

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0617-AOP-R3 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:

February 4, 2004, March 7, 2004, and December 13, 2004

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. Aerojet also produces the propellant and related components (igniters, inflators) for automobile air bag systems. This permit involves several minor modifications for this facility. They are the following:

1. Production of a new propellant, ARCOMP 408, at the facility. This product is an ignition material for automobile air bag inflators. As part of the ARCOMP 408 program, three additional production buildings (#70, #71, and #74) will be installed at the East Camden facility. These units will be considered part of the New Air Bag Manufacturing Operations (SN-82). Production of ARCOMP 408 will not change any of the currently permitted emission rates or conditions.

2. An increase in the throughput of the Waste Air Bag Propellants burned in the Thermal Treatment Facility (SN-04). Throughput will be increased by 25,000 lb/year. This change will increase PM and PM₁₀ by 6.04 tons per year, NO_x by 0.01 tons per year, and Hydrogen Chloride by 0.01 tons per year.
3. Correct the number of Boilers listed in the group Process Boilers (SN-25). During a recent internal compliance audit, Aerojet determined that the inventory of gas-fired process equipment used to prepare the original Operating Permit application was not accurate. A total of 7, rather than 4, boilers should have been included. The correct heat input capacity of the equipment is 10.06 MMBTU/hr instead of 4.20.
4. Install a new Grit Blast Machine as part of SN-67. In addition, the existing Liner Spray Machine (SN-28) will be replaced with an equivalent unit.

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
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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-R2	Permit # 0617-AOP-R3	Change
PM	241.40	247.60	+6.20
PM ₁₀	241.4	247.6	+6.2
SO ₂	3.5	3.4	-0.1
VOC	194.8	194.9	+0.1
CO	91.8	94.0	+2.2
NO _x	63.5	65.9	+2.4
Lead	4.01	4.01	0
Acetone	56.39	56.39	0
Ammonia	0.02	0.02	0
Butyl Cellosolve	12.25	12.25	0
Chlorene	1.39	1.39	0
Chromium Comp	0.05	0.05	0
1,3 Dioxolane	7.98	7.98	0
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	124.87	124.88	+0.01
Hydrogen Fluoride	0.02	0.02	0
Methanol	4.05	4.05	0
Methylene Chloride	75.39	75.39	0
Methyl Ethyl Ketone	47.38	47.38	0
Methyl Isobutyl Ketone	32.91	32.91	0

Plantwide Permitted Emissions (tpy)			
Pollutant	Permit # 0617-AOP-R2	Permit # 0617-AOP-R3	Change
Phenol	2.45	2.45	0
Tetrachloroethylene	1.93	1.93	0
Toluene	40.89	40.89	0
1,1,1 Trichloroethane	27.14	27.14	0
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).

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Acetone	1188	130.68	338.77	NO
Butyl Cellosolve	121	13.31	49.71	NO
Chromium	0.5	0.055	0.18	NO
1,3 Dioxolane	97	10.67	34.60	NO
Ethyl Acrylate	20	2.2	25.20	NO
Ethyl Benzene	434	47.74	54.61	NO
Formaldehyde	14.0	1.54	5.06	NO

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Glycol Ethers	100	110	165.35	NO
Methanol	262.1	288.3	34.11	YES
Methylene-Chloride	174	19.14	351.04	NO
Methyl Ethyl-Ketone	590	64.9	347.84	NO
Methyl Isobutyl-Ketone	205	22.55	215.26	NO
Phenol	19.25	21.17	16.45	YES
Tetrachloro-ethylene	170	18.7	17.62	YES
Toluene	188	20.68	324.61	NO
1,1,1 Trichloro-ethane	19100	2101	164.84	YES
Trichloro-ethylene	269	29.59	45.17	YES
Xylene	434	47.74	307.28	NO

2nd Tier Screening (PAIL)

ISCST3 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?
Acetone	11880	606.25	YES
Butyl Cellosolve	1210	88.48	YES
Chromium	5	0.26	YES
1,3 Dioxolane	970	422.81	YES

Pollutant	PAIL ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Ethyl Acrylate	200	44.86	YES
Ethyl Benzene	4340	97.20	YES
Formaldehyde	140	9.00	YES
Glycol Ethers	1000	294.32	YES
Methylene Chloride	1740	1031.07	YES
Methyl Ethyl Ketone	5900	582.54	YES
Methyl Isobutyl Ketone	2050	168.63	YES
Toluene	1880	1120.74	YES
Xylene	4340	130.28	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	-	<p>Rockets</p> <p>PM 33.84 lb/100 lb</p> <p>CO 34.60 lb/100 lb</p> <p>NOx 0.32 lb/100 lb</p> <p>HCl 22.92 lb/100 lb</p> <p>CL2 0.01 lb/100 lb</p> <p>HF 0.09 lb/100 lb</p> <p>Air Bags</p> <p>PM 44.75 lb/100 lb</p> <p>CO 14.34 lb/100 lb</p> <p>NOX 0.01 lb/100 lb</p> <p>HCl 1.51 lb/100 lb</p>

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	-	<p>Rockets</p> <p>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</p> <p>Air Bags</p> <p>PM 48.30 lb/100 lb NOX 0.04 lb/100 lb HCl 0.03 lb/100 lb</p>
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	-	-	
28	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
30	Test Data	See Comments	None	-	<p>Rockets</p> <p>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</p> <p>Air Bags</p> <p>PM 44.75 lb/100 lb CO 14.34 lb/100 lb NOX 0.01 lb/100 lb HCl 1.51 lb/100 lb</p>
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.	-	-	
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.	-	-	

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
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.	-	-	
69	AP-42	Natural Gas	-	-	
70	Tanks	-	-	-	
71	Tanks	-	-	-	
72	Tanks	-	-	-	
73	SCF/m3	-	-	-	
74	MSDS	See VOC limit.	-	-	
75	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
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.	-	-	

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 Air Bag Propellant	3.0	Hourly	Y
03	Pounds of Air Bag Propellant	10,000	12-month	Y
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

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
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
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 Egyption Lacquer	10	12-month	Y
55	VOC Content	See Table	12-month	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
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	-	-	-
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	-	-	-
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

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
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
81	20%	Dept. Guidance	Daily
82	5%	Dept. Guidance	Weekly

16. DELETED CONDITIONS:

Former SC	Justification for removal
There were none.	

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17. VOIDED, SUPERCEDED, OR SUBSUMED PERMITS:

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

Permit #
0617-AOP-R2

18. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

Phillip Murphy, P.E.