

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0299-AR-19 AFIN: 17-00043

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Bekaert Corporation
1881 Bekaert Drive
Van Buren, Arkansas 72956

3. PERMIT WRITER:

Jeremy Antipolo

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Steel Wire Drawing
NAICS Code: 331222

5. ALL SUBMITTALS:

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
2/15/2017	DeMinimis	Installation of new PC Strander equipment (SN-84a and SN-84b)

6. REVIEWER'S NOTES:

Bekaert Corporation (Bekaert) manufactures drawn wire products (NAICS 331222) at its facility located at 1881 Bekaert Drive, Van Buren, Crawford County, Arkansas 72958. In this DeMinimis permit modification, the facility requested to install new PC Strander equipment (SN-84a PC Strander and SN-84b Induction Heater for PC Strander with Dust Collector). Plantwide emission increases are 11.4 tpy PM/PM₁₀.

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/pending enforcement issues for 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 is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-42, SN-43	SO ₂ , PM	40 CFR 60, Subpart Dc

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. AMBIENT AIR EVALUATIONS:

a) Reserved.

b) 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	SN	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
HCl	10, 19, 30, 81	2.98*	0.328	1.99	N
Cl ₂	11, 13, 20, 22, 32, 35	1.45	0.16	0.90	N

Pollutant	SN	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
NH ₃ /NH ₄	11, 13, 20, 22, 32, 35	17.41	1.92	2.70	N

*2012 TLV data

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. Dispersion modeling was performed for the R-16 application using 2009-2012 MET data and was performed for HCl only, since this was the only pollutant affected by the application.

Pollutant	PAIL (µg/m ³) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m ³)	Pass?
HCl	29.8**	13.545	Y
Cl ₂	14.5	1.37*	Y
NH ₃ /NH ₄	174.1	5.10*	Y

* From a previous Permit #0299-AR-11-SOB

**Based on 2012 TLV

c) H₂S 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 H₂S Standards Y

If exempt, explain: No H₂S emissions

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

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
	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 Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
06, 53	Stack Testing at Bekaert Facilities in Rome, GA & Belgium	Engr Est = 10% air borne dust @ 6.0 mg/m ³ + 200% SF = <u>PM Fugitive</u> = 0.5622 lb/hr Total/2 =0.28 lb/hr ea + <u>PM Dust</u> <u>Collector @ 7.66</u> lb/hr * 200% SF * 90% eff = 1.53 lb/hr/2 =0.77 ea	Two Dust Collectors for Wire Drawing Dept	95.0% Fabric Filter – BUT used 90% for calculations	8760 hrs/yr 200% SF SN-06,53 split emissions equally
07, 16, 26	AP-42 Section 1.2	SO ₂ – 58.5 lb/ton NO _x – 9 lb/ton CO – 0.6 lb/ton PM – 13.2 lb/ton VOC – 0.3 lb/ton Pb – 0.0089 lb/ton	None	N/A	Stoker fired boilers SO ₂ EF=39S S=1.5% PM – ash content 15% 8760 hrs/yr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
10, 19, 30	Testing	100 ppm HCl conc to scrubber	Scrubber	98%	100% Safety Factor
13, 22, 35	Engineering Estimate based on dust collected in 2013	1090.9 lbs/yr collected dust	None	None	baghouses removed and vented outside. Only PM values updated in permit. All other emissions from previous permit.
28, 50, 51	Engineering Estimate	0.02 lb/hr 0.1 tpy	None	N/A	Vent Stacks exhausts Water vapor & Negligible PM #55 moved to IA in R-14
40	Based on weld	9.53×10^{-5} g Zn oxide/weld	N/A	N/A	50% is assumed to become airborne. Annual is 8760 hr/yr.
59, 70 – 74	Estimate based on depth of the weld	12.86×10^{-5} g Zn/weld	N/A	N/A	Assumes 50% is airborne
67, 68, 69	PM Stack Testing at Bekaert Facilities in Rome, GA & Belgium	Engr Est = 10% air borne dust @ 6.0 mg/m ³ dust loading= PM Fugitive = 0.40 lb/hr Total/3 =0.13 lb/hr ea	None	N/A	Ventilation Fans are not control Equipment 200% SF
75	Engineering assumption	Assumed factor of 0.1 lb/hr	N/A	N/A	#75 moved to IA in R-14
64, 66,	Engineering	Dust loading 6.0	N/A	200% SF	10% of airborne dust

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
76	estimate using industrial hygiene testing data	mg/m ³ with 200% safety factor.			leaves building. 30% of wire draw non-stack emissions distributed equally between SN-76 and SN-77. 212,230 m ³ /hr air.
77	Engineering estimate using industrial hygiene testing data	Dust loading 6.0 mg/m ³ with 200% safety factor.	N/A	N/A	10% airborne dust exits building. 30% of wire draw nonstack emission distributed equally between SN-76 & SN-77. 212,230 m ³ /hr air.
78	Engineering estimate using stack testing data	Dust loading 7.66 lb/hr with 200% safety factor.	Dust collector	90%	40% of wire draw emissions distributed equally between SN-66 and SN-78.
42, 43	AP-42, Table 1.4.1-1.4.3, small industrial boilers, uncontrolled	SO ₂ = 0.6lb/mmcf Nox = 100 lb/mmcf CO = 84 lb/mmcf PM = 7.6 lb/mmcf PM ₁₀ = 7.6 lb/mmcf VOC = 5.5 lb/mmcf NG heating value = 973 btu/cf Maximum schedule = 24hr/day, 7 days/wk, 26 wks/yr. One boiler at a time operates. One boiler operates 52	None	N/A	Updated emission factors applied only to new boilers

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		wks/yr. Existing boilers 14.7 MM Btu/hr			
81	Mass Balance	2.19 lb VOC/gal 1,650 gal per yr	Scrubber	N/A	Assumes all VOC emitted
83	Stack testing of SN-07, SN-16	PM=0.0166 lb/hr	Cyclone	Not used in the calculation	Safety factor 1.5 80 tons/day 30,926 tpy
84a	Engineering estimation using emission data of existing PC Strander SN-83	PM/PM ₁₀ 165 gallons dust/month	None		- Assumed maximum of three 55-gallon drums of collected dust (from SN-83) - Assumed density of dust to be 10 lb/gallon
84b	Engineering assumption	PM/PM ₁₀ 0.005 grains/ft ³	Partial enclosure routed to dust collector	N/A	

13. TESTING REQUIREMENTS:

No stack testing required

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)
81	Pressure Drop (inches)	Pressure gauge on HCl	Daily	N

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
	H ₂ O)	Scrubber		
10, 19, 30	Pressure Drop (inches H ₂ O)	Sieve tray differential pressure	Daily	N

15. 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)
Facility	Natural Gas	562.4 MM CF/rolling 12-month period	Monthly	N
Facility	Anthracite Coal	312 tons/rolling 12-month period	Monthly	N
Facility	Pickling Inhibitor	1650 gallons/rolling 12-month period	Monthly	N
SN-42, SN-43	Natural Gas Consumption	11.24 MM CF/month	Monthly	N

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
08, 12, 14, 17, 21, 23, 25, 27, 33, 34, 36, 42, 43, 44, 79, 84b	5%	Natural Gas Fired Equipment	Inspector's Observation
06, 07, 11, 13, 16, 20, 22, 28, 29, 31, 32, 35, 36, 39, 40, 41, 50, 51, 53, 54, 62, 64, 66, 76, 77, 78, 81, 83, 84a	20%	Manufacturing Equipment	Inspector's Observation

17. DELETED CONDITIONS:

Former SC	Justification for removal
None	

18. GROUP A INSIGNIFICANT ACTIVITIES:

Source Name	Group A Category	Emissions (tpy)							
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs		
							Single	Total	
Three Zinc Quench Bath Vacuums (one formerly SN-49) water vapor only	A-13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four Zinc or Bezinol Quench Knives (two formerly SN-55 and SN-75) water vapor only	A-13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IVP-40 Zinc Bath Emergency Generator (SN-82)	A-1	0.00058	0.000034	0.00172	0.216	0.132	N/A	N/A	N/A

19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #
0299-AR-18

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Minor Source

Revised 03-11-16

Facility Name: Bekaert Corporation

Permit Number: 0299-AR-19

AFIN: 17-00043

			Old Permit	New Permit
\$/ton factor	23.93	Permit Predominant Air Contaminant	32.8	39.9
Minimum Fee \$	400	Net Predominant Air Contaminant Increase	7.1	
Minimum Initial Fee \$	500			
Check if Administrative Amendment <input type="checkbox"/>		Permit Fee \$	400	
		Annual Chargeable Emissions (tpy)	39.9	

Pollutant (tpy)	Old Permit	New Permit	Change
PM	28.5	39.9	11.4
PM ₁₀	28.5	39.9	11.4
PM _{2.5}	0	0	0
SO ₂	18.1	18.1	0
VOC	4.4	4.4	0
CO	13.2	13.2	0
NO _x	32.8	32.8	0
Lead	0.01	0.01	0
Chlorine	2.2	2.2	0
Hydrogen Chloride	8.35	8.35	0
Ammonia	11	11	0