North Carolina Department of Environment and Natural Resources
Division of Air Quality

Beverly Eaves Perdue
Governor

B. Keith Overcash, P.E.
Director

Dee Freeman
Secretary

July 10, 2009

Mr. Cliff Bragg
Natures Earth Pellets, LLC
16900 Aberdeen Road
Laurinburg, NC 28352

SUBJECT: **Receipt of Permit Application**
Greenfield Facility
Application No. 8300104.09A
Natures Earth Pellets, LLC
Facility ID: 8300104, Laurinburg, Scotland County

Dear Mr. Bragg:

Your air permit application (8300104.09A) for Natures Earth Pellets, LLC, located in Scotland County, North Carolina was received by this Division on July 10, 2009.

Submittal of your air permit application request must include the following items:

A permit application processing fee:

Under the new permit application processing fee schedule effective January 1, 2009, your required fee is $400.

The appropriate application fee amount **was** received.

Pending review of your application and based on the required fee amount indicated above, you may be required to pay an additional amount.

Number of Copies of Form AA:

The appropriate number of copies of Form AA **was** received.

Local zoning and subdivision ordinances consistency determination:

Your application **did** contain the complete request for consistency determination.

Signature of An Authorized Official:

Your application **was** signed by an authorized official as defined by 15A NCAC 2Q.0304(j).

PE Seal Requirement:

The appropriate PE Seal **was** received.

In summary, this application submittal **did** contain all the required elements as indicated and has been accepted for processing. Your application will be considered complete as of July 10, 2009, unless informed otherwise by this office within 45 days.

Should you have any questions concerning this matter, please contact Tien Nguyen at (910) 433-3300.

Sincerely,

Steven F. Vozzo
Regional Air Quality Supervisor

cc: Fayetteville Regional Office Files
Central Files

DIVISION OF AIR QUALITY
July 27, 2009

MEMORANDUM

TO: Tien Gnuyen, Environmental Engineer, FRO
Permit Coordinator, FRO

FROM: Tom Anderson, Meteorologist II, AQAB

THROUGH: Jim Roller, Supervisor, Air Quality Analysis Branch (AQAB)

SUBJECT: Review of Dispersion Modeling Analysis for Natures Earth Pellets NC, LLC
Laurinburg, NC Scotland County

I have reviewed the dispersion modeling analysis, received July 16 and updated on July 27, 2009, for the Natures Earth Pellets NC, LLC facility that will be located in Laurinburg, NC. The company is planning to construct and operate a wood pellet manufacturing facility and is expected to emit several N.C. regulated toxics at rates that exceed the levels outlined in NCAC 2Q .0700. The modeling adequately demonstrates compliance, on a facility-wide basis, for all toxics modeled.

All toxics will be emitted from a single rotary dryer (source EP-5) at the facility. Emissions were based on a requested annual throughput limit of 141,450 tons per year and assumed 8,760 hours per year operation. Source parameters and emission rates are provided in the attached tables.

AERMOD using a single year (1992) of meteorological data from Raleigh (surface) and Greensboro (upper air) was used to evaluate impacts in both simple and elevated terrain. Direction-specific building dimensions, determined using EPA's BPIP program (95086), were used as input to the model for building wake effect determination. Receptors were placed around the facility's property line at 50-meter intervals and extended outward to a distance of approximately 5 kilometers using a nested grid. The following table shows the maximum impact for each pollutant:

Table 1.
Maximum Impacts
Natures Earth Pellets – Laurinburg, NC

Pollutant	Averaging Period	% of AAL
Acrolein	1-hour	2 %
Benzene	annual	8 %
Formaldehyde	1-hour	8 %

This compliance demonstration assumes the source parameters and pollutant emission rates used in the analysis are correct.

cc: Jim Roller
Tom Anderson

Table 1
TAP/HAP Emissions from the Rotary Dryer- Comparison to TPERs
Natures Earth Pellets NC, LLC - Laurinburg, NC

			Actual Emissions			TPERs			
Pollutant	HAP	TAP	Hourly Emissions (lbs/hr)	Daily Emissions (lbs/day)	Annual Emissions (lbs/yr)	Hourly Emissions (lbs/hr)	Daily Emissions (lbs/day)	Annual Emissions (lbs/yr)	Air Disperson Modeling Required?
Acetaldehyde	X	X	1.09	26.1	8,346	6.8	-	-	No
Acrolein	X	X	0.28 ✓	6.6	2,122	0.02	-	-	Yes
Benzene	X	X	0.09 ✓	2.1	665	-	-	8.1	Yes
Formaldehyde	X	X	1.77 ✓	42.4	13,579	0.04	-	-	Yes
Methanol	X		1.09	26.1	8,346	-	-	-	No
Methyl ethyl ketone	X	X	0.06	1.5	481	22.4	78	-	No
Metylene chloride	X	X	0.03	0.62	198	0.39	-	1,600	No
Phenol	X	X	0.15	3.49	1,117	0.24	-	-	No
Propionaldehyde	X		0.08	1.85	594	-	-	-	No
Styrene	X	X	0.01	0.25	81	2.7	-	-	No
Toluene	X	X	0.11	2.61	835	-	98	-	No
Xylene	X	X	0.12	2.82	902	16.4	57		No

Table 3: Stack Parameters (Point Source)
Natures Earth Pellets NC, LLC
Laurinburg, North Carolina

Stack Number and Description		EP-5 Rotary Dryer
Stack Height (ft)[a]		30.0
Stack Height (meters)[a]		9.1
Stack Diameter (ft)[b]		4.4
Stack Cross Section (ft^2)		N/A
Stack Diameter (meters)[b]		1.34
Stack Temperature (°F)		182
Stack Temperature (°R)		642
Stack Temperature (°K)		357
Stack Volume (acfm)		48000
Stack Exit Velocity	Actual (ft/sec)	53.3
	Actual (m/sec)	16.26
	Use in modeling (m/sec)[c]	53.3
UTM Coordinates (m)	Horizontal (E)	640,776.41
	Vertical (N)	3,851,504.47
Stack Base Elevation Above MSL(ft)[d]		
Stack Base Elevation Above MSL(m)[d]		0

[a]Stack height above ground level

[b]Stack inside diameter measured at point of discharge (or equivalent diameter if rectangular stack)

[c]Stack exit velocity of 0.01 m/sec used to account for horizontal discharge or rain cap, if applicable

[d]MSL = mean sea level

TABLE 5-1. MODELED STACK PARAMETERS

Source ID	Description	UTMX (m)	UTMY (m)	Stack Ht. (m)	Stack Temp. (K)	Stack Vel. (m/s)	Stack Diam. (m)
BLKTNK	Bulk Storage Tank Room Exh.	585490.2	3968998.4	10.97	293.00	0.01	0.50
MIXTNK	Mix Tank -Bldg Ventilation	585492.4	3968977.1	10.97	293.00	7.72	5.64
IMPLINE	Impreg. Lines 1&2 - current	585474.2	3969005.4	21.34	413.15	28.74	3.21
IMPLINE	Impreg. Lines 1&2 - future	585474.2	3969005.4	27.43	413.15	28.74	3.21
LINE34	New Impreg. Lines 3&4	585468.3	3969006.5	27.43	413.15	28.74	3.21

The formaldehyde emission rates for both modeled scenarios are presented in Table 5-2.

TABLE 5-2. MODELED EMISSION RATES

Scenario	Model ID	Emission Rate (g/s)	Requested NC Air Toxics Limit (lb/hr)
Current Actual Emissions (based on 5,355 lb/hr of resin)	BLKTNK	5.50E-04	4.36E-03
	MIXTNK	2.43E-02	1.93E-01
	IMPLINE	1.10	8.76
Future Potential Emissions (maximized for NC air toxics purposes to 98.9% of the AAL)	BLKTNK	1.96E-03	1.56E-02
	MIXTNK	3.55E-01	2.82
	IMPLINE	7.15	56.76
	LINE34	7.15	56.76

Permit # 10012
APP # 8300104.09A

GEL Engineering of NC INC

an affiliate of The GEL Group INC

problem solved

Application for Air Permit To Construct/Operate - Wood Pellet Manufacturing Facility

Natures Earth Pellets NC, LLC
16900 Aberdeen Road
Laurinburg, NC 28352

June 2009

GEL Engineering of NC INC PO Box 14262 Research Triangle Park, NC 27709 • P 919.544.1100 • F 919.406.1807 • www.gel.com
NC Corporate Engineering License No. C-1938

APPLICATION FOR AIR PERMIT TO CONSTRUCT/OPERATE - WOOD PELLET MANUFACTURING FACILITY

NATURES EARTH PELLETS NC, LLC LAURINBURG, NORTH CAROLINA

1.0 INTRODUCTION

Natures Earth Pellets NC, LLC (Natures Earth) proposes to build and operate a wood pelletizing plant in Laurinburg, North Carolina. The location of the Natures Earth facility is shown on the topographic map included as Figure 1. Natures Earth is not currently permitted by the North Carolina Department of Environmental and Natural Resources (DENR).

The purpose of this application is to request an air permit to construct and operate the equipment associated with the pelletizing plant. As shown in the application, Natures Earth will comply with applicable air regulations.

2.0 DESCRIPTION OF PROCESS AND EMISSIONS

The Natures Earth facility will be a pellet mill consisting of conveyance systems such as conveyors and pneumatic transfer, raw material and product storage, hammermills, pellet mills, pellet coolers, aspirators, and a direct-fired rotary dryer. Emissions from the conveyance systems, raw material and product storage, hammermills, pellet mills, pellet coolers and aspirators will be total suspended particulate (TSP) and particulates less than 10 microns (μm) in size (PM_{10}). Emissions from the rotary dryer will consist of TSP, PM_{10}, sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOCs) and various toxic air pollutants (TAPs) and hazardous air pollutants (HAPs). TSP and PM_{10} emissions from the proposed sources will be controlled by bag filters or cyclones.

A detailed discussion of each emission source along with the actual and potential emissions is presented in the Assumption and Calculation I. A facility process flow diagram is presented in Figure 2.

where:
E = allowable emission limit for particulate matter (pounds per hour)
P = process weight rate (tons per hour)

For process weight rates greater than 30 tons per hour this standard requires that PM emissions from general industries be limited to the value obtained by the following equation:

$$E = F \times (55.0 \times P^{0.11} - 40)$$

where:
E = allowable emission rate in pounds per hour
P = process weight rate in tons per hour
F = effect factor (F = 0.25 for acid mists, F = 1.0 for all other pollutants)

Based on a comparison of the allowable PM emission and calculated maximum PM emission rates for each source as shown in Table 1, PM emissions from each process will comply with this standard.

3.3 Sulfur Dioxide Emissions from Combustion Sources

The North Carolina Sulfur Dioxide Emissions from Combustion Sources Standard (15A NCAC 2D .0516) establishes sulfur dioxide limits for combustion sources. Emission of sulfur dioxide from any source of combustion shall not exceed 2.3 pounds of sulfur dioxide per million Btu (MMBtu) input. Based on a maximum fuel input of 5,100 pounds of wood per hour and a Btu rating of 6,700 Btu per pound of wood, the rotary dryer will have a rated heat input of 34.2 MMBtu/hr. Based on the calculated SO_2 emission rate of 0.85 pounds per hour presented in the Assumptions and Calculations I, SO_2 emissions from the rotary dryer will be 0.025 pounds per MMBtu. SO_2 emissions from the rotary dryer will comply with this standard.

3.4 Control of Visible Emissions

The North Carolina Control of Visible Emissions Standard (15A NCAC 2D .0521) establishes visible emission limits for sources. This regulation establishes opacity limits for sources, either fuel burning or process, for which no other opacity emission standards are applicable. The opacity emission limits under the North Carolina Control of Visible Emissions Standard is 40 percent for sources constructed prior to July 1, 1971, and a 20 percent opacity limit for sources constructed after that date.

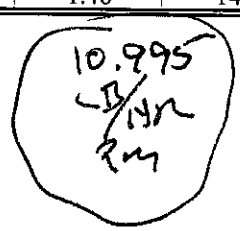
Each emissions source will comply with the 20 percent opacity limit.

Table 1

15A NCAC 2D .0515 - Process Particulate Matter

Natures Earth Pellets NC, LLC

Source	Exhaust Pt #	Production Rate (lbs/hr)	Production Rate (tons/hr)	Calculated Hourly PM (lbs/hr)	Allowable PM (lbs/hr)	Compliance Yes / No
Truck Dump		300,000	150		55	
Drag Conveyor No. 1		300,000	150		55	
Drag Conveyor No. 2		300,000	150		55	
Bucket Elevator		300,000	150		55	
Silo Loading Conveyor		300,000	150		55	
Dryer Fuel Bin Loading Cyclone		6,900	3.5		9	
Silo Nos. 2-4		300,000	150.0		55	
Bagfilter No. 1	**EP-1**			**0.41**	**342**	**Yes**
Silo No. 1	EP-2	300,000	150	0.045	55	Yes
Hammermill Feed Cyclone Nos. 1-6		78,000	39.0		42	
Pellet Mill Feed Cyclone Nos. 1-3		39,000	19.5		30	
Softwood Packaging Aspirator		52,800	26.4		37	
Hardwood Packaging Aspirator		52,800	26.4		37	
Bagfilter No. 2	**EP-6**			**0.58**	**146**	**Yes**
Hardwood Pellet Silo Feed Cyclone		28,500	14.3		24	
Softwood Pellet Silo Feed Cyclone		37,000	18.5		29	
Bagfilter No. 4	**EP-10**			**0.09**	**53**	**Yes**
Pellet Fines Feed Cyclone Nos. 1 and 2		13,000	6.5		14	
Pellet Cooler Fines Cyclone Nos. 1-3		1,950	1.0		4	
Bagfilter No. 3	**EP-12**			**0.58**	**18**	**Yes**
Pellet Mill Feed Cyclone Nos. 4-6		39,000	19.5		30	
Pellet Cooler Fines Cyclone Nos. 4-6		1,950	1.0		4	
Bagfilter No. 5	**EP-13**			**0.39**	**34**	**Yes**
Rotary Dryer	EP-5	36,800	18.4	9.86	29	Yes
Hammermill No. 7 Feed Cyclone	EP-4	55,100	27.6	0.14	38	Yes
Pellet Cooler Feed Cyclone No. 1	EP-7	13,000	6.5	1.46	14	Yes
Pellet Cooler Feed Cyclone No. 2	EP-8	13,000	6.5	1.46	14	Yes
Pellet Cooler Feed Cyclone No. 3	EP-9	13,000	6.5	1.46	14	Yes
Pellet Cooler Feed Cyclone No. 4	EP-14	13,000	6.5	1.46	14	Yes
Pellet Cooler Feed Cyclone No. 5	EP-15	13,000	6.5	1.46	14	Yes
Pellet Cooler Feed Cyclone No. 6	EP-16	13,000	6.5	1.46	14	Yes



FORM A1

FACILITY (General Information)

REVISED 11/01/02 — NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate — A1

NOTE- APPLICATION WILL NOT BE PROCESSED WITHOUT THE FOLLOWING:

☑ Local Zoning Consistency Determination (if required) ☑ Facility Reduction & Recycling Survey Form (Form A4) ☑ Application Fee
☑ Responsible Official/Authorized Contact Signature ☑ Appropriate Number of Copies of Application ☑ E. Seal (if required)

GENERAL INFORMATION

Legal Corporate/Owner Name:	**Natures Earth Pellets NC, LLC**
Site Name:	***Nature's Earth Products***
Site Address (911 Address) Line 1:	**16900 Aberdeen Road**
Site Address Line 2:	
City: **Laurinburg**	State: **North Carolina**
Zip Code: **28352**	County: **Scotland**

CONTACT INFORMATION

Permit/Technical Contact:	***Facility/Inspection Contact:***
Name/Title: **Cliff Bragg**	Name/Title: **Cliff Bragg**
Mailing Address Line 1: **16900 Aberdeen Road**	Mailing Address Line 1: **16900 Aberdeen Road**
Mailing Address Line 2:	Mailing Address Line 2:
City: **Laurinburg** State: **NC** Zip Code: **28352**	City: **Laurinburg** State: **NC** Zip Code: **28352**
Phone No. (area code) **304-642-1156** Fax No. (area code)	Phone No. (area code) **304-642-1156** Fax No. (area code)
Email Address: cbragg@natureseearth.com	Email Address: cbragg@natureseearth.com
Responsible Official/Authorized Contact:	***Invoice Contact:***
Name/Title: **Cliff Bragg**	Name/Title: **Cliff Bragg**
Mailing Address Line 1: **16900 Aberdeen Road**	Mailing Address Line 1: **16900 Aberdeen Road**
Mailing Address Line 2:	Mailing Address Line 2:
City: **Laurinburg** State: **NC** Zip Code: **28352**	City: **Laurinburg** State: **NC** Zip Code: **28352**
Phone No. (area code) **304-642-1156** Fax No. (area code)	Phone No. (area code) **304-642-1156** Fax No. (area code)
Email Address: cbragg@natureseearth.com	Email Address: cbragg@natureseearth.com

APPLICATION IS BEING MADE FOR

☑ New Non-permitted Facility/Greenfield ☐ Modification of Facility (permitted) ☐ Renewal with Modification
☐ Renewal (TV Only)

FACILITY CLASSIFICATION AFTER APPLICATION (Check Only One)

☐ General ☐ Small ☐ Prohibitory Small ☑ Synthetic Minor ☐ Title V

FACILITY (Plant Site) INFORMATION

Describe nature of (plant site) operation(s): **Facility ID No. :** **None**

Primary SIC/NAICS Code: **2499/321999**		Current/Previous Air Permit No. **NA**	Expiration Date **NA**
Facility Coordinates: Latitude: **34.760473**		Longitude: **-79.491371**	
Does this application contain confidential data? ☐ YES ☑ NO			

PERSON OR FIRM THAT PREPARED APPLICATION

Person Name: **Keith McCullock**		Firm Name: **GEL Engineering of NC, Inc.**	
Mailing Address Line 1: **P.O Box 14262**		Mailing Address Line 2:	
City: **Research Triangle Park**	State: **North Carolina**	Zip Code: **27709**	County:
Phone No. (area code) **919-544-1100**	Fax No. (area code) **919-406-1807**	Email Address: keith.mccullock@gel.com	

SIGNATURE OF RESPONSIBLE OFFICIAL/AUTHORIZED CONTACT

Name (typed): **Cliff Bragg** Title: Plant Manager

X Signature(Blue Ink): Cliff Bragg Date: 7/09/09

Attach Additional Sheets As Necessary

FORMs A2, A3

EMISSION SOURCE LISTING FOR THIS APPLICATION - A2

112r APPLICABILITY INFORMATION - A3

REVISED 04/10/07 — NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate — **A2**

EMISSION SOURCE LISTING: New, Modified, Previously Unpermitted, Replaced, Deleted

EMISSION SOURCE ID NO.	EMISSION SOURCE DESCRIPTION	CONTROL DEVICE ID NO.	CONTROL DEVICE DESCRIPTION
Equipment To Be ADDED By This Application (New, Previously Unpermitted, or Replacement)			
TD-1	Truck Dump	CD-BF-1	Bag Filter No. 1
DC-1 & DC-2	Drag Conveyors Nos. 1 & 2	CD-BF-1	Bag Filter No. 1
BE-1	Bucket Elevator	CD-BF-1	Bag Filter No. 1
SLC-1	Silo Loading Conveyor	CD-BF-1	Bag Filter No. 1
DHS-1 (1)	Silo No. 1 (Dry Hardwood Silo)	CD-BV-1	Bin Vent Filter No. 1
SS-2 & SS-3	Silo Nos. 2 & 3 (2 Softwood Silos)	CD-BF-1	Bag Filter No. 1
GHS-4	Silo No. 4 Green hardwood Silo	CD-BF-1	Bag Filter No. 1
HFC-1 - HFC-6	Hammermill Feed Cyclones Nos. 1-6 6	CD-BF-2	Bag Filter No. 2
PMFC-1 - PMFC-3	Pellet Mill Feed Cyclones No. 1-3	CD-BF-2	Bag Filter No. 2
PMFC-4 - PMFC-6	Pellet Mill Feed Cyclones No. 4-6	CD-BF-5	Bag Filter No. 5
PCFC-1 - PCFC-6	Pellet Cooler Feed Cyclone Nos. 1-6	None	N/A
PCC-1 - PCC-3	Pellet Cooler Fines Cyclone Nos. 1-3	CD-BF-3	Bag Filter No. 3
PCC-4 - PCC-6	Pellet Cooler Fines Cyclone Nos. 4-6	CD-BF-5	Bag Filter No. 5
HPSC-1 & SPSC-1	Hardwood Pellet Silo Feed Cyclone and Softwood Pellet Silo Feed Cyclone	CD-BF-4	Bag Filter No. 4
PFFC-1 & PFFC-2	Pellet Fines Feed Cyclone Nos. 1 and 2	CD-BF-3	Bag Filter No. 3
SPA-1 & HPA-1	Softwood Packaging Aspirator and Hardwood Packaging Aspirator	CD-BF-2	Bagfilter No. 2
RD-1	Direct-fired rotary dryer	CD-HEC-1	High Efficiency Cyclones No. 1
DFBC-1	Dryer Fuel Bin Loading Cyclone	CD-BF-1	Bagfilter No. 1
HFC-7	Hammermill Feed Cyclones No. 7	None	N/A
Existing Permitted Equipment To Be MODIFIED By This Application			
Equipment To Be DELETED By This Application			

112(r) APPLICABILITY INFORMATION — A 3

Is your facility subject to 40 CFR Part 68 "Prevention of Accidental Releases" - Section 112(r) of the Federal Clean Air Act? Yes / **No**

If No, please specify in detail how your facility avoided applicability: **No Chemicals stored above any thresholds.**

If your facility is Subject to 112(r), please complete the following:

A. Have you already submitted a Risk Management Plan (RMP) to EPA Pursuant to 40 CFR Part 68.10 or Part 68.150?

Yes ☝ No ☝ Specify required RMP submittal date: _____ If submitted, RMP submittal date: _____

B. Are you using administrative controls to subject your facility to a lesser 112(r) program standard?

Yes ☝ No ☝ If yes, please specify: _____

Attach Additional Sheets As Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B**

EMISSION SOURCE DESCRIPTION: **Rotary Dryer**	EMISSION SOURCE ID NO: **RD-1**
	CONTROL DEVICE ID NO(S): **CD-HEC-1**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-5**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Direct-fired Rotary Dryer controlled by high efficiency cyclones.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

⊘ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) ☐ Other (Form B9)

START CONSTRUCTION DATE **Jul-09**	OPERATION DATE: **Sep-09**	DATE MANUFACTURED: Aug-95	
MANUFACTURER / MODEL NC **Westec**		EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**	
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No**	NESHAP (SUBPART?): **No**	MACT (SUBPART?): **No**	
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB **25%**	MAR-MAY **25%**	JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**	VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**		

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	AP-42	9.86	37.9	49.3	216	9.86	43.2
PARTICULATE MATTER<10 MICRONS (PM_{10})	AP-42	9.86	37.9	49.3	216	9.86	43.2
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	AP-42	9.86	37.9	49.3	216	9.86	43.2
SULFUR DIOXIDE (SO2)	AP-42	0.85	3.7	0.85	3.7	0.85	3.7
NITROGEN OXIDES (NOx)	AP-42	25.76	99	25.76	112.8	25.76	112.8
CARBON MONOXIDE (CO)	AP-42	14.2	54.5	14.2	62.1	14.2	62.1
VOLATILE ORGANIC COMPOUNDS (VOC)	AP-42	23.92	91.9	23.92	104.8	23.92	104.8
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
See Attached Tables	**AP-42**	**See A&C Table 3**		**See A&C Table 3**		**See A&C Table 3**	

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
See Attached Tables	**AP-42**	**See A&C Table 3**	**See A&C Table 3**	**See A&C Table 3**

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B1

EMISSION SOURCE (WOOD, COAL, OIL, GAS, OTHER FUEL-FIRED BURNER)

REVISED 12/01/01 — NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate — **B1**

EMISSION SOURCE DESCRIPTION: **Rotary Dryer**	EMISSION SOURCE ID NO: **RD-1**
	CONTROL DEVICE ID NO(S): **CD-HEC-1**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-5**

DESCRIBE USE: ☐ PROCESS HEAT ☐ SPACE HEAT ☐ ELECTRICAL GENERATION
X CONTINUOUS US ☐ STAND BY/EMERGENCY ☐ OTHER (DESCRIBE): _____

HEATING MECHANISM: ☐ INDIRECT X DIRECT

MAX. FIRING RATE (MMBTU/HOUR): **34.17**

WOOD-FIRED BURNER

WOOD TYPE: ☐ BARK ☐ WOOD/BARK ☐ WET WOOD X DRY WOOD ☐ OTHER (DESCRIBE): _____

PERCENT MOISTURE OF FUEL: **40%**

☐ UNCONTROLLED X CONTROLLED WITH FLYASH REINJECTION ☐ CONTROLLED W/O REINJECTION

FUEL FEED METHOD: HEAT TRANSFER MEDIA: ☐ STEAM ☐ AIR X OTHER **Direct-Fired**

METHOD OF TUBE CLEANING: **N/A** CLEANING SCHEDULE: **N/A**

COAL-FIRED BURNER

TYPE OF BOILER IF OTHER DESCRIBE:

PULVERIZED	OVERFEED STOKER	UNDERFEED STOKER	SPREADER STOKER	FLUIDIZED BED
☐ WET BED	☐ UNCONTROLLED	☐ UNCONTROLLED	☐ UNCONTROLLED	☐ CIRCULATING
☐ DRY BED	☐ CONTROLLED	☐ CONTROLLED	☐ FLYASH REINJECTION	☐ RECIRCULATING
			☐ NO FLYASH REINJECTION	

METHOD OF LOADING: ☐ CYCLONE ☐ HANDFIRED ☐ TRAVELING GRATE ☐ OTHER (DESCRIBE): _____

METHOD OF TUBE CLEANING: CLEANING SCHEDULE:

OIL/GAS-FIRED BURNER

TYPE OF BOILER: ☐ UTILITY ☐ INDUSTRIAL ☐ COMMERCIAL ☐ RESIDENTIAL

TYPE OF FIRING: ☐ NORMAL ☐ TANGENTIAL ☐ LOW NOX BURNERS ☐ NO LOW NOX BURNER

METHOD OF TUBE CLEANING: CLEANING SCHEDULE:

OTHER FUEL-FIRED BURNER

TYPE OF FUEL: _____ PERCENT MOISTURE: _____

TYPE OF BOILER: ☐ UTILITY ☐ INDUSTRIAL ☐ COMMERCIAL ☐ RESIDENTIAL

TYPE OF FIRING: _____ TYPE OF CONTROL (IF ANY): _____ FUEL FEED METHOD: _____

METHOD OF TUBE CLEANING: CLEANING SCHEDULE:

FUEL USAGE (INCLUDE STARTUP/BACKUP FUELS)

FUEL TYPE	UNITS	MAXIMUM DESIGN CAPACITY (UNIT/HR)	REQUESTED CAPACITY LIMITATION (UNIT/HR)
Wood	**pounds**	**5,100 lbs/hr**	**NA**

FUEL CHARACTERISTICS (COMPLETE ALL THAT ARE APPLICABLE)

FUEL TYPE	SPECIFIC BTU CONTENT	SULFUR CONTENT (% BY WEIGHT)	ASH CONTENT (% BY WEIGHT)
Wood	**6,700 BTU/lb**	**NA**	**NA**

SAMPLING PORTS, COMPLIANT WITH EPA METHOD 1 WILL BE INSTALLED ON THE STACKS: ☐ YES X NO

COMMENTS:

Attach Additional Sheets As Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B**

EMISSION SOURCE DESCRIPTION: **Truck Dump**	EMISSION SOURCE ID NO: **TD-1**
	CONTROL DEVICE ID NO(S): **CD-BF-1**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-1**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Dumping of wood chips from truck to hopper.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE	**Jul-09**	OPERATION DATE:	**Sep-09**	DATE MANUFACTURED:	**2009**
MANUFACTURER / MODEL NO	**Phelps / AX245MAB63**			EXPECTED OP. SCHEDULE:	**24 HR/DAY 7 DAY/WK 52 WK/YR**

IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No** NESHAP (SUBPART?): **No** MACT (SUBPART?): **No**

PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB **25%** MAR-MAY **25%** JUN-AUG **25%** SEP-NOV **25%**

EXPECTED ANNUAL HOURS OF OPERATION: **8,760** VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B9**

EMISSION SOURCE DESCRIPTION:	EMISSION SOURCE ID NO: **TD-1**
Truck Dump	CONTROL DEVICE ID NO(S) **CD-BF-1**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-1**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Dumping of wood chips from truck to hopper

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)
Wood Chips	**tons/hr**	**300,000**	**N/A**

MAXIMUM DESIGN (BATCHES / HOUR):	
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YR):
FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 — NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate — **B**

EMISSION SOURCE DESCRIPTION: **Drag Conveyor Nos. 1 and 2, Bucket Elevator, Silo Loading Conveyor**	EMISSION SOURCE ID N **DC-1, DC-2, BE-1, SLC-1**
	CONTROL DEVICE ID NO(S): **CD-BF-1**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-1**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Conveyance of wood chips to storage silos.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE **Jul-09**	OPERATION DATE: **Sep-09**	DATE MANUFACTURED: **2009**	
MANUFACTURER / MODEL NC **Rapat - DS 6030**		EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**	
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No**	NESHAP (SUBPART?): **No**	MACT (SUBPART?): **No**	
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB **25%**	MAR-MAY **25%**	JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**	VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**		

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	Eng Calc	Refer to A&C Table 4		Refer to A&C Table 4		Refer to A&C Table 4	
PARTICULATE MATTER<10 MICRONS (PM_{10})	Eng Calc	Refer to A&C Table 4		Refer to A&C Table 4		Refer to A&C Table 4	
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	Eng Calc	Refer to A&C Table 4		Refer to A&C Table 4		Refer to A&C Table 4	
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate **B9**

EMISSION SOURCE DESCRIPT **Drag Conveyor Nos. 1 and 2, Bucket Elevator, Silo Loading Conveyor**	EMISSION SOURCE ID NO: **DC-1, DC-2, BE-1, SLC-1**
	CONTROL DEVICE ID NO(S) **CD-BF-1**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-1**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Conveyance of woods chips to storage silos

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)
Wood Chips	**tons/hr**	**300,000**	**N/A**

MAXIMUM DESIGN (BATCHES / HOUR):	
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YR):
FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 — NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate — **B**

EMISSION SOURCE DESCRIPTION: **Dryer Fuel Bin Loading Cyclone**	EMISSION SOURCE ID NO: **DFBC-1**
	CONTROL DEVICE ID NO(S): **CD-BF-1**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-1**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Feeds wood chips to rotary dryer fuel bin.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE **Jul-09**	OPERATION DATE: **Sep-09**	DATE MANUFACTURED: **2009**	
MANUFACTURER / MODEL NO **Kice**		EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**	
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No**	NESHAP (SUBPART?): **No**	MACT (SUBPART?): **No**	
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB **25%**	MAR-MAY **25%**	JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**	VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**		

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B9**

EMISSION SOURCE DESCRIPT	EMISSION SOURCE ID NO: **DFBC-1**
Dryer Fuel Bin Loading Cyclone	CONTROL DEVICE ID NO(S) **CD-BF-1**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-1**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Feeds wood chips to rotary dryer fuel bin

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Wood Chips	lbs/hr	**6,900**	**N/A**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):	
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YR):
FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 — **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** — **B**

EMISSION SOURCE DESCRIPTION: Dry Hardwood Silo No. 1	EMISSION SOURCE ID NO: **DHS-1**
	CONTROL DEVICE ID NO(S): **CD-BV-1**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-2**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Storage of wood chips

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE **Jul-09**	OPERATION DATE: **Sep-09**	DATE MANUFACTURED: **2009**	
MANUFACTURER / MODEL NO **Laidg #543-30**		EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**	
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No**	NESHAP (SUBPART?): **No**	MACT (SUBPART?): **No**	
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB **25%**	MAR-MAY **25%**	JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**	VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**		

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B6

EMISSION SOURCE (STORAGE SILO/BINS)

REVISED 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B6**

EMISSION SOURCE DESCRIPTION: Dry Hardwood Silo No. 1	EMISSION SOURCE ID NO: **DHS-1**
	CONTROL DEVICE ID NO(S): **CD-BV-1**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT(STACK) ID NO(S): **EP-2**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Storage of wood chips

MATERIAL STORED: **Wood chips**				DENSITY OF MATERIAL (LB/FT3): **22**		
CAPACITY	CUBIC FEET **73,513**			TONS: **800**		
DIMENSIONS (FEET)	HEIGHT: **104'**	DIAMETER: **30'**	***(OR)***	LENGTH:	WIDTH:	HEIGHT:
ANNUAL PRODUCT THROUGHPUT (TONS)	ACTUAL: **246,000**			MAXIMUM DESIGN CAPACITY: **1,314,000**		

PNEUMATICALLY FILLED	MECHANICALLY FILLED		FILLED FROM
☐ BLOWER	☐ SCREW CONVEYOR	MOTOR HP:	☐ RAILCAR
☐ COMPRESSOR	☐ BELT CONVEYOR		☐ TRUCK
☐ OTHER:	X BUCKET ELEVATOR		☐ STORAGE PILE
	☐ OTHER:		X OTHER: **Conveyor**

NO. FILL TUBES:

MAXIMUM ACFM:

MATERIAL IS FILLED TO:

BY WHAT METHOD IS MATERIAL UNLOADED FROM SILO? **Gravity feed to pneumatic conveyance.**

MAXIMUM DESIGN FILLING RATE OF MATERIAL (TONS/HR): **150**

MAXIMUM DESIGN UNLOADING RATE OF MATERIAL (TONS/HR): **19.5**

COMMENTS:

Attach Additional Sheets As Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B**

EMISSION SOURCE DESCRIPTION: **Softwood Silo Nos. 2 and 3, Green Hardwood Silo No. 4**	EMISSION SOURCE ID NO: **SS-2, SS-3, GHS-4**
	CONTROL DEVICE ID NO(S): **CD-BF-1**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-1**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Storage of wood chips

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE **Jul-09**	OPERATION DATE: **Sep-09**	DATE MANUFACTURED: **2009**	
MANUFACTURER / MODEL NO **Laidg #543-30**		EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**	
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No**	NESHAP (SUBPART?): **No**	MACT (SUBPART?): **No**	
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB **25%**	MAR-MAY **25%**	JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**	VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**		

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B6

EMISSION SOURCE (STORAGE SILO/BINS)

REVISED 12/01/01 — NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate — **B6**

EMISSION SOURCE DESCRIPTION: **Softwood Silo Nos. 2 and 3**	EMISSION SOURCE ID NO: **SS-2, SS-3, GHS-4**
Green Hardwood Silo No. 4	CONTROL DEVICE ID NO(S): **CD-BF-1**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT(STACK) ID NO(S): **EP-1**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Storage of wood chips

MATERIAL STORED: **Wood chips**				DENSITY OF MATERIAL (LB/FT3): **22**		
CAPACITY	CUBIC FEET **73,513**			TONS: **800**		
DIMENSIONS (FEET)	HEIGHT: **104'**	DIAMETER: **30'**	***(OR)***	LENGTH:	WIDTH:	HEIGHT:
ANNUAL PRODUCT THROUGHPUT (TONS)	ACTUAL: **246,000**			MAXIMUM DESIGN CAPACITY: **1,314,000**		

PNEUMATICALLY FILLED	MECHANICALLY FILLED		FILLED FROM
☐ BLOWER	☐ SCREW CONVEYOR	MOTOR HP:	☐ RAILCAR
☐ COMPRESSOR	☐ BELT CONVEYOR		☐ TRUCK
☐ OTHER:	X BUCKET ELEVATOR		☐ STORAGE PILE
	☐ OTHER:		X OTHER: **Conveyor**

NO. FILL TUBES:

MAXIMUM ACFM:

MATERIAL IS FILLED TO:

BY WHAT METHOD IS MATERIAL UNLOADED FROM SILO? **Gravity feed to pneumatic conveyance.**

MAXIMUM DESIGN FILLING RATE OF MATERIAL (TONS/HR): **150**

MAXIMUM DESIGN UNLOADING RATE OF MATERIAL (TONS/HR): **19.5**

COMMENTS:

Attach Additional Sheets As Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 — NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate — **B**

EMISSION SOURCE DESCRIPTION: **Hammermill Feed Cyclones Nos. 1-6**	EMISSION SOURCE ID NO: **HFC-1 - HFC-6**
	CONTROL DEVICE ID NO(S): **CD-BF-2**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-6**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Feeds wood chips to hammermills.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE	**Jul-09**	OPERATION DATE:	**Sep-09**	DATE MANUFACTURED:	**2009**
MANUFACTURER / MODEL NO: **Kice**				EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**	

IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No** NESHAP (SUBPART?): **No** MACT (SUBPART?): **No**

PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB **25%** MAR-MAY **25%** JUN-AUG **25%** SEP-NOV **25%**

EXPECTED ANNUAL HOURS OF OPERATION: **8,760** VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B9**

EMISSION SOURCE DESCRIPT	EMISSION SOURCE ID NO: **HFC-1 - HFC-6**
Hammermill Feed Cyclone Nos. 1-6	CONTROL DEVICE ID NO(S) **CD-BF-2**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-6**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Feeds wood chips to rotary dryer fuel bin

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Wood Chips	lbs/hr	**78,000**	**N/A**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):	
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YR):
FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B**

EMISSION SOURCE DESCRIPTION: **Pellet Mill Feed Cyclones Nos. 1-3**	EMISSION SOURCE ID NO: **PMFC-1 - PMFC-3**
	CONTROL DEVICE ID NO(S): **CD-BF-2**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-6**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Feeds ground wood to pellet mills.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE	**Jul-09**	OPERATION DATE:	**Sep-09**	DATE MANUFACTURED:	**2009**
MANUFACTURER / MODEL NO	**Kice**			EXPECTED OP. SCHEDULE:	**24 HR/DAY 7 DAY/WK 52 WK/YR**

IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No** NESHAP (SUBPART?): **No** MACT (SUBPART?): **No**

PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB **25%** MAR-MAY **25%** JUN-AUG **25%** SEP-NOV **25%**

EXPECTED ANNUAL HOURS OF OPERATION: **8,760** VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B9**

EMISSION SOURCE DESCRIPT	EMISSION SOURCE ID NO: **SPA-1 & HPA-1**
Pellet Mill Feed Cyclone Nos. 1-3	CONTROL DEVICE ID NO(S) **CD-BF-2**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-6**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Removes fines from pellets.

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Pellets	**lbs/hr**	**52,800**	**N/A**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):

REQUESTED LIMITATION (BATCHES / HOUR): (BATCHES/YR):

FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B**

EMISSION SOURCE DESCRIPTION: **Hardwood Pellet Silo Feed Cyclone and Softwood Pellet Feed Cyclone**	EMISSION SOURCE ID NO: **HPSC-1 & SPSC-1**
	CONTROL DEVICE ID NO(S): **CD-BF-4**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-10**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Transfer of hardwood and softwood pellets to storage vessel.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE	**Jul-09**	OPERATION DATE:	**Sep-09**	DATE MANUFACTURED:	**2009**
MANUFACTURER / MODEL NO: **Kice**				EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**	
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No**		NESHAP (SUBPART?): **No**		MACT (SUBPART?): **No**	
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB	**25%**	MAR-MAY	**25%**	JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**		VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**			

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B9**

EMISSION SOURCE DESCRIPT	EMISSION SOURCE ID NO: **HPSC-1 & SPSC-1**
Hardwood Pellet Silo Feed Cyclone and Softwood Pellet Silo Feed Cyclone	CONTROL DEVICE ID NO(S) **CD-BF-2**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-10**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Transfer of hardwood and softwood pellets to storage vessel.

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Pellets (Hardwood)	lbs/hr	**28,500**	**N/A**
Pellets (Softwood)	lbs/hr	**37,000**	**N/A**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):

REQUESTED LIMITATION (BATCHES / HOUR): (BATCHES/YR):

FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 — NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate — **B**

EMISSION SOURCE DESCRIPTION: **Pellet Fines Feed Cyclone Nos. 1 and 2**	EMISSION SOURCE ID NO: **PFFC-1 & PFCC-2**
	CONTROL DEVICE ID NO(S): **CD-BF-3**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-12**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Transfer of fines to rotary dryer fuel bin transfer cyclone.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE **Jul-09**	OPERATION DATE: **Sep-09**	DATE MANUFACTURED: **2009**	
MANUFACTURER / MODEL NO **Kice**		EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**	
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No**	NESHAP (SUBPART?): **No**	MACT (SUBPART?): **No**	
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB **25%**	MAR-MAY **25%**	JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**	VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**		

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B9**

EMISSION SOURCE DESCRIPT	EMISSION SOURCE ID NO: **PFFC-1 & PFCC-2**
Pellet Fines Feed Cyclone Nos. 1 and 2	CONTROL DEVICE ID NO(S) **CD-BF-3**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-12**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Transfer of fines to rotary dryer fuel bin transfer cyclone.

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Fines	**lbs/hr**	**13,000**	**N/A**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):

REQUESTED LIMITATION (BATCHES / HOUR): (BATCHES/YR):

FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B**

EMISSION SOURCE DESCRIPTION: **Pellet Cooler Fines Cyclone Nos. 1-3**	EMISSION SOURCE ID NO: **PCC-1 - PCC-3**
	CONTROL DEVICE ID NO(S): **CD-BF-3**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-12**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Transfer of fines to rotary dryer fuel bin transfer cyclone.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE	**Jul-09**	OPERATION DATE:	**Sep-09**	DATE MANUFACTURED:	**2009**
MANUFACTURER / MODEL NO: **Kice**				EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**	
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No**		NESHAP (SUBPART?): **No**		MACT (SUBPART?): **No**	
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB	**25%**	MAR-MAY	**25%**	JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**		VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**			

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B9**

EMISSION SOURCE DESCRIPT	EMISSION SOURCE ID NO: **PCC-1 - PCC-3**
Pellet Cooler Fines Cyclone Nos. 1-3	CONTROL DEVICE ID NO(S) **CD-BF-3**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-12**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Transfer of fines to rotary dryer fuel bin transfer cyclone.

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Fines	lbs/hr	**1,950**	**N/A**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):	
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YR):
FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B**

EMISSION SOURCE DESCRIPTION: **Pellet Mill Feed Cyclone Nos. 4-6**	EMISSION SOURCE ID NO: **PMFC-4 - PMFC-6**
	CONTROL DEVICE ID NO(S): **CD-BF-5**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-13**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Feeds ground wood to pellet mills.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE **Jul-09**	OPERATION DATE: **Sep-09**	DATE MANUFACTURED: **2009**	
MANUFACTURER / MODEL NO **Kice**		EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**	
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No**	NESHAP (SUBPART?): **No**	MACT (SUBPART?): **No**	
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB **25%**	MAR-MAY **25%**	JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**	VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**		

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B9**

EMISSION SOURCE DESCRIPT	EMISSION SOURCE ID NO: **PMFC-4 - PMFC-6**
Pellet Mill Feed Cyclone Nos. 4-6	CONTROL DEVICE ID NO(S) **CD-BF-5**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-13**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Feeds ground wood to pellet mills.

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Fines	lbs/hr	**39,000**	**N/A**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):

REQUESTED LIMITATION (BATCHES / HOUR): (BATCHES/YR):

FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B**

EMISSION SOURCE DESCRIPTION: **Pellet Cooler Fines Cyclone Nos. 4-6**	EMISSION SOURCE ID NO: **PCC-4 - PCC-6**
	CONTROL DEVICE ID NO(S): **CD-BF-5**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-13**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Transfer of fines to rotary dryer fuel bin transfer cyclone.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE	**Jul-09**	OPERATION DATE:	**Sep-09**	DATE MANUFACTURED:	**2009**
MANUFACTURER / MODEL NO	**Kice**			EXPECTED OP. SCHEDULE:	**24 HR/DAY 7 DAY/WK 52 WK/YR**

IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No** NESHAP (SUBPART?): **No** MACT (SUBPART?): **No**

PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB **25%** MAR-MAY **25%** JUN-AUG **25%** SEP-NOV **25%**

EXPECTED ANNUAL HOURS OF OPERATION: **8,760** VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**Refer to A&C Table 4**		**Refer to A&C Table 4**		**Refer to A&C Table 4**	
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B9**

EMISSION SOURCE DESCRIPT	EMISSION SOURCE ID NO: **PCC-4 - PCC-6**
Pellet Cooler Fines Cyclone Nos. 4-6	CONTROL DEVICE ID NO(S) **CD-BF-5**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-13**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Transfer of fines to rotary dryer fuel bin transfer cyclone.

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Fines	**lbs/hr**	**1,950**	**N/A**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):	
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YR):
FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B**

EMISSION SOURCE DESCRIPTION: **Hammermill No. 7 Feed Cyclone**	EMISSION SOURCE ID NO: **HFC-7**
	CONTROL DEVICE ID NO(S): **None**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-4**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Transfer of ground wood to rotary dryer.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE	**Jul-09**	OPERATION DATE:	**Sep-09**	DATE MANUFACTURED:	**2009**
MANUFACTURER / MODEL NO	**Kice**	EXPECTED OP. SCHEDULE:	**24 HR/DAY 7 DAY/WK 52 WK/YR**		
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No** NESHAP (SUBPART?): **No** MACT (SUBPART?): **No**					
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB **25%**		MAR-MAY **25%**		JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**		VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**			

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**0.14**	**0.61**	**0.7**	**0.31**	**0.14**	**0.61**
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**0.14**	**0.61**	**0.7**	**0.31**	**0.14**	**0.61**
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**0.14**	**0.61**	**0.7**	**0.31**	**0.14**	**0.61**
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B9**

EMISSION SOURCE DESCRIPT	EMISSION SOURCE ID NO: **HFC-7**
Hammermill No. 7 Feed Cyclone	CONTROL DEVICE ID NO(S) **None**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-4**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Transfer of ground wood to rotary dryer.

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Fines	lbs/hr	**55,100**	**N/A**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):

REQUESTED LIMITATION (BATCHES / HOUR): (BATCHES/YR):

FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B**

EMISSION SOURCE DESCRIPTION: **Pellet Cooler Feed Cyclone No. 1**	EMISSION SOURCE ID NO: **PCFC-1**
	CONTROL DEVICE ID NO(S): **None**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-7**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Transfer of pellets to pellet cooler.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) **X** Other (Form B9)

START CONSTRUCTION DATE	**Jul-09**	OPERATION DATE:	**Sep-09**	DATE MANUFACTURED:	**2009**
MANUFACTURER / MODEL NO: **Kice**				EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**	
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No**		NESHAP (SUBPART?): **No**		MACT (SUBPART?): **No**	
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB	**25%**	MAR-MAY	**25%**	JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**		VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**			

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B9**

EMISSION SOURCE DESCRIPT	EMISSION SOURCE ID NO: **PCFC-1**
Pellet Cooler Feed Cyclone No. 1	CONTROL DEVICE ID NO(S) **None**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-7**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Transfer of pellets to pellet cooler.

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Fines	lbs/hr	**13,000**	**N/A**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):	
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YR):
FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate **B**

EMISSION SOURCE DESCRIPTION: **Pellet Cooler Feed Cyclone No. 2**	EMISSION SOURCE ID N **PCFC-2**
	CONTROL DEVICE ID NO(S): **None**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-8**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Transfer of pellets to pellet cooler.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE	**Jul-09**	OPERATION DATE:	**Sep-09**	DATE MANUFACTURED:	**2009**
MANUFACTURER / MODEL NO **Kice**		EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**			
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No**		NESHAP (SUBPART?): **No**		MACT (SUBPART?): **No**	
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB **25%**		MAR-MAY **25%**		JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**		VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**			

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

	SOURCE OF EMISSION	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS)		POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
AIR POLLUTANT EMITTED	FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

	SOURCE OF EMISSION	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS)		POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
HAZARDOUS AIR POLLUTANT AND CAS NO.	FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B9**

EMISSION SOURCE DESCRIPT	EMISSION SOURCE ID NO: **PCFC-2**
Pellet Cooler Feed Cyclone No. 2	CONTROL DEVICE ID NO(S) **None**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-8**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Transfer of pellets to pellet cooler.

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Fines	lbs/hr	**13,000**	**N/A**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):	
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YR):
FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B**

EMISSION SOURCE DESCRIPTION: **Pellet Cooler Feed Cyclone No. 3**	EMISSION SOURCE ID NO: **PCFC-3**
	CONTROL DEVICE ID NO(S): **None**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-9**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Transfer of pellets to pellet cooler.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE	**Jul-09**	OPERATION DATE:	**Sep-09**	DATE MANUFACTURED:	**2009**
MANUFACTURER / MODEL NO: **Kice**				EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**	
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No**		NESHAP (SUBPART?): **No**		MACT (SUBPART?): **No**	
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB	**25%**	MAR-MAY	**25%**	JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**		VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**			

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate **B9**

EMISSION SOURCE DESCRIPT	EMISSION SOURCE ID NO: **PCFC-3**
Pellet Cooler Feed Cyclone No. 3	CONTROL DEVICE ID NO(S) **None**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-9**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Transfer of pellets to pellet cooler.

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Fines	lbs/hr	**13,000**	**N/A**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):	
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YR):
FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B**

EMISSION SOURCE DESCRIPTION: **Pellet Cooler Feed Cyclone No. 4**	EMISSION SOURCE ID NO: **PCFC-4**
	CONTROL DEVICE ID NO(S): **None**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-14**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Transfer of pellets to pellet cooler.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) **X** Other (Form B9)

START CONSTRUCTION DATE	**Jul-09**	OPERATION DATE:	**Sep-09**	DATE MANUFACTURED:	**2009**
MANUFACTURER / MODEL NO: **Kice**				EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**	
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No**		NESHAP (SUBPART?): **No**		MACT (SUBPART?): **No**	
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB	**25%**	MAR-MAY	**25%**	JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**		VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**			

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

	SOURCE OF EMISSION	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS)		POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
AIR POLLUTANT EMITTED	FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

	SOURCE OF EMISSION	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS)		POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
HAZARDOUS AIR POLLUTANT AND CAS NO.	FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B9**

EMISSION SOURCE DESCRIPT	EMISSION SOURCE ID NO: **PCFC-4**
Pellet Cooler Feed Cyclone No. 4	CONTROL DEVICE ID NO(S) **None**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-14**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Transfer of pellets to pellet cooler.

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Fines	lbs/hr	**13,000**	**N/A**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):	
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YR):
FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B**

EMISSION SOURCE DESCRIPTION: **Pellet Cooler Feed Cyclone No. 5**	EMISSION SOURCE ID NO: **PCFC-5**
	CONTROL DEVICE ID NO(S): **None**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-15**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Transfer of pellets to pellet cooler.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE	**Jul-09**	OPERATION DATE:	**Sep-09**	DATE MANUFACTURED:	**2009**
MANUFACTURER / MODEL NO: **Kice**				EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**	
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No**		NESHAP (SUBPART?): **No**		MACT (SUBPART?): **No**	
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB	**25%**	MAR-MAY	**25%**	JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**		VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**			

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

Assumptions and Calculations I

Wood Pellet Manufacturing Facility

Natures Earth Pellets NC, LLC
Laurinburg, North Carolina

The following assumptions and calculations are presented for regulated pollutant emissions from a proposed wood pellet manufacturing facility in Laurinburg, North Carolina.

1.0 Emission Assumptions

- The facility will consist of conveyance systems such as conveyors and pneumatic transfer, storage silos, hammermills, pellet mills, pellet coolers, and a direct-fired rotary dryer. Total suspended particulate (TSP) and particulates with aerodynamic diameter less than 10 microns (PM_{10}) will be controlled by cyclones or bag filters. TSP and PM_{10} are assumed to be equal and therefore are referred to as PM in the remainder of this document. A detailed list of equipment is provided in Tables 1-5.

- The direct-fired rotary dryer will combust wood. PM emissions from the rotary dryer will be controlled by high efficiency cyclones. The maximum output of the rotary dryer is 36,800 pounds per hour (18.4 tons per hour). The maximum fuel input to the rotary dryer is 5,100 pounds per hour. The Btu rating of the wood is anticipated to be 6,700 Btu per pound.

- PM emissions from the rotary dryer were calculated using the EPA Compilation of Air Pollutant Emission Factors, AP-42, Section 10.6.2, Table 10.6.2-1, dated Feburary 2002. The uncontrolled emission factor for a rotary dryer, direct wood-fired, mixed species (35-60% softwood, 40-65% hardwood) was used in the calculations. Total PM is the summation of filterable PM and condensible PM.

- Based on vendor data and using a conservative estimate, cyclones used for control are expected to have a minimum efficiency of 80% for all PM including PM_{10} emissions.

- Nitrogen oxide (NO_x) and carbon monoxide (CO) emissions from the rotary dryer were calculated using the EPA Compilation of Air Pollutant Emission Factors, AP-42, Section 10.6.2, Table 10.6.2-2, dated February 2002. The uncontrolled emission factor for a rotary dryer, green, direct wood-fired, mixed species (40-60% softwood, 40-60% hardwood) was used in the calculations.

- Volatile organic compound (VOC), toxic air pollutant (TAP) and hazardous air pollutant (HAP) emissions from the rotary dryer were calculated using the EPA Compilation of Air Pollutant Emission Factors, AP-42, Section 10.6.2, Table

10.6.2-3, dated February 2002. The uncontrolled emission factor for a rotary dryer, green, direct wood-fired, mixed species (40-60% softwood, 40-60% hardwood) was used in the calculations.

- Sulfur dioxide (SO_2) emissions from the rotary dryer were calculated using the EPA Compilation of Air Pollutant Emission Factors, AP-42, Section 1.6, Table 1.6-2, dated September 2003. The emission factor for dry wood-fired boilers was used in the calculations.

- Natures Earth requests an annual production limit of 141,450 tons per year for the rotary dryer to remain a synthetic minor facility.

- Based on information provided by Natures Earth, controlled PM emissions from each bag filter will be no greater than 0.002 grains per cubic foot. Uncontrolled PM emissions from each bag filter were calculated using the concentration of wood in the pneumatic stream and 5% dust content.

- PM emissions from the cyclones were calculated using a wood concentration of 234 parts per million and 20% dust content.

2.0 Emission Calculations

2.1 Rotary Dryer – PM, NOx, CO, and VOCs

Using the above assumptions and the following sample equations, PM, NOx, CO, and VOC emission rates are shown in Table 1. The bold alpha codes in the equations refer to the appropriate columns in the table.

Potential Emissions (Before Controls)

Hourly Uncontrolled Emissions

$$\boxed{A}\ \frac{\text{tons of wood}}{\text{hour}} \times \boxed{B}\ \frac{\text{lbs pollutant}}{\text{ton of wood}} = \boxed{C}\ \frac{\text{lbs uncontrolled emissions}}{\text{hour}}$$

Annual Uncontrolled Emissions

$$\boxed{C}\ \frac{\text{lbs uncontrolled emissions}}{\text{hour}} \times \frac{8760\ \text{hour}}{\text{year}} \times \frac{\text{ton}}{2000\ \text{lbs}} = \boxed{D}\ \frac{\text{tons uncontrolled emissions}}{\text{year}}$$

Potential Emissions (After Controls)

Hourly Controlled PM Emissions

$$\boxed{C}\ \frac{\text{lbs uncontrolled emissions}}{\text{hour}} \times [1\text{-Control Efficiency (80\%)}] = \boxed{E}\ \frac{\text{lbs controlled emissions}}{\text{hour}}$$

Annual Controlled PM Emissions

$$\boxed{E}\ \frac{\text{lbs controlled emissions}}{\text{hour}} \times \frac{8760\ \text{hour}}{\text{year}} \times \frac{\text{ton}}{2000\ \text{lbs}}$$

$$= \boxed{F}\ \frac{\text{tons controlled emissions}}{\text{year}}$$

Actual Emissions

Hourly Controlled PM Emissions

$$\boxed{C}\ \frac{\text{lbs uncontrolled emissions}}{\text{hour}} \times [1\text{-Control Efficiency (80\%)}] = \boxed{G}\ \frac{\text{lbs controlled emissions}}{\text{hour}}$$

Annual Controlled PM Emissions

$$\boxed{141450}\ \frac{\text{tons of wood}}{\text{year}} \times \boxed{B}\ \frac{\text{lbs pollutant}}{\text{ton of wood}} \times [1\text{-Control Efficiency (80\%)}]$$

$$\times \frac{\text{ton}}{2000\ \text{lbs}} = \boxed{H}\ \frac{\text{tons controlled emissions}}{\text{year}}$$

Annual NOx, CO and VOC Emissions

$$\boxed{141450}\ \frac{\text{tons of wood}}{\text{year}} \times \boxed{B}\ \frac{\text{lbs pollutant}}{\text{ton of wood}} \times \frac{\text{ton}}{2000\ \text{lbs}}$$

$$= \boxed{H}\ \frac{\text{tons controlled emissions}}{\text{year}}$$

2.2 Rotary Dryer – SO_2

Using the above assumptions and the following sample equations, SO_2 emission rates are shown in Table 2. The bold alpha codes in the equations refer to the appropriate columns in the table.

Potential Emissions (Before Controls/After Controls) and Actual Emissions

Hourly Uncontrolled Emissions

$$\boxed{A}\ \frac{\text{lbs wood}}{\text{hour}} \times \frac{6700\ \text{Btu}}{\text{lb wood}} \times \frac{\text{MMBtu}}{1\ \text{million Btu}} \times \boxed{B}\ \frac{\text{lbs pollutant}}{\text{MMBtu}}$$

$$= \boxed{C}\ \frac{\text{lbs uncontrolled emissions}}{\text{hour}}$$

Annual Uncontrolled Emissions

$$\boxed{C}\ \frac{\text{lbs uncontrolled emissions}}{\text{hour}} \times \frac{8760\ \text{hour}}{\text{year}} \times \frac{\text{ton}}{2000\ \text{lbs}}$$

$$= \boxed{D}\ \frac{\text{tons uncontrolled emissions}}{\text{year}}$$

2.3 Rotary Dryer – TAP/HAP Emissions

Using the above assumptions and the following sample equations, TAP/HAP emission rates are shown in Table 3. The bold alpha codes in the equations refer to the appropriate columns in the table.

Potential Emissions (Before Controls/After Controls)

Hourly Uncontrolled Emissions

$$\boxed{A}\ \frac{\text{tons of wood}}{\text{hour}} \times \boxed{B}\ \frac{\text{lbs pollutant}}{\text{ton of wood}} = \boxed{C}\ \frac{\text{lbs uncontrolled emissions}}{\text{hour}}$$

Annual Uncontrolled Emissions

$$\boxed{C}\ \frac{\text{lbs uncontrolled emissions}}{\text{hour}} \times \frac{8760\ \text{hour}}{\text{year}} \times \frac{\text{ton}}{2000\ \text{lbs}}$$

$$= \boxed{D}\ \frac{\text{tons uncontrolled emissions}}{\text{year}}$$

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B9**

EMISSION SOURCE DESCRIPT	EMISSION SOURCE ID NO: **PCFC-5**
Pellet Cooler Feed Cyclone No. 5	CONTROL DEVICE ID NO(S) **None**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-15**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Transfer of pellets to pellet cooler.

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Fines	lbs/hr	**13,000**	**N/A**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):

REQUESTED LIMITATION (BATCHES / HOUR): (BATCHES/YR):

FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSIONS SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B**

EMISSION SOURCE DESCRIPTION: **Pellet Cooler Feed Cyclone No. 6**	EMISSION SOURCE ID N **PCFC-6**
	CONTROL DEVICE ID NO(S): **None**
OPERATING SCENARIO **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-16**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
Transfer of pellets to pellet cooler.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1) ☐ Woodworking (Form B4) ☐ Manufact. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2) ☐ Coating/finishing/printing (Form B5) ☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3) ☐ Storage silos/bins (Form B6) X Other (Form B9)

START CONSTRUCTION DATE	**Jul-09**	OPERATION DATE:	**Sep-09**	DATE MANUFACTURED:	**2009**
MANUFACTURER / MODEL NO **Kice**				EXPECTED OP. SCHEDULE: **24 HR/DAY 7 DAY/WK 52 WK/YR**	
IS THIS SOURCE SUBJECT TO? NSPS (SUBPART?): **No**		NESHAP (SUBPART?): **No**		MACT (SUBPART?): **No**	
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB	**25%**	MAR-MAY	**25%**	JUN-AUG **25%**	SEP-NOV **25%**
EXPECTED ANNUAL HOURS OF OPERATION: **8,760**		VISIBLE STACK EMISSIONS UNDER NORMAL OPERATION: **0 % OPACITY**			

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
PARTICULATE MATTER<10 MICRONS (PM_{10})	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)	**Eng Calc**	**1.46**	**6.4**	**7.3**	**32**	**1.46**	**6.4**
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT AND CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMSSIONS (AFTER CONTROLS / LIMITS) tons/yr
NA							

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

INDICATE EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS

TOXIC AIR POLLUTANT AND CAS NO.	EF SOURCE	lb/hr	lb/day	lb/yr
NA				

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) de

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURC

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED: 12/01/01 **NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate** **B9**

EMISSION SOURCE DESCRIPT	EMISSION SOURCE ID NO: **PCFC-6**
Pellet Cooler Feed Cyclone No. 6	CONTROL DEVICE ID NO(S) **None**
OPERATING SCENARIO: **1 OF 1**	EMISSION POINT (STACK) ID NO(S): **EP-16**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Transfer of pellets to pellet cooler.

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Fines	lbs/hr	**13,000**	**N/A**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):	
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YR):
FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM C1

CONTROL DEVICE (FABRIC FILTER)

REVISED 12/01/01 — NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate — C1

CONTROL DEVICE ID NO: CD-BF-1	CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S): See below
EMISSION POINT (STACK) ID NO(S): EP-1	POSITION IN SERIES OF CONTROLS NO. 1 OF 1 UNITS
MANUFACTURER: Kice	MODEL NO: CR344-12
DATE MANUFACTURED: 2009	PROPOSED OPERATION DATE: Sept 2009
OPERATING SCENARIO:	PROPOSED START CONSTRUCTION DATE: July 2009
1 OF 1	P.E. SEAL REQUIRED (PER 2Q .0112)? X YES ◐ NO

DESCRIBE CONTROL SYSTEM:

Kice Bag Filter controlling PM from Source ID Nos. TD-1, DC-1, DC-2, BE-1, SLC-1, DFBC-1

POLLUTANT(S) COLLECTED:	PM			
BEFORE CONTROL EMISSION RATE (LB/HR):	17			
CAPTURE EFFICIENCY:	100 %	%	%	%
CONTROL DEVICE EFFICIENCY:	98 %	%	%	%
CORRESPONDING OVERALL EFFICIENCY:	98 %	%	%	%
EFFICIENCY DETERMINATION CODE:	1			
TOTAL EMISSION RATE (LB/HR):	0.41			

PRESSURE DROP (IN. H_2O): MIN: 2 MAX: 4 GAUGE? ◐ YES ◐ NO WARNING ALARM? ◐ YES ⊠ NO

BULK PARTICLE DENSITY (LB/FT^3):	INLET TEMPERATURE (°F): MIN MAX
POLLUTANT LOADING RATE: 0.002 ◐ LB/HR ⊠ GR/FT^3	OUTLET TEMPERATURE (°F): MIN MAX
INLET AIR FLOW RATE (ACFM): 23900	FILTER MAX OPERATING TEMP. (°F):

NO. OF COMPARTMENTS: 1	NO. OF BAGS PER COMPARTMENT: 344	LENGTH OF BAG (IN.): 144
DIAMETER OF BAG (IN.): 4.5	DRAFT: ⊠ INDUCED/NEG. ◐ FORCED/POS.	FILTER SURFACE AREA (FT^2): 4902
AIR TO CLOTH RATIO: 4.88	FILTER MATERIAL: 16 oz polyester	◐ WOVEN ⊠ FELTED

DESCRIBE CLEANING PROCEDURES:

◐ AIR PULSE ◐ SONIC
⊠ REVERSE FLOW ◐ SIMPLE BAG COLLAPSE
◐ MECHANICAL/SHAKER ◐ RING BAG COLLAPSE
◐ OTHER

DESCRIBE INCOMING AIR STREAM:

Dust from pellet manufacturing equipment

PARTICLE SIZE DISTRIBUTION

SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATIVE %
0-1		
1-10		
10-25	##	100
25-50		
50-100		
>100		
	TOTAL = 100	

METHOD FOR DETERMINING WHEN TO CLEAN:

◐ AUTOMATIC ◐ TIMED ⊠ MANUAL

METHOD FOR DETERMINING WHEN TO REPLACE THE BAGS:

◐ ALARM ⊠ INTERNAL INSPECTION ◐ VISIBLE EMISSION ◐ OTHER

SPECIAL CONDITIONS:

◐ MOISTURE BLINDING ◐ CHEMICAL RESISTIVITY ◐ OTHER

EXPLAIN:

DESCRIBE MAINTENANCE PROCEDURES:

ON A SEPARATE PAGE, ATTACH A DIAGRAM SHOWING THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S):

Attach Additional Sheets As Necessary

FORM C1

CONTROL DEVICE (FABRIC FILTER)

REVISED 12/01/01 — NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate — C1

CONTROL DEVICE ID NO: **CD-BV-1**	CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S): **DHS-1**
EMISSION POINT (STACK) ID NO(S): **EP-2**	POSITION IN SERIES OF CONTROLS NO. 1 OF 1 UNITS
MANUFACTURER: **Kice**	MODEL NO: **VR32-10**
DATE MANUFACTURED: **2009**	PROPOSED OPERATION DATE: Sept 2009
OPERATING SCENARIO:	PROPOSED START CONSTRUCTION DATE: July 2009
1 OF 1	P.E. SEAL REQUIRED (PER 2Q .0112)? X YES ☐ NO

DESCRIBE CONTROL SYSTEM:

Kice Bin Vent Filter

POLLUTANT(S) COLLECTED:	PM			
BEFORE CONTROL EMISSION RATE (LB/HR):	7.8			
CAPTURE EFFICIENCY:	100 %	%	%	%
CONTROL DEVICE EFFICIENCY:	99 %	%	%	%
CORRESPONDING OVERALL EFFICIENCY:	99 %	%	%	%
EFFICIENCY DETERMINATION CODE:	1			
TOTAL EMISSION RATE (LB/HR):	0.045			

PRESSURE DROP (IN. H_2O): MIN: 2 MAX: 4 GAUGE? ◐ YES ☐ NO WARNING ALARM? ☐ YES ☒ NO

BULK PARTICLE DENSITY (LB/FT^3):	INLET TEMPERATURE (°F): MIN MAX
POLLUTANT LOADING RATE: 0.002 ☐ LB/HR ☒ GR/FT^3	OUTLET TEMPERATURE (°F): MIN MAX
INLET AIR FLOW RATE (ACFM): 5200	FILTER MAX OPERATING TEMP. (°F):

NO. OF COMPARTMENTS: 1	NO. OF BAGS PER COMPARTMENT: 126	LENGTH OF BAG (IN.): 108
DIAMETER OF BAG (IN.): 6	DRAFT: ☒ INDUCED/NEG. ☐ FORCED/POS.	FILTER SURFACE AREA (FT^2): 1780
AIR TO CLOTH RATIO: 2.92	FILTER MATERIAL: 16 oz polyester	☐ WOVEN ☒ FELTED

DESCRIBE CLEANING PROCEDURES:

- ☒ AIR PULSE
- ☐ REVERSE FLOW
- ☐ MECHANICAL/SHAKER
- ☐ OTHER
- ☐ SONIC
- ☐ SIMPLE BAG COLLAPSE
- ☐ RING BAG COLLAPSE

PARTICLE SIZE DISTRIBUTION

SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATIVE %
0-1		
1-10		
10-25	##	100
25-50		
50-100		
>100		
	TOTAL = 100	

DESCRIBE INCOMING AIR STREAM:

Dust from pellet manufacturing equipment

METHOD FOR DETERMINING WHEN TO CLEAN:

☐ AUTOMATIC ☐ TIMED ☒ MANUAL

METHOD FOR DETERMINING WHEN TO REPLACE THE BAGS:

☐ ALARM ☒ INTERNAL INSPECTION ☐ VISIBLE EMISSION ☐ OTHER

SPECIAL CONDITIONS:

☐ MOISTURE BLINDING ☐ CHEMICAL RESISTIVITY ☐ OTHER

EXPLAIN:

DESCRIBE MAINTENANCE PROCEDURES:

ON A SEPARATE PAGE, ATTACH A DIAGRAM SHOWING THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S):

Attach Additional Sheets As Necessary

FORM C1

CONTROL DEVICE (FABRIC FILTER)

REVISED 12/01/01 — NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate — C1

CONTROL DEVICE ID NO: CD-BF-2	CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S): See below
EMISSION POINT (STACK) ID NO(S): EP-6	POSITION IN SERIES OF CONTROLS NO. 1 OF 1 UNITS
MANUFACTURER: Kice	MODEL NO: CR344-12
DATE MANUFACTURED: 2009	PROPOSED OPERATION DATE: Sept 2009
OPERATING SCENARIO	PROPOSED START CONSTRUCTION DATE: July 2009
1 OF 1	P.E. SEAL REQUIRED (PER 2Q .0112)? X YES ∅ NO

DESCRIBE CONTROL SYSTEM:

Kice Bag Filter controlling PM from Source ID Nos. HFC-1 - HFC-6, PMFC-1 - PMFC-3, SPA-1, HPA-1

POLLUTANT(S) COLLECTED:	PM			
BEFORE CONTROL EMISSION RATE (LB/HR):	24			
CAPTURE EFFICIENCY:	100 %	%	%	%
CONTROL DEVICE EFFICIENCY:	98 %	%	%	%
CORRESPONDING OVERALL EFFICIENCY:	98 %	%	%	%
EFFICIENCY DETERMINATION CODE:	1			
TOTAL EMISSION RATE (LB/HR):	0.58			

PRESSURE DROP (IN. H_2O): MIN: 2 MAX: 4 GAUGE? ◂ YES ∅ NO WARNING ALARM? ∅ YES ✠ NO

BULK PARTICLE DENSITY (LB/FT^3):	INLET TEMPERATURE (°F): MIN MAX
POLLUTANT LOADING RATE: 0.002 ∅ LB/HR ✠ GR/FT^3	OUTLET TEMPERATURE (°F): MIN MAX
INLET AIR FLOW RATE (ACFM): 34100	FILTER MAX OPERATING TEMP. (°F):

NO. OF COMPARTMENTS: 1	NO. OF BAGS PER COMPARTMENT: 344	LENGTH OF BAG (IN.): 144
DIAMETER OF BAG (IN.): 4.5	DRAFT: ✠ INDUCED/NEG. ∅ FORCED/POS.	FILTER SURFACE AREA (FT^2): 4902
AIR TO CLOTH RATIO: 6.96	FILTER MATERIAL: 16 oz polyester	∅ WOVEN ✠ FELTED

DESCRIBE CLEANING PROCEDURES:

∅ AIR PULSE — ∅ SONIC
✠ REVERSE FLOW — ∅ SIMPLE BAG COLLAPSE
∅ MECHANICAL/SHAKER — ∅ RING BAG COLLAPSE
∅ OTHER

DESCRIBE INCOMING AIR STREAM:

Dust from pellet manufacturing equipment

PARTICLE SIZE DISTRIBUTION

SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATIVE %
0-1		
1-10		
10-25	##	100
25-50		
50-100		
>100		
	TOTAL = 100	

METHOD FOR DETERMINING WHEN TO CLEAN:

∅ AUTOMATIC ∅ TIMED ✠ MANUAL

METHOD FOR DETERMINING WHEN TO REPLACE THE BAGS:

∅ ALARM ✠ INTERNAL INSPECTION ∅ VISIBLE EMISSION ∅ OTHER

SPECIAL CONDITIONS:

∅ MOISTURE BLINDING ∅ CHEMICAL RESISTIVITY ∅ OTHER

EXPLAIN:

DESCRIBE MAINTENANCE PROCEDURES:

ON A SEPARATE PAGE, ATTACH A DIAGRAM SHOWING THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S):

Attach Additional Sheets As Necessary

FORM C1

CONTROL DEVICE (FABRIC FILTER)

REVISED 12/01/01 — NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate — C1

CONTROL DEVICE ID NO: **CD-BF-3**	CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S): See below
EMISSION POINT (STACK) ID NO(S): **EP-12**	POSITION IN SERIES OF CONTROLS NO. 1 OF 1 UNITS
MANUFACTURER: Kice	MODEL NO: **CR344-12**
DATE MANUFACTURED: **2009**	PROPOSED OPERATION DATE: Sept 2009
OPERATING SCENARIO:	PROPOSED START CONSTRUCTION DATE: July 2009
1 OF 1	P.E. SEAL REQUIRED (PER 2Q .0112)? X YES ☐ NO

DESCRIBE CONTROL SYSTEM:

Kice Bag Filter controlling PM from Source ID Nos. PFFC-1, PFFC-2, PCC-1, PCC-2, PCC-3

POLLUTANT(S) COLLECTED:	PM			
BEFORE CONTROL EMISSION RATE (LB/HR):	24			
CAPTURE EFFICIENCY:	100 %	%	%	%
CONTROL DEVICE EFFICIENCY:	98 %	%	%	%
CORRESPONDING OVERALL EFFICIENCY:	98 %	%	%	%
EFFICIENCY DETERMINATION CODE:	1			
TOTAL EMISSION RATE (LB/HR):	0.58			

PRESSURE DROP (IN. H_2O): MIN: 2 MAX: 4 GAUGE? ☒ YES ☐ NO WARNING ALARM? ☐ YES ☒ NO

BULK PARTICLE DENSITY (LB/FT^3):	INLET TEMPERATURE (°F): MIN MAX
POLLUTANT LOADING RATE: 0.002 ☐ LB/HR ☒ GR/FT^3	OUTLET TEMPERATURE (°F): MIN MAX
INLET AIR FLOW RATE (ACFM): **34000**	FILTER MAX OPERATING TEMP. (°F):

NO. OF COMPARTMENTS: 1	NO. OF BAGS PER COMPARTMENT: 344	LENGTH OF BAG (IN.): 144
DIAMETER OF BAG (IN.): 4.5	DRAFT: ☒ **INDUCED/NEG.** ☐ FORCED/POS.	FILTER SURFACE AREA (FT^2): 4902
AIR TO CLOTH RATIO: 6.94	FILTER MATERIAL: 16 oz polyester	☐ WOVEN ☒ **FELTED**

DESCRIBE CLEANING PROCEDURES:

- ☐ AIR PULSE
- ☒ **REVERSE FLOW**
- ☐ MECHANICAL/SHAKER
- ☐ OTHER
- ☐ SONIC
- ☐ SIMPLE BAG COLLAPSE
- ☐ RING BAG COLLAPSE

DESCRIBE INCOMING AIR STREAM:

Dust from pellet manufacturing equipment

PARTICLE SIZE DISTRIBUTION

SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATIVE %
0-1		
1-10		
10-25	##	100
25-50		
50-100		
>100		
	TOTAL = 100	

METHOD FOR DETERMINING WHEN TO CLEAN:

☐ AUTOMATIC ☐ TIMED ☒ **MANUAL**

METHOD FOR DETERMINING WHEN TO REPLACE THE BAGS:

☐ ALARM ☒ **INTERNAL INSPECTION** ☐ VISIBLE EMISSION ☐ OTHER

SPECIAL CONDITIONS:

☐ MOISTURE BLINDING ☐ CHEMICAL RESISTIVITY ☐ OTHER

EXPLAIN:

DESCRIBE MAINTENANCE PROCEDURES:

ON A SEPARATE PAGE, ATTACH A DIAGRAM SHOWING THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S):

Attach Additional Sheets As Necessary

FORM C1

CONTROL DEVICE (FABRIC FILTER)

REVISED 12/01/01 — NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate — **C1**

CONTROL DEVICE ID NO: **CD-BF-4**	CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S): HPSC-1, SPSC-1
EMISSION POINT (STACK) ID NO(S): **EP-10**	POSITION IN SERIES OF CONTROLS NO. 1 OF 1 UNITS
MANUFACTURER: **Kice**	MODEL NO:
DATE MANUFACTURED: **2009**	PROPOSED OPERATION DATE: Sept 2009
OPERATING SCENARIO:	PROPOSED START CONSTRUCTION DATE: July 2009
1 OF 1	P.E. SEAL REQUIRED (PER 2Q .0112)? X YES ☐ NO

DESCRIBE CONTROL SYSTEM:

Kice Bag Filter

POLLUTANT(S) COLLECTED:	PM			
BEFORE CONTROL EMISSION RATE (LB/HR):	16			
CAPTURE EFFICIENCY:	100 %	%	%	%
CONTROL DEVICE EFFICIENCY:	98 %	%	%	%
CORRESPONDING OVERALL EFFICIENCY:	98 %	%	%	%
EFFICIENCY DETERMINATION CODE:	1			
TOTAL EMISSION RATE (LB/HR):	0.09			

PRESSURE DROP (IN. H_2O): MIN: 2 MAX: 4 GAUGE? ◀ YES ☐ NO WARNING ALARM? ☐ YES ☒ NO

BULK PARTICLE DENSITY (LB/FT^3):	INLET TEMPERATURE (°F): MIN MAX
POLLUTANT LOADING RATE: 0.002 ☐ LB/HR ☒ GR/FT^3	OUTLET TEMPERATURE (°F): MIN MAX
INLET AIR FLOW RATE (ACFM): **5200**	FILTER MAX OPERATING TEMP. (°F):

NO. OF COMPARTMENTS: 1	NO. OF BAGS PER COMPARTMENT: 126	LENGTH OF BAG (IN.): 110
DIAMETER OF BAG (IN.): 6	DRAFT: ☒ INDUCED/NEG. ☐ FORCED/POS.	FILTER SURFACE AREA (FT^2): 1814
AIR TO CLOTH RATIO: 2.87	FILTER MATERIAL: 16 oz polyester	☐ WOVEN ☒ FELTED

DESCRIBE CLEANING PROCEDURES:

☒ AIR PULSE ☐ SONIC
☐ REVERSE FLOW ☐ SIMPLE BAG COLLAPSE
☐ MECHANICAL/SHAKER ☐ RING BAG COLLAPSE
☐ OTHER

DESCRIBE INCOMING AIR STREAM:

Dust from pellet manufacturing equipment

PARTICLE SIZE DISTRIBUTION

SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATIVE %
0-1		
1-10		
10-25	##	100
25-50		
50-100		
>100		
	TOTAL = 100	

METHOD FOR DETERMINING WHEN TO CLEAN:

☐ AUTOMATIC ☐ TIMED ☒ MANUAL

METHOD FOR DETERMINING WHEN TO REPLACE THE BAGS:

☐ ALARM ☒ INTERNAL INSPECTION ☐ VISIBLE EMISSION ☐ OTHER

SPECIAL CONDITIONS:

☐ MOISTURE BLINDING ☐ CHEMICAL RESISTIVITY ☐ OTHER

EXPLAIN:

DESCRIBE MAINTENANCE PROCEDURES:

ON A SEPARATE PAGE, ATTACH A DIAGRAM SHOWING THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S):

Attach Additional Sheets As Necessary

FORM C1

CONTROL DEVICE (FABRIC FILTER)

REVISED 12/01/01 — NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate — C1

CONTROL DEVICE ID NO: CD-BF-5	CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S): See below
EMISSION POINT (STACK) ID NO(S): EP-13	POSITION IN SERIES OF CONTROLS NO. 1 OF 1 UNITS
MANUFACTURER: Kice	MODEL NO: CR288-12
DATE MANUFACTURED: 2009	PROPOSED OPERATION DATE: Sept 2009
OPERATING SCENARIO:	PROPOSED START CONSTRUCTION DATE: July 2009
1 OF 1	P.E. SEAL REQUIRED (PER 2Q .0112)? X YES ☐ NO

DESCRIBE CONTROL SYSTEM:

Kice Bag Filter: Source ID Nos. PMFC-4 - PMFC-6, PCC-4 - PCC-6.

POLLUTANT(S) COLLECTED:	PM			
BEFORE CONTROL EMISSION RATE (LB/HR):	16			
CAPTURE EFFICIENCY:	100 %	%	%	%
CONTROL DEVICE EFFICIENCY:	98 %	%	%	%
CORRESPONDING OVERALL EFFICIENCY:	98 %	%	%	%
EFFICIENCY DETERMINATION CODE:	1			
TOTAL EMISSION RATE (LB/HR):	0.39			

PRESSURE DROP (IN. H_2O): MIN: 2 MAX: 4 GAUGE? ◐ YES ☐ NO WARNING ALARM? ☐ YES ☒ NO

BULK PARTICLE DENSITY (LB/FT^3):	INLET TEMPERATURE (°F): MIN MAX
POLLUTANT LOADING RATE: 0.002 ☐ LB/HR ☒ GR/FT^3	OUTLET TEMPERATURE (°F): MIN MAX
INLET AIR FLOW RATE (ACFM): 22500	FILTER MAX OPERATING TEMP. (°F):

NO. OF COMPARTMENTS: 1	NO. OF BAGS PER COMPARTMENT: 288	LENGTH OF BAG (IN.): 144
DIAMETER OF BAG (IN.): 4.5	DRAFT: ☒ INDUCED/NEG. ☐ FORCED/POS.	FILTER SURFACE AREA (FT^2): 1404
AIR TO CLOTH RATIO: 5.48	FILTER MATERIAL: 16 oz polyester	☐ WOVEN ☒ FELTED

DESCRIBE CLEANING PROCEDURES:

- ☐ AIR PULSE
- ☒ REVERSE FLOW
- ☐ MECHANICAL/SHAKER
- ☐ OTHER
- ☐ SONIC
- ☐ SIMPLE BAG COLLAPSE
- ☐ RING BAG COLLAPSE

PARTICLE SIZE DISTRIBUTION

SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATIVE %
0-1		
1-10		
10-25	##	100
25-50		
50-100		
>100		
	TOTAL = 100	

DESCRIBE INCOMING AIR STREAM:

Dust from pellet manufacturing equipment

METHOD FOR DETERMINING WHEN TO CLEAN:

☐ AUTOMATIC ☐ TIMED ☒ MANUAL

METHOD FOR DETERMINING WHEN TO REPLACE THE BAGS:

☐ ALARM ☒ INTERNAL INSPECTION ☐ VISIBLE EMISSION ☐ OTHER

SPECIAL CONDITIONS:

☐ MOISTURE BLINDING ☐ CHEMICAL RESISTIVITY ☐ OTHER

EXPLAIN:

DESCRIBE MAINTENANCE PROCEDURES:

ON A SEPARATE PAGE, ATTACH A DIAGRAM SHOWING THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S):

Attach Additional Sheets As Necessary

FORM C4

CONTROL DEVICE (CYCLONE, MULTICYCLONE, OR OTHER MECHANICAL)

REVISED 12/01/01 — NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate — **C4**

CONTROL DEVICE ID NO: **CD-HEC-1**	CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S): **RD-1**
EMISSION POINT (STACK) ID NO(S):	POSITION IN SERIES OF CONTROLS NO. 1 OF 1 UNITS
MANUFACTURER: Westec	MODEL NO: 10'x42'
DATE MANUFACTURED: 2009	PROPOSED OPERATION DATE: Sept 2009
OPERATING SCENARIO:	PROPOSED START CONSTRUCTION DATE: "July 2009
1 OF 1	P.E. SEAL REQUIRED (PER 2Q .0112)? X YES ∂ NO

DESCRIBE CONTROL SYSTEM : **Twin High Efficiency Cyclones**

POLLUTANT(S) COLLECTED:	PM			
BEFORE CONTROL EMISSION RATE (LB/HR):	49.3			
CAPTURE EFFICIENCY:	100 %	%	%	%
CONTROL DEVICE EFFICIENCY:	80 %	%	%	%
CORRESPONDING OVERALL EFFICIENCY:	80 %	%	%	%
EFFICIENCY DETERMINATION CODE:	1			
TOTAL EMISSION RATE (LB/HR):	9.86			

PRESSURE DROP (IN. H_2O): MIN **8** MAX **10** — WARNING ALARM ∂ YES X NO

INLET TEMPERATURE (°F): MIN MAX **182 F**	OUTLET TEMPERATURE (°F): MIN MAX **182 F**
INLET AIR FLOW RATE (ACFM): **48000 (24K per cyclone)**	BULK PARTICLE DENSITY (LB/FT^3):
POLLUTANT LOADING RATE (GR/FT^3):	

SETTLING CHAMBER	CYCLONE			MULTICYCLONE
LENGTH (INCHES):	INLET VELOCITY (FT/SEC):		⊠ CIRCULAR ∂ RECTANGLE	NO. TUBES:
WIDTH (INCHES):	*DIMENSIONS (INCHES) See instructions*		*IF WET SPRAY UTILIZED*	DIAMETER OF TUBES:
HEIGHT (INCHES):	H: **46**	Dd: **36**	LIQUID USED:	HOPPER ASPIRATION SYSTEM?
VELOCITY (FT/SEC.):	W: **15**	Lb: **264**	FLOW RATE (GPM):	∂ YES ∂ NO
NO. TRAYS:	De: **45**	Lc: **238**	MAKE UP RATE (GPM):	LOUVERS?
NO. BAFFLES:	D: **120**	S: **192**		∂ YES ∂ NO
	TYPE OF CYCLONE: ∂ CONVENTIONAL		⊠ **HIGH EFFICIENCY** ∂ OTHER	

DESCRIBE MAINTENANCE PROCEDURES:

Visual Inspection

DESCRIBE INCOMING AIR STREAM:

Exhaust from direct-fired rotary dryer

PARTICLE SIZE DISTRIBUTION

SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATIVE %
0-1		
1-10		
10-25		
25-50		
50-100		
>100		
		TOTAL = 100

DESCRIBE ANY MONITORING DEVICES, GAUGES, TEST PORTS, ETC:

None

ON A SEPARATE PAGE, ATTACH A DIAGRAM OF THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S):

Attach Additional Sheets As Necessary

Engineering Manufacturing

KICE INDUSTRIES, INC.

WICHITA, KANSAS, U.S.A.

Skilled Air for Industry

May 5, 2009

Mr. Jason Kessler
Kesco, Inc.
857 Savile Lane
Fort Mill, SC 29715

Dear Jason,

This is in reply to your request on the efficiency of cyclone-type dust collectors. Frankly, this is a subject that is difficult to discuss because there are so many angles to be considered that even when we try to give a straight answer, it sounds like we are trying to beat around the bush.

One basic problem is that the numerous poorly designed and poorly made cyclones in use have given a black eye to all cyclones. Even though a cyclone may be well designed and well made, it can still give poor results if not properly applied - size to match the air volume, etc.

Another basic problem is that the efficiency of a cyclone varies, depending on the character of the dust involved...and dust variables are infinite. Dust particles from the same plant may have extreme differences in density, size, shape, moisture content, etc. Consider a feed mill, for example. At the intake point where grain is being moved from truck to storage bin, the particulate may be a mixture of sandy dust from the field and flakes of chaff from the grain - along with broken particles of grain, weed seeds, etc. At the loadout end of the same plant, the dust is primarily the smaller particles of ground grain, or chips that have broken off of pellets. In between - the various processes produce still more different types of small particles, some of which may escape and become dust.

The point is that cyclone efficiency will be practically 100% for the large, heavy, spherical-shaped particles. At the other extreme, it may be less than 80% efficient for flaky and small size, light density particles. So any statement regarding cyclone efficiency must specify the dust characteristics. This would theoretically include size analysis coordinated with particle density and shape in each size range, but in view of the complications necessary to coordinate all three factors; we usually confine the analysis to the range of particle size. For example - assume we have dust with particle size distribution as listed in the first column below (which happens to be typical for commercial hard wheat flour.)

Corporate Headquarters and Plant
5500 N. Mill Heights Drive
Wichita, KS 67219
(316) 744-7151
Fax: (316) 744-7355

South Plant
2040 S. Mead
Wichita, KS 67211
(316) 744-7151
Fax: (316) 744-7355

Branch Office
3343 Southgate Court S.W.
Suites 107 & 108
Cedar Rapids, IA 52404
(319) 364-5221
Fax: (319) 364-4860

e-mail: sales@kice.com ♦ web site: www.kice.com

Kice-type cyclones have been used in grain mills for more than fifty years. On the basis of our experience with literally thousands of cyclones in milling applications, we find that a 72" cyclone will collect practically 100% of all particles above 20 microns, approximately 90% of the 10-20 micron size, and 80% of the minus 10 range. The smaller particles are collected by agglomerations, in other words by attachment to larger particles. It is interesting to note that although a 20 micron particle is smaller than most human eyes can see, it contains (20/2) cubed or 1000 times the mass of a 2-micron particle.

Example assumes we have 1,000 lbs. of typical flour (dust) in which the particle sizes vary in the following ratio:

	Particle Size distr. Pounds Micron Size Range retained	Percent in this range	pounds in this range	Efficiency for size range
	Above 100 microns 120	12%	120#	100%
Typical	80 - 100 microns 120	12%	120#	100%
Flour	60-100 microns 200	20%	200#	100%
Particle	40-60 microns 240	24%	240#	100%
Sizes	20-40 microns 200	20%	200#	100%
	10-20 microns	8%	80#	90%
72				
	2-10 microns	4%	40#	80%
32				
	984 LBS	TOTAL POUNDS FLOUR RETAINED		

FLOUR IN-1000 LBS
FLOUR RETAINED - 984 LBS

CYCLONE EFFICIENCY $\frac{984}{1000} = 98.4\%$

Since most dusts in flour and feed mills are coarser and/or heavier densities than flour, we would anticipate better than the 98.4% efficiency estimated for flour. We would also estimate better efficiency for smaller systems, because smaller cyclones collect smaller particles. For example, where we would expect the above 72" diameter cyclone to collect 100% of the plus 20-micron particles, we would expect a 48" diameter cyclone to collect 100% of the plus 10 micron particles. This is because the greater number of revolutions per second produced at a given inlet velocity produces much greater centrifugal forces acting like gravity on the dust particles within the small collector. Based on the above, feed mill cyclone efficiencies on the order of 97 to 99% (depending on cyclone size and particle characteristics) can be anticipated where the cyclones are properly designed and applied - and in good condition. We have tested small diameter spun cyclones handling heavy loads of flourmill stocks with efficiencies above 99.8% on numerous occasions.

The above estimate is intended to point up how important dust characteristics are in any statement of cyclone efficiency. The same cyclone might be very low efficiency when handling dust containing a majority of particles below 3-micron size, for example - but could be 100% efficient if the particles were all comparatively large and heavy (like marbles or B-B's).

The ultimate answer is scientific testing of the actual system handling the specific dust under field conditions. Unfortunately, such tests are very expensive, difficult to control and the results apply only to the dust that was tested under the conditions of the test. We know of a series of cyclone tests conducted by Midwest Research Institute for the Alfalfa Dehydrators Association in several Midwest plants. One test involving a Kice cyclone handling dehydrated alfalfa from a dryer required a full week for four men to take measurements and another week of work to summarize the results and the cost exceeded $10,000. In this case, the test results indicated that the amount of effluent was less than the allowable to comply with the Bay Area Standards - a key criteria for Federal inspection.

Although the test report did not publish the efficiency of the cyclone, the fact that the emissions were below the Bay Area Standard indicated that the cyclone efficiency must have been considerably better than 98%. This is about all the information available to us from these tests because the Association considers the details to be confidential, but I have referred to the tests because professionals in accordance with Federal rules conducted them. They confirm our own observations and lab tests over many years of cyclone development.

In conclusion, we recognize that there are many cyclones operating at very low efficiency due to such factors as poor design, application, installation and maintenance, and there are some types of dust that cannot be handled efficiently in a cyclone. In spite of this, we can assure you that you can expect efficiencies (based on weight of dust retained/weight of entering dust) better than 98% with Kice cyclones in good condition when properly applied and installed handling most types of dust encountered in feed mills. We can make this statement rather broadly but must acknowledge difficulty in predicting exactly how much better than 98% can be expected.

I'm sorry this has become such a long letter but hope it answers the question. If more positive predictable results are necessary, cloth filters are probably your best answer.

Very truly yours,

Drew Kice
KICE INDUSTRIES, INC.

Cyclone efficiency

Dustex Corporation
12034 Goodrich Drive (28273)
Post Office Box 7368
Charlotte, North Carolina 28241-7368
Telephone: (704) 588-2030
Fax: (704) 588-2032

REF. NO.

PROPOSAL NO.

PAGE: 1

DATE: 10/7/82

TO Industrial Sheet Metal & Mechanical Corp.
P. O. Box 1376
Rockingham, NC 28379

The Vendor proposes to sell to the Purchaser the equipment and/or services herein specified, under the terms, conditions and at the prices stated. No equipment, materials, or services other than those specified in this proposal will be supplied by the Dustex Corp.
Prices subject to controlled/limited escalation clause.

DUSTEX FABRIC FILTER COLLECTOR

SYSTEM AND DESIGN CONDITIONS

Application Grinding

Volume in CFM 12,000

Temp. Amb. °F

Load unknown Gr./Ft³

Type Dust rubber

Inlet Pressure "Negative X "Positive.

Quantity	.. One	Compressed Air Requirements	.. 12.6 SCFM @ 85 psig
Model	.. 3439-9-14	Construction	.. 12 ga. carbon steel
Ratio	.. 6.74:1	Paint	.. (1) prime coat of red oxide
Casing Design Pres.	.. ± 15" W.G.	Design - Dwg.	.. D63-8003
Hopper Type	.. pyramidal	Bags: Number	.. 126
Valley Angle	.. 55°	Material	.. 16 oz./sq. yd. polyester felt
Weight	.. 7,300# est.	Nominal Size	.. 6" dia. X 9'-0"

CLOTH AREA = 12,000/6.74 = 1,780 FT²

@ 5200 ACFM 5200/1780

AIR : CLOTH = 2.92

FORM D1

FACILITY-WIDE EMISSIONS SUMMARY

REVISED 12/01/01 NCDENR/Division of Air Quality - Application for Air Permit to Construct/Operate **D1**

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION - FACILITY-WIDE

AIR POLLUTANT EMITTED	EXPECTED ACTUAL EMISSIONS (AFTER CONTROLS / LIMITATIONS)	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITATIONS)	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITATIONS)
	tons/yr	tons/yr	tons/yr
PARTICULATE MATTER (PM)	86.1	865.5	91.4
PARTICULATE MATTER < 10 MICRONS (PM_{10})	86.1	865.5	91.4
PARTICULATE MATTER < 2.5 MICRONS ($PM_{2.5}$)	86.1	865.5	91.4
SULFUR DIOXIDE (SO2)	3.7	3.7	3.7
NITROGEN OXIDES (NOx)	99	112.8	112.8
CARBON MONOXIDE (CO)	54.5	62.1	62.1
VOLATILE ORGANIC COMPOUNDS (VOC)	91.9	104.8	104.8
LEAD			
OTHER			

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION - FACILITY-WIDE

HAZARDOUS AIR POLLUTANT EMITTED	CAS NO.	EXPECTED ACTUAL EMISSIONS (AFTER CONTROLS / LIMITATIONS)	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITATIONS)	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITATIONS)
		tons/yr	tons/yr	tons/yr
Acetaldehyde	75-07-0	4.2	4.8	4.8
Acrolein	107-02-8	1.06	1.21	1.21
Benzene	71-43-2	0.33	0.38	0.38
Formaldehyde	50-00-0	6.8	7.7	7.7
Methanol	67-56-1	4.2	4.8	4.8
Methyl Ethyl Ketone	78-93-3	0.2	0.27	0.27
Methylene Chloride	75-09-2	0.1	0.11	0.11
Phenol	108-95-2	0.6	0.64	0.64
Propionaldehyde	123-38-6	0.3	0.34	0.34
Styrene	100-42-5	0.04	0.05	0.05
Toluene	108-88-3	0.4	0.48	0.48
Xylene	1330-20-7	0.45	0.51	0.51

TOXIC AIR POLLUTANT EMISSIONS INFORMATION - FACILITY-WIDE

INDICATE REQUESTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS. EMISSIONS ABOVE THE TOXIC PERMIT EMISSION RATE (TPER) IN 15A NCAC 2Q .0711 MAY REQUIRE AIR DISPERSION MODELING. USE NETTING FORM D2 IF NECESSARY.

TOXIC AIR POLLUTANT EMITTED	CAS NO.	lb/hr	lb/day	lb/year	Modeling Required ? Yes	Modeling Required ? No
Acetaldehyde	75-07-0	1.09	26.1	8346		X
Acrolein	107-02-8	0.28	6.6	2122	X	
Benzene	71-43-2	0.09	2.08	665	X	
Formaldehyde	50-00-0	1.77	42.4	13579	X	
Methyl Ethyl Ketone	78-93-3	0.06	1.5	481		X
Methylene Chloride	75-09-2	0.03	0.62	198		X
Phenol	108-95-2	0.15	3.49	1117		X
Styrene	100-42-5	0.01	0.25	81		X
Toluene	108-88-3	0.11	2.61	835		X
Xylene	1330-20-7	0.12	2.82	902		X

COMMENTS:

Attach Additional Sheets As Necessary

North Carolina Toxics Modeling Protocol Checklist

Any permit application requiring a modeling compliance demonstration ***must*** be preceded by a modeling plan or protocol. As identified in 15A NCAC 2D 0.1106(f), □The owner or operator of the facility (or facility consultant) shall submit a modeling plan to the [AQAB] and shall have received approval of that plan from the [AQAB] before submitting a modeling demonstration to the [AQAB].□ The North Carolina Toxics Modeling Protocol Checklist may be used in lieu of developing the traditional written modeling plan for North Carolina toxics modeling. The protocol checklist has been designed to provide the same level of information as requested in a modeling protocol as discussed in chapter 3 of the ***Guideline for Evaluating the Air Quality Impacts of Toxic Pollutants in North Carolina.***

Although most of the information requested in the modeling protocol checklist is self explanatory, additional comments are provided, where applicable, and are discussed in greater detail in the modeling guidelines referenced above. References to sections, tables, figures, appendices, etc., in the protocol checklist are found in the modeling guidelines.

INSTRUCTIONS: The modeling report supporting the compliance demonstration should include most of the information listed below. As appropriate, answer the following questions or indicate by check mark the information provided or action taken and reflected in your report. The modeling protocol checklist is submitted with the modeling analysis.

FACILITY INFORMATION

Name / Address: Natures Earth Pellets NC, LLC 16900 Aberdeen Road Laurinburg, North Carolina 28352	**Consultant (if applicable):** GEL Engineering of NC, Inc. P.O. Box 14262 Research Triangle Park, NC 27709
Contact Name: Cliff Bragg	**Contact Name:** Keith D. McCullock
Phone Number: 304-642-1156	**Phone Number:** 919-544-1100

GENERAL

Description of New Source or Source / Process Modification: provide a short description of the new or modified source(s) and a brief discussion of how this change affects facility production or process operation.	✓
Source / Pollutant Identification: provide a table of the affected pollutants, by source, which identifies the source type (point, area, or volume), maximum pollutant emission rates over the applicable averaging period(s), and, for point sources, if the stack is capped or non-vertical (C/N).	✓
Pollutant Emission Rate Calculations: indicate how the pollutant emission rates were derived (e.g., AP-42, mass balance, etc.) and, where applicable, provide the calculations.	✓
Site / Facility Diagram: provide a diagram or drawing showing the location of all existing and proposed emission sources, buildings or structures, and public right-of-ways, and the facility property (toxics) / fence line (criteria pollutants) boundaries. The diagram should also include a scale, true north indicator, and the UTM or latitude/longitude of at least one point.	✓
Certified Plat or Signed Survey: a certified plat (map) from the County Register of Deeds or a signed survey must be submitted to validate property boundaries modeled.	✓
Topographic Map: if any terrain within 3 miles of the facility is greater than 50% of the shortest non-fugitive stack height, a topographic map must be submitted.	✓
Cavity Impact Analysis: a cavity impact analysis must be conducted for all buildings or structures with a region of influence extending to one or more sources modeled to determine if cavity regions extend off property (toxics) or beyond the fence line (criteria pollutants). *No separate cavity analysis is required if using AERMOD. See section 4.2*	AERMOD used

GENERAL (continued)	
Background Concentrations (criteria pollutant analyses only): Background concentrations must be determined for each pollutant for each averaging period evaluated. The averaged background value used (e.g., high, high-second-high, high-third-high, etc.) is based on the pollutant and averaging period evaluated. The background concentrations are added to the modeled concentrations, which are then compared to the applicable air quality standard to determine compliance.	NA
Offsite Source Inventories (criteria pollutant analyses only): Offsite source inventories must be developed and modeled for all pollutants for which onsite sources emissions are modeled in excess of the specific pollutant significant impact levels (SILs) as defined in the PSD New Source Review Workshop Manual. The DAQ AQAB must approve the inventories. An initial working inventory can be requested from the AQAB.	NA

SCREEN LEVEL MODELING	
Model: the latest version of the SCREEN3 model or ISCST3 (screening mode) model must be used. *See DAQ/AQAB web page.* The use of other screening models should be approved by NCDAQ prior to submitting the modeling report.	NA
Source / Source emission parameters: provide a table listing the sources modeled and the applicable source emission parameters. *See NC Form 3 - appendix B.*	NA
Merged Sources: identify merged sources and show all appropriate calculations. *See section 4.4*	NA
GEP Analysis: SCREEN3 - for each source modeled, show all calculations identifying the critical structure used in the model run. *See section 4.3 and NC Form 1 - appendix B.* ISCST3 - use the EPA BPIP program to determine point source direction specific building dimensions.	NA
Cavity Impact Analysis: for each source or group of sources modeled, a cavity impact analysis must be conducted to evaluate critical structure cavity impacts. *See section 5.1*	NA
Terrain: indicate the terrain modeled - simple *(section 5.2)*, intermediate *(section 5.3)*, complex *(section 5.3 and NC Form 5 - appendix B).* If complex terrain is within 3 miles of the facility, intermediate and complex terrain must be evaluated. Simple terrain must include terrain elevations if terrain is higher than 50% of the shortest non-fugitive stack height. Simple:_____ Intermediate: _____ Complex: _____	
Meteorology: SCREEN3 - select full meteorology; ISCST3 - use SCREEN3 meteorology *(See Table 5-2).*	NA
Receptors: SCREEN3 - use shortest distance to property boundary for each source modeled and use sufficient range to find maximum (*See section 5.2.1. (i) and (j)*); ISCST3 - use property boundary and Cartesian (rectangular) receptors with sufficient number and resolution (100 meters or less) to find maximum *(See section 5.2.2.3).* Terrain must be evaluated.	NA
Modeling Results: for each affected pollutant, modeling results should be summarized, converted to the applicable averaging period *(see Table 5-1)*, and presented in tabular format indicating compliance status with the applicable AAL. *See NC Form S6/R6 – appendix B.*	NA
Modeling Files: the following modeling files should be submitted on diskette: SCREEN3 - output; ISCST3 - input, output, BPIP (if applicable).	NA

REFINED LEVEL MODELING	
Model: the latest version of the AERMOD model should be used and may be found at http://www.epa.gov/scram001/dispersion_prefrec.htm. The use of other refined models must be approved by NCDAQ prior to submitting the modeling report.	✓
Source / Source emission parameters: provide a table listing the sources modeled and the applicable source emission parameters.	See Tables 1 - 3
GEP Analysis: Use BPIP-Prime with AERMOD.	✓
Cavity Impact Analysis: No separate cavity analysis is required when using AERMOD as long as receptors are placed in cavity susceptible areas.	✓
Terrain: Receptors should be assigned terrain elevations using USGS digital elevation data. Use of other sources of terrain elevations or the non-regulatory Flat Terrain option will require prior approval from DAQ AQAB.	✓
Receptors: The receptor grid should be of sufficient size and resolution to identify the maximum pollutant impact.	✓
Meteorology: indicate the AQAB, pre processed, 5 year data set used in the modeling demonstration (*See section 5.5 Appendix B)*: AERMOD: **One-year data set used, since results <50% of AAL - 1992 Raleigh-Durham (surface) 1992 Greensboro (upper air)** If processing your own raw meteorology, then pre-approval from AQAB is required. Additional documentation files (e.g. AERMET stage processing files) will also be necessary. For NC toxics, the modeling demonstration requires only the last year of the standard 5 year data set (e.g., 2005) provided the maximum impacts are less than 50% of the applicable AAL(s).	✓
Modeling Results: For each affected pollutant and averaging period, modeling results should be summarized and presented in tabular format indicating compliance status with the applicable AAL, SIL or NAAQS.	See Table 4
Modeling Files: Submit input and output file for AERMOD. Also include BPIP-Prime files, AERMAP files, DEM files, and any AERMET input and output files, including raw meteorology data.	✓

AIR DISPERSION MODELING RESULTS

NATURES EARTH PELLETS NC, LLC
LAURINBURG, NORTH CAROLINA

1.0 INTRODUCTION

Natures Earth Pellets NC, LLC (Natures Earth) proposes to build and operate a wood pelletizing plant in Laurinburg, North Carolina. The Natures Earth facility will be a pellet mill consisting of conveyance systems such as conveyors and pneumatic transfer, raw material and product storage, hammermills, pellet mills, pellet coolers, aspirators, and a direct-fired rotary dryer. Emissions from the conveyance systems, raw material and product storage, hammermills, pellet mills, pellet coolers and aspirators will be total suspended particulate (TSP) and particulates less than 10 microns (μm) in size (PM_{10}). Emissions from the rotary dryer will consist of TSP, PM_{10}, sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOCs) and various toxic air pollutants (TAPs) and hazardous air pollutants (HAPs).

Table 1 provides a summary of TAPs that will be emitted from the rotary dryer and a comparison to the respective deminimis rates found in NCDENR regulation 15A NCAC 2Q.0711. An air dispersion model was conducted to demonstrate compliance with the Acceptable Ambient Levels (AALs) for acrolein, benzene and formaldehyde from the Natures Earth facility.

2.0 MODELING DATA

The air dispersion modeling analysis was conducted using the U.S. Environmental Protection Agency AERMOD air dispersion model and Raleigh-Durham (surface) and Greensboro (upper air) meteorological data. Since the results of the air dispersion analysis were less than 50 percent of the AAL, only one year (1992) of meteorological data was used. The procedures used for the model are outlined in the August 2007 document entitled *Guidelines for Evaluating the Air Quality Impacts of Toxic Pollutants in North Carolina*. The emission rates used to run the model are shown in Table 1. The stack description and stack parameters are provided in Tables 2 and 3, respectively.

Cavity concentrations are incorporated into the AERMOD model. All model options were chosen in accordance with the NCDENR modeling guidelines. A receptor grid was generated around the facility using 100 meter spacing from the fenceline out to 1,500 meters and 250 meter spacing from 1,500 meters to 5,000 meters. Discrete receptors were placed every 50 meters or less along the facility property boundary.

A figure showing the site boundary for modeling purposes and building locations is included as Figure 3. The terrain data required to run the AERMAP subprogram was obtained from http://data.geocomm.com. Terrain elevations were calculated within the AERMAP subprogram.

3.0 MODELING RESULTS

3.1 North Carolina Toxic Air Pollutant Guidelines

This latest air dispersion modeling was used to demonstrate compliance from acrolein, benzene and formaldehyde emissions from the Natures Earth facility with the allowable impact as referenced from the North Carolina Toxic Air Pollutant Guidelines (15A NCAC 2D.1104). Acrolein and formaldehyde were modeled using a 1 hour averaging period while benzene was modeled using an annual averaging period. Emissions from the Natures Earth facility will comply with the standards as shown in Table 4.

Table 1
TAP/HAP Emissions from the Rotary Dryer- Comparison to TPERs
Natures Earth Pellets NC, LLC - Laurinburg, NC

			Actual Emissions			TPERs			
Pollutant	HAP	TAP	Hourly Emissions (lbs/hr)	Daily Emissions (lbs/day)	Annual Emissions (lbs/yr)	Hourly Emissions (lbs/hr)	Daily Emissions (lbs/day)	Annual Emissions (lbs/yr)	Air Disperson Modeling Required?
Acetaldehyde	X	X	1.09	26.1	8,346	6.8	-	-	No
Acrolein	X	X	0.28	6.6	2,122	0.02	-	-	Yes
Benzene	X	X	0.09	2.1	665	-	-	8.1	Yes
Formaldehyde	X	X	1.77	42.4	13,579	0.04	-	-	Yes
Methanol	X		1.09	26.1	8,346	-	-	-	No
Methyl ethyl ketone	X	X	0.06	1.5	481	22.4	78	-	No
Metylene chloride	X	X	0.03	0.62	198	0.39	-	1,600	No
Phenol	X	X	0.15	3.49	1,117	0.24	-	-	No
Propionaldehyde	X		0.08	1.85	594	-	-	-	No
Styrene	X	X	0.01	0.25	81	2.7	-	-	No
Toluene	X	X	0.11	2.61	835	-	98	-	No
Xylene	X	X	0.12	2.82	902	16.4	57		No

Table 3: Stack Parameters (Point Source)
Natures Earth Pellets NC, LLC
Laurinburg, North Carolina

Stack Number and Description		EP-5 Rotary Dryer
Stack Height (ft)[a]		30.0
Stack Height (meters)[a]		9.1
Stack Diameter (ft)[b]		4.4
Stack Cross Section (ft^2)		N/A
Stack Diameter (meters)[b]		1.34
Stack Temperature (^oF)		182
Stack Temperature (^oR)		642
Stack Temperature (^oK)		357
Stack Volume (acfm)		48000
Stack Exit Velocity	Actual (ft/sec)	53.3
	Actual (m/sec)	16.26
	Use in modeling (m/sec)[c]	53.3
UTM Coordinates (m)	Horizontal (E)	
	Vertical (N)	
Stack Base Elevation Above MSL(ft)[d]		
Stack Base Elevation Above MSL(m)[d]		0

[a]Stack height above ground level

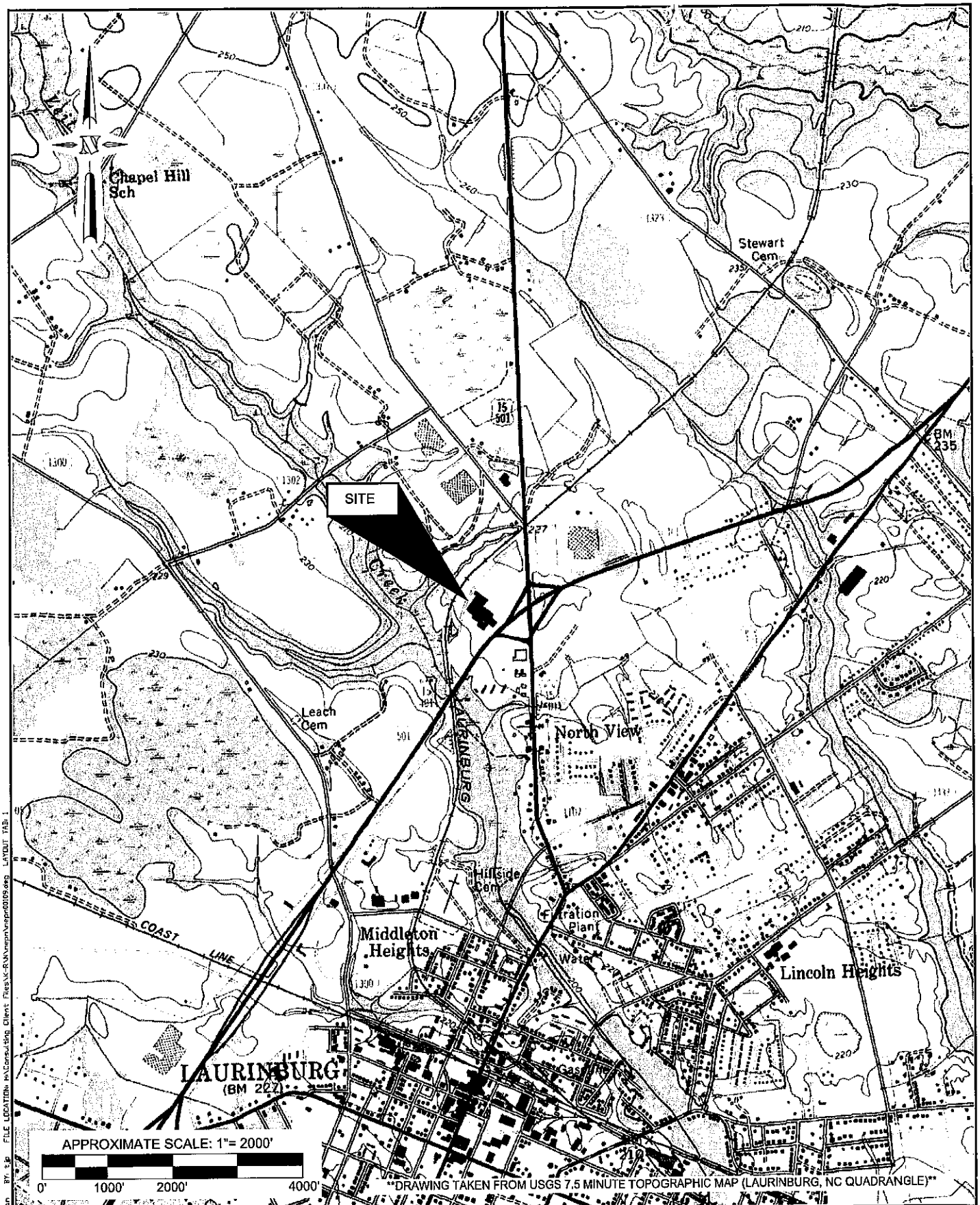
[b]Stack inside diameter measured at point of discharge (or equivalent diameter if rectangular stack)

[c]Stack exit velocity of 0.01 m/sec used to account for horizontal discharge or rain cap, if applicable

[d]MSL = mean sea level

Table 4: Modeling Results and Comparison with Standards
Natures Earth Pellets NC, LLC
Laurinburg, North Carolina

Pollutant	Averaging Period	Maximum Model Result $\mu g/m^3$	Acceptable Ambient Level $\mu g/m^3$	Shows Compliance (Y/N)
Acrolein	**1-hr**	1.82	80	**YES**
Benzene	**Annual**	0.01	0.120	**YES**
Formaldehyde	**1-hr**	11.5	150	**YES**



DRAWING TAKEN FROM USGS 7.5 MINUTE TOPOGRAPHIC MAP (LAURINBURG, NC QUADRANGLE)

PLOTTED: Jun 10, 2009 - 8:38am BY: tjp FILE LOCATION: H:\Consulting Client Files\K-R\Natures\nepn00109.dwg LAYOUT TAB: 1

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PROJECT: nepn00109			
NATURES EARTH PRODUCTS LAURINBURG, NORTH CAROLINA	SITE LOCATION MAP		FIGURE 1
DATE: June 2009	DRAWN BY: TJP	APPRV. BY: KDM	

NORTH CAROLINA DIVISION OF AIR QUALITY Air Permit Review **Permit Issue Date: 11/12/2009**	**Region:** Fayetteville Regional Office **County:** Scotland **NC Facility ID: 8300104** **Inspector's Name:** **Date of Last Inspection:** **Compliance Code:**
Facility Data **Applicant (Facility's Name):** Natures Earth Pellets NC, LLC **Facility Address:** **Natures Earth Pellets NC, LLC** 16900 Aberdeen Road Laurinburg, NC 28352 **SIC:** 2499 / Wood Products, Nec **NAICS:** 321999 / All Other Miscellaneous Wood Product Manufacturing **Facility Classification: Before:** New **After:** Synthetic Minor **Fee Classification: Before:** New **After:** **Synthetic Minor**	**Permit Applicability (this application only)** **SIP:** **NSPS:** **NESHAP:** **PSD:** **PSD Avoidance:** **NC Toxics:** **112(r):** **Other:** **GREENFIELD**

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Cliff Bragg Plant Manager (304) 642-1156 16900 Aberdeen Road Laurinburg, NC 28352	Cliff Bragg Plant Manager (304) 642-1156 16900 Aberdeen Road Laurinburg, NC 28352	Cliff Bragg Plant Manager (304) 642-1156 16900 Aberdeen Road Laurinburg, NC 28352

Application Data

Application Number: 8300104.09A
Date Received: 07/10/2009
Application Type: Greenfield Facility
Application Schedule: State

Existing Permit Data
Existing Permit Number: New
Existing Permit Issue Date: New
Existing Permit Expiration Date: New

Review Engineer: Tien Nguyen

Review Engineer's Signature: **Date:**

Tien Nguyen 11/12/2009

Comments / Recommendations:
Issue <New Permit Number>.
Permit Issue Date: 11/12/2009
Permit Expiration Date: 10/31/2014

1. Purpose of Application (executive summary):

Natures Earth Pellets NC, a greenfield facility, located in Laurinburg, NC, Scotland County has requested an air permit to construct and operate a wood pellet plant. The pellets are made from clean and untreated wood chips and sawdust (40-60% softwood, 40-60% hardwood), which are generated from Edwards Wood Products. Edwards is located in Scotland County. The facility is paying between $25 to $35 per ton for the wood chips and sawdust. A portion of the raw materials will be used as the fuel for the dryer burner. This will minimize the cost of drying. The raw materials ship to the facility as virgin wood chips and saw dust without any additives. The pellets will be marketed primarily for use in commercial and residential stoves. Pellets are made without added adhesives, thus the process as it has developed today requires no additives, but rather uses the natural adhesives present in the wood to bind the pellet together.

The raw material that is larger than 1/4" will be broken down in the hammer mill to a smaller particle size and then the raw fiber will be heated by a direct-fired rotary dryer to remove the moisture content from the wood chips. When the wood chips reach to 11% of the moisture, it's drawn out of the dryer and will be conveyed into storage silo. Sawdust and wood chips are blown into a suspension burner to generate heat for the rotary dryer. The products of combustion are blown from the burner through the dryer and come into direct contact with the raw material. The emissions from the dryer stack include both process and combustion gases.

The raw material recordkeeping stipulation was added to the permit. This stipulation only allows the facility to burn clean, untreated, and unadulterated wood chips and sawdust. The facility is required to maintain the records of the sawdust and wood chips supplier certification on-site for each batch received to demonstrate in compliance. Per DAQ guidance, Natures Earth Pellets is not subject to the Commercial and Industrial Solid Waste Incineration NSPS Subpart CCCC because it does not combust solid waste. The DAQ has considered that the wood chips and sawdust for this facility are not a solid waste.

The facility will operate a conveyance system, storage silos, hammermills, pellet mills, pellet coolers, aspirators and one triple pass direct-fired rotary dryer. Heat input to the rotary dryer is rated at approximate 34 million Btu per hour depending on type and condition of wood. The maximum material throughput of the rotary dryer rated at 18.4tons per hour.

The facility-wide PM_{10}, NO_x and VOC potential emissions exceed the 100 tons per year threshold. However, the facility has taken an annual production limit of 141,450 tons per year to maintain actual emissions at levels below the Title V threshold. This facility will be classified as a synthetic minor.

The facility's estimated actual emissions for Acrolein, Benzene and Formaldehyde exceed the TPER limitation; therefore, the facility conducted an AERMOD modeling analysis for toxics. The modeling analysis indicates that the modeled emission rates in compliance with the Acceptable Ambient Level (AAL). According to modeling analysis review, the high efficiency cyclones (HEC-1) shall be located no closer than 108 feet from the nearest property line or easement.

Keith McCullock, GEL Engineering of NC Inc., assisted with the application on behalf of Natures Earth Pellets NC, LLC. Keith's contact number is 919-544-1100.

2. Zoning:

A zoning consistency determination is required and was included with the application. The Zoning Consistency Determination was approved by Bill Peele of the Laurinburg-Scotland County Planning and Development Department.

3. Facility and Application Chronology:

July 10, 2009	FRO received a copy of the permit application and dispersion modeling analysis. The application included a letter for zoning consistency and $400 fees.
July 14, 2009	FRO sent a copy of the permit application and dispersion modeling analysis to Mr. Jim Roller, AQAB.
July 16, 2009	Jim Roller notified this office that he received a copy of the permit application and dispersion modeling analysis.
July 22, 2009	Tien Nguyen sent the facility information to Ms. Gladys Woods via email to create an account for Natures Earth Pellets NC.
July 27, 2009	Tom Anderson, AQAB, completed his review of the dispersion modeling analysis for toxics.
August 3, 2009	FRO received the dispersion modeling analysis memo from Tom Anderson, AQAB. The modeling analysis indicates that the modeled emission rates in compliance with the Acceptable Ambient Level (AAL).

August 10, 2009	Tien Nguyen contacted Mr. Cliff Bragg, Plant Manager, to request the material safety data sheet and information on the wood chips and sawdust. Mr. Bragg stated that he would submit the MSDS to FRO upon receipt.
August 13, 2009	Steven Vozzo discussed with Keith Overcash, William Wallets and Don Vandervarrt about the Commercial or Industrial Solid Waste Incinerator regulations for this facility. William Wallets stated that they are working with the Division of Waste Management (DWM) to make determinations of whether a specific biomass fuel would be considered a waste that would subject the combustor to the requirements of the Commercial or Industrial Solid Waste Incinerator regulations.
September 8, 2009	Tien Nguyen contacted McCullock to request the vendor's data for the emission calculations. McCullock forwarded vendor's email that contained the information requested. The vendor's data indicates that 234 ppm of wood concentration with a maximum of 20% dust content is delivered into the cyclones.
September 17, 2009	FRO received the material safety data sheet for the raw materials via email from Mr. Bragg.
September 28, 2009	Marc Bernstein sent an advisory memorandum to Keith Overcash. Keith distributed the memo to the regional offices. The memo contained several questions needed to evaluate if a fuel is considered a solid waste. It also had case histories to provide guidance to the DAQ and the DWM in making a determination.
September 30, 2009	FRO sent Mr. Bragg of Natural Earth Pellets a PAI letter and enclosed questionnaire for non-fossil fuel waste classification determination. The letter stating that the Division of Air Quality has been working with the Division of Waste Management and the Attorney General Office on addressing the use of wood as fuel source. Mr. Bragg was advised at that time that the permit would be put on hold until the Division of Air Quality could make a determination on the classification of the wood chips and sawdust.
October 2, 2009	Tien Nguyen and Jim Moser called Mr. Bragg to explain to him about the questionnaire for the solid waste determination. We asked him to complete the questionnaire and return it to this office as soon as possible. Mr. Bragg stated that he would submit it to this office for determination.
October 7, 2009	FRO received additional information from Mr. Bragg and forwarded it to RCO
October 15, 2009	FRO received a message from Donald Vandervaart and stated that the facility is not subject to the Commercial and Industrial Solid Waste Incineration NSPS Subpart CCCC because the sawdust at this facility is not considered waste.
October 20, 2009	Steven Vozzo, Jim Moser, and Tien Nguyen of the Fayetteville Regional Office spoke with Cliff Bragg to obtain more information on the process flow diagram. Mr. Bragg provided some of the cyclone specifications. In a phone conversation, FRO explained to Mr. Bragg that the PE seal needed to be resubmitted because the PE seal was submitted with the permit application that certified for a Cashew Cleaning Line, but not for the Natures Earth Pellets. FRO received the PE seal for the Natures Earth Pellets the same day.
October 23, 2009	FRO sent a copy of the draft permit to Cliff Bragg for review and FRO also asked him to confirm the cyclone specifications since it was not clear identified in the permit application submittal.
October 28, 2009	In the email, Donald Vandervaart stated that the DAQ needs to know the price of the wood chips and any additives in the pelletizing process from the facility to determine whether this material was solid waste under Section 129 of the Clean Air Act. This office contacted Mr. Bragg to collect this information. In a phone conversation, Mr. Bragg

stated that they are paying between $25 to $35 per ton for the wood chips and sawdust and there are no additives in the wood pelletizing process. Mr. Bragg said that they could not sell any pellets that have additives; This standard set by the Pellet Fuel Institute. Mr. Bragg also stated that the raw materials are coming from Edwards Wood Products. Edwards is also located in Scotland County. FRO received the cyclone specifications requested from the facility.

November 10, 2009 — Don Vandervaart issued a memo and stated that the Natures Earth Pellets is not subject to the Commercial and Industrial Solid Waste Incineration NSPS Subpart CCCC because it does not combust solid waste.

4. Changes in Equipment, Emissions, and Regulations:

The permitted equipment list for Natures Earth Pellets NC, LLC is shown below:

Emission Source ID	Emission Source Description	Control System ID	Control System Description
Hammermill Operation			
HM-1	Hammermill Feed Operation No.1	HMFC-1, BF-2	Cyclone (42 inches diameter) in series with a bagfilter (4902 ft^2 filter area)
HM-2	Hammermill Feed Operation No.2	HMFC-2, BF-2	Cyclone (42 inches diameter) in series with a bagfilter (4902 ft^2 filter area)
HM-3	Hammermill Feed Operation No.3	HMFC-3, BF-2	Cyclone (42 inches diameter) in series with a bagfilter (4902 ft^2 filter area)
HM-4	Hammermill Feed Operation No.4	HMFC-4, BF-2	Cyclone (42 inches diameter) in series with a bagfilter (4902 ft^2 filter area)
HM-5	Hammermill Feed Operation No.5	HMFC-5, BF-2	Cyclone (42 inches diameter) in series with a bagfilter (4902 ft^2 filter area)
HM-6	Hammermill Feed Operation No.6	HMFC-6, BF-2	Cyclone (42 inches diameter) in series with a bagfilter (4902 ft^2 filter area)
FWHM	Fuel Wood Hammermill Operation	FWHC-1	Cyclone (78 inches diameter)
Pellet Mill Operation			
PM-1	Pellet Mill Feed Operation No.1	PMFC-1, BF-2	Cyclone (72 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
PM-2	Pellet Mill Feed Operation No.2	PMFC-2, BF-2	Cyclone (72 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
PM-3	Pellet Mill Feed Operation No.3	PMFC-3, BF-2	Cyclone (72 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
PM-4	Pellet Mill Feed Operation No.4	PMFC-4, BF-5	Cyclone (72 inches diameter) in Series with a bagfilter (1404ft^2 filter area)
PM-5	Pellet Mill Feed Operation No.5	PMFC-5, BF-5	Cyclone (72 inches diameter) in Series with a bagfilter (1404 ft^2 filter area)
PM-6	Pellet Mill Feed Operation No.6	PMFC-6, BF-5	Cyclone (72 inches diameter) in Series with a bagfilter (1404 ft^2 filter area)
Truck Loadout			
TD-1	Truck Dump (300,000 tons per hour capacity)	BF-1	Bagfilter (4902 ft^2 filter area)
Drying System			
DFBC-1	Dryer Fuel Bin Loading Operation	DFBC-1, BF-1	Cyclone (42 inches diameter) in series with a bagfilter (4902 ft^2 filter area)

Emission Source ID	Emission Source Description	Control System ID	Control System Description
RD-1	Direct Wood-fired Rotary Dryer (maximum output of the rotary dryer is 18.4 tons per hour)	HEC-1	Twin High Efficiency Cyclones (120 inches diameter)
Conveying Operation			
BE-1	Bucket Elevator	BF-1	Bagfilter (4902 ft^2 filter area)
DC-1	Drag Conveyor No.1 ((300,000 tons per hour capacity)		
DC-2	Drag Conveyor No.2 ((300,000 tons per hour capacity)		
SLC-1	Silo Loading Conveyor		
Storage Silos			
DHS-1	Dry Hardwood Silo No.1 (800 tons capacity)	BV-1	Bin Vent Filter (1780 ft^2 filter area)
SS-2	Softwood Silo No.2 (800 tons capacity)	BF-1	Bagfilter (4902 ft^2 filter area)
SS-3	Softwood Silo No.3 (800 tons capacity)		
GHS-4	Green Hardwood Silo No.4 (800 tons capacity)		
HPS-1	Hardwood Pellet Silo	HPC-1, BF-4	Cyclone (42 inches diameter) in Series with a bagfilter (1814 ft^2 filter area)
SPS-1	Softwood Pellet Silo	SPC-1, BF-4	Cyclone (42 inches diameter) in Series with a bagfilter (1814 ft^2 filter area)
Aspirator Operation			
AF-1	Aspirator Feed Operation No.1	AFC-1, BF-2	Cyclone (42 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
A-1	Aspirator No.1	PFFC-1, BF-3	Cyclone (72 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
AF-2	Aspirator Feed Operation No.2	AFC-2, BF-2	Cyclone (42 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
A-2	Aspirator No.2	PFFC-2, BF-3	Cyclone (72 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
Pellet Cooler Operation			
PCF-1	Pellet Cooler Feed Operation No.1	PCFC-1	Cyclone (42 inches diameter)
PCF-2	Pellet Cooler Feed Operation No.2	PCFC-2	Cyclone (42 inches diameter)
PCF-3	Pellet Cooler Feed Operation No.3	PCFC-3	Cyclone (42 inches diameter)
PCF-4	Pellet Cooler Feed Operation No.4	PCFC-4	Cyclone (42 inches diameter)
PCF-5	Pellet Cooler Feed Operation No.5	PCFC-5	Cyclone (42 inches diameter)
PCF-6	Pellet Cooler Feed Operation No.6	PCFC-6	Cyclone (42 inches diameter)
PC-1	Pellet Cooler No.1	PCC-1, BF-3	Cyclone (66 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
PC-2	Pellet Cooler No.2	PCC-2, BF-3	Cyclone (66 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
PC-3	Pellet Cooler No.3	PCC-3, BF-3	Cyclone (66 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
PC-4	Pellet Cooler No.4	PCC-4, BF-5	Cyclone (66 inches diameter) in Series

Emission Source ID	Emission Source Description	Control System ID	Control System Description
			with a bagfilter (1404 ft^2 filter area)
PC-5	Pellet Cooler No.5	PCC-5, BF-5	Cyclone (66 inches diameter) in Series with a bagfilter (1404 ft^2 filter area)
PC-6	Pellet Cooler No.6	PCC-6, BF-5	Cyclone (66 inches diameter) in Series with a bagfilter (1404 ft^2 filter area)

This is a Greenfield facility so all emission sources are considered new. The applicable regulations are outlined in detail below:

A. ***Control of Visible Emissions (2D .0521):*** Visible emissions from all sources shall be less than 20% opacity. Each emission source will need to comply with 20% opacity limit.

B. ***Particulates from Miscellaneous Industrial Processes (2D .0515):*** The particulate emissions cannot exceed those calculated using throughput rates. The allowable emission rates are, as defined in 15A NCAC 2D .0515, a function of the process weight rate and shall be determined by the following equation(s), where P is the process throughput rate in tons per hour (tons/hr) and E is the allowable emission rate in pounds per hour (lbs/hr).

$E = 4.10 * (P)^{0.67}$ for P <= 30 tons/hr, or

$E = 55 * (P)^{0.11} - 40$ for P >30 tons/hr

Allowable emissions = *4.1*(18.4 tons/hr)* $^{0.67}$ = **28.85 lbs/hr**

The facility maximum process throughput is 18.4 tons per hour and allowable rate is 28.85 pounds per hour. Based on the calculated maximum emission rates, PM emissions from each process are in compliance with the emission standard.

C. ***Fugitive Dust Control (2D .0540):*** The Permittee shall not cause or allow fugitive dust emissions to cause complaints or excess VE beyond the property boundary. The facility will need to comply with this standard.

D. **15A NCAC 2D .0516 – "Sulfur Dioxide Emissions from Combustion Sources"**
This regulation applies to sulfur dioxide emissions from any source of combustion that is discharged from any stack. The allowable sulfur dioxide emission rate is **2.3 lb/million Btu** at maximum firing. The rotary dryer will have a rated heat input of 34.2 MMBtu/hr based on a maximum fuel input of 5,100 pounds of wood per hour and a heat content rating of 6,700 Btu per pound of wood. SO_2 emissions are calculated based on AP-42 emission factor for wood-fired boilers (0.85 lbs/hr). The SO_2 emissions from the rotary dryer will be **0.025 lb/million Btu**. Therefore, compliance is indicated.

E. ***Bagfilter Requirements (2D .0611):*** The Permittee must perform I&M, as recommended by the manufacturer, and at least one annual internal inspection on all bagfilters. Results must be maintained in a logbook to demonstrate in compliance with this standard.

F. ***Cyclone Requirements (2D .0611):*** The Permittee must perform I&M, as recommended by the manufacturer, and at least one annual internal inspection on all cyclones. Results must be maintained in a logbook to demonstrate in compliance with this standard.

G. ***Toxic Air Pollutant Emissions Limitation and Reporting Requirement (2D .1100):*** The Permittee shall not exceed the emissions limits listed in this section. Annual production shall not exceed 141,450 tons. The facility must maintain monthly records of production and calculate 12-month rolling averages. The facility must submit this information to our office on an annual basis.

H. **LIMITATION TO AVOID 15A NCAC 2Q .0501 and *Reporting Requirement*** - Pursuant to 15A NCAC 2Q .0315 "Synthetic Minor Facilities," to avoid the applicability of 15A NCAC 2Q .0501 "Purpose of

Section and Requirement for a Permit," as requested by the Permittee, facility-wide PM_{10}, NO_x and VOC emissions shall not exceed 100 tons per year. Annual production shall not exceed 141,450 tons. The facility must maintain monthly records of production and calculate 12-month rolling averages. The facility must submit this information to this office on an annual basis.

I. ***Control and Prohibition of Odorous Emissions (2D .1806):*** The Permittee shall install and operate odor control equipment to prevent odorous emissions from causing objectionable odors beyond the facility boundaries. The facility will need to comply with this standard.

J. ***Toxic Air Pollutant Emissions Limitations Requirement (2Q .0711):*** The facility shall ensure that emissions from the listed toxic pollutants do not exceed limits in the permit.

K. **Prevention of Significant Deterioration (2Q .0317):** The facility shall ensure that PM_{10} emissions do not exceed limit in the permit. These conditions will ensure that the facility does not exceed PSD significance level. The facility complies with this standard by complying with Limitation to Avoid 15A NCAC 2Q .0501.

L. ***Adhoc – Recordkeeping Requirement for Wood Chips and Sawdust.***

M. **Adhoc-Initial Start-up Reporting Requirement** - In accordance with 15A NCAC 2D .0601

5. PSD, NSPS, NESHAPs, Attainment Status, and Chemical Accident Prevention (112r):

- **PSD** – The potential PM-10emissions exceed PSD threshold limits; therefore, this facility does trigger PSD avoidance. The facility has taken limit to maintain actual emissions below 100 tpy.
- **NSPS** – The facility is not subject to NSPS requirements. The facility is not subject to the Commercial and Industrial Solid Waste Incineration NSPS Subpart CCCC because it does not combust solid waste.
- **Attainment Status** – Scotland County is a designated attainment area for all criteria pollutants.
- **NESHAP** – There are no MACT/GACT conditions applicable to the facility at this time.
- **Chemical Accident Prevention (112r)** – The facility does not store any 112(r) chemicals and is not required to maintain a written Risk Management Plan.

6. Facility-Wide Air Toxics Review:

The facility's estimated actual emissions for Acrolein, Benzene and Formaldehyde exceed the TPER limitation; therefore, the facility conducted an AERMOD modeling analysis for toxics. The modeling was reviewed by Mr. Tom Anderson on July27, 2009. The following table shows the maximum impact for each pollutant:

Pollutant	Averaging Period	% of AAL
Acrolein	1-hour	2%
Benzene	annual	8%
Formaldehyde	1-hour	8%

The facility will have an annual wood throughput limit of 141,450 tons per year and will have to maintain records documenting compliance. Other toxic pollutants emitted from the dryer will be included in the TPER stipulation, 2Q .0711.Twin high efficiency cyclones (ID No. HEC-1) shall be located no closer than 108 feet from the nearest property line or easement.

7. Facility Compliance Status:

The facility has not yet constructed; therefore, the facility does not have any negative compliance history.

8. Facility Emissions Review:

The actual and potential emissions listed below were obtained from the permit application forms. PM emissions were calculated based on 80% control efficiency of the cyclones. According to the vendor data, cyclones are expected to have a minimum of 80% control efficiency for PM emissions The emissions from the rotary dryer were

calculated using the EPA, AP-42 emission factors in section 10.6.2 (35-60% softwood, 40-65% hardwood). Controlled PM emission factor for each bag filter is 0.002 grains per cubic foot. Uncontrolled PM emissions from each bag filter are calculated using the concentration of wood in the pneumatic stream and 5% dust content. PM and PM10 are assumed to be the same. This should be a very conservative estimate since most captured from the wood pellets process has a large particle size. The actual and potential emissions with control were calculated based on an annual production of 141,450 tons per year. The potential emissions without permit limitation (or without controls) were calculated based on 8760 hours of operation per year.

Pollutant	Expected Actual Emissions (TPY)	Potential Emissions With Permit Limitations (TPY)	Potential Emissions Without Permit Limitations(TPY)
PM	86	86	865
PM-10	86	86	865
SO_2	3.7	3.7	3.7
NO_X	99	99*	113
CO	55	55	62
VOC	92	92	105

9. Stipulation Review:

The following regulations are applicable to this facility:

Regulation	Affected Sources	Emission Limits or Requirements
15A NCAC 2D .0515	Facility-wide	Limits as calculated in permit
15A NCAC 2D .0521	Facility-wide	Opacity < 20 %
15A NCAC 2D .0611	Baghouse	I&M as requested by manufacturer, annual internal inspection, and recordkeeping
15A NCAC 2D .0611	Cyclones	I&M as requested by manufacturer, annual internal inspection, and recordkeeping
15A NCAC 2D .0711	Facility-wide	TPER Limitations
15A NCAC 2D .1100	Facility-wide	Toxic Limits, Recordkeeping, Reporting
15A NCAC 2D .1806	Facility-wide	Odors
15A NCAC 2D .0540	Facility-wide	Particulate from Fugitive Sources
15A NCAC 2D .0535	Facility-wide	Notification requirement
15A NCAC 2Q .0315	Facility-wide	PM, NOx & VOC < 100 TPY, production limits, recordkeeping, and annual reporting
Adhoc	Facility -wide	Wood chips and sawdust recordkeeping requirements
15A NCAC 2Q .0317	Facility-wide	SO2 < 250 TPY, production limits, recordkeeping, and annual reporting

10. Conclusions, Comments, and Recommendations:

I recommend that permit no. 09919R00 be issued to Natures Earth Pellets NC, LLC with the following:

a. Modifications to the Permit Writer output:

- Emission source table: adjusted column widths, highlighted column heading, merged cells;
- Adjusted column widths and merged cells in the toxic tables;
- Added "fabric filter" in 11.b;
- Added adhoc-Initial Start-up Reporting Requirement
- Added adhoc "Wood chips and sawdust recordkeeping requirements"
- Bolded and formatted as needed throughout the document; and
- Added spaces as needed throughout the document.

b. Note to inspector:

- Recommend inspector check distance to verify the high efficiency cyclones (ID No. HEC-1) located no closer than 108 feet from the nearest property line or easement.
- Verity the cyclone specifications.

Review Engineer: Tom Nguyen Date: 11/12/2009

Permit Coordinator: Date: 11/12/2009

DAQ Supervisor: Date: 11-12-2009

\txn
cc: RCO Files
FRO Files

North Carolina Department of Environment and Natural Resources
Division of Air Quality

Beverly Eaves Perdue
Governor

B. Keith Overcash, P.E.
Director

Dee Freeman
Secretary

November 12, 2009

Mr. Cliff Bragg
Plant Manager
Natures Earth Pellets NC, LLC
16900 Aberdeen Road
Laurinburg, NC 28352

Subject: Air Permit No. 10012R00
Natures Earth Pellets NC, LLC
Laurinburg, Scotland County, North Carolina
Permit Class: Synthetic Minor
Facility ID# 8300104

Dear Mr. Bragg:

In accordance with your completed application received July 10, 2009 and further information received October 28, 2009, we are forwarding herewith Permit No. 10012R00 to Natures Earth Pellets NC, LLC, Laurinburg, Scotland County, North Carolina for the construction and operation of air emissions sources or air cleaning devices and appurtenances. Please note the records retention requirements are contained in General Condition 2 of the General Conditions and Limitations.

If any parts, requirements, or limitations contained in this permit are unacceptable to you, you have the right to request a formal adjudicatory hearing within 30 days following receipt of this permit, identifying the specific issues to be contested. Such a request will stay the effectiveness of the entire permit. This hearing request must be in the form of a written petition, conforming to G.S. 150B-23 of the North Carolina General Statutes, and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714. The form for requesting a formal adjudicatory hearing may be obtained upon request from the Office of Administrative Hearings. Unless a request for a hearing is made pursuant to G.S. 150B-23, this air permit shall be final and binding.

You may request modification of your air permit through informal means pursuant to G.S. 150B-22. This request must be submitted in writing to the Director and must identify the specific provisions or issues for which the modification is sought. Please note that the permit will become

final and binding regardless of a request for informal modification unless a request for a hearing is also made under G.S. 150B-23.

Unless exempted by a condition of this permit or the regulations, construction of new air pollution sources or air cleaning devices, or modifications to the sources or air cleaning devices described in this permit must be covered under a permit issued by the Division of Air Quality prior to construction. Failure to do so is a violation of G.S. 143-215.108 and may subject the Permittee to civil or criminal penalties as described in G.S. 143-215.114A and 143-215.114B.

This permit shall be effective from November 12, 2009 until October 31, 2014, is nontransferable to future owners and operators, and shall be subject to the conditions and limitations as specified therein.

Changes have been made to the permit stipulations. The Permittee is responsible for carefully reading the entire permit and evaluating the requirements of each permit stipulation. The Permittee shall comply with all terms, conditions, requirements, limitations and restrictions set forth in this permit. Noncompliance with any permit condition is grounds for enforcement action, for permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application. Should you have any questions concerning this matter, please contact Tien Nguyen at (910) 433-3300.

Sincerely,

Steven F. Vozzo
Regional Air Quality Supervisor

txn
Enclosures

c: Central Files
Fayetteville Regional Office

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF AIR QUALITY

AIR PERMIT NO. 10012R00

Issue Date: November 12, 2009
Expiration Date: October 31, 2014

Effective Date: November 12, 2009
Replaces Permit: (new)

To construct and operate air emission source(s) and/or air cleaning device(s), and for the discharge of the associated air contaminants into the atmosphere in accordance with the provisions of Article 21B of Chapter 143, General Statutes of North Carolina (NCGS) as amended, and other applicable Laws, Rules and Regulations,

Natures Earth Pellets NC, LLC
16900 Aberdeen Road
Laurinburg, Scotland County, North Carolina
Permit Class: Synthetic Minor
Facility ID# 8300104

(the Permittee) is hereby authorized to construct and operate the air emissions sources and/or air cleaning devices and appurtenances described below:

Emission Source ID	Emission Source Description	Control System ID	Control System Description
Hammermill Operation			
HM-1	Hammermill Feed Operation No.1	HMFC-1, BF-2	Cyclone (42 inches diameter) in series with a bagfilter (4902 ft^2 filter area)
HM-2	Hammermill Feed Operation No.2	HMFC-2, BF-2	Cyclone (42 inches diameter) in series with a bagfilter (4902 ft^2 filter area)
HM-3	Hammermill Feed Operation No.3	HMFC-3, BF-2	Cyclone (42 inches diameter) in series with a bagfilter (4902 ft^2 filter area)
HM-4	Hammermill Feed Opeartion No.4	HMFC-4, BF-2	Cyclone (42 inches diameter) in series with a bagfilter (4902 ft^2 filter area)
HM-5	Hammermill Feed Operation No.5	HMFC-5, BF-2	Cyclone (42 inches diameter) in series with a bagfilter (4902 ft^2 filter area)
HM-6	Hammermill Feed Operation No.6	HMFC-6, BF-2	Cyclone (42 inches diameter) in series with a bagfilter (4902 ft^2 filter area)
FWHM	Fuel Wood Hammermill Operation	FWHC-1	Cyclone (78 inches diameter)

Emission Source ID	Emission Source Description	Control System ID	Control System Description
Pellet Mill Operation			
PM-1	Pellet Mill Feed Operation No.1	PMFC-1, BF-2	Cyclone (72 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
PM-2	Pellet Mill Feed Operation No.2	PMFC-2, BF-2	Cyclone (72 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
PM-3	Pellet Mill Feed Operation No.3	PMFC-3, BF-2	Cyclone (72 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
PM-4	Pellet Mill Feed Operation No.4	PMFC-4, BF-5	Cyclone (72 inches diameter) in Series with a bagfilter (1404ft^2 filter area)
PM-5	Pellet Mill Feed Operation No.5	PMFC-5, BF-5	Cyclone (72 inches diameter) in Series with a bagfilter (1404 ft^2 filter area)
PM-6	Pellet Mill Feed Operation No.6	PMFC-6, BF-5	Cyclone (72 inches diameter) in Series with a bagfilter (1404 ft^2 filter area)
Truck Loadout			
TD-1	Truck Dump (300,000 tons per hour capacity)	BF-1	Bagfilter (4902 ft^2 filter area)
Drying System			
DFBC-1	Dryer Fuel Bin Loading Operation	DFBC-1, BF-1	Cyclone (42 inches diameter) in series with a bagfilter (4902 ft^2 filter area)
RD-1	Direct Wood-fired Rotary Dryer (maximum output of the rotary dryer is 18.4 tons per hour)	HEC-1	Twin High Efficiency Cyclones (120 inches diameter)
Conveying Operation			
BE-1	Bucket Elevator	BF-1	Bagfilter (4902 ft^2 filter area)
DC-1	Drag Conveyor No.1 ((300,000 tons per hour capacity)		
DC-2	Drag Conveyor No.2 ((300,000 tons per hour capacity)		
SLC-1	Silo Loading Conveyor		
Storage Silos			
DHS-1	Dry Hardwood Silo No.1 (800 tons capacity)	BV-1	Bin Vent Filter (1780 ft^2 filter area)
SS-2	Softwood Silo No.2 (800 tons capacity)	BF-1	Bagfilter (4902 ft^2 filter area)
SS-3	Softwood Silo No.3 (800 tons capacity)		
GHS-4	Green Hardwood Silo No.4 (800 tons capacity)		
HPS-1	Hardwood Pellet Silo	HPC-1, BF-4	Cyclone (42 inches diameter) in Series with a bagfilter (1814 ft^2 filter area)
SPS-1	Softwood Pellet Silo	SPC-1, BF-4	Cyclone (42 inches diameter) in Series with a bagfilter (1814 ft^2 filter area)
Aspirator Operation			
AF-1	Aspirator Feed Operation No.1	AFC-1, BF-2	Cyclone (42 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
A-1	Aspirator No.1	PFFC-1, BF-3	Cyclone (72 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)

Emission Source ID	Emission Source Description	Control System ID	Control System Description
AF-2	Aspirator Feed Operation No.2	AFC-2, BF-2	Cyclone (42 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
A-2	Aspirator No.2	PFFC-2, BF-3	Cyclone (72 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
Pellet Cooler Operation			
PCF-1	Pellet Cooler Feed Operation No.1	PCFC-1	Cyclone (42 inches diameter)
PCF-2	Pellet Cooler Feed Operation No.2	PCFC-2	Cyclone (42 inches diameter)
PCF-3	Pellet Cooler Feed Operation No.3	PCFC-3	Cyclone (42 inches diameter)
PCF-4	Pellet Cooler Feed Operation No.4	PCFC-4	Cyclone (42 inches diameter)
PCF-5	Pellet Cooler Feed Operation No.5	PCFC-5	Cyclone (42 inches diameter)
PCF-6	Pellet Cooler Feed Operation No.6	PCFC-6	Cyclone (42 inches diameter)
PC-1	Pellet Cooler No.1	PCC-1, BF-3	Cyclone (66 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
PC-2	Pellet Cooler No.2	PCC-2, BF-3	Cyclone (66 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
PC-3	Pellet Cooler No.3	PCC-3, BF-3	Cyclone (66 inches diameter) in Series with a bagfilter (4902 ft^2 filter area)
PC-4	Pellet Cooler No.4	PCC-4, BF-5	Cyclone (66 inches diameter) in Series with a bagfilter (1404 ft^2 filter area)
PC-5	Pellet Cooler No.5	PCC-5, BF-5	Cyclone (66 inches diameter) in Series with a bagfilter (1404 ft^2 filter area)
PC-6	Pellet Cooler No.6	PCC-6, BF-5	Cyclone (66 inches diameter) in Series with a bagfilter (1404 ft^2 filter area)

in accordance with the completed application 8300104.09A received July 10, 2009 and information received October 28, 2009 including any plans, specifications, previous applications, and other supporting data, all of which are filed with the Department of Environment and Natural Resources, Division of Air Quality (DAQ) and are incorporated as part of this permit.

This permit is subject to the following specified conditions and limitations including any TESTING, REPORTING, OR MONITORING REQUIREMENTS:

A. SPECIFIC CONDITIONS AND LIMITATIONS

1. Any air emission sources or control devices authorized to construct and operate above must be operated and maintained in accordance with the provisions contained herein. The Permittee shall comply with applicable Environmental Management Commission Regulations, including Title 15A North Carolina Administrative Code (NCAC), Subchapter 2D .0200, 2D .0202, 2D .0515, 2D .0516, 2D .0521, 2D .0535, 2D .0540, 2D .0611, 2D .1100, 2D .1806, 2Q .0315, 2Q .0317 (Avoidance) and 2Q .0711.

2. **RECORDKEEPING REQUIREMENTS FOR SAWDUST AND WOOD CHIPS** - The Permittee shall combust only clean, untreated, and unadulterated greenwood chips and sawdust from the sawmill in the direct wood-fired rotary dryer (RD-1).The Permittee shall maintain the records of the sawdust and wood chips supplier certification on-site for each batch received. All records required under this section shall be maintained for a period of two years and made available to DAQ personnel upon request. The Permittee shall be deemed in noncompliance if recordkeeping requirements are not maintained.

3. **Initial Start-up Reporting Requirement** - In accordance with 15A NCAC 2D .0601, the Permittee is required to NOTIFY the Regional Supervisor, DAQ, in WRITING, of the actual date of initial start-up of the affected emission source(s) and/or air cleaning device(s), postmarked within 15 days after such date.

4. PERMIT RENEWAL AND EMISSION INVENTORY REQUIREMENT - The Permittee, at least 90 days prior to the expiration date of this permit, shall request permit renewal by letter in accordance with 15A NCAC 2Q .0304(d) and (f). Pursuant to 15A NCAC 2Q .0203(i), no permit application fee is required for renewal of an existing air permit(without a modification request). The renewal request(with AA application form) should be submitted to the Regional Supervisor, DAQ. Also, at least 90 days prior to the expiration date of this permit, the Permittee shall submit the air pollution emission inventory report(with Certification Sheet) in accordance with 15A NCAC 2D .0202, pursuant to N.C. General Statute 143 215.65. The report shall be submitted to the Regional Supervisor, DAQ and shall document air pollutants emitted for the 2013 calendar year.

5. PARTICULATE CONTROL REQUIREMENT - As required by 15A NCAC 2D .0515 "Particulates from Miscellaneous Industrial Processes," particulate matter emissions from the emission sources shall not exceed allowable emission rates. The allowable emission rates are, as defined in 15A NCAC 2D .0515, a function of the process weight rate and shall be determined by the following equation(s), where P is the process throughput rate in tons per hour (tons/hr) and E is the allowable emission rate in pounds per hour (lbs/hr).

$E = 4.10 * (P)^{0.67}$ for P <= 30 tons/hr, or

$E = 55 * (P)^{0.11} - 40$ for P >30 tons/hr

6. SULFUR DIOXIDE CONTROL REQUIREMENT - As required by 15A NCAC 2D .0516 "Sulfur Dioxide Emissions from Combustion Sources," sulfur dioxide emissions from Direct Wood-fired Rotary Dryer (maximum output of the rotary dryer is 18.4 tons per hour) (ID No. RD-1) shall not exceed 2.3 pounds per million Btu heat input.

7. VISIBLE EMISSIONS CONTROL REQUIREMENT - As required by 15A NCAC 2D .0521 "Control of Visible Emissions," visible emissions from the emission sources, manufactured after July 1, 1971, shall not be more than 20 percent opacity when averaged over a six-minute period, except that six-minute periods averaging not more than 87 percent opacity may occur not more than once in any hour nor more than four times in any 24-hour period. However, sources which must comply with 15A NCAC 2D .0524 "New Source Performance Standards" or .1110 "National Emission Standards for Hazardous Air Pollutants" must comply with applicable visible emissions requirements contained therein.

8. NOTIFICATION REQUIREMENT - As required by 15A NCAC 2D .0535, the Permittee of a source of excess emissions that last for more than four hours and that results from a malfunction, a breakdown of process or control equipment or any other abnormal conditions, shall:

    a. Notify the Director or his designee of any such occurrence by 9:00 a.m. Eastern time of the Division's next business day of becoming aware of the occurrence and describe:

        i. the name and location of the facility,

        ii. the nature and cause of the malfunction or breakdown,

        iii. the time when the malfunction or breakdown is first observed,

        iv. the expected duration, and

        v. an estimated rate of emissions.

    b. Notify the Director or his designee immediately when the corrective measures have been accomplished.

    This reporting requirement does not allow the operation of the facility in excess of Environmental Management Commission Regulations.

9. FUGITIVE DUST CONTROL REQUIREMENT - As required by 15A NCAC 2D .0540 "Particulates from Fugitive Dust Emission Sources," the Permittee shall not cause or allow fugitive dust emissions to cause or contribute to substantive complaints or excess visible emissions beyond the property boundary. If substantive complaints or excessive fugitive dust emissions from the facility are observed beyond the property boundaries for six minutes in any one hour (using Reference Method 22 in 40 CFR, Appendix A), the owner or operator may be required to submit a fugitive dust plan as described in 2D .0540(f).

    "Fugitive dust emissions" means particulate matter from process operations that does not pass through a process stack or vent and that is generated within plant property boundaries from activities such as: unloading and loading areas, process areas stockpiles, stock pile working, plant parking lots, and plant roads (including access roads and haul roads).

10. CYCLONE REQUIREMENTS - As required by 15A NCAC 2D .0611, particulate matter emissions shall be controlled as described in the permitted equipment list.

    a. Inspection and Maintenance Requirements - The inspection, maintenance and record keeping requirements shall become effective. To comply with the provisions of this permit and ensure that emissions do not exceed the regulatory limits, **the Permittee shall perform an annual (for each 12 month period following the initial inspection) inspection of the cyclone system**. In addition, the Permittee shall perform periodic inspections and maintenance (I&M) as recommended by the manufacturer.

b. Recordkeeping Requirements - The results of all inspections and any variance from the manufacturer's recommendations or from those given in this permit (when applicable) shall be investigated with corrections made and dates of actions recorded in a cyclone logbook. Records of all maintenance activities shall be recorded in the logbook. The cyclone logbook (in written or electronic format) shall be kept on-site and made available to DAQ personnel upon request.

11. FABRIC FILTER REQUIREMENTS including cartridge filters, baghouses, and other dry filter particulate collection devices - As required by 15A NCAC 2D .0611, particulate matter emissions shall be controlled as described in the permitted equipment list.

a. Inspection and Maintenance Requirements - The inspection, maintenance and record keeping requirements shall become effective. To comply with the provisions of this permit and ensure that emissions do not exceed the regulatory limits, **the Permittee shall perform, at a minimum, an annual (for each 12 month period following the initial inspection) internal inspection of each bagfilter system**. In addition, the Permittee shall perform periodic inspections and maintenance as recommended by the equipment manufacturer.

b. Recordkeeping Requirements - The results of all inspections and any variance from manufacturer's recommendations or from those given in this permit (when applicable) shall be investigated with corrections made and dates of actions recorded in a fabric filter logbook. Records of all maintenance activities shall be recorded in the logbook. The logbook (in written or electronic format) shall be kept on-site and made available to DAQ personnel upon request.

12. TOXIC AIR POLLUTANT EMISSIONS LIMITATION AND REPORTING REQUIREMENT - Pursuant to 15A NCAC 2D .1100 "Control of Toxic Air Pollutants," and in accordance with the approved application for an air toxic compliance demonstration, the following permit limits shall not be exceeded:

Affected Source(s)	Toxic Air Pollutant	Emission Limit
Direct wood-fired rotary dryer (ID No.RD-1)	Acrolein (107-02-8)	0.28 lb/hr
	Benzene (71-43-2)	665 lbs/yr
	Formaldehyde (50-00-0)	1.77 lbs/hr

a. Restrictions - To ensure compliance with the above limits, the following restrictions shall apply:

i. The amount of wood pellet production at the facility shall not exceed **141,450 tons per 12-month period.**

ii. The wood pellet production shall not exceed **18.4 tons per hour**, and

iii. The twin high efficiency cyclone structure (ID No. HEC-1) shall be located **no closer than 108 feet** from the nearest property line or easement.

b. Reporting Requirements - For compliance purposes, **within 30 days after each calendar year**, regardless of the actual emissions, the following shall be reported to the Regional Supervisor, DAQ:

i. The monthly and annual total tons of wood pellet production at the facility for the previous 12 months.

ii. The maximum daily wood pellet production for the previous 12 months.

c. Recordkeeping Requirements - The following recordkeeping requirements apply:

i. The Permittee shall record the daily, monthly, and annual wood pellet production, in tons, for the previous 12 month period.

13. CONTROL AND PROHIBITION OF ODOROUS EMISSIONS - As required by 15A NCAC 2D .1806 "Control and Prohibition of Odorous Emissions" the Permittee shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary.

14. LIMITATION TO AVOID 15A NCAC 2Q .0501 - Pursuant to 15A NCAC 2Q .0315 "Synthetic Minor Facilities," to avoid the applicability of 15A NCAC 2Q .0501 "Purpose of Section and Requirement for a Permit," as requested by the Permittee, facility-wide emissions shall be less than the following:

Pollutant	Emission Limit (Tons per consecutive 12-month period)
PM_{10}	100
NO_x	100
VOC	100

a. Operations Restrictions - To ensure emissions do not exceed the limitations above, the following restrictions shall apply:

i. The annual wood pellet production **shall not exceed 141,450 tons per consecutive 12-month period.**

b. Recordkeeping Requirements-The Permittee shall record monthly and total annually the following:

i. The amount of wood pellet production for the previous 12 months;

ii. NO_x, PM_{10} and VOC emissions for the previous 12 months. The annual emissions must be calculated for each of the 12-month periods over the previous 14 months and;

iii. A logbook, in electronic or paper format, indicating the amount of wood pellet production and NO_x, PM_{10}, and VOC emissions shall be kept on site

and made available to DAQ personnel upon request. The Permittee shall be deemed in noncompliance if recordkeeping requirements are not maintained.

c. Reporting Requirements - **Within 30 days after each calendar year**, regardless of the actual emissions, the Permittee shall submit the following:

i. The monthly and annual total tons of wood pellet production for the previous 12 months;

ii. The monthly and total annually NO_x, PM_{10} and VOC emissions for the previous 12 months. The annual emissions must be calculated for each of the 12-month periods over the previous 14 months.

15. LIMITATION TO AVOID 15A NCAC 2D .0530 "PREVENTION OF SIGNIFICANT DETERIORATION" - In accordance with 15A NCAC 2Q .0317, to comply with this permit and avoid the applicability of 15A NCAC 2D .0530 "Prevention of Significant Deterioration," as requested by the Permittee, emissions shall be limited as follows:

Affected Source(s)	Pollutant	Emission Limit (Tons Per Consecutive 12-month Period)
Facility Wide	PM_{10}	250

a. Operations Restrictions - To ensure emissions do not exceed the limitations above, the following restrictions shall apply:

i. By complying with the operational restrictions listed in stipulation 15A NCAC 2Q .0315, Limitation to Avoid 15A NCAC 2Q .0501 (Permit Condition 14), the Permittee shall have also complied with the operational requirements for 15A NCAC 2Q .0317, Limitation to Avoid 15A NCAC 2D .0530

16. TOXIC AIR POLLUTANT EMISSIONS LIMITATION REQUIREMENT - Pursuant to 15A NCAC 2Q .0711 "Emission Rates Requiring a Permit," for each of the below listed toxic air pollutants (TAPs), the Permittee has made a demonstration that facility-wide actual emissions do not exceed the Toxic Permit Emission Rates (TPERs) listed in 15A NCAC 2Q .0711. The facility shall be operated and maintained in such a manner that emissions of any listed TAPs from the facility, including fugitive emissions, will not exceed TPERs listed in 15A NCAC 2Q .0711.

a. A permit to emit any of the below listed TAPs shall be required for this facility if actual emissions from all sources will become greater than the corresponding TPERs.

b. PRIOR to exceeding any of these listed TPERs, the Permittee shall be responsible for obtaining a permit to emit TAPs and for demonstrating compliance with the requirements of 15A NCAC 2D .1100 "Control of Toxic Air Pollutants".

c. In accordance with the approved application, the Permittee shall maintain records of operational information demonstrating that the TAP emissions do not exceed the TPERs as listed below:

Pollutant	Carcinogens (lb/yr)	Chronic Toxicants (lb/day)	Acute Systemic Toxicants (lb/hr)	Acute Irritants (lb/hr)
Acetaldehyde (75-07-0)				6.8
MEK (78-93-3)		78		22.4
Methylene chloride (75-09-2)	1600		0.39	
Phenol (108-95-2)			0.24	
Styrene (100-42-5)			2.7	
Toluene (108-88-3)		98		14.4
Xylene (1330-20-7)		57		16.4

B. GENERAL CONDITIONS AND LIMITATIONS

1. TWO COPIES OF ALL DOCUMENTS, REPORTS, TEST DATA, MONITORING DATA, NOTIFICATIONS, REQUESTS FOR RENEWAL, AND ANY OTHER INFORMATION REQUIRED BY THIS PERMIT shall be submitted to the:

   Regional Air Quality Supervisor
   North Carolina Division of Air Quality
   Fayetteville Regional Office
   Systel Building
   225 Green Street, Suite 714
   Fayetteville, NC 28301-5094
   (910) 433-3300

2. RECORDS RETENTION REQUIREMENT - Any records required by the conditions of this permit shall be kept on site and made available to DAQ personnel for inspection upon request. These records shall be maintained in a form suitable and readily available for expeditious inspection and review. These records must be kept on site for a minimum of 2 years, unless another time period is otherwise specified.

3. ANNUAL FEE PAYMENT - Pursuant to 15A NCAC 2Q .0203(a), the Permittee shall pay the annual permit fee within 30 days of being billed by the DAQ. Failure to pay the fee in a timely manner will cause the DAQ to initiate action to revoke the permit.

4. EQUIPMENT RELOCATION - A new air permit shall be obtained by the Permittee prior to establishing, building, erecting, using, or operating the emission sources or air cleaning equipment at a site or location not specified in this permit.

5. This permit is subject to revocation or modification by the DAQ upon a determination that information contained in the application or presented in the support thereof is incorrect,

conditions under which this permit was granted have changed, or violations of conditions contained in this permit have occurred. The facility shall be properly operated and maintained at all times in a manner that will effect an overall reduction in air pollution. Unless otherwise specified by this permit, no emission source may be operated without the concurrent operation of its associated air cleaning device(s) and appurtenances.

6. REPORTING REQUIREMENT - Any of the following that would result in previously unpermitted, new, or increased emissions must be reported to the Regional Supervisor, DAQ:

    a. changes in the information submitted in the application regarding facility emissions;

    b. changes that modify equipment or processes of existing permitted facilities; or

    c. changes in the quantity or quality of materials processed.

    If appropriate, modifications to the permit may then be made by the DAQ to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause a violation of the emission limitations specified herein.

7. This permit is nontransferable by the Permittee. Future owners and operators must obtain a new air permit from the DAQ.

8. This issuance of this permit in no way absolves the Permittee of liability for any potential civil penalties which may be assessed for violations of State law which have occurred prior to the effective date of this permit.

9. This permit does not relieve the Permittee of the responsibility of complying with all applicable requirements of any Federal, State, or Local water quality or land quality control authority.

10. Reports on the operation and maintenance of the facility shall be submitted by the Permittee to the Regional Supervisor, DAQ at such intervals and in such form and detail as may be required by the DAQ. Information required in such reports may include, but is not limited to, process weight rates, firing rates, hours of operation, and preventive maintenance schedules.

11. A violation of any term or condition of this permit shall subject the Permittee to enforcement pursuant to G.S. 143-215.114A, 143-215.114B, and 143-215.114C, including assessment of civil and/or criminal penalties.

12. Pursuant to North Carolina General Statute 143-215.3(a)(2), no person shall refuse entry or access to any authorized representative of the DAQ who requests entry or access for purposes of inspection, and who presents appropriate credentials, nor shall any person obstruct, hamper, or interfere with any such representative while in the process of carrying out his official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.

13. The Permittee must comply with any applicable Federal, State, or Local requirements governing the handling, disposal, or incineration of hazardous, solid, or medical wastes, including the Resource Conservation and Recovery Act (RCRA) administered by the Division of Waste Management.

14. PERMIT RETENTION REQUIREMENT - The Permittee shall retain a current copy of the air permit at the site. The Permittee must make available to personnel of the DAQ, upon request, the current copy of the air permit for the site.

15. CLEAN AIR ACT SECTION 112(r) REQUIREMENTS - Pursuant to 40 CFR Part 68 "Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act, Section 112(r)," if the Permittee is required to develop and register a risk management plan pursuant to Section 112(r) of the Federal Clean Air Act, then the Permittee is required to register this plan in accordance with 40 CFR Part 68.

16. PREVENTION OF ACCIDENTAL RELEASES - GENERAL DUTY - Pursuant to Title I Part A Section 112(r)(1) of the Clean Air Act "Hazardous Air Pollutants - Prevention of Accidental Releases - Purpose and General Duty," although a risk management plan may not be required, if the Permittee produces, processes, handles, or stores any amount of a listed hazardous substance, the Permittee has a general duty to take such steps as are necessary to prevent the accidental release of such substance and to minimize the consequences of any release. **This condition is federally-enforceable only.**

17. GENERAL EMISSIONS TESTING AND REPORTING REQUIREMENTS - If emissions testing is required by this permit, or the DAQ, or if the Permittee submits emissions testing to the DAQ in support of a permit application or to demonstrate compliance, the Permittee shall perform such testing in accordance with 15A NCAC 2D .2600 and follow all DAQ procedures including protocol approval, regional notification, report submittal, and test results approval.

Permit issued this the 12th of November, 2009.
NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION

Steven F. Vozzo
Regional Air Quality Supervisor
By Authority of the Environmental Management Commission

Air Permit No. 10012R00