STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0286-AR-3 AFIN: 70-00101

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

LANXESS Corporation - West Plant
5821 Schuler Road
El Dorado, Arkansas 71730

3. PERMIT WRITER:

Elliott Marshall

4. NAICS DESCRIPTION AND CODE:

NAICS Description: All Other Miscellaneous Chemical Product and Preparation Manufacturing
NAICS Code: 325998

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
11/11/2022	New	-Removing sources SN-102, 506 and 510. -Correct SN-201 Flare pilot size -Revise permit limits at SN-406, 407, and 408 per NSPS IIII. -Add additional pollutants to SN-501 through SN-504 based on sampling data

6. REVIEWER'S NOTES:

LANXESS submitted this application to change from a major source (Title V) classification to a synthetic minor source. In addition the following changes were made:

1. Remove sources SN-102, SN-506 and SN-510. These sources are no longer in service.
2. Correct SN-201 sour gas flare pilot size from 0.065 MMBtu/hr to 0.13 MMBtu/hr, since the flare has two pilots each with a capacity of 0.065 MMBtu/hr.
3. Revise scrubber flow rate condition (Specific Condition #8) to specify compliance is determined by a 3-hour block average of monitored scrubber parameters.
4. Revise permit limits for SN-406, 407 and 408 to be based on applicable limits in NSPS IIII.
5. Add additional pollutants to Tail Brine cooling towers based on sampling data, SN-501, 502, 503, 504, 507/508.
6. Update the maximum circulation rate at SN-501, SN-502, SN-503 and SN-504 to be 2,400 gpm.
7. Update the list of insignificant activities.
8. Revise opacity conditions at SN-005, SN-301, SN-406, 407 and 408.

Permitted emission rates are increasing/decreasing by 2.9 tpy PM, 3.0 tpy PM_{10}, 8.6 tpy VOC, 1.6 tpy CO, 3.9 tpy NO_x, 2.71 tpy Ammonia, 1.65 tpy Bromine, 0.88 tpy Chlorine, -2.32 tpy Hydrogen Bromide, -4.40 tpy Hydrogen Chloride, 4.43 tpy Hydrogen Sulfide, 0.3 tpy Sulfuric Acid and 10.80 tpy Total other HAPs.

7. COMPLIANCE STATUS:

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

Previous compliance issues have been resolved: CAO LIS: 22-115 and CAO LIS: 22-081 have been closed.

There are no active or pending enforcement actions.

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)

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
105	NOx and CO	40 CFR Part 60, Subpart Dc
SN-406, SN-407, SN-408	NOx and CO	40 CFR Part 60, Subpart IIII
SN-404, SN-406, SN-407, SN-408	HAPs	40 CFR Part 63, Subpart ZZZZ
SN-602	HAPs	40 CFR Part 63, Subpart CCCCCC
Facility	Benzene	40 CFR Part 61, Subpart FF

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
SN-510	2/22/2013	N/A	N/A	Removed upon permit issuance

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N
(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Rule 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? N/A
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
N/A		

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?
Acrolein	0.229	0.025	5.5E-05	Yes
Antimony	0.5	0.055	2.55E-05	Yes
Arsenic	0.01	0.0011	2.58E-03	No
Beryllium	0.00005	5.50E-06	1.55E-04	No
Bromine	0.654	0.0719	0.88	No
Cadmium	0.01	0.0011	1.42E-02	No
Chlorine	0.29	0.0319	1.09	No
Chromium	0.50	0.055	1.81E-02	Yes
Cobalt	0.02	0.0022	1.08E-03	Yes

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Hydrogen Sulfide	13.94*	0.15334	61.1	No
Lead	0.05	0.006	3.29E-02	No
Manganese	0.02	0.0022	4.95E-03	No
Mercury	0.01	0.011	3.35E-03	Yes
Selenium	0.20	0.022	3.10E-04	Yes
Sulfuric Acid	0.20	0.022	6.79E-02	No
Uranium	0.20	0.022	2.84E-05	Yes
POM	0.20	0.022	3.56E-02	No

*See H_2S modeling in section C.

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.

Modeling was conducted in this revision, 0286-AR-3, for all pollutants listed in the table below and H_2S.

Pollutant	PAIL ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	Pass?
Arsenic	0.10	0.00030	Yes
Beryllium	0.0005	1.78E-07	Yes
Bromine	6.54	12.806	No*
Cadmium	0.1	0.0016	Yes
Chlorine	2.9	3.14	No**
Manganese	0.2	0.00262	Yes
Lead	0.05	0.0038	Yes
Sulfuric Acid	2.0	0.97	Yes
POM	2.0	0.53311	Yes

*See 3rd Tier Screening (AEGL-1 and AEGL-2) – Bromine Analysis section.
**See 3rd Tier Screening Review of Additional Standards and Risk Assessment – Chlorine Analysis section.

3rd Tier Screening (AEGL-1 and AEGL-2) – Bromine Analysis

A human health risk assessment was performed to demonstrate that bromine emissions do not result in unacceptable impacts to human health. For this analysis, modeled impacts are compared to the Level 1 and Level 2 Acute Exposure Guideline Levels (AEGL-1 and AEGL-2) as an alternative to PAIL screening levels.

AEGL-1 is the airborne concentration of a substance below which it is not expected that the general population, including susceptible individuals, would experience notable discomfort, irritation, or certain asymptomatic, non-sensory effects.

AEGL-2 is the airborne concentration of a substance below which it is not expected that the general population, including susceptible individuals, would experience irreversible or other serious, long lasting adverse health effects or an impaired ability to escape. Ambient air concentrations of bromine used to assess risk were predicted using air dispersion modeling. The latest version of the AERMOD modeling system (Aermod_19191) was used to estimate maximum ground-level concentrations of bromine for 1-hour, 4-hour, and 8-hour averaging periods. Meteorological data for 2012 through 2016 measured at the Shreveport, LA was used in the model. To determine both the 10-minute and 30-minute average concentration, the equation below was used:

$$Cp = Cm\ (t_m/t_p)^{0.2} \quad \text{where}$$

C_p = 10-minute or 30-minute average concentration as appropriate
C_m = 1-hour average concentration
t_m = 60 minutes
t_p = 10 minutes or 30 minutes as appropriate

Averaging Period	Highest Modeled Impact (µg/m³)[1]	AEGL-1 Value (µg/m³)	Percent of AEGL-1	AEGL-2 Value (µg/m³)	Percent of AEGL-2	Pass?
10-minute	75.80	220	34.45%	3600	2.11%	Yes
30-minute	60.85	220	27.66%	3600	1.69%	Yes
1-hour	52.97	220	24.08%	3600	1.47%	Yes
4-hour	33.96	220	15.44%	3600	0.94%	Yes
8-hour	21.70	220	9.86%	3600	0.60%	Yes

[1]Modeling was conducted assuming 1.45 lb/hr Br emissions; emissions were revised down during the pre-draft permitting process, but modeling was not redone, as it still demonstrates Br emissions do not cause a condition of pollution.

Predicted concentrations at (and beyond) the facility property and the impact at Shuler Road are well below the AEGL-1 and AEGL-2 thresholds for all averaging periods. It is worth noting, that, even when the Shuler Road is out of the property line, the predicted concentrations are as well below the thresholds for all averaging periods.

3rd Tier Screening Review of Additional Standards and Risk Assessment – Chlorine Analysis

Given the potential for a ACGIH TLV standard (worker short term exposure) to be conservative when reviewing chronic health-based impacts, LANXESS reviewed alternative standards for chlorine. A review of available toxicology data for chlorine was completed. Because chlorine is a listed Hazardous Air Pollutant (HAP), there is substantial toxicology data available. The non-carcinogen health-based risks from chlorine exposure are generally categorized as short term (acute) and/or long term (chronic) exposure thresholds. The EPA Office of Air Quality Planning and Standards compiled assessments from air toxics for use in risk assessments. There were non-carcinogenic (acute and chronic) standards available for chlorine (see table below).

Source	Standard Type	Standard	Units	Standard	Units
MRL, ATSDR	Acute, 1 – 14 day	0.17	mg/m^3	170	$\mu g/m^3$
REL, California EPA	Acute, 1-hr	0.21	mg/m^3	210	$\mu g/m^3$
AEGL-1, EPA	Acute, 1-hr	1.5	mg/m^3	1,500	$\mu g/m^3$
AEGL-1, EPA	Acute, 8-hr	1.5	mg/m^3	1,500	$\mu g/m^3$
AEGL-2, EPA	Acute, 1-hr	5.8	mg/m^3	5,800	$\mu g/m^3$
AEGL-2, EPA	Acute, 8-hr	2.1	mg/m^3	2,100	$\mu g/m^3$
ERPG-1, US DOE	Acute, 1-hr	2.9	mg/m^3	2,900	$\mu g/m^3$
ERPG-2, US DOE	Acute, 1-hr	8.7	mg/m^3	8,700	$\mu g/m^3$
MRL, ATSDR	Chronic, Annual	0.00015	mg/m^3	0.15	$\mu g/m^3$

The acute standard is based on the US DOE Emergency Removal Program guidelines for irreversible or serious effects (ERPG-2) for 1-hour exposures. The chronic standard is based on the EPA Minimal Risk Level (MLR) is "estimate of daily human exposure to a hazardous substance that is likely to be without an appreciable risk of adverse non-cancer health effects over a specified route and duration of exposure."

AERMOD air dispersion modeling was performed according to the modeling for each of the averaging periods selected (1-hr,8-hr and annual). For non-cancer risks, the maximum modeled impacts are compared directly against the proposed risk standard for each averaging period. As shown in table below the modeled property/fence line concentrations are well below the standards.

Standard Type	Standard ($\mu g/m^3$)	Max Modeled Impacts ($\mu g/m^3$)	Percent of Standard
Acute, 24-hr	170	3.14	1.85%
Acute, 1-hr	210	20.21	9.62%

Standard Type	Standard (µg/m^3)	Max Modeled Impacts (µg/m^3)	Percent of Standard
Acute, 1-hr	1,500	20.21	1.35%
Acute, 8-hr	1,500	6.72	0.45%
Acute, 1-hr	5,800	20.21	0.35%
Acute, 8-hr	2,100	6.72	0.32%
Acute, 1-hr	2,900	20.21	0.70%
Acute, 1-hr	8,700	20.21	0.23%
Chronic, Annual	0.15	0.32	213%

As demonstrate above, using EPA's health-based standard the proposed chlorine emissions are well below any health based acute standards. However, due modeled impacts when compared to EPA's chronic standard showing an apparent exceedance, a risk assessment was performed.

Non-industrial receptors are typically defined as a receptor type such as residential, recreational, commercial, business, agricultural, or a school, hospital, day-care center, or church. In addition, receptors in un-zoned or undeveloped areas are generally considered non-industrial. A receptor is a location where the public could be exposed to an air contaminant in the ambient air. Nearby non-industrial receptors within the modeling domain were identified to the East and West. No non-industrial receptors were identified to the North or South within the modeling domain. The maximally affected non-industrial receptor is a household to the West, Receptor ID NI1, with an impact of 0.019 µg/m3 which is 12.6% percent of the EPA chronic standard.

Furthermore, as shown in the map below, the impacts over the proposed standard extend approximately 625 feet East as well as 1,000 ft northwest of the facility property and fall in undeveloped land (largely forested). Due to the long-term nature of the standard and the minimal risk that the undeveloped land would be populated on the long-term basis needed to see an affect from a chronic, annual health standard, LANXESS believes this impact poses minimal risk to public health.

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 N
If exempt, explain:_____

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
H_2S	20 parts per million (5-minute average*)	0.25 ppm	Yes
	80 parts per billion (8-hour average) residential area	67.69 ppb	Yes
	100 parts per billion (8-hour average) nonresidential area	67.69 ppb	Yes

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

$Cp = Cm\ (t_m/t_p)^{0.2}$ where

Cp = 5-minute average concentration
Cm = 1-hour average concentration
t_m = 60 minutes
t_p = 5 minutes

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
005	Testing at LANXESS facilities	Br: 0.4 lb/hr HBr: 0.0271 lb/hr			Cl_2 and HCl have potential to be present in trace amounts. Emissions for these pollutants is conservatively based on estimated potential emissions for HBr
009	SOCMI, Table 2-5	<10,000 ppmv emission factor (kg/hr/source **Valves** Gas: 0.000131 Light Liquid: 0.00165 Heavy Liquid: 0.00023 **Pump seals** Light Liquid: 0.00187 Heavy Liquid: 0.00210 **Compressor seals** Gas: 0.0894 **Pressure relief valves** Gas: 0.0447 **Connectors:** All: 0.0000810 **Open-ended lines** All: 0.00150			

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
105	AP-42 Table 1.4-1 Table 1.4-2	NOx: 50 lb/MMscf CO: 84 lb/MMscf PM: 7.6 lb/MMscf VOC: 5.5 lb/MMscf SO2: 0.6 lb/ MMft3			
201A	AP-42 Table 1.4-1 Table 1.4-2	PM/PM_{10}: 7.6 $lb/MMft^3$ CO: 84 lb/ $MMft^3$ NOx: 100 lb/ $MMft^3$ VOC: 5.5 lb/ $MMft^3$ SO_2: 0.6 lb/ $MMft^3$			Two Pilots at 0.065 MMBtu/hr each
201B	AP-42 Table 1.4-2, 3, 4 and Table 13.5-1 and 2	PM/PM_{10}: 11.05 lb/MMscf VOC: 0.84 $lb/MMBtu_{LHV}$ CO: 0.31 $lb/MMBtu_{LHV}$ NO_x: 0.068 $lb/MMBtu_{HHV}$ Lead: 5.0E-04 $lb/MMBtu_{HHV}$ H_2S: 482 lb/MMscf SO_2: 44,335 lb SO_2 /MMscf sour gas flared (max hourly) SO_2: 35 ton/12 month period			
301	Mass Balance	36% HCl Solution at 9.84 lb/gal HCl 48% HBr Solution at 12.40 lb/gal	Scrubber	91.1%	
404	AP-42 Table 3.3-1	PM/PM_{10}: 2.2E-03 lb/hp-hr CO: 6.68E-03 lb/hp-hr NOx: 3.1E-02 lb/hp-hr VOC: 2.69E-03 lb/hp-hr SO_2: 2.05E-03 lb/hp-hr			500 hr/yr operation

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
406, 407, 408	AP-42 Chapter 3.4 and NSPS IIII emission standards	lb/hp-hr: PM/PM_{10}: 5.84E-04 SO_2: 1.21E-05 NO_X: 1.17E-02 CO: 1.02E-02 VOC: 1.17E-02 SN-406 NOx: 1.87E-02			500 hr/yr operation, each
501, 502, 503, & 504	AP-42	PM/PM_{10}: 0.017 lb/2,400 gal circulation water flow			
507 & 508		Recirculation Rate: 4,000 gal/min Drift Rate: 0.005%			18,000 ppm (hourly) 4,000 ppm (annual)
511	AP-42 13.4 & vendor	7,500 gpm 0.005% drift rate			18,000 ppm (hourly) 4,000 ppm (annual)
512	AP-42 13.4 & vendor	1,575 gpm 1.7lb/1,000gal H_2O drift rate			
601	TANKS	Crude Oil, RVP 5 672,000 gallons/12 months			Based on 5 annual turnovers per tank. 13 total tanks. RVP 5 crude oil used to assume PTE
602	AP-42 7.1	2 TO/month 1 hour working losses per turnover (TO) 800 gallon tank 19,200 gallons/yr			

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
005	Bromine	EPA Approved	Every 5 Years	Verify Emissions
Facility	Benzene	Approved method in 40 C.F.R. §61.355(c)	Annual	40 C.F.R. 61 Subpart FF (BWON MACT)

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)
005	Scrubbing media flow rate	flow meter	12-hours	N
301	Scrubbing media flow rate	flow meter	weekly	N
501, 502, 503, 504, 507/508, 511, 512	TDS	Sampling	Quarterly	N

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)
005	Scrubbing media flow rate	2 gpm	12-hours	N
	Bromine loading rate	30 gpm 300,000 B-lots	Monthly	N
201	Volume of sour gas flared	N/A	As needed	Y
	Air emissions during sour gas flaring	N/A	As needed	Y
301	Scrubbing media used	N/A	As needed	N
404	Malfunction	-	As Applicable	N
	Hours of operation (SC 33)	Maintenance Check: 100 hours/year	As Needed	N

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
		Non-emergency: 50 hours/yr		
404,	Sulfur Content	0.5% by weight	Per Shipment	N
406, 407, & 408	Sulfur Content	15 ppm	As needed	N
404, 406, 407, & 408	Hours of operation	500 hours/12month (per engine)	Monthly	N
501, 502, 503, & 504	Max Water Flow Rate	2,400 gpm at each source, maximum pump capcity	--	N
	TDS concentration	0.40 lb PM/lb H_2O	Quarterly	N
507/508	TDS Concentration per sample	18,000 ppm	Quarterly	N
	TDS Concentration per rolling 12 month average	4,000 ppm	Quarterly	N
511 & 512	TDS concentration per sample	18,000 ppm	Quarterly	N
	TDS concentration per rolling 12 month average	4,000 ppm		
601	Throughput	672,000 gallons/yr	Monthly	N
602	Gasoline Throughput	10,000 gallons/month	Monthly	N
Facility	Records required BWON MACT	As required by § 61.356	Annual	Yes

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
105, 201A, 301	5%	Dept. Guidance	observations and burning natural gas
005[1]	5%	Dept. Guidance	Observation
404, 406, 407, 408	20%	Dept. Guidance	Observation

[1]Sources in Bromine recovery operations have opacity limits to ensure proper operation of controls, regardless of there being no particulate emissions.

20. DELETED CONDITIONS:

Former SC	Justification for removal

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
Fire Pump Engine Diesel Storage Tank (130 gal)	A-2			<0.001			1.05E-013	2.39E-13
Diesel Storage Tank (250 gal)	A-2			<0.001			9.52E-06	2.16E-05
Diesel Storage Tank (55 gal)	A-2			<0.001			1.0E-09	2.27E-09
Compressor Lubricant Oil (TT-52-1603) (250 gal)	A-2			<0.001			0.142	0.142
Total	**A-2**			**5.82E-04**				**0.143**
Used Oil Storage Tank (500 gal)	A-3			<0.001				
Compressor Oil (TT-52-1003) (560 gal)	A-3			<0.001				
Crude Oil Storage Tank (8,000 gal)	A-3			0.526			0.033	0.044
Total	**A-3**			**0.527**			**0.033**	**0.044**

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Crude Oil Storage Tank	A-13			0.526			0.033	0.045
Sodium Bromide Storage Tank	A-13			0.0107			0.0107	0.0107
Tail Brine Surge Tank #1 (TT-50-5501)	A-13			0.0087			8.29E-03	8.75E-03
Tail Brine Surge Tank #2 (TT-50-5402)	A-13			0.0087			8.29E-03	8.75E-03
Tail Brine Storage Tank (TT-50-5801)	A-13			0.0167			1.65E-02	1.67E-02
Brine Overflow Tank (TT-52-0103)	A-13			0.431			0.431	0.431
First Feed Brine Surge Tank (TT-50-0201)	A-13			7.87E-05			7.87E-05	7.87E-05
Secondary Feed Brine Surge Tank (TT-50-0202)	A-13			7.87E-05			7.87E-05	7.87E-05
Scrubber Brine Surge Tank (TT-50-0501)	A-13			7.86E-05			7.86E-05	7.86E-05
Total	**A-13**			**1.02**				**0.537**

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 #
0286-AOP-R14

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source Changing to Minor Source

Revised 03-11-16

Facility Name: LANXESS Corporation - West Plant
Permit Number: 0286-AR-3
AFIN: 70-00101

$/ton factor	27.27	Annual Chargeable Emissions (tpy)	35.8
Minimum Fee $	400	Permit Fee $	400

Title V Permit Chargeable Emissions (tpy) 128.18

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	Title V Permit Annual Chargeable Emissions
PM		26.1	29	2.9	26.1
PM_{10}		25.7	28.7	3	
$PM_{2.5}$		0	0	0	
SO_2		35.8	35.8	0	35.8
VOC		14.7	23.3	8.6	14.7
CO		42.1	43.7	1.6	
NO_X		26.2	30.1	3.9	26.2
Total Other HAPs	☐	0.92	11.72	10.8	
HCl	☑	4.95	0.55	-4.4	4.95
CL2	☑	0.12	1	0.88	0.12
	☐	0	0	0	
HBr	☑	2.72	0.4	-2.32	2.72
BR2	☑	2.19	3.84	1.65	2.19

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Title V Permit Annual Chargeable Emissions
H2S	☑	15.4	19.83	4.43	15.4
H2SO4	☑	0	0.3	0.3	0
Ammonia	☑	0	2.71	2.71	0