteration of existing structures, equipment, or facilities, and will not involve material expansions or changes in use. There is no physical change proposed in the project that would have an adverse impact on the environment beyond that which has already been evaluated under previous SEPA reviews.