

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1830-AOP-R11 AFIN: 28-00256

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

American Railcar Industries, Inc.
7755 Highway 34 East
Marmaduke, Arkansas 72443

3. PERMIT WRITER:

Amanda Leamons

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Railroad Rolling Stock Manufacturing
NAICS Code: 336510

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

Date of Application	Type of Application	Short Description of Any Changes That Would Be Considered New or Modified Emissions
5/23/18	Minor Mod	Install new lining booths (SN-28 and SN-29) & two new dust collectors (SN-30 and SN-31).
12/1/16	AA	Add Foam blowing Agent to the IA (A13) List.
8/19/16	Renewal & Mod	Updated emission calculations and increased emissions for all particulate sources. Added CAM for all dust collectors and flare. Moved SN-19 and SN-20 from IA list to individual sources. Modified Surface Coating Operation HAP requirements. Updated NESHAP MMMM requirements.
9/22/15	Minor Mod	Install Flare (SN-24). Install a new NG Boiler under NG Group SN-11, 8.37 MMBTU/hr (SN-25), it's subject to NESHAP 5D. Increase total allowable heat capacity of SN-11 to 250 MMBTU/hr & fuel usage to 500 MMscf/yr. Install a wastewater treatment system (IA, A13) & evaporator under group SN-11.

6. REVIEWER'S NOTES:

Removed the TLV table for the painting and surface coating operations and revised the HAP methodology. This permit is based on a total of 235 tons of HAP per year permitted from the surface coating operations at the VOC content of 8 lb/gal. The facility should operate at least 2,000 hours per year (40 hours per week, 50 weeks per year); therefore, the maximum allowed annual HAPs were divided by the minimum expected operating hours and that hourly amount was modeled to verify that it would pass screening for the HAPs that have potential to exceed 10 tons per year. In addition, a model was conducted at 10 tpy of a single HAP to find the minimum allowable TLV at 10 tpy.

American Railcar Industries is a railcar fabrication and painting facility in Marmaduke, Arkansas. This permit revision includes the Title V Renewal with significant modification and several previously approved minor modifications. Changes to the permit include:

- Dust Collectors (SN-01, SN-07, SN-08, SN-18, and SN-19) are now subject to CAM and associated conditions have been added.
- Updated emission calculations have led to the permitting of HAP emissions for the dust collectors.
- Increases to the maximum allowable VOC and HAP content of the coatings, along with corresponding emission limit increases for those pollutants.
- Permit conditions covering HAPs used in the painting operations have been revised.
- Head Press Wet Plasma Cutting Table (SN-19) and Tank Head Plasma Trimmer (SN-20) are now permitted as significant sources and are no longer listed as insignificant activities.
- Installation and operation of a new flare (SN-24) to control emissions of residual organic vapors resulting from the rail tank car cleaning.
- Installation and operation of a new 8.37 MMBTU/hr Natural Gas Fired Boiler (SN-25) to provide steam for the cleaning process. This boiler is subject to 40 CFR Part 63, Subpart DDDDD and is now part of the group of natural gas fired equipment permitted as SN-11.
- Increased the permitted total heat capacity allowed under SN-11 to 250 MMBtu/hr and increased the maximum allowed natural gas usage for SN-11 to 500 MMscf/yr.
- Installation of a wastewater treatment system to treat and capture liquid waste resulting from the cleaning process. This treatment system will include an evaporator which will be permitted under SN-11. Additionally, the system includes a wastewater holding tank and final liquid waste storage tank that both qualify as insignificant activities under Regulation 19, Group A.13.
- Installation of six new lining bays under the Surface Coating operations group as release points SN-28 and SN-29.
- Installation of two new Internal Blast Dust Collectors, SN-30 and SN-31.
- Removal of the insignificant activity, Empty Chlorine Car Receiving from the permit.
- Updated Plantwide Conditions (PWC) and removed the PWC requiring a SSM Plan.
- Updated the general provisions to the current template.

With the permit renewal updates and modifications referenced above, the overall annual permitted emissions will increase 46.9 tons of PM/PM₁₀, 0.1 ton of SO₂, 9.5 tons of VOC, 13.6 tons of CO, 13.3 tons of NO_x, and 8.69 tons of combined HAPs.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

They were found to be in compliance during their most recent inspection and there are no active/pending enforcement actions or compliance issues.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
If yes, were GHG emission increases significant? N/A

b) Is the facility categorized as a major source for PSD? N

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

If yes for 8(b), explain why this permit modification is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source(s)	Pollutant	Regulation (NSPS, NESHAP or PSD)
05, 06, 09, 10, 12, 20, 21, 23, 28, & 29	HAPs	NESHAP MMMM
25	PM, CO, NO _x , PMHAPs	NESHAP DDDDD
01, 07, 08, 18, 19, 30, & 31	PM ₁₀	CAM
24	VOC	CAM

10. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? Y

(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Regulation 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? Y
If not, explain why.

For any requested inapplicable regulation in the permit shield, explain the reason why it is not applicable in the table below.

Source	Inapplicable Regulation	Reason
Boilers (SN-11)	40 CFR Part 60, Subpart Dc New Source Performance Standards (NSPS) for Industrial-Commercial-Institutional Steam Generating Units	The facility does not operate any units that equal or exceed 10 MMBTU/hr heat input.
Storage Tanks	40 CFR Part 60, Subpart Kb. NSPS Volatile Organic Liquid Storage Vessels	The facility does not have any VOL storage tanks with a capacity greater than 75 m ³ (19,814 gallons).
Gasoline Storage Tank	40 CFR Part 63, Subpart CCCCCC - NESHAP for Gasoline Dispensing Facilities located at Area Sources	The facility is classified as a HAP major source; therefore, not an area source.

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the ADEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated. Based on Department procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m³), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
arsenic	0.01	0.0011	0.00005	Yes
beryllium	0.00005	0.0000055	0.000003	Yes
cadmium	0.01	0.0011	0.00027	Yes
chromium	0.5	0.055	0.018	Yes
cobalt	0.02	0.0022	0.000003	Yes
chromium	0.5	0.055	0.018	Yes
ethylbenzene	87	9.57	140	No
manganese	0.1	0.011	0.25	No
mercury	0.01	0.0011	0.00007	Yes
2-propoxyethanol	86	9.46	140.0	No
POM	0.01	0.0011	0.00003	Yes
selenium	0.2	0.022	0.000006	Yes
xylene	434	47.74	46.74	Yes

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL (µg/m ³) = 1/100 of TLV	Modeled Hourly Rate (lb/hr)	Modeled Concentration (µg/m ³)	Pass?
2-propoxyethanol	860	140.0	530.33*	Y
ethylbenzene	870	140.0	530.33*	Y
manganese	1.0	0.25	0.85	Y
NCAP/HAP Limit 10 tpy	42.54	10.0	42.54	■

*Used the same model at the highest hourly rate based on operations of 2000 hrs/yr.

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01, 07, 08, & 18	Grain loading factor and air flow MSDS	0.01 gr/ft ³ 0.25% Cr 1.3% Mn 0.2% Ni	Dust collector	99%	SN-01: 11,000 acfm SN-07: 30,000 acfm SN-08: 30,000 acfm SN-18: 12,000 acfm
02A, 02B, & 26	Fume Emissions Testing for Plasma Arc Cutting	WET Plasma 0.00056 lb _{PM/PM10} /in 2.0% (of PM) Mn 0.2% (of PM) Ni 8.6E-5 lb _{NOx} /in	N/A	N/A	SN-02A: 116 in/min SN-02B: 115 in/min SN-26: 85 in/min
05, 06, 09, 10, 12, 20, 21, 23, 28, & 29	Material Balance Based on actual usage records	VOC set at max of 235 tpy then permitted hourly based on Avg. Max divided by operating 40 hours per week for 50 weeks a year. For HAPs: Scaled actual HAP usage up by 235tpy(permitted)/12tpy (15/16 actuals)	N/A	N/A	Annual bubble of 235 tpy VOC
11	AP-42	250 MMBtu/hr 500 MMscf/yr 100 lb _{NOx} /MMscf 84 lb _{CO} /MMscf 5.5 lb _{VOC} /MMscf 7.6 lb _{PM/PM10} /MMscf 0.6 lb _{SO2} /MMscf	N/A	N/A	
19	MSDS NO _x Factor: Hypertherm – <i>Fume emissions testing for plasma arc cutting (1999)</i>	<u>PM/PM₁₀ Emissions</u> (PM/PM ₁₀ are routed back inside building) 0.01 gr/scf 7,700 scf/min <u>NO_x Emissions</u> 2.24E-04 lb NO _x per inch of metal cut (1/2” Mild Steel) . . .corrected to 13/16” mild steel = 3.64E-04 lb/inch	None	None	None
24	AP-42 13.5	69.3 MMBtu/hr 35,000 MMBtu/yr 0.068 lb _{NOx} /MMBtu	Flare	98% for VOC	

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		0.31 lb _{CO} /MMBtu 0.57 lb _{VOC} /MMBtu			
30 & 31	AP-42 Grain loading factor and air flow	5,500 hours/yr 20,000 scf/min 0.010 gr/scf	None	N/A	

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
None				

15. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
24	Pilot Flame	Alarm when not lit/flare won't operate	NA	N

16. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
30 & 31	Hours of Operation	5,500/12-mth, each	Monthly	Y
01, 07, 08, 18, 19, 30, & 31	Opacity Observations	5%	Daily	N
	Filter Maintenance	Filter is functioning as designed and in use		
05, 06, 09, 10, 12, 20, 21, 23, 28, & 29	VOC Emissions, VOC containing material, VOC content, & VOC usage	235 tpy	Monthly	Y
	HAP Emissions, HAP containing material, HAP content, HAP usage, & TLV of	235 tpy, Min TLV of 4.5 mg/m ³ if emitting 10tpy or more	Monthly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
	each HAP			
	NESHAP MMMM notification	See Specific Condition 31	Initial	Y
	Manufacturer formulation data OR test data to determine mass frac. of HAP and density for each material used	See Specific Condition 31	When changed or updated	Y
	NESHAP MMMM Compliance Option used and period of time used	See Specific Condition 31	Monthly	Y
	NESHAP MMMM Calculation of organic HAP content for each coating	Under complaint material option	Monthly	Y
	NESHAP MMMM Calculation of total mass of organic HAP emissions	Under emission rate without add-on control	Monthly	Y
	NESHAP MMMM Name of Coating Vol of Coating Used Mass Frac of HAP Vol Frac of solids Density of each material Records of Waste	Specific Conditions 20 - 32	Monthly	Y
28 & 29	VOC Emissions	39 tpy	Monthly	Y
	HAP Emissions	39 tpy		
11	Natural Gas Usage	500 MMSCF/yr	Monthly	Y
	Total Heat Capacity	250 MMBtu/hr	As equipment is added	N
	Updated list of all equipment	---	As equipment is added	N
25	Biennial Tune-up findings: Inspect burner, Clean/replace components, Inspect flame pattern, Inspect A/F ratio, Optimize CO emissions, Measure CO conc.,	Do tune-up every 2 years, don't exceed 25 months between tune-ups. See Specific Conditions 42-58.	25 months	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
	Corrective Actions from tune-up, Fuel type and usage.			
24	NOx Emissions from vapor extraction	1.2 tpy	Monthly	Y
	CO Emissions from vapor extraction	5.5 tpy		
	VOC Emissions from vapor extraction	9.0 tpy		
	HAP Emissions from vapor extraction	9.0 tpy		
	Flare Operation	NA	When operated	N
	Presence of Pilot Flame	Must be lit		

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01, 07, 08, 18, 19, 30, & 31	5%	CAM	Daily Observations
11	5%	Dept. Guidance	Natural Gas Usage
24	0%	18.501	Daily, when in operation

18. DELETED CONDITIONS:

Former SC	Justification for removal
5	Railcar Throughput no longer needed because emissions are based on capacity now.
20	The facility has to comply with the content limits in NESHAP MMMM and calculate actual emissions; therefore, an additional VOC content limit isn't required.
22 & 26-31	TLV table removed, individual HAP limits, and coatings throughput because HAP methodology has been revised; there is now a minimum TLV in the permit and the permittee must track all usage and calculate emissions monthly.

19. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
1,000 Gallon Diesel	A-3			0.0003				

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
Storage Tank (SN-14)								
1,000 Gallon Diesel Storage Tank	A-3			0.0003				
Welding Operations	A-7	1.0						0.038
Wastewater Treatment	A-13			0.06				
250 Gallon Gasoline Storage Tank	A-13			0.16			0.16	0.16
Foam Insulation Blowing	A-13			0.01			0.01	0.01

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
1830-AOP-R10

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: American Railcar Industries, Inc.
 Permit Number: 1830-AOP-R11
 AFIN: 28-00256

\$/ton factor	23.93	Annual Chargeable Emissions (tpy)	355.9
Permit Type	Modification	Permit Fee \$	1670.314

Minor Modification Fee \$	500
Minimum Modification Fee \$	1000
Renewal with Minor Modification \$	500
Check if Facility Holds an Active Minor Source or Minor Source General Permit	<input type="checkbox"/>
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	69.8
Initial Title V Permit Fee Chargeable Emissions (tpy)	

HAPs not included in VOC or PM:

Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride

Air Contaminants:

All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensable PM, H2S in TRS, etc.)

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM		21.1	68	46.9		
PM ₁₀		21.1	68	46.9	46.9	68
PM _{2.5}		0	0	0		
SO ₂		0.2	0.3	0.1	0.1	0.3
VOC		236.3	245.8	9.5	9.5	245.8
CO		18.9	32.5	13.6		
NO _x		28.5	41.8	13.3	13.3	41.8
Total HAPs*	<input type="checkbox"/>	237.23	245.92	8.69		