

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0288-AR-14 AFIN: 66-00212

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Exide Corporation dba GNB Industrial Power
4115 South Zero
Fort Smith, Arkansas 72903

3. PERMIT WRITER:

Melisha Griffin

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Storage Battery Manufacturing
NAICS Code: 335911

5. SUBMITTALS:

6/12/2008

6. REVIEWER'S NOTES:

With this modification, Exide is replacing two existing grid casters with a new WIRTZ 450 grind casting machine and is adding an automated stacking system for assembly of flooded type lead-acid batteries. The new grid casting machine emissions are being added to an existing baghouse (SN-56); PM/PM₁₀ and lead will increase by less than 0.1 tpy for each pollutant. The new stacking system emissions will also be added to an existing baghouse (SN-01); emissions from this "Flooded Robotic System" are 0.1 tpy of lead and 1.31 tpy of PM/PM₁₀. These limits are based on the maximum capacity of the equipment and 8760 hours per year of operation; therefore, no additional recordkeeping is necessary to demonstrate compliance with these limits.

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 current enforcement actions against this facility.

8. PSD APPLICABILITY:

- a. Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? 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, explain why this permit modification not PSD?

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
01-04, 37, 51, 53, 56, 57	Lead	NSPS Subpart KK

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. 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 for particulate matter, sulfur dioxide, volatile organic compounds, carbon monoxide, and nitrogen oxides. The permitted emissions of each pollutant is less than 100 tons per year.

The modeled concentration of lead must be less than the NAAQS to "pass" the modeling. The averaging period for the lead NAAQS is quarterly. The model does not contain this averaging period option. As an alternative, the lead emissions were modeled using a hourly averaging period and then multiplied by a factor of 0.15.

SN(s)	Pollutant	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)	Pass?
01, 02, 03, 04, 37, 51, 53, 56, 57	Lead	0.959 (0.15*hourly = quarterly)	1.5 (quarterly)	Yes

*This model was done in ISC. No additional modeling has been done in permit #028-AR-14 since there were minimal changes in emissions.

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/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

SN(s)	Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11*TLV	Proposed lb/hr	Pass?
06, 47, 48	H ₂ SO ₄	1	0.11	0.3	No
54	Isopropyl Alcohol	983	108.13	11.6	Yes

In addition, Exide has ambient lead monitors. According to GNB, these monitors indicate concentrations of approximately $0.05 \mu\text{g}/\text{m}^3$, well below the standard of $1.5 \mu\text{g}/\text{m}^3$.

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.

SN(s)	Pollutant	(PAIL, $\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
06, 47, 48	H ₂ SO ₄	10*	2.0	Yes

*This model was done in ISC. No additional modeling has been done in permit #028-AR-14 since there was no change in emissions.

Other Modeling:

Odor: N/A

Odor modeling for sources emitting styrene.

Pollutant	Threshold value 1-hour average	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Styrene	1361 $\mu\text{g}/\text{m}^3$		

H₂S Modeling: N/A

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.

Is the facility exempt from the H₂S Standards

Y/N

If exempt, explain: _____

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
H ₂ S	20 parts per million (5-minute average*)		
	80 parts per billion (8-hour average)		

	residential area		
	100 parts per billion (8-hour average) nonresidential area		

*To determine the 5-minute average use the following equation

$$C_p = C_m (t_m/t_p)^{0.2} \text{ where}$$

C_p = 5-minute average concentration

C_m = 1-hour average concentration

t_m = 60 minutes

t_p = 5 minutes

12. CALCULATIONS:

SN	Emission Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
All lead pots	AP-42	PM/PM ₁₀ 7.6 lb/MMcf SO ₂ 0.6 lb/MMcf VOC 5.5 lb/MMcf CO 84 lb/MMcf NO _x 94 lb/MMcf	None	N/A	the lead pots were changed to insignificant sources
04- curing ovens	AP-42	PM/PM ₁₀ 7.6 lb/MMcf SO ₂ 0.6 lb/MMcf VOC 5.5 lb/MMcf CO 84 lb/MMcf NO _x 94 lb/MMcf	Baghouse	99%	15 curing ovens @ .015 mmBTU/hr each
04- grid casters & ladle burners	AP-42	PM/PM ₁₀ 7.6 lb/MMcf SO ₂ 0.6 lb/MMcf VOC 5.5 lb/MMcf CO 84 lb/MMcf NO _x 94 lb/MMcf	Baghouse	99%	Total Burner Rating = 0.1 mmBTU/hr (4 grid casters @ 0.025 mmBTU/hr each)
56- 7 grid casters &	AP-42	PM/PM ₁₀ 7.6 lb/MMcf SO ₂ 0.6 lb/MMcf	Baghouse	99%	7 grid casters @ 0.025 mmBTU/hr each

SN	Emission Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
ladle burners		VOC 5.5 lb/MMcf CO 84 lb/MMcf NO _x 94 lb/MMcf			
56- 5 lead pots & emission ducts	AP-42	PM/PM ₁₀ 7.6 lb/MMcf SO ₂ 0.6 lb/MMcf VOC 5.5 lb/MMcf CO 84 lb/MMcf NO _x 100 lb/MMcf	Baghouse	99%	5 casting pots @ 0.8 mmBTU/hr each

Previously performed calculations are listed in the table below:

SN	Emission Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
03-oxide silos	N/A	PM insignificant Pb insignificant	Baghouse	99%	assumes that emissions of PM and lead will be insignificant from this addition
04- grid casters	AP-42	PM/PM ₁₀ 7.6 lb/MMcf SO ₂ 0.6 lb/MMcf VOC 5.5 lb/MMcf CO 40 lb/MMcf NO _x 94 lb/MMcf	Baghouse	99%	Maximum Gas Usage - 0.438 MMcf/yr calculation of POCs from the 2 new grid casters
04-lead melt pots	AP-42	PM/PM ₁₀ 7.6 lb/MMcf SO ₂ 0.6 lb/MMcf VOC 5.5 lb/MMcf CO 84 lb/MMcf NO _x 100 lb/MMcf	Baghouse	99%	Maximum Gas Usage - 13.14 MMcf/yr calculation of POCs from the 2 new melt pots

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN(s)	Pollutant	Test Method	Justification
01, 02, 03, 04, 37, 51, 53, 56, 57	PM/PM ₁₀	5	To demonstrate compliance with the permitted emission limits.

14. 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)
N/A				

15. RECORDKEEPING REQUIREMENTS:

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

SN	Recorded Item	Limit (as established in permit)	Frequency*	Report (Y/N)**
01-04, 37, 51, 53, 56, 57	Maintenance records	N/A	Monthly	N

16. OPACITY:

SN	Opacity %	Justification (NSPS limit, Dept. Guidance, etc)	Compliance Mechanism (daily observation, weekly, control equipment operation, etc)
01-04, 37, 51, 53	0%	Opacity limit from last permit.	Baghouse-Annual Compliance Test Reference Method 12 for lead Reference Method 5 for PM/PM ₁₀
11, 55	5%	Department guidance. Natural gas fired.	EPA Reference Method 9

SN	Opacity %	Justification (NSPS limit, Dept. Guidance, etc)	Compliance Mechanism (daily observation, weekly, control equipment operation, etc)
47, 48, 54	0%	Opacity limit from last permit.	EPA Reference Method 9
56, 57	0%	NSPS Subpart KK	Baghouse-Annual Compliance Test Reference Method 12 for lead Reference Method 5 for PM/PM ₁₀

17. DELETED CONDITIONS:

Former SC	Justification for removal
N/A	

18. GROUP A INSIGNIFICANT ACTIVITIES

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
19 Lead Pots (NG fired at 0.8 MM BTU/hr each)	1							
Sink Station	13							
Heat Sealer	13							
Helium Leak Tester	13							
2 Linburg ovens (0.5 MM Btu/hr each)	1							
Milling machine, drill press, grinder, sander at electrical test lab	5							
23 Battery Chargers Area	5							
Finishing and Pack Operation	13							

Shop Size Glass Bead Blaster	13							
Milling and Sawing of Post at Casting Operation	13							

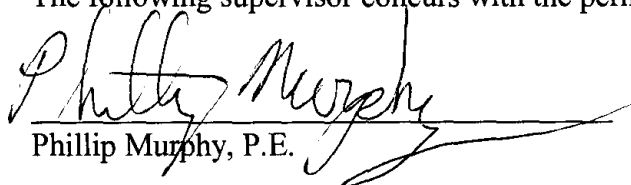
19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #
0288-AR-13

20. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.


Phillip Murphy, P.E.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

