STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0617-AOP-R17 AFIN: 07-00035

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Aerojet Rocketdyne, Inc.
East Walton Road, (Highway 274), Highland Industrial Park
East Camden, Arkansas 71701

3. PERMIT WRITER:

Shawn Hutchings

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Ammunition (except Small Arms) Manufacturing
NAICS Code: 332993

5. ALL SUBMITTALS:

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

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
7/18/2018	Modification	Addition of Building 301 activities

6. REVIEWER'S NOTES:

Aerojet Rocketdyne, Inc. currently operates a manufacturing facility located in the Highland Industrial Park near East Camden, Arkansas. This permit modification to add adding three water heaters to the insignificant activities list, A-1, addition of a Grit Blaster Machine, SN-67S, addition of Solvent Cleaning Operations at Building 301, SN-107, addition of Adhesive (Chemlok) Operations at Building 301, SN-108, addition of Adhesive Barrier Coating Operation at Building 301, SN-109, addition of a Ross Mixer at Building 301, SN-110, addition of a Sling Liner Machine at Building 301, SN-111, addition of two boilers at building 301, SN-112 and

113, and replacing the engine at SN-81 with a newer engine. Permitted emissions rates increased 0.2 tpy of Particulate, 0.3 tpy of SO2, 14.2 tpy of VOC, and 0.3 tpy of HAPs.

7. COMPLIANCE STATUS:

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

There are no known enforcement actions against the facility.

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

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	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-86, SN-87, SN-89 and SN-95 102 103	VOC CO NO_x	NSPS JJJJ
81 86 87 89 90 91 92 93 95	HAPs	MACT ZZZZ
71	VOC/HAP	NSPS Kb
72	VOC/HAP	NSPS Kb
Plantwide	VOC/HAP	NESHAP Part 63 Subpart GG
02A 02B 02C	HAPs	MACT DDDDD

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
02D 02E 02F 02H SN-25A SN-25B SN-25C SN-25D SN-25E SN-25F SN-25G SN-69A SN-69B SN-69C SN-69D SN-69E SN-69F SN-69G SN-69H SN-94 SN-96 SN-97 SN-111 SN-112		
81	Criteria	NSPS IIII

10. PERMIT SHIELD – TITLE V PERMITS ONLY:

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

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/m^3), 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?
Methanol	262	28.82	85.12	N
Methyl Isobutyl Ketone	82	9.02	193.34	N
Toluene	75.4	8.29	206.27	N
1,1,1-Trichloroethane	-	na	221.55	N
Xylene	434.19	47.76	209.73	N
Methylene chloride	174	19.14	144.2	N

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 ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	Pass?
Methanol	262	343.7226	Y
Methyl Isobutyl Ketone	82	985.8839	N
Toluene	75.4	575.399	Y

Pollutant	PAIL ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	Pass?
1,1,1-Trichloroethane	500	985.8839	Y
Xylene	434.19	1267.44	Y
Methylene chloride	174	464.3904	Y

The resulting ambient concentrations of MIKB that are above the PAIL limit occur at receptors along or just beyond Aerojet's fence line. Those beyond the fence line all fall within industrial areas. The PAIL limit is for residential exposure, which is not a concern because there is restricted public access to these areas. The predicted impact is well below OSHA exposure standards (410 mg/m^3), which is the only type of exposure that would occur at these receptors. Therefore, the additional emissions of MIBK proposed in this modification will not cause any significant impact on human health and environment.

c) H_2S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
67S	Emission factor is from the Permit Handbook, Section 11 – Miscellaneous Sources, May 1998, by Bay Area Air Quality Management District (BAAQMD), a San Francisco regulatory agency	82lb/ton	None		
107 108 109 110 111	Usage Rates of VOC and HAP	Usage	None		
112 113	AP-42 Natural gas	Varied	None		
81	IIII and AP-42	Varied	None		

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
This permit adds no testing.				

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)
The permit contains no monitoring				

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)
Engines	Hours of Operation	500	Monthly	Y
03	Material combusted	Table in Specific Condition 12	Monthly	Y
Plantwide	Material Usages in Contents	Tables In Plantwide Condition 7 through 20	Monthly	Y
Plantwide	Subpart GG Records	Plantwide 24 through 39	Monthly	Y

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
67S	5%	Department Guidance	Weekly Observations
112	5%	Department Guidance	Natural Gas Usage
113	5%	Department Guidance	
81	20%	Department Guidance	Daily Observations

18. DELETED CONDITIONS:

Former SC	Justification for removal
SN-81	Compliance change and removal of ZZZZ conditions replaced with NSPS IIII conditions.

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
DOA Storage Tank (3,500 gallons)	Group A, Number 3							
MLRS Igniter Assembly (SN-55) at Building M-85	Group A, Number 13			0.09			.06	.06
SN-60 Ingredient Preparation Room	Group A, Number 13	0.03						
SN-66 Lathes at Building 2-SH-3	Group A, Number 13	.28						
SN-70 Polymer Tank Farm	Group A, Number 13			0.04				
Motor Case Cutting Equipment	Group A, Number 13	.27						
Motor Case Grinding	Group A, Number 13	.14						
Composite Case	Group A, Number	.01						

Grinding Machine at Building M-8	13							
Dry Ice Blasting	Group A Number 13	CO_2 only. Not regulated until threshold met.						
Grit Blaster	Group A Number 13	0.19						
Total	A-13	.92		.13		.06	.06	
Water Heater Building #47	Group A, Number 1	0.14	0.01	0.09	1.19	1.41	0.01	
Water Heater Building #48	Group A, Number 1	0.1	0.1	0.1	0.8	0.9		0.02
Water Heater Building #66	Group A, Number 1	0.1	0.1	0.1	0.6	0.7		0.02
Water Heater Building #66	Group A, Number 1	0.1	0.1	0.1	0.6	0.7		0.02
Water Heater Building 301	Group A, Number 1	0.1	0.1	0.1	0.23	0.28		0.01
Water Heater Building 301	Group A, Number 1	0.1	0.1	0.1	0.23	0.28		0.01
Water Heater Building 301	Group A, Number 1	0.1	0.1	0.1	0.36	0.43		0.01
Total	A-1	0.8	0.7	0.7	4.02	4.69		0.12
Diesel	Group A,							

Tank for Generator at M-2 Building	Number 3							

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 #
0617-AOP-R16

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Aerojet Rocketdyne, Inc.
Permit #: 0617-AOP-R17
AFIN: 07-00035

$/ton factor	23.93	Annual Chargeable Emissions (tpy)	750.84
Permit Type	Modification	Permit Fee $	1000

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	☐
If Hold Active Permit, Amt of Last Annual Air Permit Invoice $	0
Total Permit Fee Chargeable Emissions (tpy)	-1.81
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 condensible 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		207	204.8	-2.2		
PM_{10}		207	204.8	-2.2	-2.2	204.8
$PM_{2.5}$		0	0	0		
SO_2		6.8	7.3	0.5	0.5	7.3
VOC		172.3	186.5	14.2	14.2	186.5
CO		104.3	104.2	-0.1		
NO_X		103.3	80.1	-23.2	-23.2	80.1
Lead	☐	6.73	6.73	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Acetaldehyde	☐	0.1	0	-0.1		
Acrolein	☐	0.1	0	-0.1		
Benzene	☐	0.2	0.1	-0.1		
1,2-Butylene Oxide	☐	1.73	1.97	0.24		
1,3 Butadiene	☐	0.1	0	-0.1		
Cadmium	☐	0.08	0.08	0		
Chlorine	☑	7.83	7.83	0	0	7.83
Chromium	☐	0.64	0.16	-0.48		
Cumene	☐	1.68	1.68	0		
DGMbEA	☐	1.86	1.86	0		
DGMeEA	☐	3.61	3.61	0		
Ethyl Acrylate	☐	4.83	4.83	0		
Ethyl Benzene	☐	9.33	10.49	1.16		
Formaldehyde	☐	0.5	0.44	-0.06		
Hydrogen Chloride	☑	145.4	145.4	0	0	145.4
Hydrogen Fluoride	☑	0.8	0.8	0	0	0.8
Methanol	☐	19.08	20	0.92		
Methylene Chloride	☑	26.02	28.77	2.75	2.75	28.77
Methyl Isobutyl Ketone	☐	36.62	36.1	-0.52		
Phenol	☐	4.4	3.58	-0.82		
Tetrachloroethylene	☐	2.6	3.3	0.7		
Toluene	☐	44.95	42.6	-2.35		
1,1,1-Trichloroethane	☑	39.56	45.7	6.14	6.14	45.7
Trichloroethylene	☐	6.68	8.52	1.84		
Xylene	☐	37.63	41.84	4.21		
HAPs	☐	0.81	1.11	0.3		
Acetone	☑	39.1	39.1	0	0	39.1
Ammonia	☑	0.04	0.04	0	0	0.04

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
HFC-245fa	☑	2.5	2.5	0	0	2.5
CFC-113	☑	2	2	0	0	2
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