STATEMENT OF BASIS

For the issuance of Air Permit # 0299-AR-16 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, AR 72958

3. PERMIT WRITER:

   Travis Porter

4. PROCESS DESCRIPTION AND NAICS CODE:

   NAICS Description: Wire products, iron & steel, made in wire drawing plants
   NAICS Code: 331222

5. SUBMITTALS:

   10/19/2012, 10/31/2012, 11/1/2012, 11/5/2012, 11/8/2012, 11/9/2012, 11/20/2012

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. The facility asks to remove SN-01 and SN-03 from the permit and to add a new, higher efficiency packed bed scrubber for the Pickling Baths/Rod Pickling (SN-81). Also, process improvements have allowed the removal of SN-45 and SN-48. As well, the active permit, #0299-AR-15, lists two alternative scenarios addressing replacement of two boilers, SN-42 and SN-43, with newer, smaller, boilers in a staged approach. Both old boilers have been replaced (Alternative Scenario #2 in the active permit), and these requirements have been incorporated into this modification. Permitted CO emissions increase by 1.2 tpy. Permitted emissions decrease as follows: PM and PM_{10} by 1.3 tpy each; VOC by 0.4 tpy; NOx by 11.4 tpy; and HCl by 0.39 tpy.

This review was limited to the removal of SN-01, SN-03, SN-45 and SN-48; the addition of SN-81, and the incorporation of Alternative Scenario #2's conditions for the new boilers from Permit #0299-AR-15 into this draft permit.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues. The last inspection, dated April 22, 2010, resulted in no violations.

There are no active or pending air enforcement actions at this time.

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, or*
- *CO_2e potential to emit ≥ 100,000 tpy and ≥100 tpy/≥250tpy of combined GHGs?*

If yes, explain why this permit modification not PSD?

9. GHG MAJOR SOURCE (TITLE V):
Indicate one:
☐ Facility is classified as a major source for GHG and the permit includes this designation
☒ Facility does not have the physical potential to be a major GHG source
☐ Facility has restrictions on GHG or throughput rates that limit facility to a minor GHG source. Describe these restrictions:

10. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

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

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. 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/m^3), 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
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 this (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 ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	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

Other Modeling: Not Required

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor & units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission Factor controlled/ uncontrolled, etc)
06, 53	Stack Testing at Bekaert Facilities in Rome, GA & Belgium	Engr Est = 10% air borne dust @ 6.0 mg/m3 + 200% SF = PM Fugitive = 0.5622 lb/hr Total/2 =0.28 lb/hr ea + PM Dust Collector @ 7.66 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
10, 19, 30	Testing	100 ppm HCl conc to scrubber	Scrubber	98%	100% Safety Factor
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.

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor & units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission Factor controlled/ uncontrolled, etc)
59, 70 – 74	Estimate based on depth of the weld	12.86 x 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/m3 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, 76	Engineering estimate using industrial hygiene testing data	Dust loading 6.0 mg/m^3 with 200% safety factor.	N/A	200% SF	10% of airborne dust leaves building. 30% of wire draw non-stack emissions distributed equally between SN-76 and SN-77. 212,230 m^3/hr air.

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor & units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission Factor controlled/ uncontrolled, etc)
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 wks/yr. Existing boilers 14.7 MM Btu/hr	None	N/A	Updated emission factors applied only to new boilers

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor & units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission Factor controlled/ uncontrolled, etc)
81	Mass Balance	2.19 lb VOC/gal 1,650 gal per yr	Scrubber	N/A	Assumes all VOC emitted

14. TESTING REQUIREMENTS:

No stack testing required

15. 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 H_2O)	Pressure gauge on HCl Scrubber	Daily	N
10, 19, 30	Pressure Drop (inches H_2O)	Sieve tray differential pressure	Daily	N

16. 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	Pickled Steel Rod	144,870 tons/rolling 12-month period	Monthly	N

SN	Recorded Item	Permit Limit	Frequency	Report (Y/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

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
08, 12, 14, 17, 21, 23, 25, 27, 33, 34, 36, 42, 43, 44, 79	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	20%	Manufacturing Equipment	Inspector's Observation

18. DELETED CONDITIONS:

Former SC	Justification for removal
14, 15, 16, 17	Alternative Scenario #1 no longer applies.
18, 19, 20, 21, 22, 23	These conditions applied to Alternative Scenario #2, which was implemented. These requirements are incorporated into other specific conditions in the permit.
24	This modification incorporates modifications for Alternative Scenario #2.

19. 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

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							Single	Total
Four Zinc or Bezinal 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

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

0299-AR-14

21. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

Phil Murphy, P.E.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Minor Source

Revised 08-20-12

Facility Name: Bekaert Corporation--
Van Buren

Permit Number: 0299-AR-16

AFIN: 17-00043

			Old Permit	New Permit
$/ton factor	22.97	Permit Predominant Air Contaminant	45.1	33.7
Minimum Fee $	400	Net Predominant Air Contaminant Increase	-11.4	
Minimum Initial Fee $	500			
		Permit Fee $	400	
Check if Administrative Amendment	☐	Annual Chargeable Emissions (tpy)	33.7	

Pollutant (tpy)	Old Permit	New Permit	Change
PM	29.1	27.8	-1.3
PM_{10}	29.1	27.8	-1.3
SO_2	11.9	11.9	0
VOC	4.7	4.3	-0.4
CO	12.5	13.7	1.2
NO_X	45.1	33.7	-11.4
Pb	0.3	0.3	0
HCl	8.74	8.35	-0.39
Chlorine	2.2	2.2	0
Ammonia	11	11	0