STATEMENT OF BASIS

For the issuance of Draft Air Permit # 2235-AOP-R1 AFIN: 47-00943

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Lexicon, Inc.
3892 N. County Road 903
Blytheville, Arkansas 72315

3. PERMIT WRITER:

Thamoda Crossen

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Fabricated Structural Metal Manufacturing
NAICS Code: 332312

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
12/1/2023	Minor Mod	To increase the maximum annual throughput of Storage Tank (SN-08) from 2,000 gallons per year to 3,000 gallons per year

6. REVIEWER'S NOTES:

The facility has submitted an application for minor modification to increase the maximum annual throughput of gasoline at the Prospect Beam Plant Gasoline Storage Tank (SN-08) from 2,000 gallons per year to 3,000 gallons per year. Annual permitted emissions increase by 0.4 tons per year (tpy) of VOC.

7. COMPLIANCE STATUS:

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

The facility was last inspected on April 12, 2022 and was found to be in compliance. EPA ECHO shows "No Violation Identified" for Clean Air Act compliance.

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-01B, SN-02, SN-03A, SN-05, and SN-06	Metal HAPs	NESHAP XXXXXX
SN-08	VOC and HAPs	NESHAP CCCCCC

10. UNCONSTRUCTED SOURCES:

Unconstructed Source	Permit Approval Date	Extension Requested Date	Extension Approval Date	If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit
N/A				

11. 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
SN-01A SN-02 SN-03A SN-04	40 CFR § 64.6	The sources have pre-control emissions below 100% of the major source threshold and are therefore, not subject to CAM requirements according to 40 CFR 64.2(a)(3).
SN-08	40 C.F.R. §60 Subpart K	The tank is smaller than 40,000 gallons and was installed in 2004.
	40 C.F.R. §60 Subpart Ka	The tank is smaller than 40,000 gallons and was installed in 2004.
	40 C.F.R. §60 Subpart Kb	The tank is smaller than 19,812.9 gallons.

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

Source	Pollutant Controlled	Cite Exemption or CAM Plan Monitoring and Frequency
N/A		

13. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

14. 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 DEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated. Based on Division of Environmental Quality 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 Division of Environmental Quality 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?
Antimony	0.5	0.055	0.00828	Yes
Arsenic	0.01	0.0011	0.000828	Yes
Beryllium	0.00005	0.0000055	0.000828	No
Cadmium	0.01	0.0011	0.0000920	Yes
Chromium	0.5	0.055	0.111	No
Cobalt	0.02	0.0022	0.000828	Yes
Lead	0.05	0.0055	0.00286	Yes
Manganese	0.02	0.0022	0.115	No
Phosphorus	0.1	0.011	0.00828	Yes
Selenium	0.2	0.022	0.00828	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 Division of Environmental Quality 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?
Beryllium	0.0005	0.04414	No
Chromium	5.0	3.75925	Yes
Manganese	0.2	4.45139	No

HEM-3 Modeling

Lexicon used the Human Exposure Model Version 1.5 for Single Facility Modeling (HEM-3) to assess the site specific risk of the predicted ambient concentrations for beryllium compounds and manganese compounds. Per the HEM-3 User's Guide, HEM-3 is designed to perform detailed and rigorous analyses of chronic and acute air pollution risks for populations located near industrial emission sources. HEM-3 estimates the predicted lifetime cancer risk, chronic non-cancer hazard indices, and acute concentrations at every receptor location. The User's Guide states that, "The predicted risk estimates are generally conservative with respect to the modeled emissions because they are not adjusted for attenuating exposure factors (such as indoor/outdoor concentration ratios, daily hours spent away for the residential receptor site, and years of lifetime spent living elsewhere than current residential receptor site."

The predicted concentrations at each receptor from the refined modeling were used as inputs to the HEM-3 model. The predicted 24-hour concentrations for each pollutant were used for the assessment of acute impacts and predicted concentrations using an annual averaging time were used for the assessment of chronic impacts. HEM-3 was used to generate estimations of population exposure and human health risks following the guidelines provided in The HEM-3 User's Guide, Instructions for using the Human Exposure Model Version 1.5 (AERMOD version) for Single Facility Modeling, January 2019. The results of the assessment are as follows:

Pollutant	**Maximum Individual Cancer Risk**	**Maximum Cancer Incidence**	**Maximum Respiratory Hazard Index**	**Maximum Neurological Hazard Index**
Beryllium Compounds	5.81E-07	1.30E-06	0.012104	0
Manganese Compounds	0	0	0	0.107129
Combined Effects (All Pollutants)	5.81E-07	1.30E-06	0.012104	0.107129

These results indicate that there are minimal predicted adverse impacts to the population living in the vicinity of Lexicon. The total cancer incidence from all pollutants is estimated to be 0.0000030 excess cancer cases per year predicted as a result of the facility's modeled emissions. Approximately 69 people are predicted to have a cancer risk greater than 0.5 in 1 million. These cancer risks, both population and individual, assume continuous inhalation of the outdoor air for a 70-year lifetime. Hazard indices below 1 are considered to be below the level at which chronic non-cancer adverse effects would be expected. The combined effects of Lexicon's proposed activities yield a predicted maximum hazard indices of 0.012104 for respiratory effects and 0.107129 for neurological effects, both of which are well below the threshold of 1.

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.

Is the facility exempt from the H_2S Standards Y
If exempt, explain: the facility does not have H_2S emissions

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01A	Material Balances Table 2 of *How to Achieve Cost Savings Through Efficient Finishing Operations* Manufacturer's Data	lb/gal PM: 23.33 PM_{10}: 4.67 VOC: 4.5 (coating) VOC: 6.68 (solvent) Maximum wt% Cumene: 1.0 Ethylbenzene: 1.0 MIBK: 1.0 Xylene: 5.0 MMA: 1.0 Styrene: 3.0 Toluene: 2.0 Naphthalene: 0.1	2.5" fiberglass filters	99.3%	
01B	AP-42 Table 12.19-1	PM/PM_{10}: 15.1 lb/1000 lb consumable Maximum wt% in steel Beryllium: 0.09 Chromium 2.00 Lead: 0.04 Manganese: 2.0			20 portable welders, 2 robotic welders

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01C	*National Pollutant Inventory: Emission Estimate Technique Manual for Structural & Fabricated Metal Product Manufacture*	g/min/machine: PM/PM_{10}: 23 NO_X: 6.6 Maximum wt% in steel Beryllium: 0.09 Chromium: 2.00 Lead: 0.04 Manganese: 2.0			1 automated plasma cutter
02	AP-42 Table 13.2.6-1	PM/PM_{10}: 0.69 lb/1000 lb shot mg/kg abrasive: Chromium: 22.5 Lead: 0.15 Manganese: 125 Nickel: 11.6	3 Dust collectors	99%	Enclosed
03A	AP-42 Table 13.2.6-1	lb/1000 lb abrasive PM: 10.4 PM_{10}: 3.12 PM/PM_{10}: 0.69 lb/1000 lb shot mg/kg abrasive: Chromium: 7.82 Lead: 0.99 Manganese: 20.4 Nickel: 6.65	Partial enclosure	75%	

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
03B	Material Balances Table 2 of *How to Achieve Cost Savings Through Efficient Finishing Operations* Manufacturer's Data	<u>lb/gal</u> PM: 23.33 PM_{10}: 4.67 VOC: 4.5 (coating) VOC: 6.68 (solvent) <u>Maximum wt%</u> Cumene: 1.0 Ethylbenzene: 1.0 MIBK: 1.0 Xylene: 5.0 MMA: 1.0 Styrene: 3.0 Toluene: 2.0 Naphthalene: 0.1	Partial enclosure		
04	Material Balances Table 2 of *How to Achieve Cost Savings Through Efficient Finishing Operations* Manufacturer's Data	<u>lb/gal</u> PM: 23.33 PM_{10}: 4.67 VOC: 4.5 (coating) VOC: 6.68 (solvent) <u>Maximum wt%</u> Cumene: 1.0 Ethylbenzene: 1.0 MIBK: 1.0 Xylene: 5.0 MMA: 1.0 Styrene: 3.0 Toluene: 2.0 Naphthalene: 0.1	2.5" fiberglass filters	99.3%	
05	AP-42 Table 12.19-1	PM/PM_{10}: 15.1 lb/1000 lb consumable <u>Maximum wt% in steel</u> Beryllium: 0.09 Chromium 2.00 Lead: 0.04			10 welders

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		Manganese: 2.0			
06	AP-42 Table 13.2.6-1	<u>lb/1000 lb abrasive</u> PM: 10.4 PM_{10}: 3.12 <u>mg/kg abrasive:</u> Chromium: 7.82 Lead: 0.99 Manganese: 20.4 Nickel: 6.65			
07	*National Pollutant Inventory: Emission Estimate Technique Manual for Structural & Fabricated Metal Product Manufacture*	<u>g/min/machine:</u> PM/PM_{10}: 23 NO_X: 6.6 <u>Maximum wt% in steel</u> Beryllium: 0.09 Chromium 2.00 Lead: 0.04 Manganese: 2.0			1 plasma cutter
08	EPA TANKS 4.09d	VOC: 14.34 lb working loss/1,000 gal 804.69 lb breathing loss/1,000 gal			3,000 gal/yr throughput

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
N/A				

17. 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				

18. 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)
01A, 03B, 04 and 08	VOC emissions	203.4 tons per rolling 12 month period	Monthly	Yes
	PM emissions	22.7 tons per rolling 12 month period	Monthly	Yes
	PM_{10} emissions	14.8 tons per rolling 12 month period	Monthly	Yes
	HAP TLV if less than 1 mg/m^3	Must be less than product of TLV and 0.11 in lb/hr	Monthly	No
Facility	Single HAP	9.2 tons per rolling 12 month period	Monthly	Yes
	Total HAP	23.5 tons per rolling 12 month period	Monthly	Yes
	NESHAP XXXXXX records	See Plantwide Condition #27	As Needed	No
03A	Slag Shot Abrasive Media	1,000,000 pounds per rolling 12 month period	Monthly	Yes
06	Slag Shot Abrasive Media	150,000 pounds per rolling 12 month period	Monthly	Yes
08	Gasoline Throughput	3,000 gallons per rolling 12 month period	Monthly	No

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01A and 04	0%	Reg.19.503	Inspector Observations

SN	Opacity	Justification for limit	Compliance Mechanism
01B and 05	20%	NESHAP XXXXXX	See Plantwide Conditions #18-#21
03A and 06	No Visible Emissions	NESHAP XXXXXX	See Plantwide Conditions #24-#26

20. DELETED CONDITIONS:

Former SC	Justification for removal
N/A	

21. 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
Prospect Beam Plant Diesel Storage Tank (500 gallon)	A-3			0.1				0.1
Lexicon Fabricators Diesel Storage Tank (500 gallon)	A-3			0.1				0.1
Gas Torch Cutting Operations	A-7							0.01

22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #
2235-AOP-R0

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Lexicon, Inc.
Permit Number: 2235-AOP-R1
AFIN: 47-00943

$/ton factor	28.14	Annual Chargeable Emissions (tpy)	242.5
Permit Type	Minor Mod	Permit Fee $	500

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)	0.4
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		30	30	0	0	30
PM_{10}		20.7	20.7	0		
$PM_{2.5}$		0	0	0		
SO_2		0	0	0	0	0
VOC		204.3	204.7	0.4	0.4	204.7
CO		0	0	0		
NO_X		7.8	7.8	0	0	7.8
Single HAP	☐	9.2	9.2	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Total HAP	☐	23.5	23.5	0		
Arsenic	☐	0	0	0		
Beryllium	☐	0.00331	0.00331	0		
Chromium	☐	0.401	0.401	0		
Manganese	☐	0.288	0.288	0		
Acetone	☑	0	0	0	0	0
	☐	0	0	0		
	☐	0	0	0		
	☐	0	0	0		
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