

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0617-AOP-R5 AFIN: 07-00035

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality
8001 National Drive
Little Rock, Arkansas 72219-8913

2. APPLICANT:

Aerojet - General Corporation
East Walton Road, Highland Industrial Park
East Camden, Arkansas 71701

3. PERMIT WRITER:

Michael H. Watt

4. PROCESS DESCRIPTION AND NAICS CODE:

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

5. SUBMITTALS:

November 4, 2005

6. REVIEWER'S NOTES:

Aerojet – General Corporation, currently operates a manufacturing facility located in the Highland Industrial Park near East Camden, Arkansas. Aerojet manufactures solid rocket motors, missile systems, aircraft ordnance, rocket warheads, and similar products for the United States Department of Defense. This minor modification application is to allow for processing new rocket propellants that contain two hazardous air pollutants (Cadmium and Chromium) during the testing and treatment activities at the Rocket Test Facility (SN-03), the Thermal Treatment Facility (SN-04), and the High Explosives Test Facility (SN-30). In addition, Aerojet proposes to install a new spray liner machine (SN-07) and grit blast machine (SN-67) to support multiple rocket motor manufacturing programs. Finally, Aerojet proposes to implement new motor case cleaning activities (SN-85) to support several production programs. This includes construction of a solvent wipe room and installation of a motor case flush-cleaning apparatus. The rocket propellant part of this modification will result in emissions increases of 0.05 tpy of Cadmium, 0.01 tpy of Chlorine, 0.54 tpy of Chromium, and 0.01 tpy of Hydrogen Chloride and emissions decreases of 0.68 tpy of lead and 0.32 tpy of 1,3 Dioxolane.

The new SN-85 part of this modification will result in increases of 1.6 tpy of VOC, 1.58 tpy of Methylene Chloride, 1.58 tpy of Methyl Ethyl Ketone, and 1.58 tpy of 1,1,1-Trichloroethane.

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 enforcement actions pending at this time.

8. APPLICABLE REGULATIONS:

PSD Applicability

Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
Has the facility undergone PSD review in the past? N
Is the facility categorized as a major source for PSD? N
 ≥ 100 tpy and on the list of 28? N
 ≥ 250 tpy all other? N

PSD Netting

Was netting performed to avoid PSD review in this permit? N

Source and Pollutant Specific Regulatory Applicability

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
36	VOC/HAP	NESHAP Part 63 Subpart T
71	VOC/HAP	NSPS Kb
72	VOC/HAP	NSPS Kb
Plantwide	VOC/HAP	NESHAP Part 63 Subpart GG

9. EMISSION CHANGES:

The following table summarizes plantwide emission changes associated with this permitting action.

Plantwide Permitted Emissions (tpy)			
Pollutant	Permit # 0617-AOP-R4	Permit # 0617-AOP-R5	Change
PM	247.90	247.90	0
PM ₁₀	247.9	247.9	0
SO ₂	3.3	3.3	0
VOC	196.6	198.2	+1.6
CO	95.0	95.0	0
NO _x	67.6	67.6	0
Lead	4.01	3.33	-0.68
Acetone	56.39	56.39	0
Ammonia	0.02	0.02	0
Butyl Cellosolve	12.25	12.25	0
Cadmium	0	0.05	+0.05
Chlorine	1.39	1.40	+0.01
Chromium Comp	0.05	0.59	+0.54
Chromium Hexavalent	0	0.01	+0.01
Chromium Trivalent	0	0.53	+0.53
1,3 Dioxolane	7.98	7.66	-0.32
Ethyl Acrylate	5.13	5.13	0
Ethyl Benzene	7.64	7.64	0
Formaldehyde	0.87	0.87	0
Glycol Ethers	32.41	32.41	0
Hydrogen Chloride	124.88	124.89	+0.01
Hydrogen Fluoride	0.02	0.02	0
Methanol	4.05	4.05	0

Plantwide Permitted Emissions (tpy)			
Pollutant	Permit # 0617-AOP-R4	Permit # 0617-AOP-R5	Change
Methylene Chloride	75.39	76.97	+1.58
Methyl Ethyl Ketone	47.38	48.96	+1.58
Methyl Isobutyl Ketone	32.91	32.91	0
Phenol	2.45	2.45	0
Tetrachloroethylene	1.93	1.93	0
Toluene	40.89	40.89	0
1,1,1 Trichloroethane	27.14	28.72	+1.58
Trichloroethylene	4.52	4.52	0
Xylene	33.97	33.97	0

10. MODELING:

Criteria Pollutants

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

Non-Criteria Pollutants:

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). Only pollutants with an emissions increase with this permit were evaluated.

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Cadmium	0.01	0.0011	0.83	NO
Chlorine	1.45	0.1595	35.27	NO
Chromium Hexavalent	0.01	0.0319	0.13	NO
Chromium Trivalent	0.5	0.055	12.52	NO
HCl	0.29	0.0319	14,734.33	NO

2nd Tier Screening (PAIL)

OBOD 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 Threshold Limit Value	Modeled Concentration (µg/m ³)	Pass?
Cadmium	0.1	0.0015	Yes
Chlorine	14.50	0.0007	Yes
Chromium Hexavalent	0.1	0.0007	Yes
Chromium Trivalent	5.0	0.0868	Yes
HCl	2.9	1.5671	Yes

11. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
02	AP-42	Natural Gas	None	-	
03	Test Data	See Comments	None	-	Rockets PM 33.84 lb/100 lb CO 34.60 lb/100 lb NOx 0.32 lb/100 lb HCl 22.92 lb/100 lb CL2 0.01 lb/100 lb HF 0.09 lb/100 lb Air Bags PM 44.75 lb/100 lb CO 14.34 lb/100 lb NOX 0.01 lb/100 lb HCl 1.51 lb/100 lb

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
04	Test Data	See Comments	None	-	Rockets PM 25.99 lb/100 lb CO 25.28 lb/100 lb NOx 1.91 lb/100 lb HCl 21.69 lb/100 lb CL2 0.37 lb/100 lb Lead 0.65 lb/100 lb HF 0.15 lb/100 lb Air Bags PM 48.30 lb/100 lb NOX 0.04 lb/100 lb HCl 0.03 lb/100 lb
05	MSDS	See VOC limit.	-	-	
06	MSDS	See VOC limit.	-	-	
07	MSDS	See VOC limit.	-	-	
08	MSDS	See VOC limit.	-	-	
11	MSDS	See VOC limit.	-	-	
12	MSDS	See VOC limit.	-	-	
13	MSDS	See VOC limit.	-	-	
19	MSDS	See VOC limit.	-	-	
20	MSDS	See VOC limit.	-	-	
22	MSDS	See VOC limit.	-	-	
24	MSDS	See VOC limit.	-	-	
25	AP-42	Natural Gas	-	-	

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
28	MSDS	See VOC limit.	-	-	
30	Test Data	See Comments	None	-	Rockets PM 33.81 lb/100 lb CO 34.60 lb/100 lb NOx 0.32 lb/100 lb HCl 22.92 lb/100 lb CL2 0.01 lb/100 lb Lead 0.78 lb/100 lb Air Bags PM 44.75 lb/100 lb CO 14.34 lb/100 lb NOX 0.01 lb/100 lb HCl 1.51 lb/100 lb
36	MSDS	See VOC limit.	-	-	
37	MSDS	See VOC limit.	-	-	
38	MSDS	See VOC limit.	-	-	
39	MSDS	See VOC limit.	-	-	
40	MSDS	See VOC limit.	-	-	
41	MSDS	See VOC limit.	-	-	
42	MSDS	See VOC limit.	-	-	
43	MSDS	See VOC limit.	-	-	
44	MSDS	See VOC limit.	-	-	
45	MSDS	See VOC limit.	-	-	

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
46	MSDS	See VOC limit.	-	-	
47	MSDS	See VOC limit.	-	-	
48	MSDS	See VOC limit.	-	-	
49	MSDS	See VOC limit.	-	-	
50	MSDS	See VOC limit.	-	-	
51	MSDS	See VOC limit.	-	-	
52	MSDS	See VOC limit.	-	-	
53	MSDS	See VOC limit.	-	-	
54	MSDS	See VOC limit.	-	-	
55	MSDS	See VOC limit.	-	-	
56	SCF/m3	-	-	-	
57	MSDS	See VOC limit.	-	-	
58	MSDS	See VOC limit.	-	-	
59	SCF/m3 MSDS	See VOC limit.	-	-	
60	SCF/m3 MSDS	See VOC limit.	-	-	
61	SCF/m3	-	-	-	
62	MSDS	See VOC limit.	-	-	
63	MSDS	See VOC limit.	-	-	
64	MSDS	See VOC limit.	-	-	
65	MSDS	See VOC limit.	-	-	
66	SCF/m3	-	-	-	
67	SCF/m3	-	-	-	
68	MSDS	See VOC limit.	-	-	

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
69	AP-42	Natural Gas	-	-	
70	Tanks	-	-	-	
71	Tanks	-	-	-	
72	Tanks	-	-	-	
73	SCF/m3	-	-	-	
74	MSDS	See VOC limit.	-	-	
75	MSDS	See VOC limit.	-	-	
76	MSDS	See VOC limit.	-	-	
77	MSDS	See VOC limit.	-	-	
78	MSDS	See VOC limit.	-	-	
79	AP-42	Natural Gas			
80	MSDS	See VOC limit.	-	-	
81	MSDS	See VOC limit.	-	-	
82	MSDS	See VOC limit.	-	-	
83	MSDS	See VOC limit.	-	-	
84	MSDS AP-42	See VOC limit. Natural Gas Emissions	-	-	
83	MSDS	See VOC limit.	-	-	

12. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
There are no stack testing requirements.				

13. 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)
There are no monitoring or CEM requirements.				

14. RECORD KEEPING 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)
03	Pounds of Rocket Propellant	56,400	Hourly	Y
03	Pounds of Rocket Propellant	369,880	12-month	Y
03	Pounds of Rocket Propellant with Cadmium, Chromium or lead	3,000	Hourly	Y
03	Pounds of Rocket Propellant with Cadmium, Chromium or lead	150,000	12-month	Y
03	Pounds of Air Bag Propellant	3.0	Hourly	Y
03	Pounds of Air Bag Propellant	10,000	12-month	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
03	Pounds of Arcadene #428 Rocket Propellant	625	Hourly	Y
03	Pounds of Arcadene #428 Rocket Propellant	6,250	12-month	Y
04	Pounds of Rocket Propellant	8,000	Hourly	Y
04	Pounds of Rocket Propellant	737,100	12-month	Y
04	Pounds of Air Bag Propellant	8,000	Hourly	Y
04	Pounds of Air Bag Propellant	235,000	12-month	Y
04	Pounds of Arcadene #428 Rocket Propellant	5,000	Hourly	Y
04	Pounds of Arcadene #428 Rocket Propellant	10,000	Hourly	Y
11	Pounds of Lacquer Pre-mix	40,000	12-month	Y
30	Pounds of Rocket Propellant	131	Hourly	Y
30	Pounds of Rocket Propellant	65,400	12-month	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
30	Pounds of Air Bag Propellant	131	Hourly	Y
30	Pounds of Air Bag Propellant	10,000	12-month	Y
47	Pounds of Polyurethane Resin	40,000	12-month	Y
48	Pounds of Phenolic Resin	10,000	12-month	Y
49	Pounds of Phenolic Resin	10,000	12-month	Y
51	Pounds of Dioctyl Adipate	2,920	12-month	Y
55	Gallons of Egyptian Lacquer	10	12-month	Y
55	VOC Content	See Table	12-month	Y
60	Pounds of Maleic Anhydride	10,000	12-month	Y
60	Pounds of Tri-Phenyl Bismuth	20,000	12-month	Y
60	Pounds of Isocyanate Compounds	150,000	12-month	Y
67	Pounds of Blasting Media	600,000	12-month	Y
68	Pounds of Kerosene	336	12-month	Y
70	Gallons of Butadiene-based Polymers	141,000	12-month	Y
70	Dimension of Tank	-	-	-

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
71	Gallons of Gasoline	40,000	12-month	Y
71	Dimension of Tank	-	-	-
72	Gallons of Diesel Fuel	40,000	12-month	Y
72	Dimension of Tank	-	-	-
84	Amount of Coatings	15,000 pounds of Asphalt Coat	12-month	N
84	Amount of Coatings	15,000 pounds of Wax Coat	12-month	N
PW	Solvent Throughputs	See Table	12-month	Y
PW	Paint Throughput	16,250 lbs	12-month	Y
PW	Paint VOC Content	See Table	12-month	Y
PW	Pounds of Adhesive	13,105	12-month	Y
PW	Adhesive VOC Content	See Table	12-month	Y
PW	CF of Natural Gas	317,510,000	12-month	Y
PW	Other MACT Standards as Applied	See Conditions	-	-

15. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
02	5%	Dept. Guidance	Natural Gas
03	20%	Dept. Guidance	Daily
04	20%	Dept. Guidance	Daily
25	5%	Dept. Guidance	Natural Gas
30	20%	Dept. Guidance	Daily
59	5%	Dept. Guidance	Weekly
60	5%	Dept. Guidance	Weekly
61	5%	Dept. Guidance	Weekly
66	5%	Dept. Guidance	Weekly
67	5%	Dept. Guidance	Weekly
69	5%	Dept. Guidance	Natural Gas
73	5%	Dept. Guidance	Weekly
81	20%	Dept. Guidance	Daily
82	5%	Dept. Guidance	Weekly
84	5%	Dept. Guidance	Weekly

16. DELETED CONDITIONS:

Former SC	Justification for removal
	There were none.

17. VOIDED, SUPERCEDED, OR SUBSUMED PERMITS:

List all active permits voided/superceded/subsumed by the issuance of this permit.

Permit #
0617-AOP-R4

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18. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

Phillip Murphy, P.E.