TECHNICAL SUPPORT DOCUMENT

Air Discharge Permit 24-3655
Air Discharge Permit Application CO-1097

Issued: August 14, 2024

National Products

SWCAA ID - 2804

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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
CAM	Compliance Assurance Monitoring
CAS#	Chemical Abstracts Service registry number
CFR	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOV	Notice of Violation/
NSPS	New Source Performance Standard
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
gr/dscf	Grain per dry standard cubic foot
MMBtu	Million British thermal unit
ppm	Parts per million
ppmv	Parts per million by volume
ppmvd	Parts per million by volume, dry
ppmw	Parts per million by weight
tph	Ton per hour
tpy	Tons per year

List of Chemical Symbols, Formulas, and Pollutants

CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
HAP	Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act
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
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:	National Products, Inc.
Applicant Address:	8410 Dallas Ave S, Seattle, Washington 98108
Facility Name:	National Products
Facility Address:	2209 Talley Way, Kelso, Washington 98626
SWCAA Identification:	2804
Contact Person:	Cliff Lucas, Director of Machinery and Tooling
Primary Process:	Aluminum Diecasting
SIC/NAICS Code:	3363 / Aluminum Die-castings 331523 / Nonferrous Metal Die-casting Foundries
Facility Classification:	Natural Minor

2. FACILITY DESCRIPTION

National Products produces mounting brackets for different electronic devices using an aluminum cold die-casting manufacturing process. The facility is equipped with five electric melting furnaces, and uses only aluminum ingots and clean scrap as feedstock. The facility operates a powder coating line and burn off ovens in support of die-cast operations.

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit application number CO-1097 (ADP Application CO-1097) dated April 26, 2024. National Products submitted ADP Application CO-1097 requesting approval of a die-cast manufacturing facility equipped with the following:

- (5) new Rayteq electric resistance melting furnaces;
- (1) new Midwest Finishing Systems powder coat line;
- (2) new Guspro burn off ovens; and
- (3) shot blast machines.

The current permitting action provides approval for a die-cast manufacturing facility as proposed in ADP Application CO-1097. This is the initial permitting action for this facility.

4. PROCESS DESCRIPTION

4.a. Die-casting (*new*). Aluminum ingot is heated in electric resistance furnaces and then formed into various parts using a cold die-casting process. Cast parts are cleaned in tumbler style shot machines and powder coated prior to packaging and shipment. Reject parts are retained at the facility and recycled into the manufacturing process. Applied coatings are removed from the reject parts prior to remelting using burn off ovens.

4.b. Powder Coating (*new*). Most products manufactured at the facility are powder coated prior to shipment. Components to be powder coated are cleaned in a wash line and dried in a drying tunnel. After drying, parts are powdered coated in a semi-enclosed robotic spray booth. Coated parts are cured in a natural gas fired cure oven. All stages of the powder coating process are served by a common hang line.

5. EQUIPMENT/ACTIVITY IDENTIFICATION

5.a. Melting Furnaces / Die-casting (*new*). These units are electric resistance furnaces used to melt aluminum ingot for injection into die-casting molds. Each furnace is configured with a dedicated die-casting machine. The furnaces are described as follows:

Furnaces 1-3

Make / Model:	Rayteq / DC-635
Rated Capacity:	635 lb/hr (each)
Exhaust Fan:	Greenheck GB-300 Upblast
Rated Exhaust Flow:	12,000 acfm (each)
Stack Description:	50" diameter stack, vertical at ~23' above ground level
Location:	TBD

Furnaces 4-5

Make / Model:	Rayteq / DC-500
Rated Capacity:	500 lb/hr (each)
Exhaust Fan:	Greenheck GB-300 Upblast
Rated Exhaust Flow:	12,000 acfm (each)
Stack Description:	50" diameter stack, vertical at ~23' above ground level
Location:	TBD

5.b. Shot Machines (*new*). These units are batch loaded tumbler style shot machines used to clean aluminum die-cast workpieces.

Make / Model:	TBD
Rated Airflow:	1,900 acfm
Filter Description:	(30) filter bags, needle punched felt fabric, >99.5% efficiency
Cleaning Method:	Pulsed Jet
Stack Description:	14" x 20", horizontal through wall at ~13' above ground level
Location:	TBD

5.c. Powder Coat Wash System (*new*). This unit is an enclosed, multi-station hang line part washing system. The unit uses warm water with cleaning additives to clean die-cast parts prior to powder coating. The unit is equipped with an integral natural gas fired water heater. The headspace of the unit is exhausted to ambient atmosphere through two exhaust stacks.

Make / Model:	Midwest Finishing Systems
Rated Exhaust Flow:	(2) @ 2,000 acfm
Exhaust Stacks:	(2) 16" dia, vertical at ~23' above ground level
Location:	TBD

Water System Burner.

Rated Heat Input:	1.0 MMBtu/hr
Fuel:	Natural gas
Emissions:	95.8 ppmv NO_X @ 3% O_2 (high fire monitoring data w/20% margin)
Exhaust Stack:	8" diameter stack, vertical at ~23' above ground level
Location:	TBD

5.d. Powder Coat Dry Off Oven (*new*). This unit is a hang line oven used to dry parts prior to being powder coated. The unit is equipped with a single natural gas fired burner. The oven exhausts through two stacks.

Make / Model:	Midwest Finishing Systems
Rated Exhaust Flow:	1,200 acfm (oven exhaust)
	2,400 acfm (gravity stack)
Exhaust Stack:	10" dia, vertical at ~23' above ground level (oven exhaust)
	20" dia, vertical at ~23' above ground level (gravity stack)
Location:	TBD

Oven Burner.

Rated Heat Input:	2.0 MMBtu/hr
Fuel:	Natural gas
Emissions:	95.8 ppmv NO_X @ 3% O_2 (high fire monitoring data w/20% margin)

5.e. Powder Coat Curing Oven (*new*). This unit is a hang line oven used to cure powder coated parts. The unit is equipped with a single natural gas fired burner. The oven exhausts through two stacks.

Make / Model:	Midwest Finishing Systems
Rated Exhaust Flow:	1,400 acfm (oven exhaust)
	2,400 acfm (gravity stack)
Exhaust Stack:	10" dia, vertical at ~23' above ground level (oven exhaust)
	20" dia, vertical at ~23' above ground level (gravity stack)
Location:	TBD

Oven Burner.

Rated Heat Input:	2.0 MMBtu/hr
Fuel:	Natural gas
Emissions:	95.8 ppmv NO_X @ 3% O_2 (high fire monitoring data w/20% margin)

5.f. Burn Off Ovens (*new*). These units (Ovens #1 and #2) are natural gas-fired ovens used to burn off powder coating on reject parts. Each unit is equipped with a dedicated exhaust oxidizer to reduce volatile emissions.

Make / Model:	Guspro / BB607272
Rated Heat Input:	0.3 MMBtu/hr (oven)
	0.6 MMBtu/hr (oxidizer)
Fuel:	Natural gas
Oxidizer Temperature:	>1,400 deg F
Oxidizer Residence Time:	>0.75 seconds
Capacity:	4,000 lbs
Exhaust:	16" dia, vertical at ~29' above ground level
	Location: TBD

5.g. Insignificant Emission Units. The following pieces of facility equipment have been determined to have insignificant emissions, and are not registered as emission units:

Space Heaters (*new*). The facility uses multiple small natural gas fired space heaters to warm air in the main workspace of the production building. The heaters hang from the ceiling and vent to ambient through independent exhaust stacks.

Powder Coat Booth (*new*). This unit is a semi-enclosed hang line booth used to apply powder coating to die-cast parts. The booth is vented to a dedicated dust collector and discharged inside the production building.

5.h. Equipment/Activity Summary.

ID No.	Equipment/Activity	Control Equipment/Measure
1	Melting Furnaces / Die-casting (3) Rayteq DC-635 (2) Rayteq DC-500	Process Enclosure, Material Limitation
2	Shot Machines	Process Enclosure, High Efficiency Filtration
3	Powder Coat Wash System (Midwest Finishing – 1.0 MMBtu/hr)	Low Sulfur Fuel (Natural Gas)
4	Powder Coat Dry Off Oven (Midwest Finishing – 2.0 MMBtu/hr)	Low Sulfur Fuel (Natural Gas)
5	Powder Coat Cure Oven (Midwest Finishing – 2.0 MMBtu/hr)	Low Sulfur Fuel (Natural Gas)
6	Burn Off Ovens (2) Guspro BB607272	Low Sulfur Fuel (Natural Gas), Oxidizer

6. EMISSIONS DETERMINATION

Emissions to the ambient atmosphere from die-cast manufacturing operations proposed in ADP Application CO-1097 consist of nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), particulate matter (PM), sulfur dioxide (SO_2), toxic air pollutants (TAPs), and hazardous air pollutants (HAPs).

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. Melting Furnaces / Die-casting (*new*). Potential emissions from metal melting and die-casting at the facility are calculated based on maximum estimated material consumption, SDS information for aluminum ingot, and applicable emission factors. Toxic air pollutant emissions are calculated from PM emissions assuming individual elements are emitted proportionately to initial material composition. Annual emissions will be calculated based on actual material throughput using the same methodology.

The PM emission factor for melting is the uncontrolled electric induction furnace emission factor from EPA AP-42 Table 12.10-3. The emission factor of 0.9 lb/ton has been ratioed based on the relative densities of iron and aluminum. PM emissions are assumed to be 60% PM_{10} and 50% $PM_{2.5}$.

$$0.31\ \frac{lb\ PM}{ton\ gray\ iron} = \frac{0.9\ lb\ PM}{ton\ gray\ iron} \times \frac{2.7\ \frac{g\ Al}{cm^3}}{7.86\ \frac{g\ Fe}{cm^3}}$$

The PM emission factor for die-casting is taken from EPA AP-42 Table 12.14-2 (1/95). PM emissions are assumed to be 100% PM_{10} and 50% $PM_{2.5}$.

Aluminum Throughput =		2,905 2,500,000	lb/hr (max, combined) lb/yr	
Process	Pollutant	Emission Factor (lb/ton)	Emissions (lb/hr)	Emissions (lb/yr)
Melting	PM	0.31	0.450	387.5
	PM_{10}	0.186	0.270	232.5
	$PM_{2.5}$	0.155	0.225	193.8
Casting	PM	0.030	0.044	37.5
	PM_{10}	0.030	0.044	37.5
	$PM_{2.5}$	0.015	0.022	18.8
		(PM %)		
Melting/Casting	Copper	2.3%	0.011	9.56
	Manganese	0.3%	0.00148	1.28
	Nickel	0.3%	0.00123	1.06

6.b. Shot Machine Filter System (*new*). Potential emissions from the central collection system for the shot machines are calculated from the rated discharge of the system, a maximum emission concentration of 0.005 gr/dscf, and maximum hours of operation. All PM emissions are assumed to be $PM_{2.5}$.

Pollutant	Discharge Rate (cfm)	Emission Concentration (gr/dscf)	Operation (hr/yr)	Emissions (lb/hr)	Emissions (lb/yr)
$PM/PM_{10}/PM_{2.5}$	1,900	0.005	8,760	0.081	713

6.c. Powder Coat Wash System (*new*). Potential emissions from operation of the Wash System heater are calculated based on a rated heat input of 1.0 MMBtu/hr, 8,760 hr/yr, and applicable emission factors. The emission factor for NO_X is based on monitoring data from similar units with a 20% margin added. The emission factor corresponds to 95.8 ppmv at 3% O_2. Other combustion emission factors are taken from EPA AP-42 Section 1.4 "Natural Gas Combustion" (3/98). All PM is assumed to be $PM_{2.5}$. Annual emissions will be calculated based on actual fuel consumption using the same methodology.

Heat Input Rating =	1.000	MMBtu/hr		
Fuel Consumption =	8,760	MMBtu/yr		
	Emission Factor		Emissions	
Pollutant	(lb/MMBtu)	(lb/hr)	(lb/yr)	(tpy)
NO_X	0.1163	0.12	1,019	0.51
CO	0.0824	0.08	722	0.36
VOC	0.0054	0.005	47	0.024
SO_X as SO_2	5.88E-04	5.9E-04	5.2	0.0026
$PM/PM_{10}/PM_{2.5}$	0.0075	0.007	65	0.033
Benzene	2.06E-06	2.1E-06	0.018	9.0E-06
Formaldehyde	7.35E-05	7.4E-05	0.64	3.2E-04
CO_2e	117	117.1	1,025,778	513

6.d. Powder Coat Dry Off Oven (*new*). Potential emissions from Dry Off Oven operation are calculated from a rated heat input of 2.0 MMBtu/hr, 8,760 hours per year of operation, and applicable emission factors. Emission factors for NO_X are based on monitoring data from similar units with a 20% margin added. The emission factor corresponds to 95.8 ppmv at 3% O_2. Other combustion emission factors are taken from EPA AP-42 §1.4 "Natural Gas Combustion" (3/98). All PM is assumed to be $PM_{2.5}$. Annual emissions will be calculated based on actual fuel consumption using the same methodology.

Heat Input Rating =	2.000	MMBtu/hr		
Fuel Consumption =	17,520	MMBtu/yr		
	Emission Factor		Emissions	
Pollutant	(lb/MMBtu)	(lb/hr)	(lb/yr)	(tpy)
NO_X	0.1163	0.23	2,038	1.02
CO	0.0824	0.16	1,444	0.72
VOC	0.0054	0.011	94	0.047
SO_X as SO_2	5.88E-04	1.2E-03	10.3	0.0052
$PM/PM_{10}/PM_{2.5}$	0.0075	0.015	131	0.065
Benzene	2.06E-06	4.1E-06	0.036	1.8E-05
Formaldehyde	7.35E-05	1.5E-04	1.29	6.4E-04
CO_2e	117	234.2	2,051,557	1,026

6.e. Powder Coat Cure Oven (*new*). Potential emissions from Cure Oven operation are calculated from a rated heat input of 2.0 MMBtu/hr, 8,760 hours per year of operation, 44,000 lb/yr of powder throughput, and applicable emission factors for the oven burner. Emission factors for NO_X are based on monitoring data from similar units with a 20% margin added. The emission factor corresponds to 95.8 ppmv at 3% O_2. Other combustion emission factors are taken from EPA AP-42 §1.4 "Natural Gas Combustion" (3/98). All PM is assumed to be $PM_{2.5}$.

Powder coats are solid powders with no little or no inherent VOC content. However, some VOC emissions are emitted during the curing process due to thermal degradation of the material. Potential VOC emissions are estimated to be up to 5% of coating weight as referenced in the Emission Inventory Improvement Program document "*Preferred and Alternative Methods for Estimating Air Emissions From Surface Coating Operation*" (July 2001).

Annual emissions will be calculated based on actual fuel consumption and powder coating throughput using the same methodology.

Heat Input Rating =	2.000	MMBtu/hr
Fuel Consumption =	17,520	MMBtu/yr
Powder Throughput =	44,000	lb/yr

	Emission Factor	Emissions		
Pollutant	(lb/MMBtu)	(lb/hr)	(lb/yr)	(tpy)
NO_X	0.1163	0.23	2,038	1.02
CO	0.0824	0.16	1,444	0.72
VOC (combustion)	0.0054	0.011	94	0.047
VOC (curing)	5%	0.25	2,200	1.10
SO_X as SO_2	5.88E-04	1.2E-03	10.3	0.0052
$PM/PM_{10}/PM_{2.5}$	0.0075	0.015	131	0.065
Benzene	2.06E-06	4.1E-06	0.036	1.8E-05
Formaldehyde	7.35E-05	1.5E-04	1.29	6.4E-04
CO_2e	117	234.2	2,051,557	1,026

6.f. Burn Off Oven 1 (*new*). Potential emissions from oven operation are calculated from combined heat input of 0.9 MMBtu/hr, 8,760 hr/yr, and applicable emission factors. Emission factors for benzene and formaldehyde are taken from EPA AP-42 Section 1.4 "Natural Gas Combustion" (3/98). Emissions of all other pollutants are calculated using manufacturer's test data. All PM is assumed to be $PM_{2.5}$. Annual emissions will be calculated based on actual hours of operation using the same methodology.

Heat Input Rating =	0.900	MMBtu/hr		
Fuel Consumption =	7,884	MMBtu/yr		
Operation =	8,760	hr/yr		
	Emission Factor		Emissions	
Pollutant	(lb/MMBtu)	(lb/hr)	(lb/yr)	(tpy)
NO_X		0.088	770.9	0.39
CO		0.044	385.4	0.19
VOC		0.011	96.4	0.048
SO_X as SO_2		0.015	131.4	0.066
$PM/PM_{10}/PM_{2.5}$		0.044	385.4	0.19
Benzene	2.06E-06	1.9E-06	0.016	8.1E-06
Formaldehyde	7.35E-05	6.6E-05	0.58	2.9E-04
CO_2e	117.1	105.4		462

6.g. Burn Off Oven 2 (*new*). Potential emissions from oven operation are calculated from combined heat input of 0.9 MMBtu/hr, 8,760 hr/yr, and applicable emission factors. Emission factors for benzene and formaldehyde are taken from EPA AP-42 Section 1.4 "Natural Gas Combustion" (3/98). Emissions of all other pollutants are calculated using manufacturer's test data. All PM is assumed to be $PM_{2.5}$. Annual emissions will be calculated based on actual hours of operation using the same methodology.

Heat Input Rating =	0.900	MMBtu/hr		
Fuel Consumption =	7,884	MMBtu/yr		
Operation =	8,760	hr/yr		
	Emission Factor		Emissions	
Pollutant	(lb/MMBtu)	(lb/hr)	(lb/yr)	(tpy)
NO_X		0.088	770.9	0.39
CO		0.044	385.4	0.19
VOC		0.011	96.4	0.048
SO_X as SO_2		0.015	131.4	0.066
$PM/PM_{10}/PM_{2.5}$		0.044	385.4	0.19
Benzene	2.06E-06	1.9E-06	0.016	8.1E-06
Formaldehyde	7.35E-05	6.6E-05	0.58	2.9E-04
CO_2e	117.1	105.4		462

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

Pollutant	Potential Emissions (tpy)	Project Increase (tpy)
NO_X	3.32	3.32
CO	2.19	2.19
VOC	1.31	1.31
SO_2	0.14	0.14
Lead	0.0	0.0
PM	0.55	0.55
PM_{10}	0.55	0.55
$PM_{2.5}$	0.55	0.55
TAP	0.0023	0.0023
HAP	0.0023	0.0023
CO_2e	3,488	3,488

Pollutant	CAS Number	Category	Facility-wide Emissions	Project Increase	WAC 173-460 SQER
			lb/yr	lb/yr	lb/yr
Benzene	71-43-2	HAP/TAP	0.12	0.12	20
Formaldehyde	50-00-0	HAP/TAP	4.38	4.38	20
Nickel	7440-02-0	HAP/TAP	1.06	***1.06***	***0.62***
			lb/24-hr	lb/24-hr	lb/24-hr
Manganese	7439-96-5	HAP/TAP	0.0035	0.0035	0.022
			lb/1-hr	lb/1-hr	lb/1-hr
Copper	7440-50-8	TAP	0.011	0.011	0.19

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. Title 40 Code of Federal Regulations Part 63 (40 CFR 63) Subpart XXXXXX "National Emissions Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories" establishes standards and work practices for dry abrasive blasting, machining, dry grinding and polishing, spray painting, and welding operations at area sources primarily engaged in one of nine selected metal fabrication and finishing source categories. This facility is engaged in die-casting manufacturing operations and is not primarily engaged in any of the affected metal fabrication and finishing source categories so this regulation is not applicable.

7.b. 40 CFR 63 Subpart ZZZZZZ "National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Aluminum, Copper, and Other Nonferrous Foundries" establishes standards and work practices for selected foundry operations. The definition of an "aluminum foundry" per 40 CFR 63.11556 specifically excepts die-casting. This facility only engages in die-casting so this regulation is not applicable.

7.c. 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.d. 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.e. Washington Administrative Code (WAC) 173-460 "Controls for New Sources of Toxic Air Pollutants" requires the use of 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.f. WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM_{10}, $PM_{2.5}$, lead, sulfur dioxide, nitrogen dioxide, ozone, and carbon monoxide in the ambient air, which shall not be exceeded.

7.g. 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.h. SWCAA 400-050 "Emission Standards for Combustion and Incineration Units" requires that all provisions of SWCAA 400-040 be met and that no person shall cause or permit the emission of particulate matter from any combustion or incineration unit in excess of 0.23 grams per dry cubic meter (0.1 grains per dry standard cubic foot) of exhaust gas at standard conditions.

7.i. 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.j. 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.k. 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.l. 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 – Melting Furnaces / Die-casting. The proposed use of electric furnaces and limitation of die-casting feedstock to only aluminum ingot and clean scrap has been determined to meet the requirements of BACT for metal melting and die-casting operations at this facility.

8.b. BACT Determination – Shot Machines. The proposed use of process enclosure and high efficiency filtration has been determined to meet the requirements of BACT for shot machines at this facility.

8.c. BACT Determination – Powder Coating. The proposed use of low sulfur fuel (natural gas), process enclosure, and proper combustion controls has been determined to meet the requirements of BACT for part washing, part drying, and powder coat curing at this facility.

8.d. BACT Determination – Burn Off Ovens. The proposed use of low sulfur fuel (natural gas) and an afterburner operating at a temperature in excess of 1,450 °F with a residence time greater than 0.75 seconds has been determined to meet the requirements of BACT and T-BACT for burn off ovens at this facility.

Other Determinations

8.e. 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.f. 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

9.a. TAP Small Quantity Review. The incremental increases in TAP emissions associated with this permitting action are quantified in Section 6 of this Technical Support Document. All incremental increases in individual TAP emissions are less than the applicable small quantity emission rate (SQER) identified in WAC 173-460 with the exception of nickel.

9.b. TAP Ambient Impact Analysis – Nickel. Emissions of nickel were modeled using the AERSCREEN dispersion model (Ver 16216). The results of the model indicate that the project will not cause an incremental increase in ambient concentrations greater than the applicable acceptable source impact level (ASIL) identified in WAC 173-460.

Toxic Compound	CAS #	Incremental Ambient Impact ($\mu g/m^3$)	Acceptable Source Impact Level ($\mu g/m^3$)
Nickel	7440-02-0	0.0038 (Annual)	0.0038 (Annual)

Conclusions

9.c. Installation of an aluminum die-cast manufacturing facility, as proposed in ADP Application CO-1097, 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.d. Installation of an aluminum die-cast manufacturing facility, as proposed in ADP Application CO-1097, 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. Installation of an aluminum die-cast manufacturing facility, as proposed in ADP Application CO-1097, will not cause a violation of 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 24-3655 in response to ADP Application CO-1097. ADP 24-3655 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards as discussed below.

10.a. General Basis. Permit requirements for equipment affected by this permitting action incorporate the operating schemes proposed by the applicant in ADP Application CO-1097. 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.b. Monitoring and Recordkeeping Requirements. ADP 24-3655 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, powder coat consumption, fuel consumption, and hours of operation.

10.c. Reporting Requirements. ADP 24-3655 establishes general reporting requirements for annual air emissions, upset conditions and excess emissions. Specific reporting requirements are established for material throughput, powder coat consumption, fuel consumption, and hours of operation. Reports are to be submitted on an annual basis.

10.d. Operating Limits and Requirements. To minimize the impact of emissions on ambient air quality, process exhaust stacks are required to exhaust vertically. Any device that obstructs or prevents vertical discharge is prohibited.

Operational requirements for the melting furnaces prohibit the use of any feedstock other than clean ingot and scrap. Use of these materials allows feedstock to be processed without the need for cleaning and reduces the quantity and type of melt contaminants. This minimizes melting and casting emissions.

Powder coating operations are fully enclosed, minimizing PM emissions from the process. All heaters operating in support of powder coating operations are fired on low sulfur fuel (natural gas).

Shot machine operation is not expected to create significant emissions due to full process enclosure, high efficiency system filtration, and a relatively small discharge rate.

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 separate, 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 not previously issued any Permits for this facility.

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-1097. Public notice for ADP Application CO-1097 was published on the SWCAA internet website for a minimum of (15) days beginning on May 10, 2024.

14.b. Public/Applicant Comment for ADP Application CO-1097. 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. A complete SEPA checklist was submitted by National Products in conjunction with ADP Application CO-1097. After reviewing the checklist, SWCAA has made a Determination of Non Significance (DNS 24-028) concurrent with issuance of ADP 24-3655.