

Statement of Basis

**Permit to Construct No. P-2016.0070
Project ID 61824**

**Rhino Linings of Canyon County
Caldwell, Idaho**

Facility ID 027-00149

Final


**December 27, 2016
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Permit Writer**

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01. et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

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ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

Btu	British thermal units
CAS No.	Chemical Abstracts Service registry number
CE	Control Efficiency
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
gal/day	gallons per calendar day
gal/hr	gallons per hour
gal/yr	gallons per consecutive 12 calendar month period
gr	grain (1 lb = 7,000 grains)
HAP	hazardous air pollutants
hr/yr	hours per year
HVLP	high volume, low pressure (applies to paint guns)
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/gal	pounds per gallon
lb/hr	pounds per hour
MMBtu	million British thermal units
NAICS	North American Industry Classification System
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
PC	permit condition
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PTC	permit to construct
PTE	potential to emit
Rules	Rules for the Control of Air Pollution in Idaho
scf	standard cubic feet
SDS	Safety Data Sheet
SIC	Standard Industrial Classification
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO ₂	sulfur dioxide
SO _x	sulfur oxides
T/yr	tons per consecutive 12-calendar month period
T2	Tier II operating permit
TAP	toxic air pollutants
TE	Transfer Efficiency
UTM	Universal Transverse Mercator
VOC	volatile organic compounds

FACILITY INFORMATION

Description

Rhino Linings of Canyon County is a pickup bed lining and miscellaneous parts lining facility with paint spray booth(s). Traditional painting will not occur. The paint booth(s) is equipped with fiber filtration media for control of particulate emissions. The process includes application of coatings via a paint gun.

Permitting History

This is the initial PTC for a new facility thus there is no permitting history.

Application Scope

This permit is the initial PTC for this facility. The applicant has proposed to permit a spray on bed lining operation. The permit also allows coating of miscellaneous parts within the booth.

Application Chronology

October 24, 2016	DEQ issued a notice of violation for failure to obtain a permit or an exemption
November 28, 2016	DEQ received an application
November 29, 2016	DEQ received an application and processing fee.
December 6 – 21, 2016	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
December 1, 2016	DEQ made available the draft permit and statement of basis for peer and regional office review.

TECHNICAL ANALYSIS

The facility utilizes fiber filtration media for control of particulate matter emissions from pickup bed lining coating application.

The analysis used to issue this permit relies on the general permit analysis (TRIM record #2011AAG916) for volatile air pollutant emissions (including volatile HAP and TAP) for spray applying pickup bed liner material. It also relies on the chemical composition of bed liner components listed in that document to determine the worst case potential for particulate matter emissions (criteria and toxic air pollutant particulate).

The facility does not use combustion sources to provide heat for product curing.

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Source	Control Equipment
<p><u>Spray booth(s):</u></p> <p>The number of booths installed at the facility is not limited by this permit.</p>	<p><u>Spray booth(s)</u> Booth Type(s): Custom Made Particulate filtration method: Dry Filters Manufacturer(s): Not Specified PM/PM₁₀ Efficiency: 98% or greater as documented by the manufacturer</p> <p><u>Coating spray gun(s):</u> Manufacturer: Graco or equivalent Type: HVLP or equivalent unless an exemption from the EPA has been granted for 40 CFR 63, Subpart HHHHHH</p>

Emissions Inventories

Potential to Emit

IDAPA 58.01.01.006 defines Potential to Emit as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

The analysis used to issue this permit relies on the general permit analysis for emissions that occur from applying bed liners (TRIM record #2011AAG916) with regard to volatile air pollutant emissions. It also relies on the chemical composition of bed liner materials listed in that document to determine the worst case potential for particulate matter emissions (criteria and toxic air pollutant particulate). Particulate matter emissions estimates in this analysis differ from the existing general permit analysis, included in Appendix A, only with respect to the transfer efficiency used to calculate particulate matter emissions and that painting operations do not occur. The existing general permit analysis uses a transfer efficiency of 65% corresponding to the use of HVLP guns. The application for this permit did not designate whether high pressure or low pressure paint guns are used. As demonstrated by the following calculations any transfer efficiency is sufficient to demonstrate compliance with all standards provided the resulting emissions are controlled by a filter with 98% control efficiency.

Worst case particulate emissions from coating material data used in the General Permit (TRIM record #2011AAG916):

- Density 10.24 lb/gal
 - Solids 73.8%
 - Use 4 gal./day
 - Transfer 0% (assumed worst case)
 - Filter 98%
 - Silica dioxide 1.5%
- Emissions Calculations (including a 1.2 safety factor):

PM emissions = (4 gal/day)(day/24hr)(10.24 lb/gal)(0.738)(1-0.98)(1.2) = 0.030 lb/hr

Silica Dioxide = (4 gal/day)(day/24hr)(10.24 lb/gal)(1-0.98)(1.2)(0.015) = 6.14 E- 4 lb/hr

Note that the PM emissions are less than the modeling threshold for PM_{2.5} (0.054 lb/hr), and silica dioxide emissions are less than the screening emissions level for that TAP (6.7 E -3 lb/hr).

The volatile organic compound and volatile HAP and TAP emission estimates in the general permit analysis for bed liner applications remain unchanged for this permit (TRIM record #2011AAG916). The emission estimates are included in Appendix A.

Uncontrolled Potential to Emit

Using the definition of Potential to Emit, uncontrolled Potential to Emit is then defined as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall not be treated as part of its design since the limitation or the effect it would have on emissions is not state or federally enforceable.

The uncontrolled Potential to Emit is used to determine if a facility is a “Synthetic Minor” source of emissions. Synthetic Minor sources are facilities that have an uncontrolled Potential to Emit for criteria pollutants or HAPs above the applicable Major Source threshold without permit limits.

The following table presents the uncontrolled Potential to Emit for criteria pollutants as determined by DEQ staff (TRIM record #2011AAG916). For VOC emissions it is assumed that on an annual average basis the source has the capacity to use a total of 8 gallons of coatings per day, for particulate matter operations are assumed to occur 8,760 hours per year. These assumptions are sufficient enough to accomplish the requirement to determine if a facility is a “Synthetic Minor” source of emissions. Synthetic Minor sources are facilities that have an uncontrolled Potential to Emit for criteria pollutants or HAPs above the applicable Major Source threshold without permit limits.

Table 2 UNCONTROLLED POTENTIAL TO EMIT FOR CRITERIA POLLUTANTS

Emissions Unit	PM ₁₀	SO ₂	NO _x	CO	VOC	Lead
	T/yr	T/yr	T/yr	T/yr	T/yr	lb/quarter
Point Sources						
Paint spray booth(s)	6.8	0.0	0.0	0.0	20	0.0

When it is presumed that the maximum bed liner coating material usage is 2,920 gallons per year (or 8 gallons per day) the uncontrolled Potential to Emit for HAP pollutants is less than 10 tons per year for any individual HAP and less than 25 tons per year for all HAPs combined.

Table 3 UNCONTROLLED POTENTIAL TO EMIT FOR HAP

HAP	Emission Rate (lb/hr) ^a	Emission Rate (T/yr)
Hexamethylene Diisocyanate	1.0E-3	4.4E-3
Methylene Diisocyanate	2.83E-3	0.012
Xylene	3.1E-2	0.136

a) Emission estimates from General Permit analysis (TRIM record #2011AAG916)

Pre-Project Potential to Emit

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project.

This is an existing facility. However, since this is the first time the facility is receiving a permit, pre-project emissions are set to zero for all criteria pollutants.

Post Project Potential to Emit

Post project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility's classification as a result of this project. Post project Potential to Emit includes all permit limits resulting from this project.

Table 4 POST PROJECT POTENTIAL TO EMIT FOR CRITERIA POLLUTANTS

Emissions Unit	PM ₁₀		SO ₂		NO _x		CO		VOC		Lead
	lb/hr ^a	T/yr ^b	lb/hr								
Point Sources											
Paint spray booth(s) and/or preparation station(s)	0.03	0.13	0.00	0.00	0.00	0.00	0.00	0.00	4.6	20	0

- a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
 b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Potential to Emit for HAP pollutants is less than 10 tons per year for any individual HAP and less than 25 tons per year for all HAPs combined.

Non-Carcinogenic and Carcinogenic TAPs Potential to Emit

Because of the daily coating material use limits imposed by DEQ, and agreed to by the facility in applying for this Automotive Coating "General Permit", no ELs specified in IDAPA 58.01.01.585 or 586 are expected to be exceeded by the facility.

Ambient Air Quality Impact Analyses

Because of the daily coating material use limits imposed by DEQ, and agreed to by the facility in applying for this Automotive Coating "General Permit", it needs to be determined if the PTE for the automotive coating operation exceeds the DEQ modeling guideline thresholds. The following table compares the post-project facility-wide annual emissions to the DEQ modeling guideline thresholds (per the State of Idaho Air Quality Modeling Guideline, September 2013).

Table 5 PTE FOR CRITERIA POLLUTANTS COMPARED TO THE DEQ MODELING GUIDELINE THRESHOLDS

Pollutant	PTE (lb/hr)	DEQ Modeling Guideline Thresholds (lb/hr)	Exceeds Modeling Guideline Threshold?
PM ₁₀	0.03 lb/hr	0.22 lb/hr	No
PM _{2.5}	0.03 lb/hr	0.054 lb/hr	No
SO ₂	0.0	0.21 lb/hr	No
NO _x	0.0	0.20 lb/hr	No
CO	0.0	15 lb/hr	No
Lead	0.00	14 lb/month	No

Therefore, the installation of the new automotive coating operation does not require criteria pollutant modeling.

As presented previously in the DEQ Automotive Coatings EI Spreadsheet (TRIM record #2011AAG916), and the Potential to Emit section of this Statement of Basis there are no TAPs that required facility modeling for exceeding the pounds per hour screening levels provided in IDAPA 58.01.01.585 and .586. Therefore, the installation of a new automotive coating operation does not require TAP modeling.

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

Rhino Linings of Canyon County is located in an area which is designated as attainment or unclassifiable for PM_{2.5}, SO₂, NO₂, CO, and Ozone, and non-attainment for PM₁₀. Refer to 40 CFR 81.313 for additional information.

Facility Classification

The AIRS/AFS facility classification codes are as follows:

For THAPs (Total Hazardous Air Pollutants) Only:

- A = Use when any one HAP has actual or potential emissions ≥ 10 T/yr or if the aggregate of all HAPS (Total HAPs) has actual or potential emissions ≥ 25 T/yr.
- SM80 = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the permit sets limits ≥ 8 T/yr of a single HAP or ≥ 20 T/yr of THAP.
- SM = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the potential HAP emissions are limited to < 8 T/yr of a single HAP and/or < 20 T/yr of THAP.
- B = Use when the potential to emit without permit restrictions is below the 10 and 25 T/yr major source threshold
- UNK = Class is unknown

For All Other Pollutants:

- A = Actual or potential emissions of a pollutant are ≥ 100 T/yr.
- SM80 = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are ≥ 80 T/yr.
- SM = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are < 80 T/yr.
- B = Actual and potential emissions are < 100 T/yr without permit restrictions.
- UNK = Class is unknown.

Table 2 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION

Pollutant	Uncontrolled PTE (T/yr)	Permitted PTE (T/yr)	Major Source Thresholds (T/yr)	AIRS/AFS Classification
PM	6.8	0.13	100	B
PM ₁₀ /PM _{2.5}	6.8	0.13	100	B
SO ₂	-	-	100	-
NO _x	-	-	100	-
CO	-	-	100	-
VOC	<100	20	100	B
HAP (single)	<10	<8	10	B
HAP (Total)	<25	<20	25	B

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201 Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the automotive coating operation. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

The facility has requested DEQ’s general permit for automotive coating operations. In accordance with IDAPA 58.01.01.225 the processing fee is \$500.

Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401 Tier II Operating Permit

The application was submitted for a permit to construct (refer to the Permit to Construct section), and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

Rules for the Control of Odors (IDAPA 58.01.01.775-776)

IDAPA 58.01.01.775-776 Rules for the Control of Odors

The facility is subject to the general restrictions for the control of odors from the facility.

Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

IDAPA 58.01.01.301 Requirement to Obtain Tier I Operating Permit

This facility is not subject to Tier I Operating Permit requirements because it is not a major source of air pollution and there are no specific regulations requiring a Tier I Operating Permit for this source category.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source, not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore, in accordance with 40 CFR 52.21(a)(2), the PSD requirements do not apply.

NSPS Applicability (40 CFR 60)

The facility is not subject to any NSPS requirements.

NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements in 40 CFR 61.

§ 63.11178

In what form and for how long must I keep my records?

In accordance with 40 CFR 63.11178(a) because the permittee is the owner or operator of an affected source, the permittee must maintain copies of the records specified in §63.11177 for a period of at least five years after the date of each record. Copies of records must be kept on site and in a printed or electronic form that is readily accessible for inspection for at least the first two years after their date, and may be kept off-site after that two year period.

§ 63.11179

Who implements and enforces this subpart?

In accordance with §63.11179(a), this subpart can be implemented and enforced by the U.S. Environmental Protection Agency (EPA), or a delegated authority. At the time of this permitting action, the EPA has not delegated authority to the State of Idaho. However, IDAPA 58.01.01.107.03.i incorporates by reference all Federal Clean Air Act requirements including 40 CFR 63, Subpart HHHHHH. Therefore, the requirements of this subpart have been placed in the permit.

§ 63.11180

What definitions do I need to know?

Terms used in this subpart are defined in accordance with §63.11180.

Permit Conditions Review

This section describes the permit conditions for this initial permit.

This permit follows the existing General Permit to Construct for Automotive Coating Operations with the following exceptions:

- The applicant has not specified whether high pressure paint guns will be used and the general permit has been modified to allow the use of high pressure paint guns if the source petitions and receives an exemption form EPA for the requirements of 40 CFR 63, Subpart HHHHHH.
- Traditional automotive painting operations are not allowed. The only coatings allowed to be used are pickup bed liner materials.

Permit conditions 1 & 2 provide a description of the purpose of the permit and the regulated sources, the process, and the control devices used at the facility.

Permit condition 2.1 provides a process description of the facility.

Permit condition 2.2 provides a description of the control devices used at the facility.

Permit condition 2.3 establishes hourly and annual emissions limits for PM₁₀ and VOC emissions from the automotive coating operation.

Permit Condition 2.4 establishes a 20% opacity limit for the paint booth stacks, vents, or functionally equivalent openings associated with the automotive coating operation.

Permit Condition 2.5 establishes that the permittee shall not allow, suffer, cause, or permit the emission of odorous gasses, liquids, or solids to the atmosphere in such quantities as to cause air pollution.

Permit condition 2.6 establishes that the facility will not use MeCl to remove paint from vehicles at the facility. This was done because MeCl was not proposed to be used at this facility by the Applicant and the emissions were not included in the DEQ Automotive Coating EI Spreadsheet (see the DEQ website).

Permit condition 2.7 prohibits traditional painting of automobile. The facility is only permitted to apply pickup bed lining material.

Permit condition 2.8 & 2.9 establishes a daily use limit for all coating materials used in the automotive coating process as proposed by the Applicant. This limit was established because it was the easiest way for the Applicant to demonstrate compliance with the PM₁₀ and VOC emissions limits and the TAPs emissions limits specified in the DEQ Automotive Coating EI Spreadsheet (TRIM record #2011AAG916 & the PTE Section of this Statement of Basis).

Permit condition 2.10 establishes that the permittee conduct all automotive coating operations in the paint booth or preparation station with the filters in place, exhaust fan(s) operating, and door(s) or curtain(s) closed, that the permittee shall maintain and operate the paint booth station exhaust filter system in accordance with the manufacturer's specifications. This condition also defines what a booth and preparation station used for applying coating is.

Permit condition 2.11 establishes that the permittee shall maintain records of all odor complaints received, perform appropriate corrective actions, and maintain records of corrective actions taken at the facility for the automotive coating process. This was required because automotive operation operations are expected to have odors that might be offensive to their immediate neighbors.

Permit condition 2.12 establishes that the permittee shall maintain material purchase records and Safety Data Sheets (SDS) for the automotive coating process. This condition was placed in the permit to ensure compliance with the Coating Materials Use Limit Permit Condition.

Permit condition 2.13 establishes that the permittee shall maintain daily usage records of pre-treatment wash primer, primer, topcoat, clear coat, and thinner/reducer materials used for the automotive coating process. This condition was placed in the permit to ensure compliance with the Coating Materials Use Limit permit condition.

Permit condition 2.14 establishes that the permittee shall maintain records as required by the General Provision recordkeeping requirements.

Permit conditions 2.15 through 2.18 establishes parameters that will allow the facility to comply with the requirements of 40 CFR 63, Subpart HHHHHH if an exemption from those requirements is not granted by EPA.

Permit condition 2.19 establishes that the federal requirements of 40 CFR Part 63 are incorporated by reference into the requirements of this permit per current DEQ guidance.

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c or IDAPA 58.01.01.404.01.c. During this time, there were no comments on the application and there was not a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

APPENDIX A – EMISSIONS INVENTORIES

Coating: Bed Liner Components

Content Weight %

Coating Material	Density	Solids (particulate)	HAP _{Por}	HAP _{Max}	Hexamethylene Diisocyanate (HDI)(HAP)	Methylene Diisocyanate (MDI)(HAP)
BASF XS-310						
Vortex						38.00%
Rhino 2170 A						60.00%
Montstainer					0.10%	
Morton 899823					0.35%	
Speedliner 1000						9.98%
Speedliner Primer 450 & 460						11.09%
Langeman 700 A						15.00%
Pro-Tek Black Content					0.32%	
Isolat						

Coating Material	Density	Solids (particulate)	HAP _{Por}	HAP _{Max}	Hexamethylene Diisocyanate (HDI)(HAP)	Methylene Diisocyanate (MDI)(HAP)
BASF XS-310	9.80	0.00	3.82	3.82	0.00	3.82
Vortex	8.12	0.00	4.87	4.87	0.00	4.87
Rhino 2170 A	10.33	0.00	6.20	6.20	0.00	6.20
Montstainer	9.77	0.00	0.01	0.01	0.01	0.00
Morton 899823	9.58	0.00	0.03	0.03	0.03	0.00
Speedliner 1000	8.33	0.00	0.80	0.80	0.00	0.80
Speedliner Primer	8.33	0.00	0.92	0.92	0.00	0.92
Langeman 700 A	9.70	0.00	1.37	1.37	0.00	1.37
Pro-Tek Black	8.50	0.00	0.03	0.03	0.03	0.00
Maximum (lb/gal)	10.33	0.00	6.20	6.20	0.03	6.20
Emission Rate (lb/hr)		0.0E+00	1.2E+00	1.2E+00	1.0E-03	see "Isor" MDI sheet
IDAPA TAP EL (lb/hr)					2.0E-03	
Below EL?					Yes	

Daily Use Rates (gal/day)	Averaging Period (hr/day)	Transfer Efficiency (%)	Filter-Central Efficiency (%)
4.00	24	65.00%	98.00%

Isocyanate Reaction Factor (ratio)	Annual Usage Rate (gal/yr)	Safety Factor (ratio)
85.00%	1,460.0	1.20

Coating: Bed Liner "Iso" Component (MDI-Based)

$$L_{sp} = (V_{air}/359) * (273.15/T_{sp}) * 60 * (C_{MDI}/1000000) * MW * K_{MDI} * t_{sp}$$

where:

L_{sp} = the annual emissions for spray coating operations

V_{air} = the exhaust airflow rate

359 = the molar volume of an ideal gas

T_{sp} = the spray temperature

C_{MDI} = $(VP_{MDI}/760) * 10^6$ = the MDI concentration in the exhaust air

VP_{MDI} = MDI vapor pressure at exhaust temperature

MW = the molecular weight of MDI (250.26)

K_{MDI} = the adjustment factor to the vapor pressure that is a function of MDI concentration

t_{sp} = hr/day x 365 day/yr = is the total time in hours/year that spray coating is occurring

t_{hr} = is the total time in hours/day that spray coating is occurring

T = the spray temperature

Emission Rate (lb/hr, 24-hr average)

	24.77	lb/yr ²
	10,000	# ² /min
	359	ft ³ /lbmol @ 0°C and 1-atm
	308.15	K
	0.0458	ppmv
	3.48E-05	mmHg ²
	250.26	lb/lbmol
	1.00	
	1460	hr/yr
	4.00	hr/day
	95	°F

2.83E-03

IDAPA TAP EL
(lb/hr)

3.00E-03

Below EL?

Yes