Chalam Pakala Engineering and Environmental Solutions

10017 Allyson Park Dr., Charlotte, NC 28277 Tel: (704) 541-4042 Fax: (704) 541-4043

April 26, 2021

Active Energy Renewable Power

1885 Alamac Road

Lumberton, North Carolina 28358

Attention:

Mr. Michael Rowan

Chief Executive Officer

Re:

Air Permit Modification Request for Pellet Manufacturing Air Emission Sources

Active Energy Renewable Power

1885 Alamac Road

Lumberton, Robeson County, North Carolina

CPEES Project No. 1198-001

Dear Mr. Rowan:

Attached please see an Air Permit modification request report for all the proposed air emission sources at the subject facility located in Lumberton, North Carolina. Active Energy Renewable Power (AERP) had requested CP Engineering and Environmental Solutions (CPEES) to calculate air emissions from all the proposed air emission sources to determine if an air permit modification is required for the proposed operations. The air emissions sources at the facility include: one 20mmBTU/hr natural gas fired Boiler, Two pressure cookers (one always used as a standby) with a condenser as a control device, one Screw Press and a 4mmBTU/hr natural gas fired Dryer with a cyclone as a control device, One Pelletizer and Pellet Cooling system with a cyclone as a control device, Pellet Screen with Cartridge Filter as a control device and pellet storage. The air permit calculations are completed based on the air emission source information provided to CPEES. Based on the information provided to CPEES and the air emissions calculations performed for all the proposed air emissions sources at the subject facility, CPEES concludes a small air permit would be required for the subject facility due to VOC emissions expected from the proposed sources. A few insignificant sources approved by NC DEQ will be in the permit as per the several NC DEQ exemption criteria. Please note CPEES is neither involved in the design of the equipment or control devices and therefore, CPEES is not responsible for their process flow and control efficiencies. The air permit application package includes:

- Facility Operations and Air Emission Sources Description;
- Process Flow Schematic:
- Air emissions calculations for the proposed air emission sources with supporting documentation; and
 - Site USGS topo Map.

It is my pleasure to complete this important project for AERP and please call me at (704) 541-4042 if you have any questions or comments on this permit application package.

Respectfully submitted,

CP Engineering and Environmental Solutions

(A Cost Effective Solution Provider for Manufacturing)

Chalam V. Pakala, P.E. Managing Principal

Attachments: Air Permit Exemption Package

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04/26/2021

Chalam Pakala Engineering and Environmental Solutions

10017 Allyson Park Dr., Charlotte. NC 28277 Tel: (704) 541-4042 Fax: (704) 541-4043

April 26, 2021

Ms. Heather Carter, Regional Supervisor Systel Building 225 Green Street, Suite 74 Fayetteville, North Carolina 28301

Re:

Air Permit Modification Request for Pellet Manufacturing Air Emission Sources

Active Energy Renewable Power

1885 Alamac Road

Lumberton, Robeson County, North Carolina Air Permit #10636R00; Facility ID#7800242

Dear Ms. Carter:

On behalf of Active Energy Renewable Power (AERP), per the requirements of NC DEQ - Division of Air Quality, CP Engineering and Environmental Solutions (CPEES) is pleased to submit an Air Permit request for all the proposed air emission sources at the subject facility located in Lumberton, Robeson County, North Carolina. In an effort to ensure that all proposed operations are under the permit exemption or in need of a permit, AERP had retained CPEES to review all the proposed operations and to calculate air emissions at the subject facility. The air emission sources at the facility include: one 20mmBTU/hr natural gas fired Boiler, Two pressure cookers (one always used as a standby) with a condenser as a control device, one Screw Press and a 4mmBTU/hr natural gas fired Dryer with a cyclone as a control device, One Pelletizer and Pellet Cooling system with a cyclone as a control device, Pellet Screen with Cartridge Filter as a control device and pellet storage. Based on the air emissions calculations performed for all the proposed air emission sources at the subject facility, CPEES has concluded that an Air Permit is required for the proposed air emission sources due to VOC emissions expected from the proposed sources. A few insignificant sources approved by NC DEQ will be in the permit as per the several NC DEQ exemption criteria. The enclosed permit exemption application package includes:

- Permit fee \$50
- State air permit forms (A1, A2, A3, B, B1 and B9, C7, C4 and C1, D1 and D5);
- Facility Operations and Air Emission Sources Description;
- Air emissions calculations for the proposed air emission sources with supporting documentation; and
- Process Flow Schematic;
- Site USGS Topo Map.

Please call Mr. Tyler Player of AERP at 207-554-7122, Ron Gaskins at 910-840-7922 or me at (704) 756-7451 if you have any questions or comments on this permit application package. We appreciate your help and cooperation on the progress of this project.

Respectfully submitted,

CP Engineering and Environmental Solutions

(A Cost Effective Solution Provider for Manufacturing)

Chalam V. Pakala, P.E.

Managing Principal

Attachments: Air Permit Exemption Package

SEAL 19807 (CAROLINIA O4/26/2021

Air Permit Request for the Proposed Air Emission Sources

Prepared for:



Active Energy Renewable Power

1885 Alamac Road Lumberton, Robeson County, North Carolina

> CPEES Project No. 1198-001 April 26, 2021

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AM V. PANIL

Prepared by:

Chalam Pakala Engineering and Environmental Solutions

10017 Allyson Park Dr. Charlotte, North Carolina 28277 Tel: (704) 541-4042 Fax: 704-541-4043

Email: cvpakala@carolina.rr.com

1.0 FACILITY DESCRIPTION AND MANUFACTURING OPERATIONS

Active Energy Renewable Power (AERP) located at 1885 Alamac Road, Lumberton, Robeson County, North Carolina, manufactures wooden pellets for fuel source for industries. The geographic site location can also be given as 34°35'20.49"North Latitude and 79° 0'21.99"West Longitude (Figure 1). AERP proposed operations at the facility are 8000 hrs per year (potential hours are 24hrs/day, 7 days/wk and 52 wks/year = 8760 hrs/year).

2.0 EXISTING AIR EMISSION SOURCES

The proposed air emissions sources at the site are:

Air Emissions Source ID	Sources	Rating	Release	Control Device
Pellet Manufactur	ing			
ES-B-1	Natural Gas fired Boiler	20 mmBTU/hr	Outside	None
ES-P-1	Pressure Cooker with a Condenser (80-95%)	Max 5 ton/hr	Outside	Condenses (CD-1)
ES-PS-1	Pellet Storage	Max 5 ton/hr	Intside	None

2.0 PROPSOED AIR EMISSION SOURCES

The proposed air emissions sources at the site are:

Air Emissions Source ID	Sources	Rating	Release	Control Device
Pellet Manufactu	ring			
ES-SPD-1	Screw Press/Dryer	Max 5 ton/hr	Outside	Cyclone (CD-2)
ES-PP-1	Pelletizer and Pellet Cooler	Max 5 ton/hr	Outside	Cyclone (CD-3)
ES-PSC-1	Pellet Screening	Max 5 ton/hr	Outside	Cartridge Filter (CD-4)
IES-WCS-1	Wood Chips/Pellet Convey System		Enclosed	None
IES-GHM-1	Green Hammer Mill		Enclosed	None

Process Description

Active Energy Group (AEG) intends to construct and operate a next generation wood pellet mill production facility in Lumberton, NC. The facility will produce up to 3000 tons of steam exploded pellet product in the short-term. This product will be used in testing by various customers and allow AEG to validate production equipment and establish emission rates. Upon completion of the test runs, AEG will revisit overall production capability of the plant and modify plans according the tests.

Raw Receiving:

The facility in Lumberton will receive chips on a paved area and utilize a loader to add these chips to an infeed hopper. The hopper is then discharged to a green hammermill for the purpose of size reduction to optimize the steam explosion process. This unit functions more as a chipper than a hammermill as the unit does not have an air assist setup, and is completely enclosed. The materials are then sent via enclosed conveyor to the reactors.

Steam Reactors:

Upon completion of grinding the material passes through totally enclosed conveyors into the reactor system. The reactor system is a batch process with two vessels, allowing the natural gas boiler to maintain consistent load. The wood is placed in the reactors, then steam added. During this process the vessel is completely sealed. Upon completion of the reaction process, the pressure is then vented through a condensing and expansion system. This is composed of 2 tanks, the first being for steam expansion, the second for condensing. Upon condensing the water is pumped into storage tanks for disposal elsewhere at an approved facility.

Drying Process:

The material is passed from the reactors into a screw press to remove surface moisture on the product, then transferred to a natural gas fired rotary drum dryer. The material is then dried down to 10% or less moisture in the rotary drum. The exhaust from the dryer is separated from the materials in a high efficiency cyclone. The materials then proceed via totally enclosed conveyor into the building. The exhaust stack from the dryer is located external to the building. The cyclone used to separate the material is sized for a minimum of 5 effective turns, and 10fps discharge velocity. (In addition, the cyclone will be an integral part of the Dryer system) The inlet temperature of the dryer is expected to be limited to 850F or less to minimize any VOC generation in the drum.

Pelletizing & Screening

Upon drying completion the materials are placed into a hopper inside the facility. This is a metering hopper to allow pellet mill adjustments without process interruptions. The loose materials are pressed into pellets , then passed through a cooler and over a screen before storage. The cooler is intended to drop the temperature of the product to make it safe for storage, and the screen is intended to remove any fine dust that has accumulated on the exterior. The cooler and pellet mill are both under negative pressure provided by a fan and cyclone. This system discharges to the atmosphere after passing through the high efficiency cylone. PM emissions from the process are expected to be negligible as the intended purpose of the draft in both locations (cooler and pellet mill) are to pull off heat, not product. Exhausting product in this location would be detrimental to facility performance. The screening process is intended to remove any fines leftover from the cooling and pelletizing. This negative air drawn on this screen is passed through a cartridge filter. The filter will then remove 99% or more of all the PM and return it to the process for pressing back into pellets.

Based on the NC DEQ Wood Waste Burning Worksheet, VOC EF was 0.272 lb/ton and the facility wide VOCs for the 36000 ODT would be 4.896 tons/year. Therefore, we believe the VOC EFs supplied by the State for VOCs were too high for our processes. However, for the permitting purpose, AERP and CPEES had used the State supplied EF for VOCs and HAPs.

The process Flow Schematic is attached with this report.

4.0 REGULATED AIR POLLUTANTS EMISSIONS CALCULATIONS

CP Engineering and Environmental Solutions (CPEES) performed calculations for the actual and potential air emissions for all the identified sources. The actual and potential air emissions are based on emissions calculated from operations: 24 hours a day and 365 days a year (8,760 hours).

Based on the air emission calculations for the proposed sources, VOC emissions were above the 5.0 ton/year limit and therefore the facility needs an air permit for the installation and operation of the proposed sources. The Hazardous Air Pollutants (HAPs) were below the 10 for a single constituent and 25 tons/yr for the combined emissions. Further, the Toxic Air Pollutants (TAPs) were below the TPER limits and thus, NO modeling is required at this time.

The calculations and the tabulated results are presented in the attached tables. Any supporting documentation used for the air emission calculations is provided in Attachment A.



Active Energy Air Permit Matrix Lumberton, NC

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Small/Synthetic Facility			New Facility	(Unpermitted) /	Greenfield								

FORM A

GENERAL FACILITY INFORMATION

REVISED 09	722/16	NCDEQ/Division of Air Qu	ality - Application	on for Air Permit to Construc	rt/Ωnorate		Г
	N	OTE- APPLICATION WILL N	OT BE PROC	ESSED WITHOUT THE	FOLLOWING:	75 CO 45 PC	
Ø	Local Zoning Consistency Deter (new or modification only)	mination		pies of Application		ee (please check	one option below)
☑	Responsible Official/Authorized		(if required)				
		CARLOS CALLES CARLOS CONTRACTOR C	NERAL INFO	PRATION	☐ Not Required	LiePayment	☑ Check Enclosed
Legal Corpo	rate/Owner Name:	39.	MENAL INFO	RMATION	and the second		
Site Name:	ACTIVE ENERGY RENEWAL P	OWER			+ 1-1-1		
		LAMAC ROAD					
Site Address		DIVING ROAD					
City:	LUMBERTON			T			
Zip Code:			2005	State: NORTH CA		···	
		CO	NTACT INFO	8 County: ROBESON	Care and control of the	1985. LOSTO EN 1005	
Responsible	Official/Authorized Contact:		MIACI III O				
Name/Title:	MR.RON GASKINS, PLANT MA	NAGER		Invoice Contact:			
Mailing Addre	ess Line 1: 1885 ALAMAC ROAD	. O COURT			ASKINS, PLANT M	ANAGER	
Mailing Addre				Mailing Address Line 1: 188	35 ALAMAC ROAD		
City: LUME		Zip Code:	2020	Mailing Address Line 2: B City: LUMBERTON	Otata ::-	7.0	
Primary Phon		Fax No.:	2033	Primary Phone No.:	State: NC	Zip Code:	283
Secondary Pr					910-840-7922	Fax No.:	
	s: ron.qaskins@aeqplc.com			Secondary Phone No.: Email Address: ron gaskins	@acania c==	<u> </u>	
	ection Contact:		-	Permit/Technical Contact:		···	
Name/Title:	MR.RON GASKINS, PLANT MA	NAGER					
Mailing Addre	ss Line 1: 1885 ALAMAC ROAD				ASKINS, PLANT MA	ANAGER	
Mailing Addre				Mailing Address Line 1: 188 Mailing Address Line 2:	55 ALAMAC ROAD	-	
City: LUMB		Zip Code:	28350	City: LUMBERTON	21-1		
Primary Phon		Fax No.:	20000	Primary Phone No.:	State: NC	Zip Code	2835
Secondary Ph				Secondary Phone No.;	910-840-7922	Fax No.:	
Email Address	s: ron.qaskins@aegplc.com	- 		Email Address: ron gaskins		<u> </u>	
44		APPLIC/	ATION IS BEI	NG MADE FOR	waequic com	- 12 va - 12 v 17	
□ New N	Ion-permitted Facility/Greenfield	Modification of Facility (pe		Renewal Title V		al Non-Title V	118 18 18 11 11 11 11 11 11
□ Name	Change Ownership Chang			Renewal with Modific		aridon-inte A	
		FACILITY CLASSIFICATI	ON AFTER A	PPLICATION (Check O	nly One)		
	General 2	Small			Synthetic Minor	□т	
Describe natu	re of (plant site) operation(s):WOOD	FACILITY EN PELLETS MNUFACTURING	(Plant Site)	NFORMATION			
				Facility ID No.7800242			
rimary SIC/N	AICS Code:2499/321999-WOOD P	RODUCTS		Current/Previous Air Permit I	No.10636R00	Expiration Date	July 31 2028
acility Coordi	nates:	Latitude: 34°35'20.49"N		Longitude: 79°00'21.99"W			
Does this app confidential d	olication contain	YES I NO	***lf yes, p application	please contact the DAQ Reg	ional Office prior t ons)	o submitting thi	s
	Para di Artini di Para di Para Para di Para d	PERSON OR FIR	M THAT PRE	PARED APPLICATION		5.4 (5.4%).21	Section of the section of
Person Name:	CHALAM PAKALA, PE			Firm Name: CP ENGINEERI		MENTAL COLLET	IONS
Mailing Addres	ss Line 1:10017 ALLYSON PARK D	R.		Mailing Address Line 2:	ENVINOIN	WEITINE SOLUT	IUNO
City:CHARLO	ПЕ	State:NC		Zip Code:28277		County:MECKL	ENBLIPG
Phone No.:	704-541-4042	Fax No.; 704-541-40		Email Address:cvpakala@ca	rolina rr com	JOOUTHY . IVIECTAL	LINDUNG
	44.	SIGNATURE OF RESPON		CIAL/AUTHORIZED CO	NTACT	1. Ag 37.5	SAM, A CHEST SUPERIOR
lame (typed):	MR.MICHAEL ROWAN			Title: CHIEF EXECUTIVE OF			
Signature(B	lue Ink) Rud			Date:	I IOER		
	Kouk			4/27/2	1	yyddigaethia	
		Attach Addition	nai Sheets A	s Necessary '			Page 1 of 2

Page 1 of 2

FORM A (continued, page 2 of 2) GENERAL FACILITY INFORMATION

REVISED 09/22/16 NCDEQ/Division of Air Quality - Application fo	r Air Permit to Construct/Operate
SECTION AA1 - APPLICATION FOR NON-T	
ACTIVE ENERGY RENEWABLE POWER (Company Name) hereby formation	ally requests renewal of Air Permit No.
There have been no modifications to the originally permitted facility or the operations therein that would rec	quire an air permit since the last permit was issued.
Is your facility subject to 40 CFR Part 68 "Prevnetion of Accidental Releases" - Section 112(r) of the Clean	Air Act? YES V NO
	S NO Date Submitted:
Did you attach a current emissions inventory? ☐ YES ☐ No If no, did you submit the inventory via AERO or by mail? ☐ Via AERO ☐ M.	
	ailed Date Mailed: N/A
SECTION AA2-APPLICATION FOR TITL	
In accordance with the provisions of Title 15A 2Q .0513, the responsible official of	(Company Name)
hereby formally requests renewal of Air Permit No(A (1) The current air quality permit identifies and describes all emissions units at the above sub	ir Permit No.) and further certifies that:
North Carolina Title V regulations at 15A NCAC 2Q .0500;	
(2) The current air quality permit cits all applicable requirements and provides the method or requirements;	methods for determing compliance with the applicable
(3) The facility is currently in compliance, and shall continue to comply, with all applicable req	uiremetns. (Note: As provided under 15A NCAC 2Q .0512
compliance with the conditions of the permit shall be deemed compliance with the applica	ble requirements specifically identified in the permit);
(4) For applicable requirements that become effective during the term of the renewed permit	
(5) The facility shall fulfill applicable enhanced monitoring requirements and submit a complia	, -
The responsible official (signature on page 1) certifies under the penalty of law that all information and stat formed after reasonable inquiry, are true, accurate, and complete.	ements provided above, based on information and belief
ionnod and reasonable inquiry, are true, accurate, and complete.	
SECTION AA3- APPLICATION FOR	R NAME CHANGEN/A
New Facility Name:	
Former Facility Name:	
An official facility name change is requested as described above for the air permit mentioned on page 1 of	this form. Complete the other sections if there have been
modifications to the originally premitted facility that would requie an air quality permit since the last permit v	was issued and if ther has been an ownership change
associated with this name change.	
SECTION AA4- APPLICATION FOR A	N OWNERSHIP CHANGE
By this application we hereby request transfer of Air Quality Permit No.	from the former owner to the new owner as described below.
The transfer of permit responsibility, coverage and liability shall be effective	(immediately or insert date.) The legal ownership of the
facility described on page 1 of this form has been or will be transferred on	(date). There have been no modifications to the originally
permitted facility that would require an air quality permit since the last permit was issued.	
Signature of New (Buyer) Responsible Official/Authorized Contact (as typed on page 1):	
X Signature (Blue Ink):	
Date:	
New Facility Name:	
Former Facility Name:	
Signature of Former (Seller) Responsible Official/Authorized Contact:	
Name (typed or print):	
Title:	
Tiue.	
V. Circustons (Diverturb)	
X Signature (Blue Ink):	- in
Date:	
Former Legal Corporate/Owner Name:	
In lieu of the seller's signature on this form, a letter may be submitted w	ith the seller's signature indicating the ownership change
SECTION AA5- APPLICATION FOR ADN	IINISTRATIVE AMENDMENT
Describe the requested administrative amendment here (attach additional documents as necessary):	

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORMs A2, A3

EMISSION SOURCE LISTING FOR THIS APPLICATION - A2 112r APPLICABILITY INFORMATION - A3

A2

REVISED 09/22/16	NCDEQ/Division of Air C	Quality - Application	n for Air Permit to Con	struct/Operate	A2
	EMISSION SOURCE LISTING:	New, Modified,	Previously Unper	mitted, Replaced, Deleted	
EMISSION SOURCE	EMISSION SOURCE		CONTROL DEVICE	CONTROL DEVI	CE
ID NO.	DESCRIPTION		ID NO.	DESCRIPTION	I
	Equipment To Be ADDED By Thi	s Application (New, Previously L	Inpermitted, or Replacement)
ES-SPD-1	ONE SCREW PRESS W/DRYER (D-1)		CD-2	CYCLONE	
ES-PP-1	PELLET PRESS AND PELLET COOLER		CD-3	CYCLONE	
ES-PSC-1	PELLET SCREEN		CD-4	CARTRIDGE FILT	ER
P-STG	PELLET STORAGE		NA	NONE	
IES-WCS	WOOD CHIPS AND PELLET CONVEY SYS	STEM	NA	NONE	
IES-GHM-1	GREEN HAMMER MILL		NA	NONE	
	 Existing Ex	amnted Equipm	nent By This App	lication	
ICC MANTE	ONE WASTEWATER TREATMENT PLAN		NA NA	NONE	
IES-WWTP	DISEL-FIRED FIRE PUMP (180 HP) (NESH		NA NA	NONE	
IES-FP	<u> </u>		INA .	NONE	
IES-GEN	DISEL-FIRED EMERGENCY GENERATOR (NESHAP ZZZZ)	((15 HP)	NA	NONE	
JES-PROPANE	PROPANE VAPORIZER		NA	NONE	
IES-MTD	WOOD CHIPS CONVEYING AND HANDLII	NG	NA	NONE	
	Existing Permitted E	quipment To Be	MODIFIED By	This Application	
ES-SPD-1	ONE SCREW PRESS W/DRYER (D-1)/PE		NA I	NONE	
	CIVE CONCENT INCOCUMENTALIN (D. 1)				
· · · · · · · · · · · · · · · · · · ·					
					
	Equipment	To Be DELEI	ED By This Appl	ication	4,000,000,000
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		245-1546 - 155-241 Selection (1997)	TY INFORMAT	The state of the s	A 3
Is your facility subject t	o 40 CFR Part 68 "Prevention of Accidental R				′es ☑ No
If No, please specify in	detail how your facility avoided applicability:	<u>_1</u>	REVIEW OF CHEMICA	LS AND THEY ARE BELOW THE TH	RESHOLD VALUES
			<u> </u>	· · · · · · · · · · · · · · · · · · ·	
If your facility is Subject	t to 112(r), please complete the following:				
A. Have you alread	y submitted a Risk Management Plan (RMP)	to EPA Pursuant to	40 CFR Part 68.10 or P	art 68.150?	
Yes	No Specify required RMP subm	nittal date:	If submi	tted, RMP submittal date:	·
B. Are you using ac	Iministrative controls to subject your facility to	a lesser 112(r) prog	ram standard?		
_ ' '_	No If yes, please specify:				
	es subject to 112(r) at your facility:				
		ROCESS LEVEL		N/A	XIMUM INTENDED
PRO	DCESS DESCRIPTION	(1, 2, or 3)	HAZARDO		NVENTORY (LBS)
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ACTIVE ENERGY RENEWABLE POWER LUMBERTON, NC

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B

REVISED 09/22/16		of Air Quality - A	• •	Air Permit to	Construct/Ope	erate		В
EMISSION SOURCE DESCRIPTION: ONE	20MMBTU/HR NA	TURAL GAS FIRE	D BOILER	EMISSION S	DURCE ID NO	ES-B-1	-	
			<u> </u>	CONTROL D	VICE ID NO(S	S):NA		
OPERATING SCENARIO1	OF	1		EMISSION PO	DINT (STACK)	ID NO(S):EP-	3-1	
DESCRIBE IN DETAILTHE EMISSION SOL 20MMBTU/HR NATURAL GAS FIRED BOIL			IAGRAM):					
TYPE OF EMISSION	SOURCE (CHECK	AND COMPLETE	APPROPRIA	TE FORM B1-I	39 ON THE FO	LLOWING PA	GES):	
Coal,wood,oil, gas, other burner (Form	B1)	☐ Woodworking	g (Form B4)		Manuf.	of chemicals/o	oatings/inks (F	orm B7)
Int.combustion engine/generator (Form Liquid storage tanks (Form B3)	B2)		hing/printing (F s/bins (Form B	,		ation (Form B8 Form B9))	
START CONSTRUCTION DATE:NOVEMBE	R 2019			FACTURED: N				
MANUFACTURER / MODEL NO.:				OP. SCHEDUL			Y/WK 52	WK/YR
	NSPS (SUBPARTS	3?):	1		AP (SUBPART			
PERCENTAGE ANNUAL THROUGHPUT (9		25 MAR-M	AY 25	JUN-AUG		SEP-NOV 2	5	
		ITANT EMISSI					_	
	manufication of a proof the second constraint	SOURCE OF		D ACTUAL	Windows William P. Breed of The Co. of the Co. of the Co.	POTENTIAL	FMISSIONS	
		EMISSION		ROLS / LIMITS)	(BEFORE CONT		(AFTER CONTE	ROLS / LIMITS)
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)		AP-42/NC DEQ	0.01		0.01	0.04	0.01	0.04
PARTICULATE MATTER<10 MICRONS (PM ₁₀	<u> </u>	AP-42/NC DEQ	0.01		0.01	0.04	0.01	0.04
PARTICULATE MÄTTER<2.5 MICRONS (PM	·	AP-42/NC DEQ	0.01		0.01	0.04	0.01	0.04
SULFUR DIOXIDE (SO2)		AP-42/NC DEQ	0.01		0.01	0.05	0.01	0.05
NITROGEN OXIDES (NOx)		AP-42/NC DEQ	1.96		1.96	8.59	1.96	8.59
CARBON MONOXIDE (CO)		AP-42/NC DEQ	1.65	-	1.65	7.21	1.65	7.21
VOLATILE ORGANIC COMPOUNDS (VOC)	AP-42/NC DEQ	0.11		0.11	0.47	0.11	0.47
LEAD								
OTHER								
HAZARD	OUS AIR POL	UTANT EMIS	SIONS INFO	DRMATION	FOR THIS :	SOURCE	, all	
		SOURCE OF	EXPECTE	D ACTUAL		POTENTIAL	EMISSIONS	
		EMISSION		ROLS / LIMITS)	(BEFORE CONT		(AFTER CONTE	ROLS / LIMITS)
HAZARDOUS AIR POLLUTANT	CAS NO.	FACTOR	lb/hr	lbs/yr	lb/hr	lbs/yr	lb/hr	lbs/yr
AMMONIA (T)	7664417	AP-42/NC DEQ	6.27E-02	501.95	6.27E-02	549.65	6.27E-02	549.65
Benzene (TH)	71432	AP-42/NC DEQ	4.12E-05	0.33	4.12E-05	0.36	4.12E-05	0.36
Cobalt unlisted compounds (H)	COC-other	AP-42/NC DEQ	1.65E-06	0.01	1.65E-06	0.01	1.65E-06	0.01
Formaldehyde (TH)	50000	AP-42/NC DEQ	1.47E-03	11.76	1.47E-03	12.88	1.47E-03	12.88
Hexane, n- (TH)	110543	AP-42/NC DEQ	3.53E-02	282.35	3.53E-02	309.18	3.53E-02	309.18
Lead unlisted compounds (H)	PBC-other	AP-42/NC DEQ	9.80E-06	0.08	9.80E-06	0.09	9.80E-06	0.09
Napthalene (H)	91203	AP-42/NC DEQ	1.20E-05	0.10	1.20E-05	0.10	1.20E-05	0.10
Toluene (TH)	108883	AP-42/NC DEQ	6.67E-05	0.53	6.67E-05	0.58	6.67E-05	0.58
TOXIC	AIR POLLUT	ANT EMISSIO	NS INFORM	NATION FO	R THIS SOL	JRCE		
		SOURCE OF EMISSION	EXPE	CTED ACTUAL	EMISSIONS	AFTER CONT	ROLS / LIMITA	TIONS
TOVIC AIR POLITANT	CAS NO.	FACTOR	lb)/hr	ib/o	day	lb	/yr
TOXIC AIR POLLUTANT	75070	AP-42/NC DEQ	2.98	3E-07	6.56	E-06	0.	00
Acetaldehyde (TH)	75070				7 76	E-06	0.0	00
	107028	AP-42/NC DEQ	3.53	3E-07				
Acetaldehyde (TH)				3E-07 7E-02		E+00	501	.95
Acetaldehyde (TH) Acrolein (TH) Ammonia (T)	107028 7664417	AP-42/NC DEQ AP-42/NC DEQ	6.27	7E-02	1.38	E+00		.95
Acetaldehyde (TH) Acrolein (TH) Ammonia (T) Arsenic unlisted compounds (TH)	107028 7664417 ASC-other	AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	6.27 0.00	7E-02 0E+00	1.38l 0.00l	E+00 E+00	0.	00
Acetaldehyde (TH) Acrolein (TH) Ammonia (T) Arsenic unlisted compounds (TH) Benzene (TH)	107028 7664417 ASC-other 71432	AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	6.27 0.00 4.12	7E-02 0E+00 2E-05	1.38l 0.00l 9.06	E+00 E+00 E-04	0. 0.	00 33
Acetaldehyde (TH) Acrolein (TH) Ammonia (T) Arsenic unlisted compounds (TH) Benzene (TH) Benzo(a)pyrene (TH)	107028 7664417 ASC-other 71432 50328	AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	6.27 0.00 4.12 2.35	7E-02 0E+00 2E-05 5E-08	1.38l 0.00l 9.06 5.18	E+00 E+00 E-04 E-07	0. 0. 0.	00 33 00
Acetaldehyde (TH) Acrolein (TH) Ammonia (T) Arsenic unlisted compounds (TH) Benzene (TH) Benzo(a)pyrene (TH) Formaldehyde (TH)	107028 7664417 ASC-other 71432 50328 50000	AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	6.27 0.00 4.12 2.35 1.47	7E-02 9E+00 2E-05 5E-08 7E-03	1.38 0.00 9.06 5.18 3.24	E+00 E+00 E-04 E-07 E-02	0. 0. 0. 11	00 33 00 .76
Acetaldehyde (TH) Acrolein (TH) Ammonia (T) Arsenic unlisted compounds (TH) Benzene (TH)	107028 7664417 ASC-other 71432 50328	AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	6.27 0.00 4.12 2.35 1.47 3.53	7E-02 0E+00 2E-05 5E-08	1.38l 0.00l 9.06 5.18 3.24 7.76	E+00 E+00 E-04 E-07	0. 0. 0. 11 282	00 33 00

ACTIVE ENERGY RENEWABLE POWER LUMBERTON, NC

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B

REVISED 09/22/16 N	CDEQ/Division	of Air Quality - A	oplication for	Air Permit to	Construct/Op	erate		В
EMISSION SOURCE DESCRIPTION: ONE 4	MMBTU/HR NA	TURAL GAS FIRE	BOILER	EMISSION S	DURCE ID NO	:ES-D-1		
					EVICE ID NO			
OPERATING SCENARIO1	OF	1				ID NO(S):EP-	D-1	
DESCRIBE IN DETAILTHE EMISSION SOUF 4MMBTU/HR NATURAL GAS FIRED DRYER			-					
TYPE OF EMISSION SO		AND COMPLETE	APPROPRIA	TE FORM B1-	B9 ON THE F	OLLOWING P	AGES):	
Coal,wood,oil, gas, other burner (Form B	1)	☐ Woodworking	g (Form B4)		Manuf.	of chemicals/o	coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B		Coating/finish	ning/printing (F	Form B5)	Inciner	ation (Form B8	3)	
Liquid storage tanks (Form B3)		Storage silos	/bins (Form B	6)	Other (Form B9)		-
START CONSTRUCTION DATE: NOVEMBER	R 2019		DATE MANÚ	FACTURED: N	OVEMBER 20)19		
MANUFACTURER / MODEL NO.:			EXPECTED (OP. SCHEDUL	E:22_ HR/I	DAY7_ D	AY/WK52	WK/YR
IS THIS SOURCE SUBJECT TO? NS	PS (SUBPARTS	S?):		NESH/	AP (SUBPART	S?):		
PERCENTAGE ANNUAL THROUGHPUT (%)		25 MAR-M		JUN-AU		SEP-NOV	25	
CRITERIA	AIR POLLU	TANT EMISSI	ONS INFOR	RMATION F	OR THIS S	OURCE		KIN THE STATE OF
		SOURCE OF	EXPECTE	D ACTUAL		POTENTIAL	EMISSIONS	
		EMISSION	(AFTER CONT	ROLS / LIMITS)	(BEFORE CONT	ROLS / LIMITS)		ROLS / LIMITS)
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)		AP-42/NC DEQ	0.00		0.01	0.04	0.01	0.04
PARTICULATE MATTER < 10 MICRONS (PM ₁₀)	 	AP-42/NC DEQ	0.00		0.01	0.04	0.01	0.04
PARTICULATE MATTER < 2.5 MICRONS (PM _{2.5})	<u> </u>	AP-42/NC DEQ	0.00		0.01	0.04	0.01	0.04
SULFUR DIOXIDE (SO2)		AP-42/NC DEQ	0.00		0.00	0.01	0.00	0.01
NITROGEN OXIDES (NOx)	<u></u>	AP-42/NC DEQ	0.39		0.39	1.72	0.39	1.72
CARBON MONOXIDE (CO)		AP-42/NC DEQ	0.33		0.33	1.44	0.33	1.44
VOLATILE ORGANIC COMPOUNDS (VOC)		AP-42/NC DEQ	0.02	0.09	0.02	0.09	0.02	0.09
LEAD								
OTHER HAZARDOL	IS AIR POLI	UTANT EMISS	IONS INFO) DRMATION	FOR THIS	SOURCE		
NACANDO	JO AIX I OLE	SOURCE OF		D ACTUAL	I ON HHO		EMISSIONS	
		EMISSION		ROLS / LIMITS)	(BEFORE CONT			ROLS / LIMITS)
HAZARDOUS AIR POLLUTANT	CAS NO.	FACTOR	lb/hr	lbs/yr	lb/hr	lbs/yr	lb/hr	lbs/yr
AMMONIA (T)	7664417	AP-42/NC DEQ	1.25E-02	100.38	1.25E-02	109.93	1.25E-02	109.93
Benzene (TH)	71432	AP-42/NC DEQ	8.24E-06	0.07	8.24E-06	0.07	8.24E-06	0.07
Cobalt unlisted compounds (H)	COC-other	AP-42/NC DEQ	3.29E-07	0.00	3.29E-07	0.00	3.29E-07	0.00
Formaldehyde (TH)	50000	AP-42/NC DEQ	2.94E-04	2.35	2.94E-04	2.58	2.94E-04	2.58
Hexane, n- (TH)	110543	AP-42/NC DEQ	7.06E-03	56.47	7.06E-03	61.84	7.06E-03	61.84
Lead unlisted compounds (H)	PBC-other	AP-42/NC DEQ	1.96E-06	0.02	1.96E-06	0.02	1.96E-06	0.02
Napthalene (H)	91203	AP-42/NC DEQ	2.39E-06	0.02	2.39E-06	0.02	2.39E-06	0.02
Toluene (TH)	108883	AP-42/NC DEQ	1.33E-05	0.11	1.33E-05	0.12	1.33E-05	0.12
TOXIC	AIR POLLUT	ANT EMISSIOI	VS INFORM	IATION FO	R THIS SO	URCE		
		SOURCE OF EMISSION	EXPE	CTED ACTUAL	. EMISSIONS	AFTER CONT	ROLS / LIMIT	ATIONS
TOXIC AIR POLLUTANT	CAS NO.	FACTOR	lb	/hr	lb/	day	lb	o/yr
Acetaldehyde (TH)	75070	AP-42/NC DEQ	5.96	SE-08	1.31	E-06	0	.00
Acrolein (TH)	107028	AP-42/NC DEQ	7.06	SE-08	1.55	E-06	0	.00
Ammonia (T)	7664417	AP-42/NC DEQ	1.25	5E-02	2.76	E-01	10	0.38
Arsenic unlisted compounds (TH)	ASC-other	AP-42/NC DEQ	0.00	E+00	0.00	E+00	0	.00
Benzene (TH)	71432	AP-42/NC DEQ	8.24	1E-06	1.81	E-04	0	.07
Benzo(a)pyrene (TH)	50328	AP-42/NC DEQ	4.71	IE-09	1.04	E-07	0	.00
Formaldehyde (TH)	50000	AP-42/NC DEQ	2.94	1E-04	6.47	E-03	2	.35
Hexane, n- (TH)	110543	AP-42/NC DEQ	7.06	SE-03	1.55	E-01	56	6.47
Toluene (TH)	108883	AP-42/NC DEQ	1.33	BE-05	2.93	E-04	0	.11
Attachments: (1) emissions calculations and support describe how these are monitored and with what free						.g. hours of oper	ation, emission i	rates) and

ACTIVE ENERGY RENEWABLE POWER LUMBERTON, NC

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B

REVISED 09/22/16	ICDEQ/Division	of Air Quality - Ap	plication for	Air Permit to	Construct/Op	erate		В
EMISSION SOURCE DESCRIPTION: PRES	SURE COOKER	W/CONDENSER		EMISSION SC	URCE ID NO	:ES-P-1		
				CONTROL DE				
OPERATING SCENARIO 1	OF	1			······································	ID NO(S):EP-	CD-1	
DESCRIBE IN DETAILTHE EMISSION SOU PRESSURE COOKER WITH A CONDENSE		(ATTACH FLOW D	DIAGRAM):					
TYPE OF EMISSION SO	OURCE (CHECK	AND COMPLETE	APPROPRIA [®]	TE FORM B1-	B9 ON THE F	OLLOWING P	AGES):	
Coal,wood,oil, gas, other burner (Form B	31)	Woodworking	(Form B4)		Manuf.	of chemicals/o	coatings/inks (l	Form B7)
Int.combustion engine/generator (Form E Liquid storage tanks (Form B3)	32)		ning/printing (F /bins (Form B6	•		ation (Form B8 Form B9)	3)	
START CONSTRUCTION DATE: NOVEMBE	R 2019		DATE MANUI	ACTURED: N	OVEMBER 20	019		
MANUFACTURER / MODEL NO.:			EXPECTED C	P. SCHEDUL	E:22_ HR/I	DAY7_ D	AY/WK52_	_ WK/YR
IS THIS SOURCE SUBJECT TO? NS	SPS (SUBPARTS	S?):		☐ NESHA	AP (SUBPART	S?):		
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB	25 MAR-N	//AY 25	JUN-AU	G 25	SEP-NOV	25	
		TANT EMISSIC	ONS INFOR	MATION F	OR THIS S	OURCE		
		SOURCE OF		DACTUAL		POTENTIAL	EMISSIONS	
		EMISSION	(AFTER CONT		(BEFORE CONT	ROLS / LIMITS)	(AFTER CONTI	ROLS / LIMITS)
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)								
PARTICULATE MATTER<10 MICRONS (PM ₁₀)								
PARTICULATE MATTER < 2.5 MICRONS (PM _{2.5})							
SULFUR DIOXIDE (SO2)	·	:						
NITROGEN OXIDES (NOx)								
CARBON MONOXIDE (CO)		11.						
VOLATILE ORGANIC COMPOUNDS (VOC)		AP-42/NC DEQ	0.96	3.85	4.82	21.09	0.96	4.22
	· · · · · · · · · · · · · · · · · · ·		-					
ILEAD		1				1 1		
OTHER								
OTHER	US AIR POLL	UTANT EMISS	SIONS INFO	RMATION	FOR THIS	SOURCE		
OTHER	US AIR POLL	UTANT EMISS			FOR THIS		EMISSIONS	
OTHER	US AIR POLL	SOURCE OF	EXPECTE	D ACTUAL			EMISSIONS	ROLS / LIMITS)
OTHER HAZARDO		SOURCE OF EMISSION	EXPECTE (AFTER CONTI	D ACTUAL ROLS / LIMITS)		POTENTIAL ROLS / LIMITS)	EMISSIONS	
OTHER HAZARDO HAZARDO HAZARDOUS AIR POLLUTANT	CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTE	D ACTUAL	(BEFORE CONT	POTENTIAL	EMISSIONS (AFTER CONT	ROLS / LIMITS)
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH)	CAS NO. 75070	SOURCE OF EMISSION FACTOR AP-42/NC DEQ	EXPECTE (AFTER CONTI Ib/hr	D ACTUAL ROLS / LIMITS) Ibs/yr	(BEFORE CONT	POTENTIAL TROLS / LIMITS)	EMISSIONS (AFTER CONT lb/hr	ROLS / LIMITS)
HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH)	CAS NO.	SOURCE OF EMISSION FACTOR	(AFTER CONTI Ib/hr 5.76E-02	D ACTUAL ROLS / LIMITS) Ibs/yr 460.80	(BEFORE CONT Ib/hr 2.88E-01	POTENTIAL TROLS / LIMITS) Ibs/yr 2522.88	EMISSIONS (AFTER CONT Ib/hr 5.76E-02	ROLS / LIMITS) Ibs/yr 504.58
HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH)	CAS NO. 75070 107028 50000	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ	(AFTER CONTI Ib/hr 5.76E-02 0.00E+00	D ACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00	(BEFORE CONT Ib/hr 2.88E-01 0.00E+00	POTENTIAL TROLS / LIMITS) Ibs/yr 2522.88 0.00	EMISSIONS (AFTER CONT Ib/hr 5.76E-02 0.00E+00	ROLS / LIMITS) lbs/yr 504.58 0.00
HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol	CAS NO. 75070 107028 50000 67561	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTI Ib/hr 5.76E-02 0.00E+00 6.09E-02	D ACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00 487.44	(BEFORE CONT Ib/hr 2.88E-01 0.00E+00 3.05E-01	POTENTIAL TROLS / LIMITS) Ibs/yr 2522.88 0.00 2668.73	(AFTER CONT Ib/hr 5.76E-02 0.00E+00 6.09E-02	ROLS / LIMITS) Ibs/yr 504.58 0.00 533.75
HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol	CAS NO. 75070 107028 50000	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTIL 1b/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02	D ACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00 487.44 214.56	(BEFORE CONT Ib/hr 2.88E-01 0.00E+00 3.05E-01 1.34E-01	POTENTIAL TROLS / LIMITS) Ibs/yr 2522.88 0.00 2668.73 1174.72	(AFTER CONT Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02	ROLS / LIMITS) Ibs/yr 504.58 0.00 533.75 234.94
HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol	CAS NO. 75070 107028 50000 67561 108952	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTI Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00	DACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00 487.44 214.56 0.00	(BEFORE CONTIDING 16/hr 2.88E-01 0.00E+00 3.05E-01 1.34E-01 0.00E+00	POTENTIAL PROLS / LIMITS) Ibs/yr 2522.88 0.00 2668.73 1174.72 0.00	EMISSIONS (AFTER CONT Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00	Ibs/yr 504.58 0.00 533.75 234.94 0.00
HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol	CAS NO. 75070 107028 50000 67561 108952	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTI Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00	DACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00 487.44 214.56 0.00	(BEFORE CONTIDING 16/hr 2.88E-01 0.00E+00 3.05E-01 1.34E-01 0.00E+00	POTENTIAL PROLS / LIMITS) Ibs/yr 2522.88 0.00 2668.73 1174.72 0.00	EMISSIONS (AFTER CONT Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00	Ibs/yr 504.58 0.00 533.75 234.94 0.00
HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde	CAS NO. 75070 107028 50000 67561 108952 123386	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTILID/In) 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.54E-02	DACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00 487.44 214.56 0.00 282.96	(BEFORE CONTIBINATION ID/hr 2.88E-01 0.00E+00 3.05E-01 1.34E-01 0.00E+00 1.77E-01	POTENTIAL FROLS / LIMITS) Ibs/yr 2522.88 0.00 2668.73 1174.72 0.00 1549.21	EMISSIONS (AFTER CONT Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00	Ibs/yr 504.58 0.00 533.75 234.94 0.00
HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde	CAS NO. 75070 107028 50000 67561 108952 123386	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTILID/In) 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.54E-02	D ACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00 487.44 214.56 0.00 282.96	(BEFORE CONT Ib/hr 2.88E-01 0.00E+00 3.05E-01 1.34E-01 0.00E+00 1.77E-01	POTENTIAL FROLS / LIMITS) Ibs/yr 2522.88 0.00 2668.73 1174.72 0.00 1549.21	EMISSIONS (AFTER CONT Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.53E-02	ROLS / LIMITS) Ibs/yr 504.58 0.00 533.75 234.94 0.00 308.84
HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde	CAS NO. 75070 107028 50000 67561 108952 123386	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF	EXPECTE (AFTER CONTILIDATION ID/hr) 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.54E-02	D ACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00 487.44 214.56 0.00 282.96	(BEFORE CONTIBINATION ID/Inr 2.88E-01 0.00E+00 3.05E-01 1.34E-01 0.00E+00 1.77E-01	POTENTIAL TROLS / LIMITS) Ibs/yr 2522.88 0.00 2668.73 1174.72 0.00 1549.21	EMISSIONS (AFTER CONT Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.53E-02	ROLS / LIMITS) Ibs/yr 504.58 0.00 533.75 234.94 0.00 308.84
HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION FACTOR	EXPECTE (AFTER CONTILIDATE CON	D ACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00 487.44 214.56 0.00 282.96 DATION FO	(BEFORE CONT Ib/hr 2.88E-01 0.00E+00 3.05E-01 1.34E-01 0.00E+00 1.77E-01 R THIS SO EMISSIONS	POTENTIAL (ROLS / LIMITS) Ibs/yr 2522.88 0.00 2668.73 1174.72 0.00 1549.21 URCE AFTER CONT	EMISSIONS (AFTER CONT Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.53E-02 ROLS / LIMIT	ROLS / LIMITS) Ibs/yr 504.58 0.00 533.75 234.94 0.00 308.84 ATIONS
HAZARDON HAZARD	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070	SOURCE OF EMISSION FACTOR AP-42/NC DEQ ANT EMISSION FACTOR AP-42/NC DEQ	EXPECTE (AFTER CONTILID/In) 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.54E-02 VS INFORM EXPECTED	D ACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00 487.44 214.56 0.00 282.96 DATION FO CTED ACTUAL	(BEFORE CONT Ib/hr 2.88E-01 0.00E+00 3.05E-01 1.34E-01 0.00E+00 1.77E-01 R THIS SO EMISSIONS	POTENTIAL (FROLS / LIMITS) Ibs/yr 2522.88 0.00 2668.73 1174.72 0.00 1549.21 URCE AFTER CONT	EMISSIONS (AFTER CONT Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.53E-02 ROLS / LIMIT	ROLS / LIMITS) Ibs/yr 504.58 0.00 533.75 234.94 0.00 308.84
HAZARDON HAZARD	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ ANT EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTILID/INF 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.54E-02 VS INFORM EXPECT Ib 5.76 0.00	D ACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00 487.44 214.56 0.00 282.96 IATION FO	(BEFORE CONT Ib/hr 2.88E-01 0.00E+00 3.05E-01 1.34E-01 0.00E+00 1.77E-01 R THIS SO EMISSIONS Ib/ 0.00E	POTENTIAL FROLS / LIMITS) Ibs/yr 2522.88 0.00 2668.73 1174.72 0.00 1549.21 URCE AFTER CONT day 27 00	EMISSIONS (AFTER CONT Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.53E-02 ROLS / LIMIT It 466	ROLS / LIMITS) Ibs/yr 504.58 0.00 533.75 234.94 0.00 308.84
HAZARDON HAZARD	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070	SOURCE OF EMISSION FACTOR AP-42/NC DEQ ANT EMISSION FACTOR AP-42/NC DEQ	EXPECTE (AFTER CONTILID/INF 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.54E-02 VS INFORM EXPECT Ib 5.76 0.00	D ACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00 487.44 214.56 0.00 282.96 DATION FO CTED ACTUAL	(BEFORE CONT Ib/hr 2.88E-01 0.00E+00 3.05E-01 1.34E-01 0.00E+00 1.77E-01 R THIS SO EMISSIONS Ib/ 0.00E	POTENTIAL TROLS / LIMITS) Ibs/yr 2522.88 0.00 2668.73 1174.72 0.00 1549.21 URCE AFTER CONT	EMISSIONS (AFTER CONT Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.53E-02 ROLS / LIMIT It 466	ROLS / LIMITS) Ibs/yr 504.58 0.00 533.75 234.94 0.00 308.84
HAZARDON HAZARD	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ ANT EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTILID/INF 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.54E-02 VS INFORM EXPECT Ib 5.76 0.00	D ACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00 487.44 214.56 0.00 282.96 IATION FO	(BEFORE CONT Ib/hr 2.88E-01 0.00E+00 3.05E-01 1.34E-01 0.00E+00 1.77E-01 R THIS SO EMISSIONS Ib/ 0.00E	POTENTIAL FROLS / LIMITS) Ibs/yr 2522.88 0.00 2668.73 1174.72 0.00 1549.21 URCE AFTER CONT day 27 00	EMISSIONS (AFTER CONT Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.53E-02 ROLS / LIMIT It 466	ROLS / LIMITS) Ibs/yr 504.58 0.00 533.75 234.94 0.00 308.84
HAZARDON HAZARD	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ ANT EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTILID/INF 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.54E-02 VS INFORM EXPECT Ib 5.76 0.00	D ACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00 487.44 214.56 0.00 282.96 IATION FO	(BEFORE CONT Ib/hr 2.88E-01 0.00E+00 3.05E-01 1.34E-01 0.00E+00 1.77E-01 R THIS SO EMISSIONS Ib/ 0.00E	POTENTIAL FROLS / LIMITS) Ibs/yr 2522.88 0.00 2668.73 1174.72 0.00 1549.21 URCE AFTER CONT day 27 00	EMISSIONS (AFTER CONT Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.53E-02 ROLS / LIMIT It 466	ROLS / LIMITS) Ibs/yr 504.58 0.00 533.75 234.94 0.00 308.84
HAZARDON HAZARD	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ ANT EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTILID/INF 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.54E-02 VS INFORM EXPECT Ib 5.76 0.00	D ACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00 487.44 214.56 0.00 282.96 IATION FO	(BEFORE CONT Ib/hr 2.88E-01 0.00E+00 3.05E-01 1.34E-01 0.00E+00 1.77E-01 R THIS SO EMISSIONS Ib/ 0.00E	POTENTIAL FROLS / LIMITS) Ibs/yr 2522.88 0.00 2668.73 1174.72 0.00 1549.21 URCE AFTER CONT day 27 00	EMISSIONS (AFTER CONT Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.53E-02 ROLS / LIMIT It 466	ROLS / LIMITS) Ibs/yr
HAZARDON HAZARD	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ ANT EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTILID/INF 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.54E-02 VS INFORM EXPECT Ib 5.76 0.00	D ACTUAL ROLS / LIMITS) Ibs/yr 460.80 0.00 487.44 214.56 0.00 282.96 IATION FO	(BEFORE CONT Ib/hr 2.88E-01 0.00E+00 3.05E-01 1.34E-01 0.00E+00 1.77E-01 R THIS SO EMISSIONS Ib/ 0.00E	POTENTIAL FROLS / LIMITS) Ibs/yr 2522.88 0.00 2668.73 1174.72 0.00 1549.21 URCE AFTER CONT day 27 00	EMISSIONS (AFTER CONT Ib/hr 5.76E-02 0.00E+00 6.09E-02 2.68E-02 0.00E+00 3.53E-02 ROLS / LIMIT It 466	ROLS / LIMITS) Ibs/yr

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B

REVISED 09/22/16 N	CDEQ/Division	of Air Quality - A	pplication for	Air Permit to	Construct/Op	erate		В
EMISSION SOURCE DESCRIPTION: SCREV	V PRESS/DRYE	R		EMISSION SO	DURCE ID NO	:ES-SPD-1		
					EVICE ID NO(
OPERATING SCENARIO1_	OF	1				ID NO(S):EP-	SPD-1	
DESCRIBE IN DETAILTHE EMISSION SOUR SCREW PRESS AND DRYER	RCE PROCESS	(ATTACH FLOW [DIAGRAM):					
TYPE OF EMISSION SO	URCE (CHECK	AND COMPLETE	APPROPRIA	TE FORM B1-	B9 ON THE F	OLLOWING P.	AGES):	
Coal,wood,oil, gas, other burner (Form B	1)	☐ Woodworking	g (Form B4)		☐ Manuf.	of chemicals/o	coatings/inks (l	Form B7)
Int.combustion engine/generator (Form B	2)	Coating/finish	ning/printing (F	orm B5)	Inciner	ation (Form B8	3)	
Liquid storage tanks (Form B3)		Storage silos	/bins (Form Be	5)	Other (Form B9)		
START CONSTRUCTION DATE:NOVEMBER	2019		DATE MANUI	ACTURED: N	OVEMBER 20	19		
MANUFACTURER / MODEL NO.:			EXPECTED (P. SCHEDUL	E:22_ HR/[DAY7_ D	AY/WK52_	_WK/YR
IS THIS SOURCE SUBJECT TO? NS	PS (SUBPARTS	S?):		☐ NESH	AP (SUBPART	S?):		
PERCENTAGE ANNUAL THROUGHPUT (%)		25 MAR-M		JUN-AU		SEP-NOV	25	
CRITERIA	AIR POLLU	TANT EMISSION	ons infor	MATION F	OR THIS S	OURCE		
		SOURCE OF	EXPECTE	D ACTUAL		POTENTIAL	EMISSIONS	
		EMISSION	(AFTER CONTI	ROLS / LIMITS)	(BEFORE CONT	ROLS / LIMITS)	(AFTER CONT	ROLS / LIMITS)
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)			6.67	26.67	6.67	26.67	6.67	26.67
PARTICULATE MATTER < 10 MICRONS (PM ₁₀)		:	6.67	26.67	6.67	26.67	6.67	26.67
PARTICULATE MATTER < 2.5 MICRONS (PM _{2.5})	<u> </u>			:				
SULFUR DIOXIDE (SO2)								
NITROGEN OXIDES (NOx)			0.82	3.29	0.82	3.60	0.82	3.60
CARBON MONOXIDE (CO)			1.56	6.24	1.56	6.84	1.56	6.84
VOLATILE ORGANIC COMPOUNDS (VOC)		AP-42/NC DEQ	4.82	19.26	4.82	21.09	4.82	21.09
LEAD								
OTHER		207-20						Jen spins of the court
HAZARDOL	IS AIR POLL	UTANT EMISS			FOR I HIS			
		SOURCE OF		D ACTUAL	· 		EMISSIONS	
	1	EMISSION	(AFTER CONT	The second second	(BEFORE CONT	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(AFTER CONT	T 10 - 1 C 2 2 2 2 2 3 3 5 5 5
HAZARDOUS AIR POLLUTANT	CAS NO.	FACTOR	lb/hr	lbs/yr	lb/hr	lbs/yr	lb/hr	lbs/yr
Acetaldehyde (TH)	75070	AP-42/NC DEQ	1.16E-01	925.20	1.16E-01	1013.09	1.16E-01	1013.09
Acrolein (TH)	107028	AP-42/NC DEQ	0.00E+00	0.00	0.00E+00	0.00	0.00E+00	0.00
Formaldehyde (TH)	50000	AP-42/NC DEQ	6.30E-03	50.40	6.30E-03	55.19	6.30E-03	55.19
Methanol	67561	AP-42/NC DEQ	2.03E-02	162.00	2.03E-02	177.39	2.03E-02	177.39
Phenol	108952	AP-42/NC DEQ	0.00E+00	0.00	0.00E+00	0.00	0.00E+00	0.00
Propionaldehyde	123386	AP-42/NC DEQ	2.03E-02	162.00	2.03E-02	177.39	2.03E-02	177.39
				-				
TOXIC	NR POLLIT	ANT EMISSIOI	NS INFORM	ΙΔΤΙΟΝ ΕΟ	R THIS SO	URCF		
		SOURCE OF EMISSION	1	TED ACTUAL			ROLS / LIMIT	ATIONS
TOXIC AIR POLLUTANT	CAS NO.	FACTOR	lb	/hr	lb/c	day	Ib	/yr
Acetaldehyde (TH)	75070	AP-42/NC DEQ	 	E-01		54		5.20
Acrolein (TH)	107028	AP-42/NC DEQ	 	E+00		00		00
Formaldehyde (TH)	50000	AP-42/NC DEQ		E-03		14		.40
1 omaldenyde (11)	30000	AI -42/10 BEQ	0.00	L-00	0.	17		. 10
		1						
:								
	1 :							i
		1						
Attachments: (1) emissions calculations and supporti	na documentation	(2) indicate all regue	eted state and fo	deral enforceshi	normit limite (o	a hours of open	ation emission	rates) and
describe how these are monitored and with what free						.g. nouis or oper		

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B

REVISED 09/22/16	NCDEQ/Division	of Air Quality - Ap	pplication for	Air Permit to	Construct/Op	erate		В
EMISSION SOURCE DESCRIPTION: PELL	ETIZER AND PEI	LLET COOLER		EMISSION SO	DURCE ID NO	:ES-PP-1		
					VICE ID NO(:
OPERATING SCENARIO1	OF	1		EMISSION PO	DINT (STACK)	ID NO(S):EP-	PP-1	
DESCRIBE IN DETAILTHE EMISSION SOL SCREW PRESS AND DRYER	IRCE PROCESS	(ATTACH FLOW I	DIAGRAM):					
TYPE OF EMISSION S	OURCE (CHECK	AND COMPLETE	APPROPRIA	TE FORM B1-	B9 ON THE F	OLLOWING P	AGES):	
Coal,wood,oil, gas, other burner (Form I		☐ Woodworking				of chemicals/o		Form B7)
Int.combustion engine/generator (Form	B2)	Coating/finish	ning/printing (F	orm B5)	Inciner	ation (Form B8	3) , ' '	
Liquid storage tanks (Form B3)		Storage silos	/bins (Form Be	3)	Other (Form B9)		
START CONSTRUCTION DATE:NOVEMBE	R 2019		DATE MANUI	ACTURED: N	OVEMBER 20)19		
MANUFACTURER / MODEL NO.:			EXPECTED C	P. SCHEDUL	E:22_ HR/[DAY7_ D	AY/WK52_	_WK/YR
	SPS (SUBPARTS	S?):		☐ NESHA	AP (SUBPART			··
PERCENTAGE ANNUAL THROUGHPUT (%		25 MAR-N		JUN-AU		SEP-NOV	25	
CRITERI	A AIR POLLU	TANT EMISSIC	ONS INFOR	MATION F	OR THIS S			
		SOURCE OF		D ACTUAL		POTENTIAL		
		EMISSION	(AFTER CONT		(BEFORE CONT		(AFTER CONTE	
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)		1:	0.02	0.09	0.69	3.04	0.02	0.1
PARTICULATE MATTER 42 5 MICRONS (PM		 	0.01	0.02	0.40	1.74	0.00	0.02
PARTICULATE MATTER < 2.5 MICRONS (PM ₂ .) SULFUR DIOXIDE (SO2)	5)							
NITROGEN OXIDES (NOx)		 			·			· · · · · · · · · · · · · · · · · · ·
CARBON MONOXIDE (CO)	-							
VOLATILE ORGANIC COMPOUNDS (VOC)		AP-42/NC DEQ	2.25	9.00	2.25	9.86	2.25	9.86
1 · · · · · · · · · · · · · · · ·			2.20	0.00		0.00		3.00
LEAD								
LEAD OTHER								
OTHER	US AIR POLI	UTANT EMISS	SIONS INFO	RMATION	FOR THIS	SOURCE		
OTHER	US AIR POLL	UTANT EMISS SOURCE OF	SIONS INFO		FOR THIS		EMISSIONS	
OTHER	US AIR POLL			D ACTUAL	FOR THIS	POTENTIAL	Note the production of the pro	
OTHER	US AIR POLL CAS NO.	SOURCE OF	EXPECTE	D ACTUAL		POTENTIAL	EMISSIONS	
OTHER HAZARDO		SOURCE OF EMISSION	EXPECTE (AFTER CONTI	D ACTUAL ROLS / LIMITS)	(BEFORE CONT	POTENTIAL ROLS / LIMITS)	EMISSIONS (AFTER CONTE	ROLS / LIMITS)
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH)	CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTE (AFTER CONTI Ib/hr	D ACTUAL ROLS / LIMITS) Ibs/yr	(BEFORE CONT	POTENTIAL ROLS / LIMITS) lbs/yr	EMISSIONS (AFTER CONTE	ROLS / LIMITS)
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH)	CAS NO. 75070 107028 50000	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTI Ib/hr 1.16E-01 0.00E+00 6.30E-03	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19	(AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03	ROLS / LIMITS) Ibs/yr
HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol	CAS NO. 75070 107028 50000 67561	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTILID/In) Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39	(AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02	lbs/yr 1013.09 0.00 55.19 177.39
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol	CAS NO. 75070 107028 50000 67561 108952	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTITUDE Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00	POTENTIAL ROLS / LIMITS) lbs/yr 1013.09 0.00 55.19 177.39 0.00	(AFTER CONTENTS Ib/hr	lbs/yr 1013.09 0.00 55.19 177.39 0.00
HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol	CAS NO. 75070 107028 50000 67561	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTILID/In) Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39	(AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02	lbs/yr 1013.09 0.00 55.19 177.39
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol	CAS NO. 75070 107028 50000 67561 108952	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTITUDE Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00	POTENTIAL ROLS / LIMITS) lbs/yr 1013.09 0.00 55.19 177.39 0.00	(AFTER CONTENTS Ib/hr	lbs/yr 1013.09 0.00 55.19 177.39 0.00
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde	CAS NO. 75070 107028 50000 67561 108952 123386	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTILID/In) 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	DACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39	(AFTER CONTENTS Ib/hr	lbs/yr 1013.09 0.00 55.19 177.39 0.00
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde	CAS NO. 75070 107028 50000 67561 108952 123386	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF	EXPECTE (AFTER CONTILID/In) 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	DACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39	EMISSIONS (AFTER CONTRIBINATION OF CONTRIBUTION OF CONTRIBUTIO	ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION	EXPECTE (AFTER CONTILID/In) 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 R THIS SO	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39 URCE	(AFTER CONTRIBINATION ID/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	ROLS / LIMITS) lbs/yr
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO.	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION FACTOR	EXPECTE (AFTER CONTILID/In) 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 VS INFORM EXPEC	DACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 RTHIS SOO EMISSIONS	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39 URCE AFTER CONT	EMISSIONS (AFTER CONTRIBIONS) (AFTER CONTRIBIONS) 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 ROLS / LIMIT/	ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC AIR POLLUTANT Acetaldehyde (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION FACTOR AP-42/NC DEQ	EXPECTE (AFTER CONTILIDATION ID/In) 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 VS INFORM EXPECTE Ib. 1.16	DACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 RTHIS SO EMISSIONS	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39 URCE AFTER CONT	EMISSIONS (AFTER CONTRIBIONS) (AFTER CONTRIBIONS) 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 ROLS / LIMIT/	ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39
OTHER HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTIL 1b/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 VS INFORM EXPECT 1.16 0.000	DACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 RTHIS SO EMISSIONS	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39 URCE AFTER CONT day 54 00	EMISSIONS (AFTER CONTRIBIONS) (AFTER CONTRIBIONS) 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 ROLS / LIMIT/ 1b. 925 0.	ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC AIR POLLUTANT Acetaldehyde (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION FACTOR AP-42/NC DEQ	EXPECTE (AFTER CONTIL 1b/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 VS INFORM EXPECT 1.16 0.000	DACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 RTHIS SO EMISSIONS	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39 URCE AFTER CONT	EMISSIONS (AFTER CONTRIBIONS) (AFTER CONTRIBIONS) 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 ROLS / LIMIT/ 1b. 925 0.	ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39
OTHER HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTIL 1b/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 VS INFORM EXPECT 1.16 0.000	DACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 RTHIS SO EMISSIONS	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39 URCE AFTER CONT day 54 00	EMISSIONS (AFTER CONTRIBIONS) (AFTER CONTRIBIONS) 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 ROLS / LIMIT/ 1b. 925 0.	ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39
OTHER HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTIL 1b/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 VS INFORM EXPECT 1.16 0.000	DACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 RTHIS SO EMISSIONS	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39 URCE AFTER CONT day 54 00	EMISSIONS (AFTER CONTRIBIONS) (AFTER CONTRIBIONS) 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 ROLS / LIMIT/ 1b. 925 0.	ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39
OTHER HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTIL 1b/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 VS INFORM EXPECT 1.16 0.000	DACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 RTHIS SO EMISSIONS	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39 URCE AFTER CONT day 54 00	EMISSIONS (AFTER CONTRIBIONS) (AFTER CONTRIBIONS) 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 ROLS / LIMIT/ 1b. 925 0.	ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39
OTHER HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTIL 1b/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 VS INFORM EXPECT 1.16 0.000	DACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 RTHIS SO EMISSIONS	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39 URCE AFTER CONT day 54 00	EMISSIONS (AFTER CONTRIBIONS) (AFTER CONTRIBIONS) 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 ROLS / LIMIT/ 1b. 925 0.	ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B

REVISED 09/22/16	NCDEQ/Division	of Air Quality - A	pplication for	Air Permit to	Construct/Op	erate	**	В
EMISSION SOURCE DESCRIPTION: PELLE	T SCREEN			EMISSION S	DURCE ID NO	:ES-PSC-1		
				CONTROL DI	EVICE ID NO(S):CD-4		
OPERATING SCENARIO1	OF	1		EMISSION PO	DINT (STACK)	ID NO(S):EP-	PSC-1	
DESCRIBE IN DETAILTHE EMISSION SOU SCREW PRESS AND DRYER	RCE PROCESS	(ATTACH FLOW	DIAGRAM):					
TYPE OF EMISSION S	OURCE (CHECK	AND COMPLETE	APPROPRIA	TE FORM B1-	B9 ON THE F	OLLOWING P	AGES):	
Coal,wood,oil, gas, other burner (Form E		Woodworking				of chemicals/o		Form B7)
Int.combustion engine/generator (Form I	32)	Coating/finish	hing/printing (F	orm B5)	Inciner	ation (Form B8)	
Liquid storage tanks (Form B3)			s/bins (Form B6		Other (Form B9)		
START CONSTRUCTION DATE: NOVEMBE	R 2019		DATE MANUE	ACTURED: N	OVEMBER 20			
MANUFACTURER / MODEL NO.:			EXPECTED C				AY/WK52_	_ WK/YR
	SPS (SUBPART	S?):		☐ NESH/	AP (SUBPART	S?):		
PERCENTAGE ANNUAL THROUGHPUT (%		25 MAR-I		JUN-AU		SEP-NOV	25	
GRITERIA	A AIR POLLU	ITANT EMISSI	ONS INFOR	MATION F	OR THIS S	OURCE		
		SOURCE OF	EXPECTE	D ACTUAL		POTENTIAL	EMISSIONS	
		EMISSION	(AFTER CONT	ROLS / LIMITS)	(BEFORE CONT	ROLS / LIMITS)	(AFTER CONTE	ROLS / LIMITS)
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)			0.00	0.0003	0.08	0.34	0.00	0.0003
PARTICULATE MATTER<10 MICRONS (PM ₁₀)			0.00	0.003	0.08	0.34	0.00	0.0003
PARTICULATE MATTER < 2.5 MICRONS (PM _{2.5}	<u>)</u>							
SULFUR DIOXIDE (SO2)	<u> </u>	;						
NITROGEN OXIDES (NOx) CARBON MONOXIDE (CO)								
VOLATILE ORGANIC COMPOUNDS (VOC)		AP-42/NC DEQ	2.25	9.00	2.25	9.86	2.25	9.86
VOLATILE ORGANIC COMPOUNDS (VOC)		AP-42/NC DEQ	2.25	9.00	2.25	9.00	2.25	9.00
LEAD							1	
LEAD OTHER						*		
OTHER	US AIR POLI	UT/ANT/EMISS	SIONS INFO	RMATION	FOR THIS	SOURCE		
OTHER	US AIR POLL	UTANT EMISS	7		FOR THIS		FMISSIONS	
OTHER	US AIR POLL	SOURCE OF	EXPECTE	D ACTUAL		POTENTIAL		ROLS/LIMITS)
OTHER HAZARDO		SOURCE OF EMISSION	EXPECTEI (AFTER CONTR	D ACTUAL ROLS / LIMITS)	(BEFORE CONT	POTENTIAL ROLS / LIMITS)	(AFTER CONT	ARRIVA CARA PARA
OTHER	CAS NO. 75070	SOURCE OF EMISSION FACTOR	EXPECTEI (AFTER CONTR Ib/hr	D ACTUAL ROLS / LIMITS) Ibs/yr	(BEFORE CONT	POTENTIAL ROLS / LIMITS) Ibs/yr	(AFTER CONTE	ROLS / LIMITS) Ibs/yr 1013.09
OTHER HAZARDO HAZARDO HAZARDOUS AIR POLLUTANT	CAS NO.	SOURCE OF EMISSION	EXPECTE (AFTER CONTR Ib/hr 1.16E-01	D ACTUAL ROLS / LIMITS)	(BEFORE CONT	POTENTIAL ROLS / LIMITS)	(AFTER CONTE Ib/hr 1.16E-01	lbs/yr
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH)	CAS NO. 75070	SOURCE OF EMISSION FACTOR AP-42/NC DEQ	EXPECTEI (AFTER CONTR Ib/hr	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20	(BEFORE CONT Ib/hr 1.16E-01	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09	(AFTER CONTE	lbs/yr 1013.09
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH)	CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ	(AFTER CONTR Ib/hr 1.16E-01 0.00E+00	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00	(AFTER CONTE Ib/hr 1.16E-01 0.00E+00	lbs/yr 1013.09 0.00
HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH)	CAS NO. 75070 107028 50000	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19	(AFTER CONTE Ib/hr 1.16E-01 0.00E+00 6.30E-03	lbs/yr 1013.09 0.00 55.19
HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol	CAS NO. 75070 107028 50000 67561	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTEI (AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39	(AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02	lbs/yr 1013.09 0.00 55.19 177.39
HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol	CAS NO. 75070 107028 50000 67561 108952	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTEI (AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00	(AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00	lbs/yr 1013.09 0.00 55.19 177.39 0.00
HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde	CAS NO. 75070 107028 50000 67561 108952 123386	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTEI (AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	D ACTUAL ROLS / LIMITS) lbs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39	(AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00	lbs/yr 1013.09 0.00 55.19 177.39 0.00
HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde	CAS NO. 75070 107028 50000 67561 108952 123386	SOURCE OF EMISSION FACTOR AP-42/NC DEQ	EXPECTEI (AFTER CONTRIBUTION ID/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39	(AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	lbs/yr 1013.09 0.00 55.19 177.39 0.00 177.39
HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde	CAS NO. 75070 107028 50000 67561 108952 123386	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF	EXPECTEI (AFTER CONTRIBUTION ID/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39	(AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	lbs/yr 1013.09 0.00 55.19 177.39 0.00 177.39
HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde	CAS NO. 75070 107028 50000 67561 108952 123386	SOURCE OF EMISSION FACTOR AP-42/NC DEQ	EXPECTEI (AFTER CONTRIBUTION ID/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39	(AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	lbs/yr 1013.09 0.00 55.19 177.39 0.00 177.39
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC	CAS NO. 75070 107028 50000 67561 108952 123386	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION	EXPECTEL (AFTER CONTRIBUTION ID/In) 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 R THIS SOO	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39	(AFTER CONTE Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO.	SOURCE OF EMISSION FACTOR AP-42/NC DEQ EMISSION FACTOR	EXPECTEI (AFTER CONTRIBUTION ID/In) 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 VS INFORM EXPEC	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 RTHIS SOL	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39	(AFTER CONTI- Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02	lbs/yr 1013.09 0.00 55.19 177.39 0.00 177.39
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC AIR POLLUTANT Acetaldehyde (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION FACTOR AP-42/NC DEQ	EXPECTEI (AFTER CONTRIBUTION IN INFORM EXPECTEI (B)	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 R THIS SOU EMISSIONS A	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39	(AFTER CONTI- Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 ROLS / LIMITA- Ib/ 925	lbs/yr
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTEI (AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 VS INFORM EXPECTEI 1.16 0.000	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 R THIS SOL EMISSIONS	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39	(AFTER CONTI- Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 ROLS / LIMITA- Ib/ 925	lbs/yr
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTEI (AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 VS INFORM EXPECTEI 1.16 0.000	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 R THIS SOL EMISSIONS	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39	(AFTER CONTI- Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 ROLS / LIMITA- Ib/ 925	Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTEI (AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 VS INFORM EXPECTEI 1.16 0.000	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 R THIS SOL EMISSIONS	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39	(AFTER CONTI- Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 ROLS / LIMITA- Ib/ 925	lbs/yr
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTEI (AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 VS INFORM EXPECTEI 1.16 0.000	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 R THIS SOL EMISSIONS	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39	(AFTER CONTI- Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 ROLS / LIMITA- Ib/ 925	Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39
OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTEI (AFTER CONTR Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 VS INFORM EXPECTEI 1.16 0.000	D ACTUAL ROLS / LIMITS) Ibs/yr 925.20 0.00 50.40 162.00 0.00 162.00	(BEFORE CONT Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 R THIS SOL EMISSIONS	POTENTIAL ROLS / LIMITS) Ibs/yr 1013.09 0.00 55.19 177.39 0.00 177.39	(AFTER CONTI- Ib/hr 1.16E-01 0.00E+00 6.30E-03 2.03E-02 0.00E+00 2.03E-02 ROLS / LIMITA- Ib/ 925	lbs/yr

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B

REVISED 09/22/16	ACDE @ DIVISION	of Air Quality - A	ppouc.on .o.	All Permit to	Och Strace Op	ciale	. 1	В
EMISSION SOURCE DESCRIPTION: PELLE	T STORAGE (F	UGITIVE EMISSIO	NS)	EMISSION SO	OURCE ID NO	:ES-PS-1		
				CONTROL DI	EVICE ID NO(S):NA		
OPERATING SCENARIO1	OF	1		EMISSION PO	DINT (STACK)	ID NO(S):NA		
DESCRIBE IN DETAILTHE EMISSION SOU PELLET STORAGE	RCE PROCESS	(ATTACH FLOW I	DIAGRAM):					
TYPE OF EMISSION S	OURCE (CHECK	AND COMPLETE	APPROPRIA	TE FORM B1.	B9 ON THE F	OLLOWING P	AGES):	
Coal,wood,oil, gas, other burner (Form E		Woodworking		i Li Olambi		of chemicals/c		Form B7)
Int.combustion engine/generator (Form B	•		hing/printing (F	orm B5)		ation (Form B8	• •	
Liquid storage tanks (Form B3)			/bins (Form B6			Form B9)	,	
START CONSTRUCTION DATE:NOVEMBE	R 2019		DATE MANUE	ACTURED: N	OVEMBER 20)19		
MANUFACTURER / MODEL NO.:			EXPECTED C	P. SCHEDUL	E:22_ HR/[DAY7_ D.	AY/WK52_	_ WK/YR
IS THIS SOURCE SUBJECT TO? N	SPS (SUBPART	S?):	<u> </u>	☐ NESH	AP (SUBPART	S?):		
PERCENTAGE ANNUAL THROUGHPUT (%		25 MAR-		JUN-AU		SEP-NOV	25	
CRITERIA	A AIR POLLU	ITANT EMISSI	ONS INFOR	MATION F	OR THIS S	OURCE		
		SOURCE OF	EXPECTE	D ACTUAL		POTENTIAL	EMISSIONS	
		EMISSION	(AFTER CONT	ROLS / LIMITS)	(BEFORE CONT	ROLS / LIMITS)	(AFTER CONT	ROLS / LIMITS)
AIR POLLUTANT EMITTED	· .	FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)	-							
PARTICULATE MATTER<10 MICRONS (PM ₁₀)								
PARTICULATE MATTER < 2.5 MICRONS (PM _{2.5})	1						
SULFUR DIOXIDE (SO2)								
NITROGEN OXIDES (NOx)								
CARBON MONOXIDE (CO)		AD 40/NO DEC		0.00	0.00	0.00	0.23	0.99
VOLATILE ORGANIC COMPOUNDS (VOC)	· · · · · · · · · · · · · · · · · · ·	AP-42/NC DEQ	0.23	0.90	0.23	0.99	0.23	0.50
LEAD		AP-42/NC DEQ	0.23	0.90	0.23	0.99	0.23	0.50
LEAD OTHER	US AIR POLL							
LEAD OTHER	US AIR POLI	UTANT EMISS	SIONS INFO	RMATION		SOURCE		
LEAD OTHER	US AIR POLL	UTANT EMISS SOURCE OF	EXPECTE	PRMATION D ACTUAL	FOR THIS	SOURCE POTENTIAL	EMISSIONS	
LEAD OTHER	US AIR POLI	UTANT EMISS SOURCE OF EMISSION	EXPECTE (AFTER CONTR	DRMATION D ACTUAL ROLS / LIMITS)	FOR THIS	SOURCE POTENTIAL ROLS / LIMITS)	EMISSIONS (AFTER CONTE	ROLS / LIMITS)
DEAD OTHER HAZARDO		UTANT EMISS SOURCE OF	EXPECTE	PRMATION D ACTUAL	FOR THIS	SOURCE POTENTIAL	EMISSIONS	
LEAD OTHER HAZARDO	CAS NO.	UTANT EMISS SOURCE OF EMISSION FACTOR	EXPECTE (AFTER CONTR Ib/hr	DRMATION D ACTUAL ROLS / LIMITS) Ibs/yr	FOR THIS (BEFORE CONT Ib/hr	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr	EMISSIONS (AFTER CONTE	ROLS / LIMITS) Ibs/yr
LEAD OTHER HAZARDO HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH)	CAS NO. 75070	SOURCE OF EMISSION FACTOR AP-42/NC DEQ	EXPECTE (AFTER CONTR Ib/hr 1.16E-02	DRMATION D ACTUAL ROLS / LIMITS) Ibs/yr 92.52	FOR THIS (BEFORE CONT Ib/hr 1.16E-02	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr 101.31	EMISSIONS (AFTER CONTE	ROLS / LIMITS) Ibs/yr 101.31
LEAD OTHER HAZARDO HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH)	CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ	EXPECTEL (AFTER CONTEL Ib/hr 1.16E-02 0.00E+00	DRMATION D ACTUAL ROLS / LIMITS) Ibs/yr 92.52 0.00	(BEFORE CONT	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr 101.31 0.00	EMISSIONS (AFTER CONTE Ib/hr 1.16E-02 0.00E+00	ROLS / LIMITS) Ibs/yr 101.31 0.00
LEAD OTHER HAZARDO HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH)	CAS NO. 75070 107028 50000	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTR Ib/hr 1.16E-02 0.00E+00 6.30E-04	DRMATION D ACTUAL ROLS / LIMITS) Ibs/yr 92.52 0.00 5.04	(BEFORE CONT Ib/hr 1.16E-02 0.00E+00 6.28E-04	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50	EMISSIONS (AFTER CONTROL 1b/hr 1.16E-02 0.00E+00 6.28E-04	ROLS / LIMITS) Ibs/yr
HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol	CAS NO. 75070 107028 50000 67561	SOURCE OF EMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE (AFTER CONTR Ib/hr 1.16E-02 0.00E+00 6.30E-04 2.03E-03	DRMATION D ACTUAL ROLS / LIMITS) Ibs/yr 92.52 0.00 5.04 16.20	(BEFORE CONT Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74	EMISSIONS (AFTER CONTRIBION 1.16E-02 0.00E+00 6.28E-04 2.03E-03	ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74
LEAD OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde	CAS NO. 75070 107028 50000 67561 108952 123386	SOURCE OF EMISSION FACTOR AP-42/NC DEQ	EXPECTE (AFTER CONTR Ib/hr 1.16E-02 0.00E+00 6.30E-04 2.03E-03 0.00E+00 2.03E-03	DRMATION D ACTUAL ROLS / LIMITS) Ibs/yr 92.52 0.00 5.04 16.20 0.00 16.20	(BEFORE CONT Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74	EMISSIONS (AFTER CONTR Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00	ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00
LEAD OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde	CAS NO. 75070 107028 50000 67561 108952 123386	SOURCE OF EMISSION FACTOR AP-42/NC DEQ	EXPECTE: (AFTER CONTE Ib/hr 1.16E-02 0.00E+00 6.30E-04 2.03E-03 0.00E+00 2.03E-03	DRMATION DACTUAL ROLS / LIMITS) 1bs/yr 92.52 0.00 5.04 16.20 0.00 16.20	(BEFORE CONT Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74	EMISSIONS (AFTER CONTEMPLY) 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03	ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74
LEAD OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde	CAS NO. 75070 107028 50000 67561 108952 123386	SOURCE OF EMISSION FACTOR AP-42/NC DEQ SOURCE OF	EXPECTE: (AFTER CONTE Ib/hr 1.16E-02 0.00E+00 6.30E-04 2.03E-03 0.00E+00 2.03E-03	DRMATION DACTUAL ROLS / LIMITS) 1bs/yr 92.52 0.00 5.04 16.20 0.00 16.20	(BEFORE CONT Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74	EMISSIONS (AFTER CONTEMPLY) 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03	ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74
LEAD OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT	SOURCE OF EMISSION FACTOR AP-42/NC DEQ	EXPECTE: (AFTER CONTE Ib/hr 1.16E-02 0.00E+00 6.30E-04 2.03E-03 0.00E+00 2.03E-03	DRMATION D ACTUAL ROLS / LIMITS) Ibs/yr 92.52 0.00 5.04 16.20 0.00 16.20 IATION FO	(BEFORE CONT Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74	EMISSIONS (AFTER CONTI- Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03	ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74
LEAD OTHER HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO.	SOURCE OF EMISSION FACTOR AP-42/NC DEQ	EXPECTE: (AFTER CONTE Ib/hr 1.16E-02 0.00E+00 6.30E-04 2.03E-03 0.00E+00 2.03E-03 EXPECTE EXPECTE Ib/hr EXPECTE Ib/hr Ib/hr	DRMATION DACTUAL ROLS / LIMITS) 1bs/yr 92.52 0.00 5.04 16.20 0.00 16.20 IATION FO	(BEFORE CONT Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74	EMISSIONS (AFTER CONTED	ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74
LEAD OTHER HAZARDO H	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070	SOURCE OF EMISSION FACTOR AP-42/NC DEQ	EXPECTE: (AFTER CONTE Ib/hr 1.16E-02 0.00E+00 6.30E-04 2.03E-03 0.00E+00 2.03E-03 VS INFORM EXPECTE:	DRMATION DACTUAL ROLS / LIMITS) 92.52 0.00 5.04 16.20 0.00 16.20 IATION FO	(BEFORE CONT Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03 R THIS SO EMISSIONS	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr	EMISSIONS (AFTER CONTEMPLY) Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03	ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74
LEAD OTHER HAZARDO HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC AIR POLLUTANT	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO.	SOURCE OF EMISSION FACTOR AP-42/NC DEQ	EXPECTE: (AFTER CONTE) (b/hr 1.16E-02 0.00E+00 6.30E-04 2.03E-03 0.00E+00 2.03E-03 VS INFORM EXPECTE 1.16 0.001	DRMATION DACTUAL ROLS / LIMITS) 1bs/yr 92.52 0.00 5.04 16.20 0.00 16.20 IATION FO	(BEFORE CONT Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03 R THIS SO EMISSIONS	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74 URCE AFTER CONTI	EMISSIONS (AFTER CONTF Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03	ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74
LEAD OTHER HAZARDO HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC TOXIC Acetaldehyde (TH) Acrolein (TH) Acrolein (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ ARAPEMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE: (AFTER CONTE) (b/hr 1.16E-02 0.00E+00 6.30E-04 2.03E-03 0.00E+00 2.03E-03 VS INFORM EXPECTE 1.16 0.001	DRMATION DACTUAL ROLS / LIMITS) 1bs/yr 92.52 0.00 5.04 16.20 0.00 16.20 IATION FO TED ACTUAL	(BEFORE CONTIBE ID/In 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03 EMISSIONS	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74 URCE AFTER CONTI	EMISSIONS (AFTER CONTF Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03	ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74
LEAD OTHER HAZARDO HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC TOXIC Acetaldehyde (TH) Acrolein (TH) Acrolein (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ ARAPEMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE: (AFTER CONTE) (b/hr 1.16E-02 0.00E+00 6.30E-04 2.03E-03 0.00E+00 2.03E-03 VS INFORM EXPECTE 1.16 0.001	DRMATION DACTUAL ROLS / LIMITS) 1bs/yr 92.52 0.00 5.04 16.20 0.00 16.20 IATION FO TED ACTUAL	(BEFORE CONTIBE ID/In 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03 EMISSIONS	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74 URCE AFTER CONTI	EMISSIONS (AFTER CONTF Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03	ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74
LEAD OTHER HAZARDO HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC TOXIC Acetaldehyde (TH) Acrolein (TH) Acrolein (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ ARAPEMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE: (AFTER CONTE) (b/hr 1.16E-02 0.00E+00 6.30E-04 2.03E-03 0.00E+00 2.03E-03 VS INFORM EXPECTE 1.16 0.001	DRMATION DACTUAL ROLS / LIMITS) 1bs/yr 92.52 0.00 5.04 16.20 0.00 16.20 IATION FO TED ACTUAL	(BEFORE CONTIBE ID/In 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03 EMISSIONS	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74 URCE AFTER CONTI	EMISSIONS (AFTER CONTF Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03	ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74
LEAD OTHER HAZARDO HAZARDO HAZARDOUS AIR POLLUTANT Acetaldehyde (TH) Acrolein (TH) Formaldehyde (TH) Methanol Phenol Propionaldehyde TOXIC TOXIC TOXIC Acetaldehyde (TH) Acrolein (TH) Acrolein (TH)	CAS NO. 75070 107028 50000 67561 108952 123386 AIR POLLUT CAS NO. 75070 107028	SOURCE OF EMISSION FACTOR AP-42/NC DEQ ARAPEMISSION FACTOR AP-42/NC DEQ AP-42/NC DEQ AP-42/NC DEQ	EXPECTE: (AFTER CONTE) (b/hr 1.16E-02 0.00E+00 6.30E-04 2.03E-03 0.00E+00 2.03E-03 VS INFORM EXPECTE 1.16 0.001	DRMATION DACTUAL ROLS / LIMITS) 1bs/yr 92.52 0.00 5.04 16.20 0.00 16.20 IATION FO TED ACTUAL	(BEFORE CONTIBE ID/In 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03 EMISSIONS	SOURCE POTENTIAL ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74 URCE AFTER CONTI	EMISSIONS (AFTER CONTF Ib/hr 1.16E-02 0.00E+00 6.28E-04 2.03E-03 0.00E+00 2.03E-03	ROLS / LIMITS) Ibs/yr 101.31 0.00 5.50 17.74 0.00 17.74

ACTIVE ENERGY RENEWABLE POWER LUMBERTON, NC

AIR PERMIT: 10636R00; FACILITY ID # 7800242 **FORM B1**

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

REVISED 09/22/16		Air Quality - Application f		t/Operate B1
EMISSION SOURCE DESCRIPTION	ON:ONE 20MMBTU/HR NAT	URAL GAS FIRED BOILER	EMISSION SOURCE ID	NO:ES-B-1
	:		CONTROL DEVICE ID N	O(S):NA
OPERATING SCENARIO:	1 OF	1	EMISSION POINT (STAC	CK) ID NO(S):EP-B-1
DESCRIBE USE: PROC	ESS HEAT	SPACE HEAT	ELECTRICAL GE	ENERATION
□сонт	INUOUS USE	STAND BY/EMERGENCY	OTHER (DESCR	KIBE):
HEATING MECHANISM:	✓ INDIRECT	DIRECT		
MAX. FIRING RATE (MMBTU/HO	UR):20			
		WOOD-FIRED BU	JRNER	
WOOD TYPE: ☐ BARK	WOOD/BARK	☐ WET WOOD	☐ DRY WOOD	OTHER (DESCRIBE):
PERCENT MOISTURE OF FUEL:				
	CONTROLLE	O WITH FLYASH REINJEC	rion _	CONTROLLED W/O REINJECTION
FUEL FEED METHOD:		HEAT TRANSFER MEDIA	: STEAM DAIR	OTHER (DESCRIBE)
	7.4 2.4 2.4	COAL-FIRED BU	IRNER	
TYPE OF BOILER	IF OTHER DESCRI	BE:		
PULVERIZED OVERFEED STO	OKER UNDERFEED	STOKER SP	READER STOKER	FLUIDIZED BED
□ WET BED □ UNCONTRO	LLED UNCONTROL	LED UNC	ONTROLLED	CIRCULATING
☐ DRY BED ☐ CONTROLLI	ED CONTROLLE	D FLYA	SH REINJECTION	RECIRCULATING
		□ NO F	LYASH REINJECTION	
		OIL/GAS-FIRED B	URNER	
TYPE OF BOILER:	UTILITY INDUS	TRIAL COMM	IERCIAL	INSTITUTIONAL
TYPE OF FIRING:	NORMAL TANGE), 1	OX BURNERS	NO LOW NOX BURNER
		OTHER FUEL-FIRED	BURNER	
TYPE(S) OF FUEL:	PE			
TYPE OF BOILER:	UTILITY INDUS	STRIAL COMM	IERCIAL	INSTITUTIONAL
TYPE OF FIRING:	Turk recovered the course of the contraction arms of the contract of the contract of	CONTROL(S) (IF ANY):		and the second s
	FUEL USA	GE (INCLUDE STAR		
		MAXIMUN		REQUESTED CAPACITY
FUEL TYPE	UNITS	CAPACITY	(UNIT/HR)	LIMITATION (UNIT/HR)
NATURAL GAS	MMSCF	· · · · · · · · · · · · · · · · · · ·	172	2 157
	 	Netice (COMPLETE	ALL THAT ARE ARE	
	FUEL CHARACTER	SPECIFIC SPECIFIC	SULFUR CON	
FUEL TV	(DE	-	(% BY WEIG	
FUEL TY	(PE .	BTU CONTENT		(% BY WEIGHT)
NATURAL GAS			1020	
	······································		<u> </u>	
COMMENTS:				

Already Permitted

AIR PERMIT: 10636R00; FACILITY ID # 7800242 **FORM B1**

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

REVISED 09/22/16		Air Quality - Application fo	r Air Permit to Construct	/Operate B1	
EMISSION SOURCE DESCRIPTION	ON:ONE 4MMBTU/HR NATU	IRAL GAS FIRED DRYER	EMISSION SOURCE ID N	NO:ES-D-1	
			CONTROL DEVICE ID NO	O(S):NA	
OPERATING SCENARIO:	1 OF	1	EMISSION POINT (STAC	cK) ID NO(S):EP-D-1	
DESCRIBE USE: PROC	ESS HEAT	SPACE HEAT	ELECTRICAL GE	NERATION	
CONT	INUOUS USE	STAND BY/EMERGENCY	OTHER (DESCRI	IBE):	
HEATING MECHANISM:	INDIRECT	☐ DIRECT			
MAX. FIRING RATE (MMBTU/HO	UR):20				
		WOOD-FIRED BU	RNER		
WOOD TYPE: BARK	WOOD/BARK	☐ WET WOOD	☐ DRY WOOD	OTHER (DESCRIBE):	
PERCENT MOISTURE OF FUEL:					
	CONTROLLE	O WITH FLYASH REINJECT	ION 🗆	CONTROLLED W/O REINJECTION	
FUEL FEED METHOD:		HEAT TRANSFER MEDIA:	☐ STEAM ☐ AIR	OTHER (DESCRIBE)	
	The state of the s	COAL-FIRED BU	RNER		
TYPE OF BOILER	IF OTHER DESCRI	BE:			
PULVERIZED OVERFEED STO	OKER UNDERFEED	STOKER SPF	READER STOKER	FLUIDIZED BED	
☐ WET BED ☐ UNCONTRO	LLED UNCONTROL	LED UNCC	NTROLLED	CIRCULATING	
☐ DRY BED ☐ CONTROLLI	ED CONTROLLE	D FLYA	SH REINJECTION	RECIRCULATING	
		□ NO FL	☐ NO FLYASH REINJECTION		
		OIL/GAS-FIRED B	URNER:		
TYPE OF BOILER:	UTILITY INDUS		ERCIAL	INSTITUTIONAL	
TYPE OF FIRING:	NORMAL TANGE		OX BURNERS	NO LOW NOX BURNER	
		OTHER FUEL-FIRED	BURNER	Margan et gan i sagaran maran na gan a sagaran sa sagaran sa sagaran sa sagaran sa sagaran sa sagaran sa sagar	
TYPE(S) OF FUEL:	PE				
TYPE OF BOILER:	UTILITY INDUS	STRIAL COMM	ERCIAL	INSTITUTIONAL	
TYPE OF FIRING:	tackers of the transfer of the contract of the	CONTROL(S) (IF ANY):			
	FUEL USA	GE (INCLUDE START			
· · · · · · · · · · · · · · · · · · ·		MAXIMUM		REQUESTED CAPACITY	
FUEL TYPE	UNITS	CAPACITY	(UNIT/HR)	LIMITATION (UNIT/HR)	
NATURAL GAS	MMSCF		35	32	
	 FIJEL CHARACTER	 RISTICS (COMPLETE)	ALL THAT ARE APP	LICABLE)	
	I OLL CITALOGICI	SPECIFIC	SULFUR CON		
FUEL TY	/PE	BTU CONTENT	(% BY WEIG		
			1020		
NATURAL GAS			1020		
COMMENTS:					
JOHNNETTIO.					

ACTIVE ENERGY RENEWABLE POWER LUMBERTON, NC

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B9

		for Air Permit to Construct/Operat	
EMISSION SOURCE DESCRIPTION: PRESSURE COOKER W	CONDENSER	EMISSION SOURCE ID NO:ES-P-	
ODERATING COENARIO		CONTROL DEVICE ID NO(S):CD-	
OPERATING SCENARIO:1 OF1_ DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGR	MA PRESSURE ASSI	EMISSION POINT (STACK) ID NO	(S):EP-CD-1
DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGR DETAILS)	RAM):PRESSURE COOF	CER WITH A CONDENSER (SEE PR	OCESS SCHEMATIC FOR
<i>52.7.</i> 11.5)			
MATERIALS ENTERING PROCESS - CONTINUOU	IS PRUCESS	MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/YR)	LIMITATION(UNITYHR)
WOOD CHIPS	ODT/YR	39420	3600
The second secon			
The second secon			
MATERIALS ENTERING PROCESS - BATCH O	DEBATION		DEQUIENTED CARACITY
MATERIALS ENTERING PROCESS - BATCH O	PERATION	MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)
		<u> </u>	
		 	
MAXIMUM DESIGN (BATCHES / HOUR):			
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/	/R):	
FUEL USED:NONE	TOTAL MAX	IMUM FIRING RATE (MILLION BTU	/HR):
MAY CARACITY HOURLY FUEL LICE.	DEOLIESTE	D CAPACITY ANNUAL FUEL USE:	
MAX. CAPACITY HOURLY FUEL USE: COMMENTS:	IKEQUESTE	D CAFACITT ANNOAL FUEL USE.	
OOMINIEN TO.			

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B9

REVISED 09/22/16 NCDEQ/Division of Air Quality	- Application f	or Air Permit to Construct/Opera	ate B9
EMISSION SOURCE DESCRIPTION: SCREW PRESS AND A DRYE	_	EMISSION SOURCE ID NO:ES-S	
		CONTROL DEVICE ID NO(S):CD	-2
OPERATING SCENARIO:1 OF1		EMISSION POINT (STACK) ID NO	D(S):EP-SPD-1
DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM): SCHEMATIC FOR DETAILS)	SCREW PRESS	S W/DRYER TO REDUCE MOISTU	JRE (SEE PROCESS
MATERIALS ENTERING PROCESS - CONTINUOUS PRO		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/YR)	LIMITATION(UNITYHR)
WOOD CHIPS	ODT/YR	39420	36000
MATERIALS ENTERING PROCESS - BATCH OPERAT	ION	MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)
· · · · · · · · · · · · · · · · · · ·			
MAXIMUM DESIGN (BATCHES / HOUR):			
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YI	R)·	
FUEL USED:NONE	- 	MUM FIRING RATE (MILLION BT	U/HR)
MAX. CAPACITY HOURLY FUEL USE:		CAPACITY ANNUAL FUEL USE	
COMMENTS:	TREGOLOTED	ON TOTAL THROUGH	•

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B9

REVISED 09/22/16 NCDEQ/Division of Air Qual	lity - Application fo	or Air Permit to Construct/Opera	ate B9
EMISSION SOURCE DESCRIPTION: PELLETIZER AND PELLET	000150	EMISSION SOURCE ID NO:ES-P	
		CONTROL DEVICE ID NO(S):CD	-3
OPERATING SCENARIO:1 OF1		EMISSION POINT (STACK) ID NO	O(S):EP-PP-1
DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM SCHEMATIC FOR DETAILS)	II):SCREW PRESS	S W/DRYER TO REDUCE MOISTU	JRE (SEE PROCESS
MATERIALS ENTERING PROCESS - CONTINUOUS PR	ROCESS	MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/YR)	LIMITATION(UNITYHR)
WOOD CHIPS	ODT/YR	39420	36000
MATERIALS ENTERING PROCESS - BATCH OPER	ATION	MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)
:			
			<u> </u>
MAXIMUM DESIGN (BATCHES / HOUR):			
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/Y	R):	
FUEL USED:NONE	TOTAL MAXI	MUM FIRING RATE (MILLION BT	U/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED	CAPACITY ANNUAL FUEL USE	
COMMENTS:			

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM B9

REVISED 09/22/16 NCDEQ/Division of Air Quality	ty - Application fo	or Air Permit to Construct/Oper	ate B9
EMISSION SOURCE DESCRIPTION: PELLET SCREEN		EMISSION SOURCE ID NO:ES-F	
		CONTROL DEVICE ID NO(S):CE)-4
OPERATING SCENARIO:1 OF1		EMISSION POINT (STACK) ID N	IO(S):EP-PSC-1
DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM SCHEMATIC FOR DETAILS)):SCREW PRESS	W/DRYER TO REDUCE MOIST	URE (SEE PROCESS
MATERIALS ENTERING PROCESS - CONTINUOUS PR	OCESS	MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/YR)	LIMITATION(UNITYHR)
WOOD CHIPS	ODT/YR	39420	36000
MATERIALS ENTERING PROCESS - BATCH OPERA	ATION	MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)
A CONTRACTOR OF THE CONTRACTOR			
MAXIMUM DESIGN (BATCHES / HOUR):			
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YI	R):	
FUEL USED:NONE		MUM FIRING RATE (MILLION B	TU/HR):
MAX. CAPACITY HOURLY FUEL USE:		CAPACITY ANNUAL FUEL USE	
COMMENTS:			

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B9

REVISED 09/22/16	NCDEQ/Division	of Air Quality - Application	for Air Permit to Construct/Opera	ate B9
EMISSION SOURCE DESCRIP	TION: PELLET STORA	GE (FUGITIVE EMISSIONS)	EMISSION SOURCE ID NO:ES-F	
			CONTROL DEVICE ID NO(S):NA	
OPERATING SCENARIO:	1 OF	1	EMISSION POINT (STACK) ID N	O(S):NA
DESCRIBE IN DETAIL THE PR	OCESS (ATTACH FLOV	W DIAGRAM):PELLET STOR	AGE IN BAGS (SEE PROCÉSS S	CHEMATIC FOR DETAILS)
MATERIAI S ENTERI	NG PROCESS - CONT	INUOUS PROCESS	MAX, DESIGN	REQUESTED CAPACITY
	TYPE	UNITS	CAPACITY (UNIT/YR)	LIMITATION(UNITYHR)
WOOD CHIPS		ODT/YR	39420	36000
MATERIALS ENTE	RING PROCESS - BA	TCH OPERATION	MAX. DESIGN	REQUESTED CAPACITY
	TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)
MAXIMUM DESIGN (BATCHES	S / HOUR):			
REQUESTED LIMITATION (BA	TCHES / HOUR):	(BATCHES/	YR):	
FUEL USED:NONE		TOTAL MAX	KIMUM FIRING RATE (MILLION B	TU/HR):
MAX. CAPACITY HOURLY FU	EL USE:	REQUESTE	D CAPACITY ANNUAL FUEL USE	
COMMENTS:				

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM C4

CONTROL DEVICE (CYCLONE, MULTICYCLONE, OR OTHER MECHANICAL)

C4

REVISED 09/22/16	NCDEQ/			ication for All Peri				
CONTROL DEVICE ID NO: CD-2		CONTROLS EN	/IISSIONS F	ROM WHICH EMIS	SION SOURCE I			
EMISSION POINT (STACK) ID NO	(S):EP-SPD-1	POSITION IN S	ERIES OF	CONTROLS	NO.	1 OF 1	UNITS	
OPERATI	IG SCENARIO:							
1	OF1		P.E. SEAL I	REQUIRED (PER 20	Q .0112)?	✓ YES	□ NO	DED
DESCRIBE CONTROL SYSTEM: included with this documentation;	CYCLONE For PM con	ntrol on dryer. The	cyclone is a	also a process collect d smaller particles	ction device so it a	ctually receivesthe a	amount snown in the	PFU
ncluded with this documentation,	with the portion noted	below being only to	ic i wiio aii	d smaller participes.				
				 		 		
POLLUTANT(S) COLLECTED:			PM :				_	
BEFORE CONTROL EMISSION F	ATE (LB/HR):		670.00				<u>.</u>	
CAPTURE EFFICIENCY:			100	%	%	%	%	
					%	%	 %	
CONTROL DEVICE EFFICIENCY			99					
CORRESPONDING OVERALL EF	FICIENCY:		99	.%	%	.%	%	
EFFICIENCY DETERMINATION (ODE:						_	
TOTAL AFTER CONTROL EMISS	ION RATE (LB/HR):		6.70					
PRESSURE DROP (IN. H ₂ 0):	2 MIN	6 MAX				2 24 25 12 5 15		
	OF MIN		IAX	OUTLET TEMPER	ATURE (°F):	OF MIN	400F MAX	
INLET TEMPERATURE (°F):				BULK PARTICLE				
INLET AIR FLOW RATE (ACFM): POLLUTANT LOADING RATE (G		a)						
SETTLING CHAMBER	K/F1).0.03 (discharg		CYCLONE	I		М	ULTICYCLONE	
197 - 198 -	INLET VELOCITY	(ET/SEC): 50 60fp		GIRCULAR C	TRECTANGLE	NO. TUBES:	- 10 - 1 - 13 - 1 - 3	
LENGTH (INCHES):		(INCHES) See inst		IF WET SPRA		DIAMETER OF TU	JBES:	
WIDTH (INCHES):	H:31' including disc		ructions	LIQUID USED:	(10111111111111111111111111111111111111	HOPPER ASPIRA		
HEIGHT (INCHES):		Lb:		FLOW RATE (GPN	V).	☐ YES	□ NO	
VELOCITY (FT/SEC.):	Inlet 50-60fps	Lc:	 	MAKE UP RATE (LOUVERS?		
NO. TRAYS:	De:	S:		WARL OF TOTTE (Si ivi).	☐ YES	□ NO	
NO. BAFFLES:			TIONAL	☑ HIGH EFFI	ICIENCY	OTHER		
DESCRIBE MAINTENANCE PRO	TYPE OF CYCLON				loieitoi	PARTICLE SIZE D	ISTRIBUTION	
airlock flaps to avoid carry over.	Active control over cyc	lone differential pre	essure.		SIZE	WEIGHT %	CUMULAT	IVE
					(MICRONS)	OF TOTAL	%	
DESCRIBE INCOMING AIR STR	EAM: Air stream is a	collection of all par	ticles for the	process, with the	0-1	0.25%		0.25
portion shown above to be the po OVERALL FLOW IS REFLECTED	rtion that is PM10 and	smaller particle siz	ze. PLEASE DVF IS ONL'	E NOTE : Y FOR PM10 and	1-10	0.75%		1.00
SMALLER PARTICLES.	7 IN THE TTO_TOK	1011 0110 1111 120			10-25	8%		9.00
					25-50	15%		24.00
					50-100	39%		63.00
					>100	37%		100.00
						_ 	TOTAL = 100	
DESCRIBE ANY MONITORING	DEVICES, GAUGES.	TEST PORTS, ET	C: Differenti	ial pressure on the c	cyclone			
D200111127111111111111111111111111111111	,							

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM C4

CONTROL DEVICE (CYCLONE, MULTICYCLONE, OR OTHER MECHANICAL)

REVISED 09/22/16	NCDEQ/Di	vision of Air Qu	ality - App	lication for Air Per	rmit to Construct	Operate		<u> </u>
CONTROL DEVICE ID NO: CD-3		CONTROLS EN	MISSIONS	FROM WHICH EMI	SSION SOURCE	ID NO(S):ES-PP-1		
EMISSION POINT (STACK) ID NO)(S):EP-PP-1	POSITION IN S	ERIES OF	CONTROLS	NO.	1 OF	1 UNITS	
OPERATI	NG SCENARIO:							
1	OF1			REQUIRED (PER :		☑ YES	□ NO	
DESCRIBE CONTROL SYSTEM	CYCLONE for cooler and	d pelletizer. This	system is	meant to collect any	/ PM that arises fro	om the pelltizing an	d cooling process.	
POLLUTANT(S) COLLECTED:			PM	**************************************	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			-
• • • • • • • • • • • • • • • • • • • •	ATE (LD/LID)	-		·	·	-		
BEFORE CONTROL EMISSION R	ATE (LB/HR):	-	0.75		-			
CAPTURE EFFICIENCY:		-	100	.%			%	
CONTROL DEVICE EFFICIENCY	:		99	<u> </u>			%	
CORRESPONDING OVERALL EF	FICIENCY:		99	.%	%	%	%	
EFFICIENCY DETERMINATION C	ODE:				·:			
TOTAL AFTER CONTROL EMISS	ION RATE (LB/HR):		0.01					
PRESSURE DROP (IN. H ₂ 0):	4 MIN	6 MAX						
INLET TEMPERATURE (°F):	MIN	400F M/	AX	OUTLET TEMPER	ATURE (°F):	OFMIN	400F MAX	
INLET AIR FLOW RATE (ACFM):8	3500			BULK PARTICLE	DENSITY (LB/FT ³)			
POLLUTANT LOADING RATE (GF	R/FT ³):0.32							
SETTLING CHAMBER		(CYCLONE			Į.	MULTICYCLONE	
LENGTH (INCHES):	INLET VELOCITY (FT	Г/SEC):		☑ CIRCULAR [RECTANGLE	NO. TUBES:		
WIDTH (INCHES):	DIMENSIONS (IN	CHES) See instru	uctions	IF WET SPRA	AY UTILIZED	DIAMETER OF T	UBES:	
HEIGHT (INCHES):	H:253" Including outlet	Dd: 6 feet nomi	nal	LIQUID USED:		HOPPER ASPIR	ATION SYSTEM?	
VELOCITY (FT/SEC.):	W:50-60fps	Lb:		FLOW RATE (GPI	M):	☐ YES	□ NO	
NO. TRAYS:	De: N/A	Lc:		MAKE UP RATE (GPM):	LOUVERS?		
NO. BAFFLES:	D:N/A	s:		<u> </u>	-	YES	□ NO	
DECORIDE MAINTENANCE DEC	TYPE OF CYCLONE:	☑ CONVENT	IONAL	☐ HIGH EFF	ICIENCY	☐ OTHER		
DESCRIBE MAINTENANCE PRO	JEDUKES:				CIZE	PARTICLE SIZE	DISTRIBUTION CUMULATIV	
					SIZE (MICRONS)	WEIGHT % OF TOTAL	%	E .
DESCRIBE INCOMING AIR STRE	AM: Hot air from pellitiz	er and cooler. D	istribution s	size unknown as	0-1			
minimal PM is expected.					1-10			
					10-25			
					25-50			
					50-100			
					>100			
					:		TOTAL = 100	
DESCRIBE ANY MONITORING D	EVICES, GAUGES, TES	ST PORTS, ETC:						
<u> </u>								
							· · · · · · · · · · · · · · · · · · ·	
ON A SEPARATE PAGE, ATTACH	HA DIAGRAM OF THE	RELATIONSHIP	OF THE C	ONTROL DEVICE	TO ITS EMISSION	SOURCE(S):		

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM C1

CONTROL DEVICE (FABRIC FILTER)

REVISED 09/22/16 NCI	DEQ/Div	ision of Air Quality -	Application for A	Air Permit to C	onstruct/Operat	•		C1
CONTROL DEVICE ID NO:CD-4		CONTROLS EMISSI	IONS FROM WHI	CH EMISSION	SOURCE ID NO	(S):ES-PSC-1		
EMISSION POINT (STACK) ID NO(S): EP-PS(C- 1	POSITION IN SERIE	S OF CONTROL	S	N	D. 1 OF 1	UNITS	
OPERATING SCENARI	iO:							
10F1_			P.E. SEAL REQU] YES	□ NO	
DESCRIBE CONTROL SYSTEM: CARTRIDGE FIL	TER MA	NUFACTURER BY SL	Y, information inc	luded for remo	val specifications	Set up to remove PM	I from scree	ning proc
·								
					· :			
POLLUTANTS COLLECTED:			PM	-		_	_	
BEFORE CONTROL EMISSION RATE (LB/HR):			483.00			<u> </u>	-	
CAPTURE EFFICIENCY:			100 %		%	%	%	
CAPTURE EFFICIENCY.			100 /6				- ′°	
CONTROL DEVICE EFFICIENCY:			99.9 %		%	%	%	
·			***************************************		_			
CORRESPONDING OVERALL EFFICIENCY:			99.9 %		_%	%	_%	
EFFICIENCY DETERMINATION CODE:						_	-	
TOTAL AFTER CONTROL EMISSION RATE (LB/H	B).		0.483					

PRESSURE DROP (IN H ₂ 0): MIN: MAX:		GAUGE?	✓ YES	□ NO				
BULK PARTICLE DENSITY (LB/FT³):		CI OD/CT ³	INLET TEMPER		MIN:72	MAX: 72		
POLLUTANT LOADING RATE:	HR .	GR/FT ³	OUTLET TEMPE			MAX:72		
INLET AIR FLOW RATE (ACFM):		DED COMPARTMENT	FILTER OPERA	TING TEMP (·	C (IN)		
		PER COMPARTMEN			LENGTH OF BA			
	K SURF	ACE AREA PER CART			DIAMETER OF	BAG (IIV.).		
TOTAL FILTER SURFACE AREA (FT²): DRAFT TYPE: INDUCED/NEGATIVE		FORCED/POSITIVE		FILTER MA	ATERIAL: D	WOVEN	FELTED	
DRAFT TYPE: INDUCED/NEGATIVE DESCRIBE CLEANING PROCEDURES:		PORCEDIPOSITIVE		FILTER WI		RTICLE SIZE DISTR		
_		SONIC			SIZE	WEIGHT %	CUMUL	ΔTIVE
✓ AIR PULSE	片	SIMPLE BAG COLL	ADCE		(MICRONS)	OF TOTAL	% CONTO	
REVERSE FLOW	片						1	
☐ MECHANICAL/SHAKER	ш	RING BAG COLLAF	PSE		0-1	NOT KNOWN		
DESCRIBE INCOMING AIR STREAM: Screen neg	ative air	The screen is used to	o remove fine dus	t from the	1-10 10-25		 	 -
pellets and this unit is used to ensure that dust is re	covered	and put back in the pr	ocess. It is also u	sed to ensure	25-50		+	
high efficienty of PM control.					50-100		<u> </u>	
					>100	 	1	
					7100	TOT	AL = 100	
						101	, 100	
					0 170 5: 200/5:	LOCUROF(C)		
ON A SEPARATE PAGE, ATTACH A DIAGRAM SI		i HE RELATIONSHII	P OF THE CONTR	KUL DEVICE T	O 112 EMISSION	1 SOURCE(S):		
COMMINION TO SELL THE PROCESS FLOW FOR DE	IAILO							
·								
· ·								

ACTIVE ENERGY RENEWABLE POWER LUMBERTON, NC

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM C7

CONTROL DEVICE (CONDENSER)

REVISED 09/22/16 NCDEQ/Divis	ion of Air Quality - App	lication for Air Perm	it to Constr	uct/Operate	1	C7
AS REQUIRED BY 15A NCAC 2Q .0112, THIS FO	RM MUST BE SEALED	BY A PROFESSION	AL ENGINE	ER (P.E.) LICENSEL	IN NORTH CAROLI	IA.
CONTROL DEVICE ID NO:CD-1	CONTROLS EMISSION	S FROM WHICH EMI	SSION SOU	RCE ID NO(S):ES-P	-1	
	POSITION IN SERIES C	F CONTROLS	NO.	_1 OF1_	_ UNITS	
OPERATING SCENARIO:		<u> i i i i i i i i i i i i i i i i i </u>			<u> </u>	
10F1		<u></u>				
CONDENSER TYPE: DIRECT CONTACT DESCRIBE CONTROL SYSTEM:CONDENSER	INDIRECT CONTACT C	CONDENSER TYPE:	✓ SHE	LL AND TUBE	OTHER	
BEGGNIBE GONTINGE GTOTEM, GONDENGEN						
						·
i de la companya del la companya de	·					
POLLUTANT(S) COLLECTED:		VOC	<u> </u>			
CORRESPONDING EFFICIENCY:		80	%	%	%	%
EFFICIENCY DETERMINATION CODE:						
BEFORE CONTROL CONCENTRATION (PPMV):			· . 			
BEFORE CONTROL EMISSION RATE (LB/HR):		4.815		<u> </u>	<u>:</u>	
AFTER CONTROL CONCENTRATION (PPMV):						
AFTER CONTROL EMISSION RATE (LB/HR):		0.9625				
BOILING POINT OF COLLECTED POLLUTANT (°F):		131-356				
HEAT OF VAPORIZATION OF COLLECTED POLLUTANT	(BTU/LB-MOL):					
SPECIFIC HEAT OF POLLUTANT COLLECTED (BTU/LB-	-MOL°F):	:				:
	Ī.	NI ET EL HOOLON OTE		EDATUSE (E), 400	(0000)	
EMISSION STREAM FLOW RATE (ACFM):75.25 MOISTURE CONTENT OF EMISSION STREAM (%):99.8		NLET EMISSION STE DUTLET EMISSION S				
COOLANT USED: WATER		TEMPERATURE OF I			01 (000)	
TEMPERATURE OF CONDENSATION (°F):210 (99C)		TEMPERATURE OF C			C)	
COOLANT FLOW RATE (LB/HR): 48,149 (1.6gal/sec)		REFRIGERATION CA	PACITY (TC	NS):NONE		
CONDENSER SURFACE AREA (FT ²):2015 (20 m2)						:
DESCRIBE MAINTENANCE PROCEDURES:CLEAN CON	IDENSER AS PER THE	MANUFACTURER SF	PECS			
						: .
DESCRIBE ANY MONITORING DEVICES, GAUGES, TES	ST PORTS, ETC:TEMPE	RATURE AND PRES	SURE GAU	GES		
		TO FINISCION COUR	0E/0\ 0EE	THE DECOMES EL	NW DIA CDAM	· · · · · ·
ATTACH A DIAGRAM OF THE RELATIONSHIP OF THE C	CONTROL DEVICE TO I	IS EMISSION SOUR	CE(S):SEE	THE PROCESS FLO	JW DIAGRAM	
COMMENTS:	:					——————————————————————————————————————
Sommervio.						

Attach Additional Sheets As Necessary

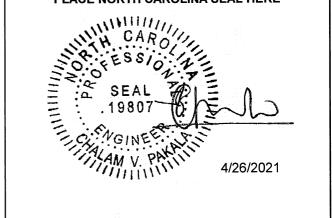
AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM D1

FACILITY-WIDE EMISSIONS SUMMARY (PROPOSED)

CRITERIA AI	RPULLUIANI	EMISSIONS I	NFORMATIC	N - FACILITY-V	/IDE	25,121,126	(1.00 kg)	
		EXPECTED ACTUAL EMISSIONS (AFTER CONTROLS / LIMITATIONS)		POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITATIONS)		POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITATIONS)		
AIR POLLUTANT EMITTED		tons/yr		tons/yr		tons/yr		
ARTICULATE MATTER (PM)		26.81		29.35		29.35		
ARTICULATE MATTER < 10 MICRONS (PM ₁₀)		26.73		29.35		29.35		
ARTICULATE MATTER < 2.5 MICRONS (PM _{2.5})		0.06		0.06		0.06		
ULFUR DIOXIDE (SO ₂)		0.66		0.73		0.73		
ITROGEN OXIDES (NOx)		4.91		5.38		5.38		
ARBON MONOXIDE (CO)		16.15		17.68		17.68		
OLATILE ORGANIC COMPOUNDS (VOC)		24.57		26.9		26.9		
EAD								
REENHOUSE GASES (GHG) (SHORT TONS)		11309		283072		283072		
OTHER				l				
HAZARDOUS	AIR POLLUTAI	NT EMISSIONS	INFORMAT	ION - FACILITY	-WIDE			
		EXPECTED ACTUAL EMISSIONS (AFTER CONTROLS /		POTENTIAL EMISSIONS (BEFORE CONTROLS /		POTENTIAL EMISSION (AFTER CONTROLS		
		LIMITA	TIONS)	LIMITAT	IONS)	LIMITATIONS)		
IAZARDOUS AIR POLLUTANT EMITTED	CAS NO.	Lbs	s/yr	Lbs/	уг		bs/yr	
Acetaldehyde (TH)	75070	2403.72		2632.08	· · · · · · · · · · · · · · · · · · ·	2632.08		
Acrolein (TH)	107028	0.003		0.004	·	0.004		
Ammonia (T)	7664417	602.34		659.56		659.56		
Arsenic unlisted compounds (TH)	ASC-other	0.00		0.00		0.00		
Benzene (TH)	71432	0.40		0.43		0.43		
Benzo(a)pyrene (TH)	50328	0.00		0.00		0.00		
Beryllium metal (unreacted) (TH)	7440417	0.00		0.00		0.00		
Cadmium metal (elemental unreacted) (TH)	7440439	0.00		0.00		0.00		
Chromic acid (VI) (TH)	7738945	0.00		0.00		0.00		
Cobalt unlisted compounds (H)	COC-other	0.02		0.02		0.02		
Formaldehyde (TH)	50000	607.40		665.10		665.10		
Hexane, n- (TH)	110543	338.81		371.00		371.00		
Lead unlisted compounds (H)	PBC-other	0.09		0.10		0.10		
Manganese unlisted compounds (TH)	MNC-other	0.00		0.00		0.00		
Mercury vapor (TH)	7439976	0.00		0.00		0.00		
Napthalene (H)	91203	0.11		0.13		0.13	-	
Nickel metal (TH)	7440020	0.00		0.00		0.00		
Selenium compounds (H)	SEC	0.00		0.00		0.00		
Toluene (TH)	108883	0.64		0.70		0.70		
Methanol (H)	67561	554.76		607.46	;	607.46		
Phenol (TH)	108952	0.00	·	0.00		0.00		
Propionaldehyde (H)	123386	1755.00		1921.73			1921.73	
			FORMATION	- FACILITY-WI	DE	C15 4/482 400		
NDICATE REQUESTED ACTUAL EMISSIONS AFTER						ON RATE (TPE	ER) IN 15A	
NCAC 2Q .0711 MAY REQUIRE AIR DISPERSION MC	DELING. USE N	IETTING FORM I	D2 IF NECESS	ARY. (NO MODE	ING IS REQU	JIRED)		
				-	Modeling	Required ?	TPER LIN	
OXIC AIR POLLUTANT EMITTED	CAS NO.	lb/hr	lb/day	lb/year	Yes	No		
Acetaldehyde (TH)	75070	0.27	6.59	2403.72		NO	6.8 lbs/hr	
Ammonia (T)	7664417	0.07	1.65	602.34		NO	6.8 lbs/hr	
Formaldehyde (TH)	50000	0.07	1.66	607.40		. NO	0.04 lbs/h	
Hexane, n- (TH)	110543	0.04	0.93	338.81		NO	23 lb/day	
Toluene (TH)	108883	0.00	0.00	0.64		NO	197.96 lb	
							58.97 lb/l	
		T						
		1						
A CONTRACTOR OF THE CONTRACTOR								
COMMENTS:				·	-			

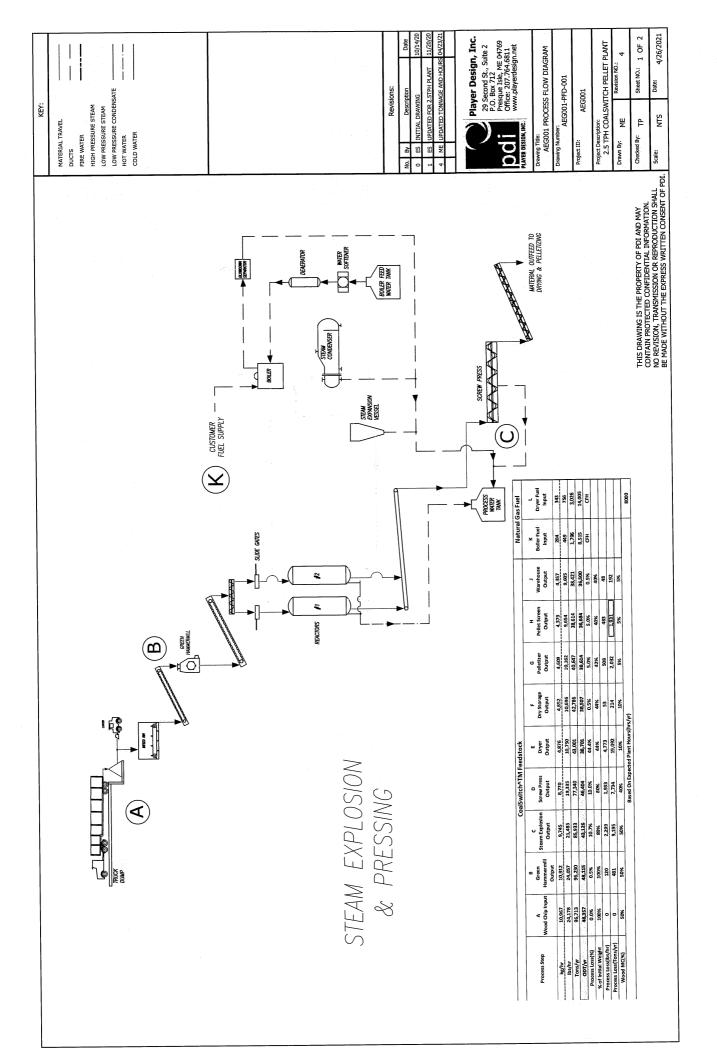
AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM D5

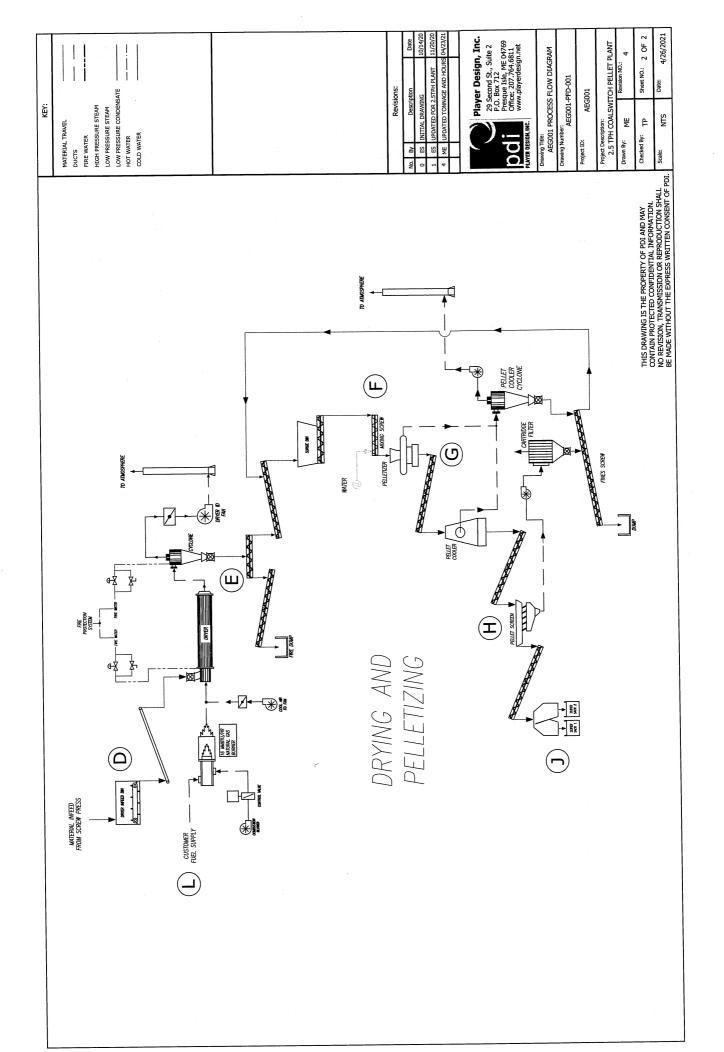
		I ECHNICAL AN	IALYSIS TO SUPPORT I	PERMIT APPLICATION				
RE	VISED 09/22/16	NCDEQ/Division of Air	Quality - Application for Air Permit	to Construct/Operate	D5			
		INSTRATIONS MADE IN THIS A NECESSARY TO SUPPORT	PPLICATION. INCLUDE A COM	LL EMISSION, CONTROL, AND REGULATORY PREHENSIVE PROCESS FLOW DIAGRAM AS AND ASSUMPTIONS. ADDRESS THE PARATE PAGES:				
A	MATERIAL BALANCE CALCULATION OF PO	SPECIFIC EMISSIONS SOURCE (EMISSION INFORMATION) (FORM B and B1 through B9) - SHOW CALCULATIONS USED, INCLUDING EMISSION FACTORS, MATERIAL BALANCES, AND/OR OTHER METHODS FROM WHICH THE POLLUTANT EMISSION RATES IN THIS APPLICATION WERE DERIVED. INCLUDE CALCULATION OF POTENTIAL BEFORE AND, WHERE APPLICABLE, AFTER CONTROLS. CLEARLY STATE ANY ASSUMPTIONS MADE AND PROVIDE ANY REFERENCES AS NEEDED TO SUPPORT MATERIAL BALANCE CALCULATIONS.						
В	INDIVIDUAL SOURCE REQUIREMENTS) FC RATES OR OTHER O SIGNIFICANT DETER POLLUTANTS (NESH FACILITY. SUBMIT A	S AND THE FACILITY AS A WHOLE R COMPLYING WITH APPLICABLE PERATIONAL PARAMETERS. PRO IORATION (PSD), NEW SOURCE P APS), TITLE V), INCLUDING EXEME NY REQUIRED INFORMATION TO I	E. INCLUDE A DISCUSSION OUTIN REGULATIONS, PARTICULARLY T OVIDE JUSTIFICATION FOR AVOIDA ERFORMANCE STANDARDS (NSPS PTIONS FROM THE FEDERAL REGI	PROVIDE AN ANALYSIS OF ANY REGULATIONS APP G METHODS (e.g. FOR TESTING AND/OR MONITORIN HOSE REGULATIONS LIMITING EMISSIONS BASED O NACE OF ANY FEDERAL REGULATIONS (PREVENTIONS), NATIONAL EMISSION STANDARDS FOR HAZARDO ULATIONS WHICH WOULD OTHERWISE BE APPLICAE NY REGULATIONS. INCLUDE EMISSION RATES CALC THESE CALCULATIONS.	G N PROCESS N OF US AIR BLE TO THIS			
С	EFFICIENCIES LISTE OPERATING PARAM APPLICATION) CRITIFOR THE PARTICULA	D ON SECTION C FORMS, OR USE ETERS (e.g. OPERATING CONDITION CAL TO ENSURING PROPER PERF AR CONTROL DEVICES AS EMPLO	ED TO REDUCE EMISSION RATES I DNS, MANUFACTURING RECOMME FORMANCE OF THE CONTROL DEV	LUATION WITH SUPPORTING REFERENCES FOR AN'N CALCULATIONS UNDER ITEM "A" ABOVE. INCLUDE INDATIONS, AND PARAMETERS AS APPLIED FOR IN VICES). INCLUDE AND LIMITATIONS OR MALFUNCTIC ROCEDURES FOR ASSURING PROPER OPERATION CORMED.	PERTINENT THIS IN POTENTIAL			
D	PROCESS, OPERATI	ONAL, OR OTHER DATA TO DEMO	NSTRATE COMPLIANCE. REFER T	OWING HOW COMPLIANCE WILL BE ACHIEVED WHE O COMPLIANCE REQUIREMENTS IN THE REGULATO I BE MONITORED AND REPORTED TO DEMONSTRAT	RY ANALYSIS			
E		NGINEER REGISTERED IN NORTH		CATION REQUIRING A PROFESSIONAL ENGINEERING TO SEAL TECHNICAL PORTIONS OF THIS APPLICATIONS OR FURTHER APPLICABILITY).				
	I. CHALAM PAKALA	•	attest that this application for	ACTIVE ENERGY RENEWABLE POWER				
	design has been prepa professionals, inclusion In accordance with NO	ns, calculations, and all other support ared in accordance with the applicabl in of these materials under my seal si C General Statutes 143-215.6A and 1	ing documentation to the best of my he le regulations. Although certain portic gnifies that I have reviewed this mate 43-215.6B, any person who knowing!	mplete and consistent with the information supplied knowledge. I further attest that to the best of my knowledgens of this submittal package may have been developed by the proposed by the proposed by makes any false statement, representation, or certification, on certification, on the proposed of the proposed by makes any false statement, representation, or certification.	y other design. Note:			
	(PLEASE USE BLUE	INK TO COMPLETE THE FOLLOW	ING)	PLACE NORTH CAROLINA SEAL H	IERE			
	NAME:	CHALAM PAKALA	:					
	DATE:		26-Apr-21	WH CAROU				
	COMPANY:	CP ENGINEERIGN AND ENV SOL	UTIONS	Secression Lie				
	ADDRESS:	10017 ALLYSON PARK DR., CHAR	RLOTTE, NC 28277	1.7=				
	TELEPHONE:	704-756-7451	912 No -	SEAL TO A				
	SIGNATURE:			19807 (19807)	بر			
	PAGES CERTIFIED:	ALL	: 	= O. NOINEEL ES	**			

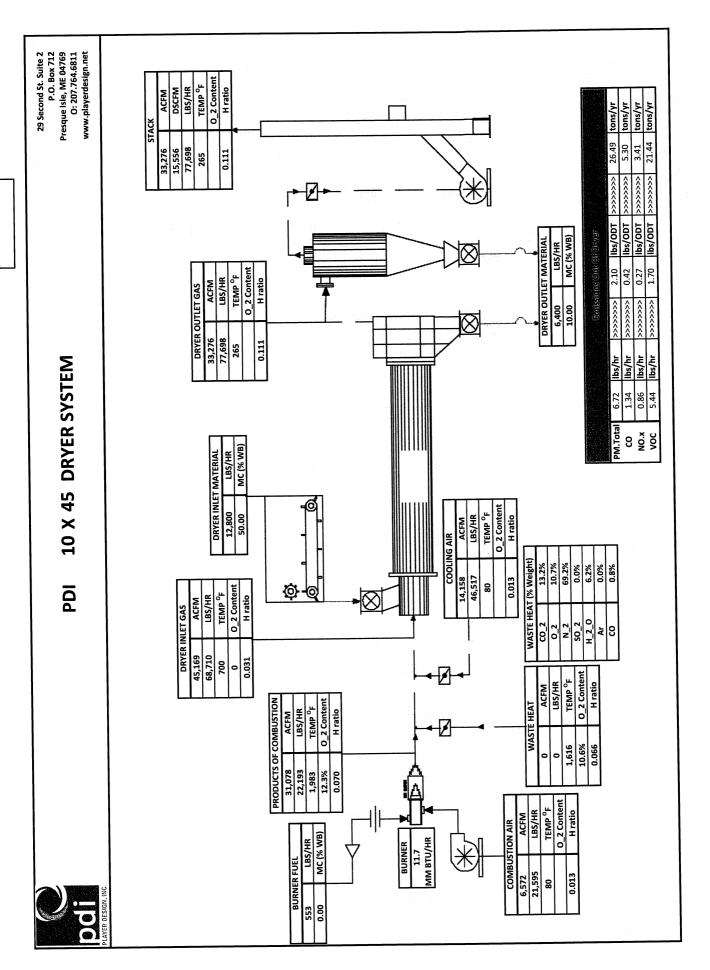


(IDENTIFY ABOVE EACH PERMIT FORM AND ATTACHMENT THAT IS BEING CERTIFIED BY THIS SEAL)

PROCESS SCHEMATICS	







TABLES AIR EMISSION CALCULATIONS

Active Energy Renewable Power
Lumberton, Robeson County, NC
Actual Hours of Operation/yr =
Potential Hours of Operation/yr =

8000

The property of the property o	Yearly Potential/Actual emissions: Boilers, Dryers, and Screw & Pellet Presses	oilers, Dryer	s, and Screw	& Pellet P	resses									
Part Part Control	Pollutaint	CAS Number	Steam Boiler (ES-B-1)	Dryer (ES-D-1)	Pressure Cooker W/Condenser (ES-P-1) & CD-1	Screw Press/Dryer (ES-SPD-1) & CD-		Pellet Screening (ES-PSC-1) & CD-	Pellet Storage (ES-PS-1) No CD	Actual Emissions after CD	Actual Emissions	Potential Emissions before CD	Potential Emissions after CD	Potential Emissions
PM FM M O M <th></th> <th></th> <th>(ton/yr)</th> <th>(ton/yr)</th> <th>(ton/yr)</th> <th>(ton/yr)</th> <th>(ton/yr)</th> <th>(ton/yr)</th> <th>(ton/yr)</th> <th>(ton/yr)</th> <th>(ton/hr)</th> <th>(ton/yr)</th> <th>(ton/yr)</th> <th>(ton/hr)</th>			(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/hr)	(ton/yr)	(ton/yr)	(ton/hr)
PHO PHO Dept. OLD CODO SEAT CODO SEAT SEAT CODO SEAT SEAT CODO SEAT SEAT CODO SEAT	Criteria Air Pollutants													
PMLS PMLS COLOR			0.04	0.01		26.67	0.09	0.0003		26.81	0.003		29.35	0.003
Photo Pho	PM10	l	0.04	0.01		26.67	0.02	0.0003		26.73	0.003		29.27	0.003
Columbia	PM2.51		0.03	0.01			0.02	0.0003		90.0	0.000		90.0	0.000
No. No. Co. E.59 1.22 1.2	SULFUR DIOXIDE (SO2)		0.65	0.01						99.0	0.000		0.73	0.000
NATION CO. 6.52	NITROGEN OXIDES (NOX)		0.05	1.57		3.29				4.91	0,001		5.38	0.001
1,000 1,00	CARBON MONOXIDE (CO)		8.59	1.32		6.24				16.15	0.002		17.68	0.002
NECHO Ch. Ch	VOLATILE ORGANIC COMPOUNDS (VOC)		0.47	0.09	3.85	19.26			0.90	24.57	0.003		26.90	0.003
Control Co.	Greenhouse Gas Emissions													
NE CH CH CH CH CH CH CH C	CARBON DIOXIDE (CO ₂)		9424.29	1884.74						11,309.03			12,383.39	
	METHANE (CH4)		0.18	0.04						0.21			0.23	
Part	NITROUS OXIDE (N2O)	_	0.02	0.00						0.02			0.02	
Checky C														
175070 10002 10000 4600800 925.20 92	Toxic/Hazardous Air Pollutants	(lbs/yr)	(lbs/yr)	(lbs/yr)		(lbs/yr)	(lbs/yr)	(lbs/yr)		(lbs/yr)	(lbs/hr)		(lbs/yr)	(lbs/hr)
According Light 5 0,003 0,003 6,004	Acetaldehyde (TH)	L	0.002	0.000	460.800	925.20	925.20		92.52	2403.72	0.27	2632.08	2632.08	0.30
Amount of the control of the	Acrolein (TH)		0.003	0.001				-		0.003	0.00	0.004	0.004	0.00
Automatical Compounds (TH) Accordance Automatical Compounds (TH) Accordance Automatical Compounds (TH) Automatical Compo	Ammonia (T)	L	501.952	100.384						602.34	0.07	659.56	659.56	0.08
Berczeciere (TH) 714424 0.026 0.066	Arsenic unlisted compounds (TH)									89	00:0	0.00	0.00	0.00
Bery/literal Perupatan P	Benzene (TH)		0.329	990.0						0.40	.000	0.43	0.43	0.00
Berylliam metal (immeacle) (TH) 744047 7440436 7440447 7440436 7440447 7440436 7440447 7440436 7440447 7440436 7440447 7440436 7440436 7440447 7440436 7440436 7440447 7440436 7440447 7440436 7440447 7440436 7440447 7440436 7440447 7440436 7	Benzo(a)pyrene (TH)	Ц	0.000	0.000						0.00	00:0	0.00	0.00	000
Contain metal (elimental (elimental lurisates) Contain metal (elimental (elimental lurisates) Contain metal (elimental (elimental lurisates) Contain metal (elimental lurisates) Contain unitated compounds (H) CoCother	Beryllium metal (unreacted) (TH)									0.00	0.00	0.00	000	000
Cobal Unified Compounds (Tr) Agraests Cobal Unified Compounds (Tr) Agraests 0.013 0.003 0.020 0.02	Cadmium metal (elemental unreacted) (TH)									8 8	000	8.6	0.00	00.0
Cobalt unisted compounds (†) CO-Cheff of COT 0.103 0.103 0.103 0.103 0.103 0.103 0.103 0.103 0.103 0.103 0.103 0.103 0.10	Chromic acid (VI) (TH)	┙								0.00	00.0	000	000	800
Proping Prop	Cobalt unlisted compounds (H)		14 765	0.003	407 440	50.40	50.40		5.04	607.40	0.07	665.10	665.10	0.08
Lead unisted compounds (H) Machiner (LD) Residence unisted compounds (H) And-other (LD)	Formaldenyde (1H)		282.348	56 466	044.704	01.00	21.00			338.81	0.04	371.00	371.00	0.04
Marganese unlisted compounds (TH) MNC-other 0.00	(H) Spring compounds (H)	L	0.078	0.016						0.09	0,00	0.10	0.10	00.0
Mercury vapor (TH) 7439976 0.03 0.000 0.000 0.000 0.000 0.000 0.00 <th< td=""><td>Manganese unlisted compounds (TH)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></th<>	Manganese unlisted compounds (TH)									0.00	0.00	0.00	0.00	0.00
Nightlailene (H) 81203 0.096 0.019 Nightlailene (H) 81203 0.096 0.019 0.004 0.000 0.	Mercury vapor (TH)									00.0	0.00	0.00	000	0.00
Nicke metal (TH) 740020 Cond. Co	Napthalene (H)		0.096	0.019						0.11	000	0.13	0.13	000
Selenium compounds (1) SEC 0.004 0.001 0.004 0.001 0.004 0.001 0.004 0.001 0.004 0.001 0.004 0.000 0.004 0.000	Nickel metal (TH)										00.0	000	000	000
District 1777 District 177	Selenium compounds (H)		0.004	0.001						0.64	00:0	0.70	0.70	00.0
Propional dehyde (th) 12336 100.38 152.00 162.0	(III) elinene (III)		2000		214 560	162.00	162 00		16.20	554.76	90'0	607.46	607.46	0.07
Propional resolution (+1) 12386 162.00	Dhenilaniol (T.)				200:1-7					00'0	00'0	0.00	0.00	00.00
Max 501.35 100.38 925.20 9.00 263.20 263.20 797.12 757.12 759.41 1239.60 1,000 6263.30 6868.31	Propionaldehyde (H)	L			1414.800	162.00	162.00		16.20	1755.00	0.20	1921.73	1921.73	0.22
Max 501.95 100.38 925.20 926.20 0.00 263.30 2632.08 797.12 797.12 159.41 1299.60 1299.60 0.00 6263.30 6858.31														
797.12 159.41 1299.60 1.299.60 6.00 6858.31 6858.31	HAB Indiv Max		501.95	100.38		925.20	925.20	0.00				2632.08	2632.08	
	HAP fotal		797.12	159.41		1299.60	1299.60	0.00		6263.30		6858.31	6858.31	

¹ Xylenes (total) includes emission factors listed as o-Xylene.

Active Energy Renewable Power Lumberton, Robeson County, NC

Calculations of NG usage based on Hours of Operation

Data Input (BOILER)

Maximum Heat Input	20.00	mmBtu/hr
Boiler Size/Type	Small Industrial	
Actual Fuel Usage or Hours of Operation and Heating Value	or 8,000 and 1,020	ft^3/yr hr/yr Btu/ft^3
Calculated Fuel Usage	156,862,745	ft^3/yr mmscf/yr

Data Input (DRYER)

Maximum Heat Input	4.00	mmBtu/hr
Boiler Size/Type	Small Industrial	
Actual Fuel Usage		ft^3/yr
or	or	
Hours of Operation	8,000	hr/yr
and	and	
Heating Value	1,020	Btu/ft^3
Calculated Fuel Usage	31,372,549	ft^3/yr
	31.37	mmscf/yr

NATURAL GAS COMBUSTION EMISSIONS CALCULATOR REVISION N 01/05/2017 - INPUT SCREEN



Instructions: Enter emission source / facility data on the "INPUT" tab/screen. The air emission results and summary of input data are viewed / printed on the "OUTPUT" tab/screen. The different tabs are on the bottom of this screen.

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Directions: Enter and select information in the boxes in the co	olumn on the right:
FIELDS COMPANY NAME: FACILITY ID NUMBER: PERMIT NUMBER FACILITY CITY: FACILITY COUNTY: SPREADSHEET PREPARED BY:	SELECTIONS ACTIVE ENERGY RENEWABLE POWER NA NA LUMBERTON ROBESON CHALAM PAKALA, PE
EMISSION SOURCE ID NO.: MAXIMUM HEAT INPUT (MILLION BTU PER HOUR):	ES-B-1 20.00 mmBTU/HR
TYPE OF BOILER:	SMALL BOILER (<100 mmBTU/HR)
DOES THE SOURCE ALSO BURN COAL OR FUEL OIL?	No 🔻
DATE OF CONSTRUCTION:	10/1/2019 (mm/dd/yyyy)
 ADDITIONAL INFORMATION FOR GREENHOUSE GAS (GHG)	
ENTER Calculation Tier from EPA Mandatory Reporting Rule (MR * See http://www.epa.gov/climatechange/emissions/ghgrulemaking SINCE TIER 3 IS NOT BEING USED, DO NOT ENTER FUEL CASINCE TIER 3 IS NOT BEING USED, DO NOT ENTER MOLECULAR SINCE TIER 3 IS NOT BEING USED, DO NOT ENTER MOLECULAR SINCE TIER 3 IS NOT BEING USED, DO NOT ENTER MOLECULAR SINCE TIER 3 IS NOT BEING USED, DO NOT ENTER MOLECULAR SINCE TIER 3 IS NOT BEING USED, DO NOT ENTER MOLECULAR SINCE TIER 3 IS NOT BEING USED, DO NOT ENTER MOLECULAR SINCE TIER 3 IS NOT BEING USED, DO NOT ENTER MOLECULAR SINCE TIER 3 IS NOT BEING USED, DO NOT ENTER MOLECULAR SINCE TIER 3 IS NOT BEING USED, DO NOT ENTER MOLECULAR SINCE TIER 3 IS NOT BEING USED, DO NOT ENTER MOLECULAR SINCE TIER 3 IS NOT BEING USED, DO NOT ENTER MOLECULAR SINCE TIER	ARBON CONTENT 0.7500
 FUEL HEATING VALUE	
ANNUAL AVG MEASURED FUEL HEATING VALUE (BTU/SCF): DEFAULT FUEL HEATING VALUE (BTU/SCF) will be used for 1,028 BTU/SCF default value is from EPA's man	
USAGE AND OTHER SOURCE-SPECIFIC DATA	
ACTUAL YEARLY FUEL USAGE (MILLION SCF): CALCULATED POTENTIAL YEARLY USAGE (MILLION SCF) REQUESTED ANNUAL LIMITATION (MILLION SCF)	156.86 MILLION SCF 171.76 MILLION SCF 171.76 MILLION SCF (TYPEOVER IF NECESSARY - DEFAULT IS POTENTIAL)
DAILY HOURS OF OPERATION:	22 HOURS
TYPE OF EMISSION CONTROL:	NO CONTROL ▼
IS SNCR APPLIED TO THE BOILER?	NO 🔻

NATURAL GAS COMBUSTION EMISSIONS CALCULATOR REVISION N 01/05/2017 - OUTPUT SCREEN



Instructions: Enter emission source / facility data on the "INPUT" tab/screen. The air emission results and summary of input data are viewed / printed on the "OUTPUT" tab/screen. The different tabs are on the bottom of this screen.

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SOU	RCE / FACILIT	Y/USER INPUT	SUMMARY	(FROM INPUT	SCREEN)		1516 (C11)		27 17 270 7	
COMPANY: ACTIVE E	NEDGY D	ENEWABLE	DOWE)		FACILITY ID NO	O.:	NA		
			FOVER	•		PERMIT NUME		NA		
EMISSION SOURCE DESCRIPTION: 20 MMBTU/HR NATU	JRAL GAS-FIF	ED BOILER				FACILITY CITY		LUMBERTO	N	
EMISSION SOURCE ID NO.: ES-B-1						FACILITY COU		ROBESON		
CONTROL DEVICE: NO CONTROL						POLLUT	ANT	CONTRO	DL EFF.	
SPREADSHEET PREPARED BY: CHALAM PAKALA, F		<u> </u>				NO	,	CALC'D	AS 0%	
ACTUAL FUEL THROUGHPUT: 156.86	10 ⁶ SCF/YR	FUEL HEAT VAI	LUE:	1,020	BTU/SCF	1	`	OALOD	A0 0 70	
POTENTIAL FUEL THROUGHPUT: 171.76	10 ⁶ SCF/YR	BOILER TYPE:	SMALL BOIL	ER (<100 mmB	TU/HR)		NO SNCR	APPLIED		
REQUESTED MAX. FUEL THRPT: 171.76		HOURS OF OPE								
		AIR POLLUTAN			Visa System Section	A 200		ns 1220374	101547210	
		ACTUAL EMI		***************************************	POTENTIAL I		1.00.0000000000000000000000000000000000	EMISSION		
		(AFTER CONTROL		(BEFORE CONTRO		(AFTER CONTRO	(C / LIMITE)	lb/mn		
AIR POLLUTANT EMITTED		lb/hr	tons/yr	lb/hr	tons/yr	lb/hr		uncontrolled		
PARTICULATE MATTER (Total)		0.01	0.04	0.01	0.04			0.001	0.001	
PARTICULATE MATTER (Filterable)		0.00	0.04	0.00	0.04			0.000	0.000	
PARTICULATE MATTER (Condensable)		0.01	0.02	0.01	0.02			0.000	0.000	
PM 2.5 (Total)		0.01	0.03	0.01	0.03			0.000	0.000	
M 2.5 (Filterable)	-	0.00	0.03	0.00	0.04			0.000	0.000	
SULFUR DIOXIDE (SO2)		0.00	0.05	0.00	0.05			0.001	0.001	
ITROGEN OXIDES (NOx)		1.96	7.84	1.96	8.59			0.001	0.001	
CARBON MONOXIDE (CO)		1.96	6.59	1.95	7.21			0.082	0.098	
VOLATILE ORGANIC COMPOUNDS (VOC)		0.11	0.43	0.11	0.47			0.002	0.002	
OE THEE OTTORING GOINE GOINES (VOC)		U.11	0.43	0.11	0.47	0.1	0.47	0.000	0.000	
70.	XIC / HATAPI	OUS AIR POLI	ITANT FMIS	SIONS INFORM	ATION		a figuration and a	1041,5110F1	erra de la como	
		ACTUAL EMI			POTENTIAL		roma protes de AMERICA (EST.)	EMISSION		
	CAS	(AFTER CONTROL		(BEFORE CONTR		(AFTER CONTRO	IS / IMITO	Ib/mn		
OXIC / HAZARDOUS AIR POLLUTANT	NUMBER	(AFTER CONTROL	ibs/yr	Ib/hr	lbs/yr	Ib/hr	lbs/yr	uncontrolled		
Acetaldehyde (TH)	75070	2.98E-07	2.38E-03	2.98E-07	2.61E-03	2.98E-07	2.61E-03	1.49E-08	1.49E-08	i
Acrolein (TH)	107028	3.53E-07	2.82E-03	3.53E-07	3.09E-03	3.53E-07	3.09E-03	1.49E-08 1.76E-08	1.49E-08 1.76E-08	i
Ammonia (T)	7664417	6.27E-02	5.02E+02	6.27E-02	5.50E+02	6.27E-02	5.50E+02	3.14E-03	3.14E-03	
Arsenic unlisted compounds (TH)	ASC-other	0.00E+00	0.00E+00	0.27E-02 0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1
Benzene (TH)	71432	4.12E-05	3.29E-01	4.12E-05	3.61E-01	4.12E-05	3.61E-01	2.06E-06	2.06E-06	
Benzo(a)pyrene (TH)	50328	2.35E-08	1.88E-04	2.35E-08	2.06E-04	2.35E-08	2.06E-04	1.18E-09	1.18E-09	
Beryllium metal (unreacted) (TH)	7440417	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Cadmium metal (elemental unreacted) (TH)	7440439	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Chromic acid (VI) (TH)	7738945	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	i
Cobalt unlisted compounds (H)	COC-other	1.65E-06	1.32E-02	1.65E-06	1.44E-02	1.65E-06	1.44E-02	8.24E-08	8.24E-08	I
Formaldehyde (TH)	50000	1.47E-03	1.18E+01	1.47E-03	1.29E+01	1.47E-03	1.29E+01	7.35E-05	7.35E-05	I
Hexane, n- (TH)	110543	3.53E-02	2.82E+02	3.53E-02	3.09E+02	3.53E-02	3.09E+02	1.76E-03	1.76E-03	I
ead unlisted compounds (H)	PBC-other	9.80E-06	7.84E-02	9.80E-06	8.59E-02	9.80E-06	8.59E-02	4.90E-07	4.90E-07	
Manganese unlisted compounds (TH)	MNC-other	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1
Mercury vapor (TH)	7439976	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	I
Napthalene (H)	91203	1.20E-05	9.57E-02	1.20E-05	1.05E-01	1.20E-05	1.05E-01	5.98E-07	5.98E-07	I
Vapuralene (11)	7440020	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	I
Selenium compounds (H)	SEC	4.71E-07	3.76E-03	4.71E-07	4.12E-03	4.71E-07	4.12E-03	2.35E-08	2.35E-08	I
Foluene (TH)	108883	6.67E-05	5.70E-03 5.33E-01	6.67E-05	5.84E-01	6.67E-05	5.84E-01	3.33E-06	3.33E-06	İ
olderio (111)	1100000	0.072-00	0.00L 01 1	0.07 £ 00	0.042 01	0.072.00	0.042 01	0.002.00	0.002 00	I
otal HAPs		3.69E-02	2.95E+02	3.69E-02	3.23E+02	3.69E-02	3.23E+02	1.84E-03	1.84E-03	
Highest HAP	Hexane	3.53E-02	2.82E+02	3.53E-02	3.09E+02	3.53E-02	3.09E+02	1.76E-03	1.76E-03	I
		EMISSIONS INF					* 5 *		150 de 150 de 1	İ
								EMISSION	FACTOR	
EXPECTED A	CTUAL EMISS	IONS AFTER CO	ONTROLS / L	IMITATIONS			1	lb/mr		
OXIC AIR POLLUTANT	CAS Num.	lb/hr		lb/da	av .	lb/y	r	uncontrolled		
Acetaldehyde (TH)	75070	2.98E-		6.56E		2.38E		1.49E-08	1.49E-08	l
Acrolein (TH)	107028	3.53E-		7.76E		2.82E		1.76E-08		l
Ammonia (T)	7664417	6.27E-		1.38E		5.02E		3.14E-03		l
Arsenic unlisted compounds (TH)	ASC-other	0.00E+		0.00E		0.00E		0.00E+00		l
Benzene (TH)	71432	4.12E-		9.06E		3.29E		2.06E-06	2.06E-06	l
Benzo(a)pyrene (TH)	50328	2.35E-		5.18E		1.88E		1.18E-09	1.18E-09	l
	7440417	0.00E+		0.00E		0.00E		0.00E+00	0.00E+00	l
Bervilium metal (unreacted) (TH)	1	0.00E+		0.00E		0.00E		0.00E+00	0.00E+00	ł
	7440439		1	0.001		0.00E		0.00E+00	0.00E+00	ĺ
Cadmium metal (elemental unreacted) (TH)	7440439 SolCR6		-00	0.00=	+00			7.35E-05	7.35E-05	ĺ
Cadmium metal (elemental unreacted) (TH) Soluble chromate compounds, as chromium (VI) equivalent	SolCR6	0.00E+		0.00E 3.24E			+01			1
Cadmium metal (elemental unreacted) (TH) Soluble chromate compounds, as chromium (VI) equivalent Formaldehyde (TH)	SolCR6 50000	0.00E+ 1.47E-	03	3.24E	-02	1.18E			1,76E-03	
Cadmium metal (elemental unreacted) (TH) Soluble chromate compounds, as chromium (VI) equivalent Formaldehyde (TH) Fexane, n- (TH)	SolCR6 50000 110543	0.00E+ 1.47E- 3.53E-	03 02	3.24E 7.76E	-02 -01	1.18E 2.82E	+02	1.76E-03	1.76E-03 0.00E+00	
Cadmium metal (elemental unreacted) (TH) Soluble chromate compounds, as chromium (VI) equivalent ormaldehyde (TH)	SolCR6 50000 110543 MNC-other	0.00E+ 1.47E- 3.53E- 0.00E+	03 02 ·00	3.24E 7.76E 0.00E	-02 -01 +00	1.18E 2.82E 0.00E	+02 +00		1.76E-03 0.00E+00 0.00E+00	
Cadmium metal (elemental unreacted) (TH) Soluble chromate compounds, as chromium (VI) equivalent Formaldehyde (TH) Hexane, n- (TH) Manganese unlisted compounds (TH) Mercury vapor (TH)	SolCR6 50000 110543 MNC-other 7439976	0.00E+ 1.47E- 3.53E- 0.00E+ 0.00E+	03 02 ·00	3.24E 7.76E	-02 -01 +00 +00	1.18E 2.82E 0.00E 0.00E	+02 +00 +00	1.76E-03 0.00E+00 0.00E+00	0.00E+00	
Cadmium metal (elemental unreacted) (TH) Soluble chromate compounds, as chromium (VI) equivalent Formaldehyde (TH) Hexane, n- (TH) Alanganese unlisted compounds (TH) Mercury vapor (TH) Jickel metal (TH)	SolCR6 50000 110543 MNC-other 7439976 7440020	0.00E+ 1.47E- 3.53E- 0.00E+	03 02 00 00 00	3.24E 7.76E 0.00E 0.00E	-02 -01 +00 +00 +00	1.18E 2.82E 0.00E	+02 +00 +00 +00	1.76E-03 0.00E+00	0.00E+00 0.00E+00	
Cadmium metal (elemental unreacted) (TH) Soluble chromate compounds, as chromium (VI) equivalent Formaldehyde (TH) Hexane, n- (TH) Alanganese unlisted compounds (TH) Mercury vapor (TH) Jickel metal (TH)	SolCR6 50000 110543 MNC-other 7439976 7440020 108883	0.00E+ 1.47E- 3.53E- 0.00E+ 0.00E+ 6.67E- INVENTORY PU	03 02 00 00 00 00 05 RPOSES) -	3.24E 7.76E 0.00E 0.00E 0.00E 1.47E	-02 -01 +00 +00 +00 -03	1.18E 2.82E 0.00E 0.00E 0.00E 5.33E	+02 +00 +00 +00 -01	1.76E-03 0.00E+00 0.00E+00 0.00E+00 3.33E-06	0.00E+00 0.00E+00 0.00E+00 3.33E-06	TENTIAL TO EMIT
Cadmium metal (elemental unreacted) (TH) Soluble chromate compounds, as chromium (VI) equivalent ormaldehyde (TH) Hexane, n- (TH) Alanganese unlisted compounds (TH) Mercury vapor (TH) slickel metal (TH) Toluene (TH) GREENHOUSE GAS EMISSIONS INFORMATION (FOR	SolCR6 50000 110543 MNC-other 7439976 7440020 108883	0.00E+ 1.47E- 3.53E- 0.00E+ 0.00E+ 0.00E+ 6.67E-	03 02 00 00 00 00 05 RPOSES) -	3.24E 7.76E 0.00E 0.00E 0.00E 1.47E CONSISTENT V ACTUAL EN	-02 -01 +00 +00 +00 -03 WITH EPA MA	1.18E 2.82E 0.00E 0.00E 0.00E 5.33E	+02 +00 +00 +00 -01	1.76E-03 0.00E+00 0.00E+00 0.00E+00 3.33E-06	0.00E+00 0.00E+00 0.00E+00 3.33E-06 GHG - PO FBASED C	N EPA MRR METHOD
Cadmium metal (elemental unreacted) (TH) Soluble chromate compounds, as chromium (VI) equivalent ormaldehyde (TH) Hexane, n- (TH) Alanganese unlisted compounds (TH) Mercury vapor (TH) slickel metal (TH) Toluene (TH) GREENHOUSE GAS EMISSIONS INFORMATION (FOR	SolCR6 50000 110543 MNC-other 7439976 7440020 108883	0.00E+ 1.47E- 3.53E- 0.00E+ 0.00E+ 6.67E- INVENTORY PU (MRR) METHO	03 02 00 00 00 00 05 RPOSES) -	3.24E 7.76E 0.00E 0.00E 0.00E 1.47E CONSISTENT V ACTUAL EN	-02 -01 +00 +00 +00 -03 WITH EPA MA IISSIONS DN METHOD:	1.18E 2.82E 0.00E 0.00E 0.00E 5.33E WDATORY REF	+02 +00 +00 +00 +00 -01	1.76E-03 0.00E+00 0.00E+00 0.00E+00 3.33E-06	0.00E+00 0.00E+00 0.00E+00 3.33E-06 GHG - PO F BASED C	N EPA MRR METHOD
Cadmium metal (elemental unreacted) (TH) Soluble chromate compounds, as chromium (VI) equivalent Sormaldehyde (TH) Sexane, n. (TH) Manganese unlisted compounds (TH) Rercury vapor (TH) Sickel metal (TH) Soluene (TH) GREENHOUSE GAS EMISSIONS INFORMATION (FOR	SolCR6 50000 110543 MNC-other 7439976 7440020 108883	0.00E+ 1.47E 3.53E- 0.00E+ 0.00E+ 0.00E+ 6.67E- INVENTORY PUE (MRR) METHO	03 02 00 00 00 00 05 RPOSES) - D EPA MF	3.24E 7.76E 0.00E 0.00E 0.00E 1.47E CONSISTENT V ACTUAL EN RR CALCULATIC metric tons/yr, C	-02 -01 +00 +00 +00 -03 WITH EPA MA IISSIONS DN METHOD: 02e	1.18E 2.82E 0.00E 0.00E 0.00E 5.33E NDATORY REF	+02 +00 +00 +00 -01 -07 -07 -07 -08 -08 -08 -09 -09 -09 -09 -09 -09 -09 -09 -09 -09	1.76E-03 0.00E+00 0.00E+00 0.00E+00 3.33E-06	0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.33E-06 GHG - PO F BASED C POTENT	TAL EMISSIONS short tons/yr, CO2e
Cadmium metal (elemental unreacted) (TH) Soluble chromate compounds, as chromium (VI) equivalent Formaldehyde (TH) Fexane, n. (TH) Manganese unlisted compounds (TH) Mercury vapor (TH) Mickel metal (TH) Foluene (TH) GREENHOUSE GAS EMISSIONS INFORMATION (FOR GREENHOUSE GAS POLLUTANT CARBON DIOXIDE (CO2)	SolCR6 50000 110543 MNC-other 7439976 7440020 108883	0.00E+ 1.47E 3.53E 0.00E+ 0.00E+ 6.67E INVENTORY PU E (MRR) METHO metric to 8549.	03 02 00 00 00 00 05 RPOSES) - D EPA MF	3.24E 7.76E 0.00E 0.00E 0.00E 1.47E CONSISTENT V ACTUAL EN RR CALCULATIO metric tons/yr, C 8,549	-02 -01 +00 +00 +00 -03 WITH EPA MA IISSIONS DN METHOD: O2e	1.18E 2.82E 0.00E 0.00E 0.00E 5.33E NDATORY REF	+02 +00 +00 +00 -01 -01 -0RTING	1.76E-03 0.00E+00 0.00E+00 0.00E+00 3.33E-06	0.00E+00 0.00E+00 0.00E+00 3.33E-06 GHG - PO F BASED C POTENT tons/yr 39.47	TAL_EMISSIONS short tons/yr, CO2e 10239.47
GREENHOUSE GAS POLLUTANT CARBON DIOXIDE (CO ₂) METHANE (CH ₄)	SolCR6 50000 110543 MNC-other 7439976 7440020 108883	0.00E+ 1.47E 3.53E- 0.00E+ 0.00E+ 0.00E+ 6.67E- INVENTORY PUE (MRR) METHO	03 02 00 00 00 00 05 RPOSES) - D EPA MF	3.24E 7.76E 0.00E 0.00E 0.00E 1.47E CONSISTENT V ACTUAL EN RR CALCULATIC metric tons/yr, C	-02 -01 +00 +00 +00 -03 WITH EPA MA IISSIONS DN METHOD: O2e	1.18E 2.82E 0.00E 0.00E 0.00E 5.33E NDATORY REF	+02 +00 +00 +00 -01 -01 -0RTING	1.76E-03 0.00E+00 0.00E+00 0.00E+00 3.33E-06	0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.33E-06 GHG - PO F BASED C POTENT	TAL EMISSIONS short tons/yr, CO2e 10239.47 4.83E+00
Cadmium metal (elemental unreacted) (TH) Soluble chromate compounds, as chromium (VI) equivalent Formaldehyde (TH) Fexane, n. (TH) Manganese unlisted compounds (TH) Mercury vapor (TH) Mickel metal (TH) Foluene (TH) GREENHOUSE GAS EMISSIONS INFORMATION (FOR GREENHOUSE GAS POLLUTANT CARBON DIOXIDE (CO2)	SolCR6 50000 110543 MNC-other 7439976 7440020 108883	0.00E+ 1.47E 3.53E 0.00E+ 0.00E+ 6.67E INVENTORY PU E (MRR) METHO metric to 8549.	03 02 -00 -00 -00 -00 05 	3.24E 7.76E 0.00E 0.00E 0.00E 1.47E CONSISTENT V ACTUAL EN RR CALCULATIO metric tons/yr, C 8,549	-02 -01 +00 +00 +00 -03 WITH EPA MA IISSIONS DN METHOD: 02e .59	1.18E 2.82E 0.00E 0.00E 0.00E 5.33E NDATORY REF	+02 +00 +00 +00 -01 -ORTING -ns/yr .29	1.76E-03 0.00E+00 0.00E+00 0.00E+00 3.33E-06 NO1 short 1 10,23 1.93	0.00E+00 0.00E+00 0.00E+00 3.33E-06 GHG - PO F BASED C POTENT	TAL_ EMISSIONS short tons/yr, CO2e 10239.47

NOTE: CO2e means CO2 equivalent

NOTE: The DAQ Air Emissions Reporting Online (AERO) system requires short tons be reported. The EPA MRR requires metric tons be reported.

NOTE: Do not use greenhouse gas emission estimates from this spreadsheet for PSD (Prevention of Significant Deterioration) purposes.

NATURAL GAS COMBUSTION EMISSIONS CALCULATOR REVISION N 01/05/2017 - INPUT SCREEN



Instructions: Enter emission source / facility data on the "INPUT" tab/screen. The air emission results and summary of input data are viewed / printed on the "OUTPUT" tab/screen. The different tabs are on the bottom of this screen.

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Directions: Enter and select information in the boxes in the c	olumn on the right:	
FIELDS	SELECTIONS	
COMPANY NAME:	ACTIVE ENERGY RENEW	ARI E POWER
FACILITY ID NUMBER:	NA	ADEL I OVER
PERMIT NUMBER	NA	
FACILITY CITY:	LUMBERTON	
FACILITY COUNTY:	ROBESON	
SPREADSHEET PREPARED BY:	CHALAM PAKAL, PE	
EMISSION SOURCE ID NO.:	ES-D-1	
MAXIMUM HEAT INPUT (MILLION BTU PER HOUR):	4.00	mmBTU/HR
		
TYPE OF BOILER:	SMALL BOILER (<100 mmBTU/HR	\
DOED THE COURSE ALSO BURN COAL OR FUEL OILS	No 🔻	
DOES THE SOURCE ALSO BURN COAL OR FUEL OIL?	NO	
DATE OF CONSTRUCTION:	5/1/2000	
B/III G G G G G G G G G G G G G G G G G G	(mm/dd/yyyy)	
ADDITIONAL INFORMATION FOR GREENHOUSE GAS (GHG)	EMISSIONS	
ENTER Calculation Tier from EPA Mandatory Reporting Rule (MF	RR)* Subpart C TIER 1: DEFAULT	T HHV AND DEFAULT EF
* See http://www.epa.gov/climatechange/emissions/ghgrulemakin	g.html	
SINCE TIER 3 IS NOT BEING USED, DO NOT ENTER FUEL O	ADDON CONTENT	0.7500
SINCE HER 3 IS NOT BEING USED, BO NOT ENTERT DEE C	ANDON CONTENT	0.7000
SINCE TIER 3 IS NOT BEING USED, DO NOT ENTER MOLEC	ULAR WEIGHT	19.00 kg/kg-mole
 FUEL HEATING VALUE		
ANNUAL AVG MEASURED FUEL HEATING VALUE (BTU/SCF)	1,020 BTU/SCF	
(
DEFAULT FUEL HEATING VALUE (BTU/SCF) will be used for	or CHC coloulations under TIEF	1 approach
		1, "Natural Gas Pipeline (Weighted U.S. Average)"
1,020 BT0/001 delault value is from El As mai	idatory reporting rule, Table o	1, Natural Gas i Ipoline (VVolgined G.G. / Volago)
USAGE AND OTHER SOURCE-SPECIFIC DATA		
ACTUAL YEARLY FUEL USAGE (MILLION SCF):	31.37 MILLION SCF	
CALCULATED POTENTIAL YEARLY USAGE (MILLION SCF)	34.35 MILLION SCF	
REQUESTED ANNUAL LIMITATION (MILLION SCF)	34.35 MILLION SCF	
, , , , , , , , , , , , , , , , , , ,		,
DAILY HOURS OF OPERATION:	22 HOURS	
DAILT HOURS OF OF LIVEHOUS.	ZZ HOUNG	
TYPE OF EMISSION CONTROL:	NO CONTROL	. 🔻
	NO CONTROL	· V
IS SNCR APPLIED TO THE BOILER?	NO ▼	

NATURAL GAS COMBUSTION EMISSIONS CALCULATOR REVISION N 01/05/2017 - OUTPUT SCREEN



Instructions: Enter emission source / facility data on the "INPUT" tab/screen. The air emission results and summary of input data are viewed / printed on the "OUTPUT" tab/screen. The different tabs are on the bottom of this screen.

This spreadsheet is for your use only and should be used with caution. NCDEQ does not guarantee the accuracy of the information contained. This spreadsheet is subject to continual revision and updating. It is your responsibility to be aware of the most current information available. NCDEQ is not responsible for errors or omissions that may be contained herein.

ENTERONIAL CUALITY		may be contain	eu nerem.							
	SOURCE / FACILIT	V/IISER INDIT	COMMAD	V (EDOM INDI IT	SCREM	107 - 541,4534,45354	MARKAPINA DA		esco su puesto	
						FACILITY ID NO		NA	F4-40-7-30-70-50	
	VE ENERGY R		POWE	K		PERMIT NUMB		NA		
MISSION SOURCE DESCRIPTION: 4 MMBTU/HR	NATURAL GAS-FIRE	D BOILER				FACILITY CITY:		LUMBERTO		
MISSION SOURCE ID NO.: ES-D-1 CONTROL DEVICE: NO CONTROL	· · · · · · · · · · · · · · · · · · ·					FACILITY COUR POLLUT		CONTRO		
PREADSHEET PREPARED BY: CHALAM PAK						POLLUT	ANI	CONTRO	UL EFF.	
CTUAL FUEL THROUGHPUT: 31.37		FUEL HEAT VA	LUE	1,020	BTU/SCF	NOX		CALC'D	AS 0%	
OTENTIAL FUEL THROUGHPUT: 34.35				ILER (<100 mmB		<u> </u>	NO SNCR	APPLIED		
EQUESTED MAX. FUEL THRPT: 34.35		HOURS OF OP								
	CRITERIA	AIR POLLUTAN	T EMISSION	IS INFORMATIO	N , L		(4) (4)		Apr. 17.535	
		ACTUAL EM	SSIONS		POTENTIAL I			EMISSION	FACTOR	
IR POLLUTANT EMITTED		(AFTER CONTROL		(BEFORE CONTR		(AFTER CONTROL			nBtu	
ARTICULATE MATTER (Total)		lb/hr 0.00	tons/yr 0.01	lb/hr 0.00	tons/yr 0.01	lb/hr 0.00	tons/yr 0.01	uncontrolled 0.001	controlled 0.001	
ARTICULATE MATTER (Filterable)		0.00		0.00						
ARTICULATE MATTER (Condensable)		0.00	0.01	0.00				0.000		
M 2.5 (Total)		0.00		0.00						
M 2.5 (Filterable)		0.00		0.00						
ULFUR DIOXIDE (SO2) ITROGEN OXIDES (NOx)		0.00		0.00		0.00	0.01 1.72		0.001 0.098	
ARBON MONOXIDE (CO)		0.33		0.33			1.44		0.082	
OLATILE ORGANIC COMPOUNDS (VOC)		0.02		0.02						
and the state of t	TOWO / 114 Tr ==	OUG AIR PO	174 N	00(0)(0)		5 75 regenerastrationer		CA COMPANIA ARMONT	TETAL SHOP	
	TOXIC/HAZARD	OUS AIR POLLI ACTUAL EMI		SSIONS INFORM I			es desi		FACTOR	
	CAS	(AFTER CONTROL		(BEFORE CONTR	POTENTIAL I	(AFTER CONTROL	S/I IMITE)	EMISSION lb/mr		
XIC / HAZARDOUS AIR POLLUTANT	NUMBER	lb/hr	lbs/yr	lb/hr	lbs/yr	Ib/hr	lbs/yr	uncontrolled	controlled	
cetaldehyde (TH)	75070	5.96E-08	4.77E-04	5.96E-08	5.22E-04	5.96E-08	5.22E-04	1.49E-08	1.49E-08	
crolein (TH)	107028	7.06E-08	5.65E-04	7.06E-08	6.18E-04	7.06E-08	6.18E-04	1.76E-08	1.76E-08	
mmonia (T) senic unlisted compounds (TH)	7664417 ASC-other	1.25E-02 0.00E+00	1.00E+02	1.25E-02	1.10E+02	1.25E-02	1.10E+02		3.14E-03	
enzene (TH)	71432	8.24E-06	0.00E+00 6.59E-02	0.00E+00 8.24E-06	0.00E+00 7.21E-02	0.00E+00 8.24E-06	0.00E+00 7.21E-02	0.00E+00 2.06E-06	0.00E+00 2.06E-06	
enzo(a)pyrene (TH)	50328	4.71E-09	3.76E-05	4.71E-09	4.12E-05	4.71E-09	4.12E-05	1.18E-09	1.18E-09	
eryllium metal (unreacted) (TH)	7440417	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	
admium metal (elemental unreacted) (TH)	7440439	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	
hromic acid (VI) (TH)	7738945	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	
obalt unlisted compounds (H) ormaldehyde (TH)	COC-other 50000	3.29E-07 2.94E-04	2.64E-03 2.35E+00	3.29E-07 2.94E-04	2.89E-03 2.58E+00	3.29E-07 2.94E-04	2.89E-03 2.58E+00	8.24E-08 7.35E-05	8.24E-08 7.35E-05	
exane, n- (TH)	110543	7.06E-03	5.65E+01	7.06E-03	6.18E+01	7.06E-03	6.18E+01	1.76E-03	1.76E-03	
ead unlisted compounds (H)	PBC-other	1.96E-06	1.57E-02	1.96E-06	1.72E-02	1.96E-06	1.72E-02	4.90E-07	4.90E-07	
anganese unlisted compounds (TH)	MNC-other	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	
lercury vapor (TH) apthalene (H)	7439976	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	
ickel metal (TH)	91203 7440020	2.39E-06 0.00E+00	1.91E-02 0.00E+00	2.39E-06 0.00E+00	2.10E-02 0.00E+00	2.39E-06 0.00E+00	2.10E-02 0.00E+00	5.98E-07 0.00E+00	5.98E-07 0.00E+00	
elenium compounds (H)	SEC	9.41E-08	7.53E-04	9.41E-08	8.24E-04	9.41E-08	8.24E-04	2.35E-08	2.35E-08	
oluene (TH)	108883	1.33E-05	1.07E-01	1.33E-05	1.17E-01	1.33E-05	1.17E-01	3.33E-06	3.33E-06	
otal HAPs ghest HAP	luovana	7.38E-03 7.06E-03	5.90E+01	7.38E-03	6.46E+01	7.38E-03	6.46E+01	1.84E-03	1.84E-03	
	Hexane C AIR POLLUTANT I		5.65E+01 ORMATION	7.06E-03 (FOR PERMITTI	6.18E+01	7.06E-03	6.18E+01	1.76E-03	1.76E-03	
	TED ACTUAL EMISS				A			EMISSION	FACTOR	
		IONS AFTER CO	ON I ROLS /	LIMITATIONS				lb/mr		
OXIC AIR POLLUTANT	CAS Num.	lb/hr		lb/da		lb/yr		uncontrolled		
cetaldehyde (TH) crolein (TH)	75070 107028	5.96E- 7.06E-		1.31E 1.55E		4.77E- 5.65E-		1.49E-08		
mmonia (T)	7664417	1.25E-		2.76E		1.00E+		1.76E-08 3.14E-03		
senic unlisted compounds (TH)	ASC-other	0.00E+		0.00E		0.00E+		0.00E+00	0.00E+00	
enzene (TH)	71432	8.24E-		1.81E		6.59E-	02	2.06E-06	2.06E-06	
enzo(a)pyrene (TH)	50328	4.71E-		1.04E		3.76E-		1.18E-09	1.18E-09	
eryllium metal (unreacted) (TH) admium metal (elemental unreacted) (TH)	7440417 7440439	0.00E+ 0.00E+		0.00E 0.00E		0.00E+ 0.00E+		0.00E+00 0.00E+00	0.00E+00 0.00E+00	
pluble chromate compounds, as chromium (VI) equiv		0.00E+		0.00E		0.00E+		0.00E+00	0.00E+00 0.00E+00	
ormaldehyde (TH)	50000	2.94E-		6.47E		2.35E+		7.35E-05	7.35E-05	
exane, n- (TH)	110543	7.06E-		1.55⊟		5.65E+		1.76E-03	1.76E-03	
anganese unlisted compounds (TH)	MNC-other	0.00E+		0.00E		0.00E+		0.00E+00	0.00E+00	
ercury vapor (TH) ckel metal (TH)	7439976 7440020	0.00E+ 0.00E+		0.00E 0.00E		0.00E+ 0.00E+		0.00E+00	0.00E+00	
oluene (TH)	108883	1.33E-		2.93E		1.07E-		0.00E+00 3.33E-06	0.00E+00 3.33E-06	
GREENHOUSE GAS EMISSIONS INFORMATION	N (FOR EMISSIONS	71: NO: 195 14 6 97 61	RPOSES) -	TO A WHOLE WATER	s. Amerikan bermelen.	er to er or bettelyber	NAMES OF PERSONS		GHG - PO	TENTIAL TO EN N EPA MRR M
REENHOUSE GAS POLLUTANT				ACTUAL EN			1400930833			IAL EMISSION
				RR CALCULATIO						
APPON BIOVIPE (OC.)		metric to		metric tons/yr, C		short tor				short tons/yr, Co
ARBON DIOXIDE (CO ₂)		1709.8		1,709		1,884.		2,04		2047
ETHANE (CH ₄)		3.22E-		8.06E		3.55E-			E-02	9.668
ITROUS OXIDE (N₂O)	·	3.22E-	03	9.61E		3.55E-	03	3.86		1.15E
				L TOTAL COO-		i				TOTAL COOL

NOTE: The DAQ Air Emissions Reporting Online (AERO) system requires short tons be reported. The EPA MRR requires metric tons be reported.

1,711.58

TOTAL CO2e

(metric tons)

2,050.01

TOTAL CO2e

(short tons)

NOTE: Do not use greenhouse gas emission estimates from this spreadsheet for PSD (Prevention of Significant Deterioration) purposes.

Active Energy Renewable Power Lumberton, Robeson County, NC

NOTES:
Enviva Pellets Company makes their pellets from dry/green chips and therefore, the VOC are still in the chip. However, Active Energy first pressure cook the dry chips and condense the liquids using a condeser with a conservative efficieny of 80% (80-95%). Please note many VOCs bolling point is less than the steam temp and therefore, majority of the VOC will be condensed in the steam released from the Pressure Cooker operation. The condensed VOC liquids will be disposed of,
As a conservative estimate, we have estimated VOCs emissions from several permits and used the worst case for Pressure cooker emissions calcs

Actual Hrs of Operations = Potential Hrs of Operation =

8000 hrs 8760 hrs

VOC from the Pres Condenser	80-95%	Used 80		J			(ES-P-1) & CD-1	# :	
Max Throughput	43,800.00	Ton/yr (2) 10% m.c.		Emission	Actual Emissions	Potential Emissions	Actual Emissions (after Condenser 80%	Potential Emissions (after Condenser 80%
Potential				i i	Factor ¹	Emissions	Emissions	Eff)	Eff)
Throughput	39,420.00	ODT/yr		l					
Actual Throughput Composition	36,000.00 25% Hardwood 75				lbs/ODT	tons/yr	tons/yr	tons/yr	tons/yr
Pollutant	1	T :		Voc I					
voc		i		Y	1.070	19.26	21.09	3.85	4.22
	-		l			(lbs/yr)	(lbs/vr)	(lbs/yr)	(lbs/yr)
Acetaldehyde (BP-6	8.36F)	Y	Y	Y	6.40E-02	2304.00	2522.88	460.80	504.58
Acrolein (BP-127.4F)	Y	Y	Y	0.00E+00			0.00	0.00
Formaldehide (BP- (-2.2F)	Y	Υ	Y	6.77E-02	2437.20	2668.73	487.44	533.75
Methanol (BP-148.5	F)	Y	N	Y	2.98E-02	1072.80	1174.72	214.56	234.94
Phenol (BP-359.1F)	ľ	Y	Y	Y	0.00E+00	0.00	0.00	0.00	0.00
Propionaldehyde (Bl	P-119.8F)	Y	N	Y	3.93E-02	1414.80	1549.21	282.96	309.84
``	T								
							and the second		
			HAPs tot	al (lbs/year)		7,228.80	7,915.54	1,449.61	1,587.33
Permit Name			ODT Processed (ODT/Yr)	Facility Wide VOC (ton/yr)	Emission Factor (ib/ODT)			.:	
2016 Enviva Pellets-	Sampson-Dryer Sta	ck Test			1.070	Used as the worst ca	se	7	
Stack Test dated Ap			1				austrania de la companya de la comp		

PM, NOX, CO and VOC, HAPS from Screw Press/Pellet Drying with an INTEGRAL Cyclone (99% for PM) (ES-SPD-1) & CD-2

Max Throughput	43,800.00	Ton/yr@	10% m.c.		Emission	Actual	Potential	Actual Emissions	Potential Emissions
Potential					Factor ¹	Emissions	Emissions	After a CD (99% Eff)	After a CD (99% Eff)
Throughput	39,420.00 36,000.00				1 40101			7	
Actual Throughput Composition	36,000.00 25% Hardwood 75%		nd		lbs/ODT	lbs/yr	lbs/yr	lbs/yr	lbs/yr
- Composition			^-						
Pollutant	Flow Rate (CFM)		Grains/cf	hrs					
PM	15556		0.05	8000		53334.80	58,401.61	53334.80	58401.61
Cyclone Loading rate calc	s			Tons		26.67	29.20	26.67	29.20
voc					1.07	38520.00	42179.40	38520.00	42179.40
EF from Enviva Pellet Pi	ess -Stack Test Dated	April 2017	7	Tons	4.	19.26	21.09	19.26	21.09
NOx (combined from	n dryer and NG)				0.27	9,720.00	10,643.40	9720.00	10643.40
NOx (dryer)				Tons		3.29	3.60	3.29	3.60
CO (combined from	dryer and NG)				0.42	15,120.00	16,556.40	15120.00	16556.40
CO (dryer)			1 1	Tons		6.24	6.84	6.24	6.84
Pollutant		HAP	NC TAP	VOC					
						(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Acetaldehyde (BP-68	.36F)	Υ	Υ	Υ	2.57E-02	925.20	1,013.09	33,307,200.00	36,471,384.00
Acrolein (BP-127.4F)		Υ	Υ	Υ	0.00E+00	: : : : - <u>-</u>	· · · · · · · · · · · · · · · · · · ·	- · · · · · · · · · · · · · · · · · · ·	: -
Formaldehide (BP- (-	2.2F)	Y	Υ	Υ	1.40E-03	50.40	55.19	1,814,400.00	1,986,768.00
Methanol (BP-148.5F)	Υ	N	Y	4.50E-03	162.00	177.39	5,832,000.00	6,386,040.00
Phenol (BP-359.1F)		Υ	Υ	Y	0.00E+00	-			-
Propionaldehyde (BP	-119.8F)	Υ	N	Υ	4.50E-03	162.00	177,39	5,832,000.00	6,386,040.00
			HAP tot	al (ibs/year)		1,299.60	1,423.06	46,785,600.00	51,230,232.00
			HAP to	tal (tons/yr)		0.65	0.71	23,392.80	25,615.12
·			TAP tot	al (lbs/year)		975.60	1,068.28	35,121,600.00	38,458,152.00
			TAP to	tal (tons/yr)		0.49	0.53	17,560.80	19,229.08
Permit Name			ODT Processed (ODT/Yr)	Facility Wide VOC (ton/yr)	Emission Factor (lb/ODT)				
2016 Enviva Pellets-S	Sampson-Dryer Sta	ck Test			1.070	Used as the worst cas	ie		

Active Energy Renewable Power Lumberton, Robeson County, NC

NOTES:
Enviva Pellets Company makes their pellets from dry/green chips and therefore, the VOC are still in the chip. However, Active Energy first pressure cook the dry chips and condense the liquids using a condeser with a conservative efficieny of 80% (80-95%). Please note many VOCs boiling point is less than the steam temp and therefore, majority of the VOC will be condensed in the steam released from the Pressure Cooker operation. The condensed VOC liquids will be disposed of.

As a conservative estimate, we have estimated VOCs emissions from several permits and used the worst case for Pressure cooker emissions calcs

Actual Hrs of Operations = Potential Hrs of Operation =

PM, VOCs and HAPS from Pellet Press & Pellet Cooler with a Cyclone (99% Eff)

(ES-PP-1) & CD-3

Max Throughput	43,800.00 39.420.00) 10% m.c.		Emission Factor ¹	Actual Emissions	Potential Emissions	Actual Emissions After a CD (99% Eff)	Potential Emissions After a CD (99% Eff)
Actual Throughput Composition	36,000.00 25% Hardwood 75		od		lbs/ODT	lbs/yr	lbs/yr	lbs/yr	lbs/yr
Pollutant	Flow Rate (CFM)	1.72.3	EF in kg/ton	hrs					
PM			0.07	8000	0.15	5554.08	6,081.72	180.00	197.10
PM and PM10 EFs a	re taken from ref IT	Q# dated	12/01/2008	Tons		2.78	3.04	0.09	0.10
PM10			0.04	8000	0.09	3170.88	3,472.11	31.71	34.72
				Tons		1,59	1.74	0.02	0.02
Pollutant		HAP	NC TAP	Voc				· · · · · · · · · · · · · · · · · · ·	
voc		1		Y	0.5	18,000.00	19,710.00	18000.00	19710.0
EF from Enviva Pellet P	ress -Stack Test Date	d April 201	7	Tons	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	9.00	9.86	9.00	9.86
	l					(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Acetaldehyde (BP-68	B.36F)	Y	Υ	Y	2.57E-02	925.20	1,013.09	925.20	1,013.09
Acrolein (BP-127.4F)	Y	Υ	Y	0.00E+00	11.1.	- 1	•	
Formaldehide (BP- (-	-2.2F)	Y	Υ	Y	1.40E-03	50,40	55.19	50.40	55.19
Methanol (BP-148.5l	F)	Υ .	N	Υ	4.50E-03	162.00	177.39	162.00	177.39
Phenol (BP-359.1F)		Υ	Υ	Υ	0.00E+00	- 1		-	
Propionaldehyde (BF	P-119.8F)	Υ	N	Υ	4.50E-03	162.00	177.39	162.00	177.39
			HAP tot	al (lbs/year)		1,299.60	1,423.06	1,299.60	1,423.00
			HAP to	tal (tons/yr)	1	0.65	0.71	0.65	0.71
	:		TAP tot	al (lbs/year)		975.60	1,068.28	975.60	1,068.28
			TAP to	tal (tons/yr)		0.49	0.53	0.49	0.5
Permit Name			ODT Processed (ODT/Yr)	Facility Wide VOC (ton/yr)	Emission Factor				

PM from Pellet Screen with a Cartridge Filter (99.9% Eff)

2016 Enviva Pellets-Sampson-Pellet Press Stack Test Stack Test dated April 2017

(ES-PSC-1) & CD-4

Max Throughput Potential Actual Throughput Composition	43,800.00 Ton/yr @ 10% m.c. 39,420.00 ODT/yr 36,000.00 ODT/yr 25% Hardwood 75% Softwood		Emission Factor1 Ibs/ODT	Actual Emissions lbs/yr	Potential Emissions //bs/yr	Actual Emissions After a CD (99% Eff) /bs/yr	Potential Emissions After a CD (99% Eff) /bs/yr
PM.		8000	0.0175	630.00	689.85	0.63	0.69
PM and PM10 EFs	are taken from ref ITQ# dated 12/01/2008	Tons		0.32	0.34	0.0003	0.0003
A consrvative estimate of	of 25% of Pelletize and Pellet Cooler EF was considered		0.25 x 0.07	0.0175	lbs/ODT		

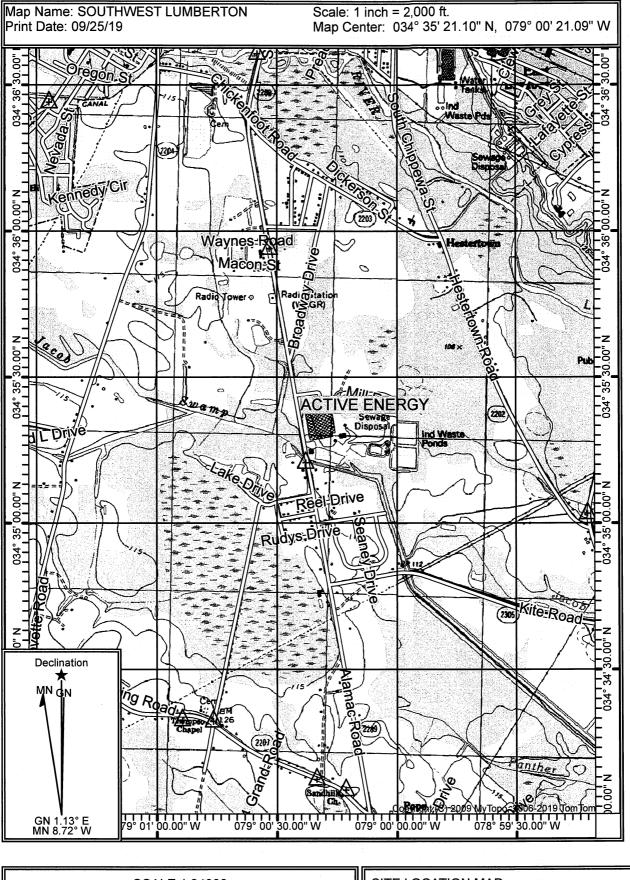
Hazardous Air Pollutants and VOC from Pellet Storage

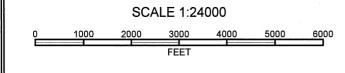
(ES-PS-1)

Max Throughput	43,800.00	Tonbur 6	100/ m a	1 г	Emission	Actual	Potential
wax imougnput	39.420.00) 10% III.C.		Factor ¹	Emissions	Emissions
Actual Throughput	36,000.00						
	25% Hardwood 75%		nd		lbs/ODT	lbs/yr	lbs/yr
Composition 2	23 /8 Hardwood 73 /	o SULLANO	Ju	1 1		L	
Pollutant		HAP	NC TAP	VOC			
VOC				(Y	0.050	1,800.00	1,971.00
EF from Enviva Pellet Pro	ess -Stack Test Dated	April 201	7	Tons		0.90	0.99
						(lbs/yr)	(lbs/yr)
Acetaldehyde (BP-68.	36F)	Υ	Υ	Y	2.57E-02	92.52	101.31
Acrolein (BP-127.4F)		Υ	Y	Y	0.00E+00		
Formaldehide (BP- (-2	2.2F)	Υ	ν γ	Y	1.40E-03	5.04	5.52
Methanol (BP-148.5F))	Υ	N .	Y	4.50E-03	16.20	17.74
Phenol (BP-359.1F)		Υ	Υ	Y	0.00E+00	1	-
Propionaldehyde (BP-	·119.8F)	Υ	N	Y	4.50E-03	16.20	17.74
			HAP tot	al (lbs/year)		129.96	142.31
			HAP to	tal (tons/yr)	111 11 111	0.06	0.07
			TAP tot	al (lbs/year)		97.56	106.83
			TAP to	tal (tons/yr)		0.05	0.05
Permit Name			ODT Processed (ODT/Yr)	_	Emission Factor (Ib/ODT)	Emission Factor (10%) (lb/ODT)	
2016 Enviva Pellets-S	ampson-Pellet Pre	ss Stack	Test		0.500	0.050	Used as the worst case
Stack Test dated April	2017						

FIGURES

FIGURE 1 – USGS Site Location Map





SITE LOCATION MAP ACTIVE ENERGY RENEWABLE POWER LUMBERTON, NC FIGURE 1 JOB NO. 1198-001

ATTACHMENT A

Supporting Documentation

CHUCK PAKALA

From: "Reeves, Gregory W" < gregory.reeves@ncdenr.gov>

Date: Monday, October 14, 2019 11:39 AM

To: "CHUCK PAKALA" <cvpakala@carolina.rr.com>

Cc: "Antonio Esposito" <antonio.esposito@aegplc.com>; "Michael Rowan" <michael.rowan@aegplc.com>;

"Carter, Heather" <Heather.Carter@ncdenr.gov>; "Cole, Jeffrey D" <jeffrey.cole@ncdenr.gov>; "Lowery-

jacobs, Evangelyn" <evangelyn.lowery-jacobs@ncdenr.gov>; "Kadir, Abdul" <abdul.kadir@ncdenr.gov>

Subject: RE: Air permit for Active Energy

Chuck, based on the information submitted and our conversation this morning, it would appear that the facility will require an air permit, as the facility-wide VOC emissions after controls appear to exceed 5 tons per year.

In reaching that conclusion, I assumed that the pressure cooker emissions at Active Energy would be similar to the dryer emissions at the Enviva Sampson pellet facility. Uncontrolled emissions from the Enviva Sampson dryer were 1.07 lb/ODT in a stack test conducted in April 2017. I further assumed that the condenser in the Active Energy process would condense 80% of the VOC from the pressure cooker, so 20% of the VOC emissions (0.21 lb/ODT) would be emitted to the atmosphere. I assumed that the pellet press/dryer operation at Active Energy would have VOC emissions similar to the pellet press/cooler operations at Enviva Sampson. The emission factor for the Enviva Sampson pellet presses during the April 2017 stack testing was 0.50 lb/ODT (5.82 lb/hr VOC emission with throughput rate of 11.54 ODT/hr). There may be additional emissions of VOC from the pellet dryer operation at the Active Energy facility that we have not yet quantified.

Based on this information, the overall facility-wide actual emissions are estimated to be 0.71 lb/ODT. Using the expected throughput of 36,000 ODT/yr, this yields an expected VOC emission of 12.78 tons/yr.

Based on this VOC emission, the facility does not qualify for an exemption from air permitting, and thus an air permit application is required prior to construction and operation.

There is a \$50 fee required for the air permit application (classification is Small), and a zoning consistency determination will be required. A PE review will be required for the condenser VOC control. Call me if you need assistance with the proper forms for the air permit application or if you have other questions.



Greg Reeves

Permits Coordinator

Division of Air Quality, Fayetteville Regional Office
225 Green Street, Suite 714 910.433.3373 (Office)
Fayetteville, NC 28301-5043 910.485.7467 (Fax)
Gregory.Reeves@ncdenr.gov

Emplicorrespondence to and from this wateres is subject to the North Carolina Paint. Festion's Law and may be disclosed to their parties.

From: CHUCK PAKALA [mailto:cvpakala@carolina.rr.com]

Sent: Monday, October 7, 2019 6:20 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Cc: Antonio Esposito <antonio.esposito@aegplc.com>; Michael Rowan <michael.rowan@aegplc.com>

Subject: [External] Air permit for Active Energy

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to report.spam@nc.gov

CHUCK PAKALA

From:

"Reeves, Gregory W" < gregory.reeves@ncdenr.gov>

Date:

Monday, October 28, 2019 8:26 AM

To:

"CHUCK PAKALA" < cvpakala@carolina.rr.com>

Subject:

RE: [External] Dryer EF

Chuck, here are the results of stack testing at Enviva – Sampson for HAP: (All results expressed in lb/ODT)

March 2017

	<u>Dryer</u>	Green Hammermills	<u>Pellet</u>
Press/Coolers			
Methanol	0.0428	0.00008	0.0045
Formaldehyde	0.0760	0.00008	0.0014
Acetaldehyde	0.0640	0	0.0257
Propionaldehyde	0.0319	0	0.0045
Total HAP	0.215	0.00016	0.036

March 2018

	<u>Dryer</u>
Methanol	0.0298
Formaldehyde	0.0677
Propionaldehyde	0.0393
Total HAP	0.1757

Testing was also conducted in March 2019 for Formaldehyde, but that was on the dryer including thermal oxidizer control, so I don't think that would be similar to the Active Energy process. I think you could use any of these factors. I don't think any of these factors would cause an exceedance of the toxic TPERs in 02Q .0711.

Call me if questions......Greg



Greg Reeves
Permits Coordinator

Division of Air Quality, Fayetteville Regional Office

225 Green Street, Suite 714 Fayetteville, NC 28301-5043 910.433.3373 (Office) 910.485.7467 (Fax)

Gregory.Reeves@ncdenr.gov

Email consequación se obtam tha address is suitest to the North Carolina Public Nei ords Law and may be decidioned to third parties.

From: CHUCK PAKALA [mailto:cvpakala@carolina.rr.com]

Sent: Saturday, October 26, 2019 10:59 AM

To: Reeves, Gregory W <gregory.reeves@ncdenr.gov> **Cc:** Antonio Esposito <antonio.esposito@aegplc.com>

Subject: Re: [External] Dryer EF

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Greg,

Having used the Enviva stack test data for VOC calculations. Did Enviva have EFs for HAPS listed below or do you have any idea what you want me to use based on your past reviews. Looks like there is so much data on Enviva that you agree as recent and some you told me that it was old. Sorry to bother you many times like this.

Acetaldehyde	
Acrolein	
Formaldehide	
Methanol	
Phenol	
Propionaldehyd	е

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-541-4042 704-756-7451 (cell) 704-541-4043 (fax)

From: Reeves, Gregory W

Sent: Friday, October 25, 2019 8:48 AM

Email: cvpakala@carolina.rr.com

To: CHUCK PAKALA

Subject: RE: [External] Dryer EF



Greg Reeves

Permits Coordinator

Division of Air Quality, Fayetteville Regional Office
225 Green Street, Suite 714 910.433.3373 (Office)
Fayetteville, NC 28301-5043 910.485.7467 (Fax)

Gregory.Reeves@ncdenr.gov

lumps consist ordained to and from this actities is subject to the North Carolina Fallet. Heconds Law and may be disclived to their rathes.

From: CHUCK PAKALA [mailto:cvpakala@carolina.rr.com]

Sent: Thursday, October 24, 2019 6:57 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov >

Subject: [External] Dryer EF

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to report.spam@nc.gov

Greg,

I saw a stack test data on Enviva-Ahoskie in June 2014 and the Dryer EF is given as 0.781 lb/ODT. Would you be okay to use this number for my Dryer emissions at Screw Press/Dryer. Please note the purpose of this Dryer is to remove moisture content from 30% to 15% so that pellet making would be easier. Attached is the copy of that test. Currently I am using the same EF as the pressure cooker (1.07 lb/ODT). What are your thoughts.

Regards

Chuck Pakala, PE
CP Engineering and Environmental Solutions
704-541-4042
704-756-7451 (cell)
704-541-4043 (fax)
Email: cvpakala@carolina.rr.com

Greg,

Based on our conversations, research of available literature and also my extensive review of all Enviva and Natures Pellet permits, attached please find Air permit Exemption report for your review and approval process.

Assumptions:

- 1. Used facility wide VOCs (all operations including fuel sources) from Enviva and other pellet making industries to calculate Emission Factor for our Pressure Cooker Process
- 2. We believe 80% of VOC will be emitted from the Pressure Cooker process but as a conservative estimate, we used 100% VOC to be released from this (Pressure Cooker) process.
- 3. A Condenser (80-95% eff) will be used to control Pressure Cooker emissions and we took as a conservative estimate 80% of Pressure Cooker emissions to be condensed in the condenser and 20% will be released to the air from this process.
- 4. The wet chips/wood product are sent to Screw Press with NO COOLERS (@Active Energy) unlike Enviva and other Pellet manufacturing process. Therefore, the VOCs released from the Screw Press would be due to the friction heat and it will be far less compared to the dryer emissions. Therefore, as a conservative estimate, we took Enviva Dryer EF for the Screw Press air emission calcs. In addition, Enviva presses were declared as insignificant sources at one time and later in combination with Coolers were added as a significant source in the permit.
- 5. Our Dryer Emissions are calculated using the Enviva Dryer EF.
- 6. In our opinion, all our calculations were based of conservative numbers taken from Enviva and other Pellet production.
- 7. Based on our calcs, all actual VOC emissions were below the 5.0 ton/yr limit and thus, Active Energy Renewal Power will be qualified for an Air Permit Exemption status.

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-541-4042 704-756-7451 (cell) 704-541-4043 (fax)

Email: cvpakala@carolina.rr.com

Emissions and Air Pollution Controls for the Biomass Pellet Manufacturing Industry

Reference ITQ Number: 12/01/2008

Prepared for:

Mr. Bob Konkin
The BC Ministry of the Environment
PO Box 9342, Stn.
Provincial Government
Victoria, BC V8W 9M1



Prepared by:

Paul Beauchemin Martin Tampier Envirochem Services Inc. 310 East Esplanade North Vancouver, B.C. V7L 1A4



May 12th, 2010

Table 2: Estimated PM/PM10 Emissions for a 100,000 Tonne/yr Pellet Plant

Emission Points			Control Methods	Emission Factors (controlled) kg/tonne		Emissions (100 kt/yr Plant) t/yr		% of Total of Plant Emissions %		PM10 Fraction	
10.00	PM/PM10	4274							PM	PM10	% PM10
-	lb/ton	PM	PM10	N.T.	PM.	PM10	PM	PM10	SPORT AREA	0%	FIMILO
Log storage	Not available			None	0	0		0	0%		
Log debarking	0.02/0.011 lb/ton (AP-42)	0.01	0.005	Water spray (50% eff.)	0.005	0.003	0.5	0.3	0%	1%	60
Log chipping	0.6/0.6 lb/hr [OK 2003]	0.3	0.3	None	0.024	0.024	2.4	2.4	1%	5%	100
Stock piles	(SCC 30700803, USEPA FIRE Now revoked)	•		Emissions controlled by moisture in sawdust (25-40%); watering unpaved areas	0.5	0.18	50	18	27%	35%	36
Load in							0	0	0%	0%	
Wind erosion	Front-end loaders (AP-42, Section 13.2.2, 12/03):						0	0	0%	0%	
Vehicular activity	5.48/4.60 lb/Vehicle mile traveled (VMT			(2.7/2.3 lb/VTM)	1.23 kg/ VTM	1.04 kg/ VTM			0%	0%	
Load out							0	0	0%	0%	
Feed bins	(3-07-008-03,			Multi-	0.75	0.27	75	27	40%	52%	36
Open conveyor belt	FIRE page EF- 77)			cyclone			0	0	0%	0%	
Screen				-			0	0	0%	0%	
Hammer mill				1			0	0	0%	0%	
Enclosed drag belts			1				0	0	0%	0%	
Rotary dryer	3.4/0.69 lb/ODT (AP- 42, Table 10.6.2-1)			Multi- cyclone	0.465		46.5	0	25%	0%	
Storage bin	0.33/- lb/ton of product (AP- 42, 10.6.2)			Multi- cyclone	0.045		4.5	0	2%	0%	
Pellet mill	Cooler: (3-07- 008-08, FIRE page EF-77)						0	0	0%	0%	
Pellet cooler	F-8 ''')			₹.	0.07	0.04	7	4	4%	8%	57



VIA << HAND DELIVERY/CERTIFIED MAIL RETURN RECEIPT REQUESTED>>

Dixon Ivey Jr. Zoning Director Robeson County Zoning Dept 415 Country Club Rd Lumberton, NC 28360 910-671-6298/272-6520

Current Air Permit No. 10636R00

Dear Mr. Ivey:

On behalf of Active Energy Renewable Power (AERP) previously known as Lumberton Energy Holdings located 1885 Alamac Road, Lumberton, NC, I am writing to inform you that we intend to install and operate a wood pellet manufacturing operations at the subject site. Please note an air permit (#10636R00) for our operations was approved in the past and we adding a few control equipment to the operation. Based on my conversations with your Zoning Dept., I hereby certify that to the best of my knowledge, that the Robeson County is the only local government having jurisdiction over this part of the land for an approval.

In accordance with § 143-215.108(f) of the North Carolina General Statutes, we hereby request that you issue a determination as to whether your municipality has in effect a zoning or subdivision ordinance that is applicable to the proposed facility. Additionally, please issue a determination as to whether the proposed use would be consistent with applicable zoning or subdivision ordinances. For your convenience, I have included a form with which you may remit your determination and a copy of the draft air permit application. As a means of demonstrating proof of transmittal, please sign, title, stamp, and date the enclosed form and mail to both the facility mailing address and the checked air quality office at your earliest convenience.

Thank you for your prompt attention to this matter. If you have any questions regarding this request, please contact me at 910-547-1920 or Ms. Doris Sampson at 910-734-5863 or Mr. Chuck Pakala at 704-541-4042.

Sincerely,

Ron Gaskins Plant Manager 910-840-7922

710-010-7722

Enclosures:

Zoning Consistency Determination Form Air Permit Application

Courtesy of the Small Business Assistance Program toll free at 1-877-623-6748 or on the web at www.envhelp.org/sb

Zoning Consistency Determination

Facility Name	ACTIVE POWER RENEWABLE ENERGY				
Facility Street Address	1885 ALAMAC ROAD				
Facility City	LUMBERTON, NC 28359				
Description of Process	WOOD PELLET MAKING				
SIC/NAICS Code	2499/321999				
Facility Contact	MR. RON GASKINS				
Phone Number	910-840-7922 (cell)				
Mailing Address	1885 ALAMAC ROAD				
Mailing City, State Zip	LUMBERTON, NC 28359				
Based on the information given a	above:				
	he air permit application (final)				
There are no applicable zon	ing ordinances for this facility at this time				
The proposed operation IS consistent with applicable zoning ordinances					
The proposed operation IS NOT consistent with applicable zoning ordinances The proposed operation IS NOT consistent with applicable zoning ordinances					
(please include a copy of the rules in the package sent to the air quality office)					
The determination is pending	g further information and can not be made at this time				
Cother:					
Agency					
Name of Designated Official					
Title of Designated Official					
Signature					
Date					
Please forward to the facility ma at the appropriate address as che	cked on the back of this form.				

All PSD and Title V Applications

Attn: William Willets, PE DAQ – Permitting Section 1641 Mail Service Center Raleigh, NC 27699-1641

Local Programs

Attn: David Brigman
Western NC Regional Air Quality Agency
49 Mount Carmel Road
Asheville, NC 28806
(828) 250-6777

✓ Attn: Leslie Rhodes
 Mecklenburg County Air Quality
 700 N. Tryon Street, Suite 205
 Charlotte, NC 28202-2236
 (704) 336-5430

Forsyth County Office of Environmental
Assistance and Protection
201 N. Chestnut Street
Winston-Salem, NC 27101-4120
(336) 703-2440

Division of Air Quality Regional Offices

Attn: Paul Muller
Asheville Regional Office
2090 U.S. Highway 70
Swannanoa, NC 28778
(828) 296-4500

Attn: HEATHER CARTER
Fayetteville Regional Office
225 Green Street, Suite 714
Fayetteville, NC 28301
(910) 433-3300

Mooresville Regional Office 610 East Center Avenue, Suite 301 Mooresville, NC 28115 (704) 663-1699

Attn: Patrick Butler, PE Raleigh Regional Office 1628 Mail Service Center Raleigh, NC 27699-1628 (919) 791-4200 Attn: Robert Fisher
Washington Regional Office
943 Washington Square Mall
Washington, NC 27889
(252) 946-6481

Attn: Brad Newland
Wilmington Regional Office
127 Cardinal Drive Extension
Wilmington, NC 28405
(910) 796-7215

Attn: Lisa Edwards, PE
 Winston-Salem Regional Office
 450 West Hanes Mill Road, Suite 300
 Winston-Salem, NC 27105
 (336) 776-9800

Please add a signed copy of the permit application package with the Form

FOR APPLICATION FEE Jahre Jampson "
WELLC Utah PARGO Wellsfargocom
DOLLARS 1 Security Double on Brain on B
ORDER OF 11 (\$ 50.00
DATE 7/2/21
. 3
1885 ALAMAC RD LUMBERTON, NC 28358-8859
ACTIVE ENERGY RENEWABLE POWER LLC 04/19 1679

AQ PERMIT Robeson

RECEIVED

APR 3 0 2021 10:22 AM DEQ-FAYET TEVILLE REGIONAL OFFICE

VIA << HAND DELIVERY/CERTIFIED MAIL RETURN RECEIPT REQUESTED>>

Dixon Ivey Jr. Zoning Director Robeson County Zoning Dept 415 Country Club Rd Lumberton, NC 28360 910-671-6298/272-6520

Current Air Permit No. 10636R00

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In accordance with § 143-215.108(f) of the North Carolina General Statutes, we hereby request that you issue a determination as to whether your municipality has in effect a zoning or subdivision ordinance that is applicable to the proposed facility. Additionally, please issue a determination as to whether the proposed use would be consistent with applicable zoning or subdivision ordinances. For your convenience, I have included a form with which you may remit your determination and a copy of the draft air permit application. As a means of demonstrating proof of transmittal, please sign, title, stamp, and date the enclosed form and mail to both the facility mailing address and the checked air quality office at your earliest convenience.

Thank you for your prompt attention to this matter. If you have any questions regarding this request, please contact me at 910-547-1920 or Ms. Doris Sampson at 910-734-5863 or Mr. Chuck Pakala at 704-541-4042.

Sincerely,

Ron Gaskins Plant Manager 910-840-7922

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Courtesy of the Small Business Assistance Program toll free at 1-877-623-6748 or on the web at www.envhelp.org/sb

Zoning Consistency Determination

Facility Name	ACTIVE POWER RENEWABLE ENERGY
Facility Street Address	1885 ALAMAC ROAD
Facility City	LUMBERTON, NC 28359
Description of Process	WOOD PELLET MAKING
SIC/NAICS Code	2499/321999
Facility Contact	MR. RON GASKINS
Phone Number	910-840-7922 (cell)
Mailing Address	1885 ALAMAC ROAD
Mailing City, State Zip	LUMBERTON, NC 28359
Based on the information give	n above:
X I have received a copy of	of the air permit application (final)
050 Sept. 980 Se	
	oning ordinances for this facility at this time
The proposed operation Is	S consistent with applicable zoning ordinances
1	S NOT consistent with applicable zoning ordinances
	of the rules in the package sent to the air quality office)
The state of the s	ling further information and can not be made at this time
☐ Other:	
Agency	Robeson County
Name of Designated Official	Dixon Ivey Ju.
Title of Designated Official	Director Community Development
Signature	Darle
Date	April 29, 2021
	nailing address listed above and the air quality office hecked on the back of this form.

[External] Zoning letter

CHUCK PAKALA < cvpakala@carolina.rr.com>

Fri 4/30/2021 6:57 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

1 attachments (17 KB)

Form_from_Municipality 2019 REV.pdf;

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to <u>Report Spam.</u>

Greg,

Please see the attached revised zoning info letter

Regards

Chuck Pakala, PE
CP Engineering and Environmental Solutions
704-756-7451 (cell)
704-541-4043 (fax)

Email: cvpakala@carolina.rr.com

Zoning Consistency Determination

Facility Name	ACTIVE ENERGY RENEWABLE POWER (AERP)
Facility Street Address	1885 ALAMAC ROAD
Facility City	LUMBERTON, NC 28359
Description of Process	WOOD PELLET MAKING
SIC/NAICS Code	2499/321999
Facility Contact	MR. RON GASKINS
Phone Number	910-840-7922 (cell)
Mailing Address	1885 ALAMAC ROAD
Mailing City, State Zip	LUMBERTON, NC 28359
Based on the information give	n above:
	f the air permit application (final)
☐ There are no applicable ze	oning ordinances for this facility at this time
☐ The proposed operation IS	S consistent with applicable zoning ordinances
• •	S NOT consistent with applicable zoning ordinances
=	of the rules in the package sent to the air quality office)
_	ing further information and can not be made at this time
Other:	
Agency	
Name of Designated Official	
Title of Designated Official	
Signature	
Date	
	nailing address listed above and the air quality office necked on the back of this form.

All	PSD and Title V Applications	
	Attn: William Willets, PE DAQ – Permitting Section 1641 Mail Service Center Raleigh, NC 27699-1641	
Loc	al Programs	
	Attn: David Brigman Western NC Regional Air Quality Agency 49 Mount Carmel Road Asheville, NC 28806 (828) 250-6777	Attn: William Minor Barnette Forsyth County Office of Environmental Assistance and Protection 201 N. Chestnut Street Winston-Salem, NC 27101-4120 (336) 703-2440
	Attn: Leslie Rhodes Mecklenburg County Air Quality 700 N. Tryon Street, Suite 205 Charlotte, NC 28202-2236 (704) 336-5430	(550) 765 2110
Div	ision of Air Quality Regional Offices	
	Attn: Paul Muller Asheville Regional Office 2090 U.S. Highway 70 Swannanoa, NC 28778 (828) 296-4500	Attn: Robert Fisher Washington Regional Office 943 Washington Square Mall Washington, NC 27889 (252) 946-6481
X□	Attn: HEATHER CARTER Fayetteville Regional Office 225 Green Street, Suite 714 Fayetteville, NC 28301 (910) 433-3300	Attn: Brad Newland Wilmington Regional Office 127 Cardinal Drive Extension Wilmington, NC 28405 (910) 796-7215
	Attn: Ron Slack Mooresville Regional Office 610 East Center Avenue, Suite 301 Mooresville, NC 28115 (704) 663-1699	Attn: Lisa Edwards, PE Winston-Salem Regional Office 450 West Hanes Mill Road, Suite 300 Winston-Salem, NC 27105 (336) 776-9800
	Attn: Patrick Butler, PE Raleigh Regional Office 1628 Mail Service Center Raleigh, NC 27699-1628 (919) 791-4200	

Active Energy Renewable Power Permit Application - Additional Information Needed

Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Wed 5/5/2021 5:35 PM

To: CHUCK PAKALA <cvpakala@carolina.rr.com>
Cc: tyler@playerdesign.net <tyler@playerdesign.net>

1 attachments (16 KB)

20210505 Active Energy Application Questions.docx;

Chuck, see the attached Word document for some questions I have regarding the submitted information in the permit application. Please call me to discuss at your earliest opportunity. The permit application will be considered on hold until you respond. However, I will still continue to work on other parts of the draft permit and permit review while awaiting your response.



Greg Reeves
Compliance Coordinator
Division of Air Quality, Fayetteville Regional Office
225 Green Street, Suite 714 910.433.3373 (Office)
Fayetteville, NC 28301-5043
Gregory.Reeves@ncdenr.gov

Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

Active Energy Permit Application Questions

- 1. In the Pressure Cooker/Condenser system (ES-P-1/CD-1) the exhaust temperature of the gases released to atmosphere is listed as 131°F. The permit will contain a condition that requires maintaining this temperature below some set limit. At what temperature should this limit be set?
- 2. Screw Press/Dryer Emissions (ES-SPD-1)— Form B includes NOx and CO emissions, as well as HAP/TAP emissions for several aldehydes. Are these emissions from the steam explosion process, or are they from the combustion of natural gas in the dryer burner? If from the burner, they should not be included on the Screw Press/Dryer Emissions Form B, as they are already included on the natural gas combustion spreadsheet for the dryer burner.
- 3. Screw Press/Dryer Cyclone (CD-2)—On the Form C4 this is listed as a high-efficiency cyclone with a control efficiency for PM and PM₁₀ of 99%. Do you have the manufacturer's data sheets that list this control efficiency for these pollutants?
- 4. Screw Press/Dryer Emissions (CD-2) On the Form C4 the after control emissions of PM are listed as 6.70 lb/hr. No emissions are listed for PM10. These same emissions are listed on the Form B for the Screw Press/Dryer (ES-SPD-1) as 6.67 lb/hr. Please explain this discrepancy?
- 5. Pelletizer/Pellet Cooler Emissions (CD-3) On the Form C4, PM emissions before control are listed as 0.75 lb/hr and after control emissions are listed as 0.02 lb/hr, but the Form B (ES-PP-1) lists the emissions before control as 0.639 lb/hr and after control as 0.01 lb/hr. Please explain this discrepancy.
- 6. Pelletizer/Pellet Cooler Emissions (CD-3) The Form C4 does not list emissions for PM₁₀. However, the Form B (ES-PP-1) lists PM₁₀ emissions before control as 0.40 lb/hr and after control as 0.00 lb/hr. Please provide the methodology for determining either the PM₁₀ emission factors, or the rationale for the percentage of PM that is PM₁₀.
- 7. Pelletizer/Pellet Cooler Cyclone control efficiency (CD-3) The Form C4 lists the cyclone as being a conventional cyclone, but lists a control efficiency for PM of 99%. Please provide manufacturer data that would demonstrate this high a control efficiency.
- 8. Pellet Screener Emissions (CD-4) The Form C1 lists PM emissions before control of 483 lb/hr. This seems excessively high. Please explain.
- 9. Pellet Screener Emissions (CD-4) The Form C1 does not list PM₁₀ emissions. However, the Form B for the Pellet Screen (ES-PSC-1) lists PM₁₀ before and after controls. Please describe how these numbers were derived.
- 10. Pellet Screener Emissions (ES-PSC-1) The Form B lists VOC emissions and HAP/TAP emissions from this source. However, based on our conversations, it was assumed that there were only particulate emissions from this source, as this simply screens out fine particles from the final product pellets prior to bagging in super sacks. Please clarify why VOC and HAP/TAP emissions were included here.

Is the facility aware that DEQ Water Quality believes that either a transport permit for trucking wastewater offsite for disposal at a proper facility or a modification to the existing water permit for the facility's wastewater treatment system is required prior to startup of the facility?

Re: [External] Request

CHUCK PAKALA < cvpakala@carolina.rr.com>

Mon 5/10/2021 9:00 AM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

2 attachments (656 KB)

Pinnacle Newton Application Revised (2020 01 24) 1.pdf; Pinnacle Newton Application Revised (2020 01 24) 40.pdf;

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to Report Spam.

Greg,

I did find some EFs for screen emissions. A pellet company in AL and work was done by Trinity.

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

Email: cvpakala@carolina.rr.com

From: Reeves, Gregory W

Sent: Monday, May 10, 2021 8:34 AM

To: CHUCK PAKALA

Subject: Re: [External] Request

Your calcs definitely need to reflect the information on the various forms, and vice versa



Greg Reeves
Compliance Coordinator
Division of Air Quality, Fayetteville Regional Office
225 Green Street, Suite 714 910.433.3373 (Office)
Fayetteville, NC 28301-5043
Gregory.Reeves@ncdenr.gov

Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: CHUCK PAKALA < cvpakala@carolina.rr.com>

Sent: Monday, May 10, 2021 8:32 AM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Subject: Re: [External] Request

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to <u>Report Spam.</u>

Thanks Greg. I think, Tyler used 99.9% in the C-Form. I will use the same 99.9% in my calcs.

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

Email: cvpakala@carolina.rr.com

From: Reeves, Gregory W

Sent: Monday, May 10, 2021 8:01 AM

To: CHUCK PAKALA

Subject: Re: [External] Request

A cartridge filter is generally 99.9%, similar to a bagfilter. If not certain, refer to the manufacturer's data



Greg Reeves
Compliance Coordinator
Division of Air Quality, Fayetteville Regional Office
225 Green Street, Suite 714 910.433.3373 (Office)
Fayetteville, NC 28301-5043
Gregory.Reeves@ncdenr.gov

Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: CHUCK PAKALA < cvpakala@carolina.rr.com>

Sent: Sunday, May 9, 2021 4:07 PM

To: Reeves, Gregory W <gregory.reeves@ncdenr.gov>

Subject: [External] Request

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to <u>Report Spam.</u>

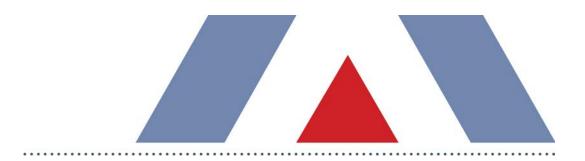
Greg,

What is a conservative estimate efficiency for a cartridge filter. I am seeing 90-99% in the literature. Are you comfortable if I use 90%

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

Email: cvpakala@carolina.rr.com



AIR PERMIT APPLICATION

Pinnacle Renewable Energy Inc. > Newton, Mississippi



Wood Pellet Production Facility

TRINITY CONSULTANTS

1 Perimeter Park S Suite 100N Birmingham, AL 35243 (205) 970-6035

August 2019 Revised November 2019 Revised January 2020

Project 190101.0031



EHS solutions delivered uncommonly well

Appendix B - Detailed Emissions Calculations Pinnacle Renewable Energy Inc. - Newton Facility

Table B-23. Potential PM Emissions from Screening

		Potential	Emission Factors ²				ential Emissi	
EP ID	Emission Unit	Throughput ¹ (tpy)	PM	(lb/ton) PM ₁₀	PM _{2.5}	PM (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)
F-SC1 F-SC2	Wet Infeed Screening Pellet Screening	880,000 440,000	1.76E-03 3.15E-02	8.40E-04 1.50E-02	1.76E-04 3.15E-03	7.76E-01 6.93	3.70E-01 3.30	7.76E-02 0.69

^{1.} The potential throughput for wet infeed screening is based on the green material throughput. The potential throughput for pellet screening is based on the facility's production capacity.

^{2.} Emission factors from the "Rock Crushing Plants," Table 6, published by TCEQ (February 2002). Wet screening factors were used for wet infeed screening. Dry screening factors were used for pellet screening. PM_{2.5} conservatively assumed 10% of PM.

^{3.} Potential Emissions from screening are calculated as follows: Potential Emissions (tpy) = Emission Factor (lb/ton) x Throughput (ton/year) ÷ 2,000

Re: [External] Request

CHUCK PAKALA < cvpakala@carolina.rr.com>

Mon 5/10/2021 8:33 AM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to <u>Report Spam.</u>

Thanks Greg. I think, Tyler used 99.9% in the C-Form. I will use the same 99.9% in my calcs.

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

Email: cvpakala@carolina.rr.com

From: Reeves, Gregory W

Sent: Monday, May 10, 2021 8:01 AM

To: CHUCK PAKALA

Subject: Re: [External] Request

A cartridge filter is generally 99.9%, similar to a bagfilter. If not certain, refer to the manufacturer's data



Greg Reeves
Compliance Coordinator
Division of Air Quality, Fayetteville Regional Office
225 Green Street, Suite 714 910.433.3373 (Office)
Fayetteville, NC 28301-5043
Gregory.Reeves@ncdenr.gov

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From: CHUCK PAKALA < cvpakala@carolina.rr.com>

Sent: Sunday, May 9, 2021 4:07 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Subject: [External] Request

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to <u>Report Spam.</u>

Greg,

What is a conservative estimate efficiency for a cartridge filter. I am seeing 90-99% in the literature. Are you comfortable if I use 90%

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

Email: cvpakala@carolina.rr.com

VIA << HAND DELIVERY/CERTIFIED MAIL RETURN RECEIPT REQUESTED >>

Dixon Ivey Jr. Zoning Director Robeson County Zoning Dept 415 Country Club Rd Lumberton, NC 28360 910-671-6298/272-6520

RECEIVED

MAY 1 0 2021

DEQ-FAYETTEVILLE REGIONAL OFFICE

Current Air Permit No. 10636R00

Dear Mr. Ivey:

On behalf of Active Energy Renewable Power (AERP) previously known as Lumberton Energy Holdings located 1885 Alamac Road, Lumberton, NC, I am writing to inform you that we intend to install and operate a wood pellet manufacturing operations at the subject site. Please note an air permit (#10636R00) for our operations was approved in the past and we adding a few control equipment to the operation. Based on my conversations with your Zoning Dept., I hereby certify that to the best of my knowledge, that the Robeson County is the only local government having jurisdiction over this part of the land for an approval.

In accordance with § 143-215.108(f) of the North Carolina General Statutes, we hereby request that you issue a determination as to whether your municipality has in effect a zoning or subdivision ordinance that is applicable to the proposed facility. Additionally, please issue a determination as to whether the proposed use would be consistent with applicable zoning or subdivision ordinances. For your convenience, I have included a form with which you may remit your determination and a copy of the draft air permit application. As a means of demonstrating proof of transmittal, please sign, title, stamp, and date the enclosed form and mail to both the facility mailing address and the checked air quality office at your earliest convenience.

Thank you for your prompt attention to this matter. If you have any questions regarding this request, please contact me at 910-547-1920 or Ms. Doris Sampson at 910-734-5863 or Mr. Chuck Pakala at 704-541-4042.

Sincerely

Ron Gaskins Plant Manager 910-840-7922

Enclosures:

Zoning Consistency Determination Form Air Permit Application

Zoning Consistency Determination

Facility Name	ACTIVE ENERGY RENEWABLE POWER (AE	ERP)
Facility Street Address	1885 ALAMAC ROAD	
Facility City	LUMBERTON, NC 28359	
Description of Process	WOOD PELLET MAKING	
SIC/NAICS Code	2499/321999	
Facility Contact	MR. RON GASKINS	
Phone Number	910-840-7922 (cell)	
Mailing Address	1885 ALAMAC ROAD	
Mailing City, State Zip	LUMBERTON, NC 28359	
Based on the information given	above:	
	the air permit application (final)	
	ning ordinances for this facility at this time	
The second control of the second control of	consistent with applicable zoning ordinances	
The state of the s	NOT consistent with applicable zoning ordinances	
	f the rules in the package sent to the air quality office)	
The determination is pending	g further information and can not be made at this time	
Cother:		
Agency	Kobeson County	
Name of Designated Official	Trucha Turk Ton	
	- 1/1×011 - 1/14	
Title of Designated Official	Director Community Dev-	
Signature	Dat 2/0	
Data Comment		
Date	Hpril 29, 2021	
Please forward to the facility mai	iling address listed above and the air quality office	
at the appropriate address as chec	cked on the back of this form.	

All PSD and Title V Applications

Attn: William Willets, PE DAQ – Permitting Section 1641 Mail Service Center Raleigh, NC 27699-1641

Local Programs

Attn: David Brigman
Western NC Regional Air Quality Agency
49 Mount Carmel Road
Asheville, NC 28806
(828) 250-6777

Attn: Leslie Rhodes
Mecklenburg County Air Quality
700 N. Tryon Street, Suite 205
Charlotte, NC 28202-2236
(704) 336-5430

Attn: William Minor Barnette
Forsyth County Office of Environmental
Assistance and Protection
201 N. Chestnut Street
Winston-Salem, NC 27101-4120
(336) 703-2440

Division of Air Quality Regional Offices

Attn: Paul Muller
Asheville Regional Office
2090 U.S. Highway 70
Swannanoa, NC 28778
(828) 296-4500

Attn: HEATHER CARTER Fayetteville Regional Office 225 Green Street, Suite 714 Fayetteville, NC 28301 (910) 433-3300

Attn: Ron Slack
Mooresville Regional Office
610 East Center Avenue, Suite 301
Mooresville, NC 28115
(704) 663-1699

Attn: Patrick Butler, PE Raleigh Regional Office 1628 Mail Service Center Raleigh, NC 27699-1628 (919) 791-4200 Attn: Robert Fisher
Washington Regional Office
943 Washington Square Mall
Washington, NC 27889
(252) 946-6481

Attn: Brad Newland
Wilmington Regional Office
127 Cardinal Drive Extension
Wilmington, NC 28405
(910) 796-7215

Attn: Lisa Edwards, PE
 Winston-Salem Regional Office
 450 West Hanes Mill Road, Suite 300
 Winston-Salem, NC 27105
 (336) 776-9800

Please add a signed copy of the permit application package with the Form

[External] Revised files as requested

CHUCK PAKALA < cvpakala@carolina.rr.com>

Tue 5/11/2021 3:05 PM

To: Reeves, Gregory W <gregory.reeves@ncdenr.gov>; Michael Rowan <michael.rowan@aegplc.com>; Tyler Player <tyler@playerdesign.net>; Brad Crone
bradcrone@campaignconnections.com>

Cc: Jennifer Scott <jscott@SHIPMANLAW.COM>; Andrew Diamond <andrew.diamond@aegplc.com>; Ron Gaskins <Ronald.Gaskins@aegplc.com>; Doris Sampson <doris.sampson@aegplc.com>; jkohn@kohnassociates.net <jkohn@kohnassociates.net>



B_2019 NEW 051021.pdf; All Emissions Calcs-GREG HAP EFs 051021.pdf; C_Forms Tyler051021.pdf; D1 NEW 051021.pdf; Pinnacle Newton Application Revised (2020 01 24) 1.pdf; Pinnacle Newton Application Revised (2020 01 24) 40.pdf; filter- EPA-P1008OHA.pdf; Cyclone efficiency.pdf; 13-PJ-100 CARTRIDGE FILTER.pdf; 11-pelletVOCs 1.pdf; 12-pelletVOCs 19.pdf;

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to <u>Report Spam.</u>

Greg,

Thank you for your kind help and progress of this project. Please see our response in the attached revised files for your prompt action. Please note, the second cyclone (CD-3) that we will using on the Pelletizer and Pellet Cooling is an used one and we do not have any manufacturer info on that unit at this time. We used very conservative efficiency on that unit as discussed. Please let me know if you have any questions or need any additional information.

Any questions on this package, please email them to me and Tyler ONLY.

Regards

Chuck Pakala, PE
CP Engineering and Environmental Solutions
704-756-7451 (cell)
704-541-4043 (fax)
Email: cvpakala@carolina.rr.com

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B (ALREADY APPROVED)

REVISED 09/22/16	NCDEQ/Division	of Air Quality - A	pplication for	Air Permit to (Construct/Ope	erate		В
EMISSION SOURCE DESCRIPTION: ONE 2	OMMBTU/HR NA	BTU/HR NATURAL GAS FIRED BOILER EMISSION SOURCE ID NO:ES-B-1						
				CONTROL DE	VICE ID NO(S	S):NA		
OPERATING SCENARIO1	OF	1		EMISSION PO	,	,	3-1	
DESCRIBE IN DETAILTHE EMISSION SOUR 20MMBTU/HR NATURAL GAS FIRED BOILE		•	IAGRAM):					
TYPE OF EMISSION S	OURCE (CHECK	AND COMPLETE	APPROPRIA	TE FORM R1-F	R9 ON THE EC	I I OWING PA	GES):	
Coal,wood,oil, gas, other burner (Form B	•	Woodworking		IL I OKWI BI-L		of chemicals/c	•	Form B7)
Int.combustion engine/generator (Form B	,		,	orm B5)			•	om br)
Liquid storage tanks (Form B3)	-2)	= -	oating/finishing/printing (Form B5)					
START CONSTRUCTION DATE:NOVEMBER	2 2019		•	FACTURED: N		•		
MANUFACTURER / MODEL NO.:	(2013			OP. SCHEDULI			Y/WK52_	WK/YR
	SPS (SUBPARTS	(2).	EXI EOTED C		AP (SUBPART		(17VII52_	_ **********
PERCENTAGE ANNUAL THROUGHPUT (%)	,	25 MAR-M	AY 25	JUN-AUG	,	SEP-NOV 2		
		ITANT EMISSI					<u> </u>	
		SOURCE OF		D ACTUAL		POTENTIAL	EMISSIONS	
		EMISSION		ROLS / LIMITS)	(BEFORE CONT	1		ROLS / LIMITS)
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)		AP-42/NC DEQ	0.01	0.04	0.01	0.04	0.01	0.04
PARTICULATE MATTER<10 MICRONS (PM ₁₀)		AP-42/NC DEQ	0.01	0.04	0.01	0.04	0.01	0.04
PARTICULATE MATTER<2.5 MICRONS (PM _{2.5}))	AP-42/NC DEQ	0.01	0.03	0.01	0.04	0.01	0.04
SULFUR DIOXIDE (SO2)		AP-42/NC DEQ	0.01	0.05	0.01	0.05	0.01	0.05
NITROGEN OXIDES (NOx)		AP-42/NC DEQ	1.96	7.84	1.96	8.59	1.96	8.59
CARBON MONOXIDE (CO)		AP-42/NC DEQ	1.65	6.59	1.65	7.21	1.65	7.21
VOLATILE ORGANIC COMPOUNDS (VOC)		AP-42/NC DEQ	0.11	0.43	0.11	0.47	0.11	0.47
LEAD					_		_	
OTHER								
HAZARDO	US AIR POLI	LUTANT EMIS	SIONS INFO	DRMATION	FOR THIS	SOURCE		
		SOURCE OF	EXPECTE	D ACTUAL		POTENTIAL	EMISSIONS	
		EMISSION	(AFTER CONT	ROLS / LIMITS)	(BEFORE CONT	ROLS / LIMITS)	(AFTER CONT	ROLS / LIMITS)
HAZARDOUS AIR POLLUTANT	CAS NO.	FACTOR	lb/hr	lbs/yr	lb/hr	lbs/yr	lb/hr	lbs/yr
AMMONIA (T)	7664417	AP-42/NC DEQ	6.27E-02	501.95	6.27E-02	549.65	6.27E-02	549.65
Benzene (TH)	71432	AP-42/NC DEQ	4.12E-05	0.33	4.12E-05	0.36	4.12E-05	0.36
Cobalt unlisted compounds (H)	COC-other	AP-42/NC DEQ	1.65E-06	0.01	1.65E-06	0.01	1.65E-06	0.01
Formaldehyde (TH)	50000	AP-42/NC DEQ	1.47E-03	11.76	1.47E-03	12.88	1.47E-03	12.88
Hexane, n- (TH)	110543	AP-42/NC DEQ	3.53E-02	282.35	3.53E-02	309.18	3.53E-02	309.18
Lead unlisted compounds (H)	PBC-other	AP-42/NC DEQ	9.80E-06	0.08	9.80E-06	0.09	9.80E-06	0.09
Napthalene (H)	91203	AP-42/NC DEQ	1.20E-05	0.10	1.20E-05	0.10	1.20E-05	0.10
Toluene (TH)	108883	AP-42/NC DEQ	6.67E-05	0.53	6.67E-05	0.58	6.67E-05	0.58
TOXIC	AIR POLLUT	ANT EMISSIO	NS INFORM	IATION FOI	R THIS SOL	JRCE		
		SOURCE OF EMISSION	EXPE	CTED ACTUAL	. EMISSIONS	AFTER CONTI	ROLS / LIMIT <i>I</i>	ATIONS
TOXIC AIR POLLUTANT	CAS NO.	FACTOR	lb	/hr	lb/d	day	lb	/yr
Acetaldehyde (TH)	75070	AP-42/NC DEQ	2.98	E-07	6.56	E-06	0.	00
Acrolein (TH)	107028	AP-42/NC DEQ	3.53	E-07	7.76	E-06	0.	00
Ammonia (T)	7664417	AP-42/NC DEQ	6.27	E-02	1.38	E+00	50 ⁻	1.95
Arsenic unlisted compounds (TH)	ASC-other	AP-42/NC DEQ	1	E+00	0.00			00
Benzene (TH)	71432	AP-42/NC DEQ		E-05	9.06			33
Benzo(a)pyrene (TH)	50328	AP-42/NC DEQ		E-08	5.18			00
Formaldehyde (TH)	50000	AP-42/NC DEQ		E-03	3.24			.76
Hexane, n- (TH)	110543	AP-42/NC DEQ		E-02	7.76			2.35
Toluene (TH)	108883	AP-42/NC DEQ		E-05		E-03		53
Attachments: (1) emissions calculations and suppor								
describe how these are monitored and with what fre	•						, . ,	,

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B (ALREADY APPROVED)

REVISED 09/22/16	NCDEQ/Division	of Air Quality - Ap	oplication for	Air Permit to	Construct/Ope	erate		В
EMISSION SOURCE DESCRIPTION: ONE	4MMBTU/HR NA	TURAL GAS FIREI) BOILER	EMISSION SO	OURCE ID NO	:ES-D-1	-	
OPERATING SCENARIO1	OF	1			Other (Form B9) JRED: NOVEMBER 2019 HEDULE:22_ HR/DAY7_ DAY/WK NESHAP (SUBPARTS?): NA JUN-AUG			
DESCRIBE IN DETAILTHE EMISSION SOL 4MMBTU/HR NATURAL GAS FIRED DRYE		•	•					
TYPE OF EMISSION S	OURCE (CHECK	AND COMPLETE	APPROPRIA	TE FORM B1-	B9 ON THE FO	OLLOWING PA	AGES):	
Coal,wood,oil, gas, other burner (Form I	•	Woodworkin		i i i okui bi			•	Form B7)
Int.combustion engine/generator (Form	,	=	hing/printing (F	Form B5)			•	2.,
Liquid storage tanks (Form B3)		= -	bins (Form B			•	-,	
START CONSTRUCTION DATE:NOVEMBE	R 2019		•	•		,		
MANUFACTURER / MODEL NO.:							AY/WK 52	WK/YR
	SPS (SUBPARTS	S?):NA						
PERCENTAGE ANNUAL THROUGHPUT (%	1	25 MAR-	MAY 25		,	,		
,	,							
		SOURCE OF		D ACTUAL			EMISSIONS	
		EMISSION		ROLS / LIMITS)	(BEFORE CONT		(AFTER CONTR	ROLS / LIMITS)
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr			ī	tons/yr
PARTICULATE MATTER (PM)		AP-42/NC DEQ	0.00	,		,	0.01	0.04
PARTICULATE MATTER<10 MICRONS (PM ₁₀)		AP-42/NC DEQ	0.00				0.01	0.04
PARTICULATE MATTER<2.5 MICRONS (PM ₂		AP-42/NC DEQ	0.00				0.01	0.04
SULFUR DIOXIDE (SO2)	5,	AP-42/NC DEQ	0.00				0.00	0.01
NITROGEN OXIDES (NOx)		AP-42/NC DEQ	0.39	1.57		1.72	0.39	1.72
CARBON MONOXIDE (CO)		AP-42/NC DEQ	0.33	1.32		1.44	0.33	1.44
VOLATILE ORGANIC COMPOUNDS (VOC)		AP-42/NC DEQ	0.02			0.09	0.02	0.09
LEAD								
OTHER								
HAZARDO	US AIR POLL	UTANT EMISS	SIONS INFO	DRMATION	FOR THIS	SOURCE		
		SOURCE OF	EXPECTE	D ACTUAL		POTENTIAL	EMISSIONS	
		EMISSION	(AFTER CONT	ROLS / LIMITS)	(BEFORE CONT	ROLS / LIMITS)	(AFTER CONTR	ROLS / LIMITS)
HAZARDOUS AIR POLLUTANT	CAS NO.	FACTOR	lb/hr	lbs/yr	lb/hr	lbs/yr	lb/hr	lbs/yr
AMMONIA (T)	7664417	AP-42/NC DEQ	1.25E-02	100.38	1.25E-02	109.93	1.25E-02	109.93
Benzene (TH)	71432	AP-42/NC DEQ	8.24E-06	0.07	8.24E-06	0.07	8.24E-06	0.07
Cobalt unlisted compounds (H)	COC-other	AP-42/NC DEQ	3.29E-07	0.00	3.29E-07	0.00	3.29E-07	0.00
Formaldehyde (TH)	50000	AP-42/NC DEQ	2.94E-04	2.35	2.94E-04	2.58	2.94E-04	2.58
Hexane, n- (TH)	110543	AP-42/NC DEQ	7.06E-03	56.47	7.06E-03	61.84	7.06E-03	61.84
Lead unlisted compounds (H)	PBC-other	AP-42/NC DEQ	1.96E-06	0.02	1.96E-06	0.02	1.96E-06	0.02
Napthalene (H)	91203	AP-42/NC DEQ	2.39E-06	0.02	2.39E-06	0.02	2.39E-06	0.02
Toluene (TH)	108883	AP-42/NC DEQ	1.33E-05	0.11			1.33E-05	0.12
TOXIC	AIR POLLUT	ANT EMISSIO	<u>VS INFORM</u>	<u>IATION FO</u>	R THIS SOL	URCE		
		SOURCE OF EMISSION	EXPEC	CTED ACTUAL	EMISSIONS /	AFTER CONT	ROLS / LIMIT	ATIONS
TOXIC AIR POLLUTANT	CAS NO.	FACTOR	lb	/hr	lb/d	day	lb/	/yr
Acetaldehyde (TH)	75070	AP-42/NC DEQ	5.96	E-08	1.31	E-06	0.0	00
Acrolein (TH)	107028	AP-42/NC DEQ	7.06	E-08	1.55	E-06	0.0	00
Ammonia (T)	7664417	AP-42/NC DEQ	1.25	E-02	2.76	E-01	100).38
Arsenic unlisted compounds (TH)	ASC-other	AP-42/NC DEQ	0.00	E+00	0.00	E+00	0.0	00
Benzene (TH)	71432	AP-42/NC DEQ	8.24	E-06	1.81	E-04	0.0	07
Benzo(a)pyrene (TH)	50328	AP-42/NC DEQ	4.71	E-09	1.04	E-07	0.0	00
Formaldehyde (TH)	50000	AP-42/NC DEQ	2.94	E-04	6.47	E-03	2.3	35
Hexane, n- (TH)	110543	AP-42/NC DEQ		E-03	1.55			.47
Toluene (TH)	108883	AP-42/NC DEQ	1.33	E-05	2.93	E-04	0.	11
Attachments: (1) emissions calculations and suppor describe how these are monitored and with what free						. hours of operat	ion, emission rate	es) and

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM B (ALREADY APPROVED)

REVISED 09/22/16 N	ICDEQ/Division	of Air Quality - Ap	oplication for	Air Permit to	Construct/Op	erate		D
EMISSION SOURCE DESCRIPTION: PRESS	SURE COOKER	W/CONDENSER		EMISSION SO	OURCE ID NO	:ES-P-1		
				CONTROL DI	EVICE ID NO(S):CD-1		
OPERATING SCENARIO1	OF	1		EMISSION PO	OINT (STACK)	ID NO(S):EP-	CD-1	
DESCRIBE IN DETAILTHE EMISSION SOUI PRESSURE COOKER WITH A CONDENSE		(ATTACH FLOW I	DIAGRAM):					
TYPE OF EMISSION SO	OURCE (CHECK	AND COMPLETE	APPROPRIA	TE FORM B1-	B9 ON THE F	OLLOWING PA	AGES):	
Coal,wood,oil, gas, other burner (Form B	•	Woodworkin				of chemicals/	•	Form B7)
Int.combustion engine/generator (Form B	•	_	hing/printing (F	Form B5)	Inciner	ation (Form B8	3)	,
Liquid storage tanks (Form B3)	,	= -	s/bins (Form B	,	U Other (•	,	
START CONSTRUCTION DATE:NOVEMBER	R 2019		DATE MANU	FACTURED: N	NOVEMBER 20	019		
MANUFACTURER / MODEL NO.:			EXPECTED (OP. SCHEDUL	.E:22_ HR/I	DAY7_ D	AY/WK52	WK/YR
IS THIS SOURCE SUBJECT TO? NS	SPS (SUBPARTS	S?):	•	☐ NESH	AP (SUBPART	S?):		
PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB	25 MAR-	MAY 25	JUN-AU	JG 25	SEP-NOV	25	
CRITERIA	AIR POLLU	ITANT EMISSI	ONS INFOR	RMATION F	OR THIS S	OURCE		
		SOURCE OF	EXPECTE	D ACTUAL		POTENTIAL	EMISSIONS	
		EMISSION		ROLS / LIMITS)	(BEFORE CONT	ROLS / LIMITS)	(AFTER CONTI	ROLS / LIMITS)
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)				·		j		,
PARTICULATE MATTER<10 MICRONS (PM ₁₀)								
PARTICULATE MATTER<2.5 MICRONS (PM _{2.5})	1							
SULFUR DIOXIDE (SO2)								
NITROGEN OXIDES (NOx)								
CARBON MONOXIDE (CO)								
VOLATILE ORGANIC COMPOUNDS (VOC)		AP-42/NC DEQ	0.96	3.85	4.82	21.09	0.96	4.22
LEAD								
OTHER								
HAZARDOL	JS AIR POLL	LUTANT EMISS	SIONS INFO	ORMATION	FOR THIS	SOURCE		
		SOURCE OF	EXPECTE	EXPECTED ACTUAL		POTENTIAL	EMISSIONS	
		EMISSION	(AFTER CONT	ROLS / LIMITS)	(BEFORE CONT	ROLS / LIMITS)	(AFTER CONTR	ROLS / LIMITS)
HAZARDOUS AIR POLLUTANT	CAS NO.	FACTOR	lb/hr	lbs/yr	lb/hr	lbs/yr	lb/hr	lbs/yr
Acetaldehyde (TH)	75070	AP-42/NC DEQ	5.76E-02	460.80	2.88E-01	2522.88	5.76E-02	504.58
Acrolein (TH)	107028	AP-42/NC DEQ	0.00E+00	0.00	0.00E+00	0.00	0.00E+00	0.00
Formaldehyde (TH)	50000	AP-42/NC DEQ	6.09E-02	487.44	3.05E-01	2668.73	6.09E-02	533.75
Methanol	67561	AP-42/NC DEQ	2.68E-02	214.56	1.34E-01	1174.72	2.68E-02	234.94
Phenol	108952	AP-42/NC DEQ	0.00E+00	0.00	0.00E+00	0.00	0.00E+00	0.00
Propionaldehyde	123386	AP-42/NC DEQ	3.54E-02	282.96	1.77E-01	1549.21	3.54E-02	309.84
TOYIC	ND DOLLUT	ANT EMISSION	NC INFORM	MATION FO		UDCE		
TOXICA	T TOLLUT	I	VS INFORM	MATION FO	K 1113 300	UKCE		
		SOURCE OF EMISSION	EXPEC	CTED ACTUAL	EMISSIONS	AFTER CONT	ROLS / LIMITA	ATIONS
TOXIC AIR POLLUTANT	CAS NO.	FACTOR	Ib	/hr	lb/d	day	lb	/yr
Acetaldehyde (TH)	75070	AP-42/NC DEQ	5.76	SE-02	1.3	27	460).80
Acrolein (TH)	107028	AP-42/NC DEQ	0.00	E+00	0.	00	0.	00
Formaldehyde (TH)	50000	AP-42/NC DEQ	6.09	9E-02	1.3	34	487	7.44
							 	
			-					
		(2)	<u> </u>					
Attachments: (1) emissions calculations and supporti						. nours of operat	ion, emission rat	es) and

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM B

REVISED 09/22/16 NC	DEQ/Division	of Air Quality - A	pplication for	Air Permit to	Construct/Op	erate		В
EMISSION SOURCE DESCRIPTION: SCREW	PRESS/DRYE	R	EMISSION SOURCE ID NO:ES-SPD-1				,	
					EVICE ID NO(
OPERATING SCENARIO1	OF	1		i e	,) ID NO(S):EP-	-SPD-1	
DESCRIBE IN DETAILTHE EMISSION SOURGE SCREW PRESS AND DRYER	CE PROCESS	(ATTACH FLOW I	DIAGRAM):					
TYPE OF EMISSION SOU	IRCE (CHECK	AND COMPLETE	APPROPRIA	TE FORM B1.	R9 ON THE F	OLI OWING P	AGES):	
Coal,wood,oil, gas, other burner (Form B1)	•	Woodworkin		TETOKWI BI-		of chemicals/	•	(Form B7)
Int.combustion engine/generator (Form B2		=	g (1 01111 B 1) hing/printing (F	Form B5)		ation (Form B		, o <i>D1</i> /
Liquid storage tanks (Form B3)	,		s/bins (Form B			(Form B9)	٥,	
START CONSTRUCTION DATE:NOVEMBER	2019			FACTURED: N				
MANUFACTURER / MODEL NO.:				OP. SCHEDUL			0AY/WK52	WK/YR
	S (SUBPARTS	S?):NA			AP (SUBPART		NA	
PERCENTAGE ANNUAL THROUGHPUT (%):	•	25 MAR-	MAY 25	JUN-AL	,	SEP-NOV	25	
		TANT EMISSI						
-		SOURCE OF		D ACTUAL			EMISSIONS	
		EMISSION		ROLS / LIMITS)	(BEFORE CON			ROLS / LIMITS)
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)			6.67	i	7.30	29.2	7.30	
PARTICULATE MATTER<10 MICRONS (PM ₁₀)			0.07		0.07	0.29	0.07	
PARTICULATE MATTER<2.5 MICRONS (PM _{2.5})			0.02		0.02	0.07	0.02	0.07
SULFUR DIOXIDE (SO2)								
NITROGEN OXIDES (NOx)								
CARBON MONOXIDE (CO)								
VOLATILE ORGANIC COMPOUNDS (VOC)		AP-42/NC DEQ	4.82	19.26	4.82	21.09	4.82	21.09
LEAD								
OTHER								
HAZARDOU	S AIR POLL	UTANT EMIS	SIONS INFO	ORMATION	FOR THIS	SOURCE		
		SOURCE OF	EXPECTE	D ACTUAL	POTENTIAL		EMISSIONS	
		EMISSION	(AFTER CONT	ROLS / LIMITS)	(BEFORE CON	TROLS / LIMITS)	(AFTER CONTROLS / LIMITS)	
HAZARDOUS AIR POLLUTANT	CAS NO.	FACTOR	lb/hr	lbs/yr	lb/hr	lbs/yr	lb/hr	lbs/yr
Acetaldehyde (TH)	75070	AP-42/NC DEQ	1.16E-01	925.20	1.16E-01	1013.09	1.16E-01	1013.09
Acrolein (TH)	107028	AP-42/NC DEQ	0.00E+00	0.00	0.00E+00	0.00	0.00E+00	0.00
Formaldehyde (TH)	50000	AP-42/NC DEQ	6.30E-03	50.40	6.30E-03	55.19	6.30E-03	55.19
Methanol	67561	AP-42/NC DEQ	2.03E-02	162.00	2.03E-02	177.39	2.03E-02	177.39
Phenol	108952	AP-42/NC DEQ	0.00E+00	0.00	0.00E+00	0.00	0.00E+00	0.00
Propionaldehyde	123386	AP-42/NC DEQ	2.03E-02	162.00	2.03E-02	177.39	2.03E-02	177.39
TOXIC A	IR POLLUT	ANT EMISSIO	NS INFORM	<u>NATION FO</u>	R THIS SO	URCE		
		SOURCE OF EMISSION	EXPEC	CTED ACTUAL	. EMISSIONS	AFTER CONT	ROLS / LIMIT	ATIONS
TOXIC AIR POLLUTANT	CAS NO.	FACTOR	lb	/hr	lb/	day	lb	/yr
Acetaldehyde (TH)	75070	AP-42/NC DEQ	1.16	SE-01	2.	54	925	5.20
Acrolein (TH)	107028	AP-42/NC DEQ	0.00	E+00	0.	00	0.	.00
Formaldehyde (TH)	50000	AP-42/NC DEQ	6.30	E-03	0.	14	50).40
		1						
			<u> </u>					
Attachments: (1) emissions calculations and supporting	documentation:	(2) indicate all reques	ted state and fed	deral enforceable	permit limits (e./	i, hours of operat	tion, emission rat	tes) and
describe how these are monitored and with what freque						, or opoid	, 5666611141	,

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM B

REVISED 09/22/16 NC	DEQ/Division	of Air Quality - A	pplication for	Air Permit to	Construct/Op	erate		D
EMISSION SOURCE DESCRIPTION: PELLET	ZER AND PEI	LET COOLER	EMICOION COONCE ID NO.EC 11 1					
				CONTROL DI	EVICE ID NO(S):CD-3		
OPERATING SCENARIO1	OF	1		EMISSION PO	DINT (STACK)	ID NO(S):EP-	PP-1	
DESCRIBE IN DETAILTHE EMISSION SOURG SCREW PRESS AND DRYER	CE PROCESS	(ATTACH FLOW	DIAGRAM):					
TYPE OF EMISSION SOU	IRCE (CHECK	AND COMPLETE	E APPROPRIA	TE FORM B1-	B9 ON THE F	OLLOWING P	AGES):	
Coal,wood,oil, gas, other burner (Form B1)	•	Woodworkin					coatings/inks (F	Form B7)
Int.combustion engine/generator (Form B2)			hing/printing (F	Form B5)	_	ation (Form B8		,
Liquid storage tanks (Form B3)		= "	s/bins (Form B	,	_	Form B9)	-,	
START CONSTRUCTION DATE:NOVEMBER 2	2019		DATE MANU	FACTURED: N	OVEMBER 20)19		
MANUFACTURER / MODEL NO.:			1	OP. SCHEDUL			0AY/WK52_	WK/YR
	S (SUBPARTS	S?): NA			AP (SUBPART		NA	
PERCENTAGE ANNUAL THROUGHPUT (%):		25 MAR-	MAY 25	JUN-AU		SEP-NOV		
		TANT EMISSI				OURCE		
		SOURCE OF		D ACTUAL			EMISSIONS	
		EMISSION		ROLS / LIMITS)	(BEFORE CONT		(AFTER CONTE	ROLS / LIMITS)
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)			0.45	1	0.69	3.04	0.45	1.97
PARTICULATE MATTER<10 MICRONS (PM ₁₀)			0.08		0.40	1.74	0.08	0.35
PARTICULATE MATTER<2.5 MICRONS (PM _{2.5})			1					
SULFUR DIOXIDE (SO2)								
NITROGEN OXIDES (NOx)								
CARBON MONOXIDE (CO)								
VOLATILE ORGANIC COMPOUNDS (VOC)		AP-42/NC DEQ	2.25	9.00	2.25	9.86	2.25	9.86
LEAD			-					
OTHER								
	S AIR POLL	UTANT EMIS	SIONS INFO	ORMATION	FOR THIS	SOURCE		
		SOURCE OF	EXPECTE	D ACTUAL		POTENTIAL	EMISSIONS	
	EMISSION		(AFTER CONT	ROLS / LIMITS)	(BEFORE CONT	ROLS / LIMITS)	(AFTER CONTR	ROLS / LIMITS)
HAZARDOUS AIR POLLUTANT	CAS NO.	FACTOR	lb/hr	lbs/yr	lb/hr	lbs/yr	lb/hr	lbs/yr
Acetaldehyde (TH)	75070	AP-42/NC DEQ	1.16E-01	925.20	1.16E-01	1013.09	1.16E-01	1013.09
Acrolein (TH)	107028	AP-42/NC DEQ	0.00E+00	0.00	0.00E+00	0.00	0.00E+00	0.00
Formaldehyde (TH)	50000	AP-42/NC DEQ	6.30E-03	50.40	6.30E-03	55.19	6.30E-03	55.19
Methanol	67561	AP-42/NC DEQ	2.03E-02	162.00	2.03E-02	177.39	2.03E-02	177.39
Phenol	108952	AP-42/NC DEQ	0.00E+00	0.00	0.00E+00	0.00	0.00E+00	0.00
Propionaldehyde	123386	AP-42/NC DEQ	2.03E-02	162.00	2.03E-02	177.39	2.03E-02	177.39
TOXIC AI	R POLLUT	ANT EMISSIO	NS INFORM	MATION FO	R THIS SO	URCE		
		SOURCE OF EMISSION	EXPE	CTED ACTUAL	. EMISSIONS	AFTER CONT	ROLS / LIMITA	ATIONS
TOXIC AIR POLLUTANT	CAS NO.	FACTOR	Ib	/hr	lb/d	day	lb/	/yr
Acetaldehyde (TH)	75070	AP-42/NC DEQ	1.16	SE-01	2.	54	925	.20
Acrolein (TH)	107028	AP-42/NC DEQ	0.00	E+00	0.	00	0.0	00
Formaldehyde (TH)	50000	AP-42/NC DEQ	6.30	E-03	0.	14	50.	.40
				-				-
				-				-
Attachments: (1) emissions calculations and supporting						g. hours of opera	ation, emission ra	ates) and
describe how these are monitored and with what frequence	auch, and the god	scrine any monitorina	LIEVICES USTITUDE	or test norte for	TITLE SOURCE			

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM B

REVISED 09/22/16 NC	DEQ/Division	of Air Quality - A	pplication for	Air Permit to	Construct/Op	erate		Ь	
EMISSION SOURCE DESCRIPTION: PELLET	: PELLET SCREEN EMISSION SOURCE ID NO:ES-PSC-1								
				CONTROL DI	EVICE ID NO(S):CD-4			
OPERATING SCENARIO1	OF	1		EMISSION PO	DINT (STACK)	ID NO(S):EP-	-PSC-1		
DESCRIBE IN DETAILTHE EMISSION SOUR SCREW PRESS AND DRYER	CE PROCESS	(ATTACH FLOW	DIAGRAM):						
TYPE OF EMISSION SOU	JRCE (CHECK	AND COMPLETE	APPROPRIA	TE FORM B1-	B9 ON THE F	OLLOWING P	AGES):		
Coal,wood,oil, gas, other burner (Form B1	•	Woodworkin					coatings/inks (Form B7)	
Int.combustion engine/generator (Form B2	•		hing/printing (F	Form B5)	_	ation (Form B	•	,	
Liquid storage tanks (Form B3)	,	= "	s/bins (Form B	,	_	(Form B9)	-,		
START CONSTRUCTION DATE:NOVEMBER	2019		DATE MANU	FACTURED: N	OVEMBER 2	019			
MANUFACTURER / MODEL NO.:			1	OP. SCHEDUL			AY/WK 52	WK/YR	
	PS (SUBPARTS	5?):			AP (SUBPART				
PERCENTAGE ANNUAL THROUGHPUT (%):		25 MAR-	MAY 25	JUN-AU	•	SEP-NOV	25		
		TANT EMISSI							
		SOURCE OF		D ACTUAL			. EMISSIONS		
		EMISSION		ROLS / LIMITS)	(BEFORE CONT			ROLS / LIMITS)	
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	
PARTICULATE MATTER (PM)			0.00	i -	0.14	0.62		•	
PARTICULATE MATTER<10 MICRONS (PM ₁₀)			0.00		0.07	0.32			
PARTICULATE MATTER<2.5 MICRONS (PM _{2.5})			0.00		0.01	0.06	0.00		
SULFUR DIOXIDE (SO2)						0.00	0.00		
NITROGEN OXIDES (NOx)									
CARBON MONOXIDE (CO)									
VOLATILE ORGANIC COMPOUNDS (VOC)		AP-42/NC DEQ							
LEAD									
OTHER									
HAZARDOU	S AIR POLI	UTANT EMIS	SIONS INFO	DRMATION	FOR THIS	SOURCE			
	T	SOURCE OF	EXPECTE	D ACTUAL		POTENTIAL	EMISSIONS		
		EMISSION		ROLS / LIMITS)	(BEFORE CONT			(AFTER CONTROLS / LIMITS)	
HAZARDOUS AIR POLLUTANT	CAS NO.	FACTOR	lb/hr	lbs/yr	lb/hr	lbs/yr	lb/hr	lbs/yr	
Acetaldehyde (TH)	75070	AP-42/NC DEQ	1.16E-01	925.20	1.16E-01	1013.09	1.16E-01	1013.09	
Acrolein (TH)	107028	AP-42/NC DEQ	0.00E+00	0.00	0.00E+00	0.00	0.00E+00	0.00	
Formaldehyde (TH)	50000	AP-42/NC DEQ	6.30E-03	50.40	6.30E-03	55.19	6.30E-03	55.19	
Methanol	67561	AP-42/NC DEQ	2.03E-02	162.00	2.03E-02	177.39	2.03E-02	177.39	
Phenol	108952	AP-42/NC DEQ	0.00E+00	0.00	0.00E+00	0.00	0.00E+00	0.00	
Propionaldehyde	123386	AP-42/NC DEQ	2.03E-02	162.00	2.03E-02	177.39	2.03E-02	177.39	
TOXIC A	IR POLLUT	ANT EMISSIO	NS INFORM	NATION FO	R THIS SO	URCE			
		SOURCE OF EMISSION	EXPE	CTED ACTUAL	. EMISSIONS	AFTER CONT	ROLS / LIMITA	ATIONS	
TOXIC AIR POLLUTANT	CAS NO.	FACTOR	lb	/hr	lb/e	day	lb.	/yr	
Acetaldehyde (TH)	75070	AP-42/NC DEQ	1.16	E-01	2.	54	925	5.20	
Acrolein (TH)	107028	AP-42/NC DEQ	0.00	E+00	0.	00	0.0	.00	
Formaldehyde (TH)	50000	AP-42/NC DEQ	6.30	E-03	0.	14	50	0.40	
Attachments: (1) emissions calculations and supportin						.g. hours of oper	ation, emission ra	ates) and	
describe how these are monitored and with what freque	ency: and (3) dec	crine any monitorina	devices darines	or tost norts for	thic cource				

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B1 (ALREADY APPROVED)

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

REVISED 09/22/16	I	NCDEQ/Division of	Air Quality - A	pplication for Air Per	rmit to Construct	t/Operate		B1
EMISSION SOURCE DESCRIPT	ΓΙΟΝ:ΟΝΕ	20MMBTU/HR NA	TURAL GAS FIF	RED BOILER EMISSI	ON SOURCE ID I	NO:ES-B-1	<u>-</u>	
					OL DEVICE ID N			
OPERATING SCENARIO:	1	OF	1		ON POINT (STAC		:EP-B-1	
DESCRIBE USE: ✓ PRO	CESS HE	AT	SPACE HEAT		ELECTRICAL GE	NERATION		
CON	ITINUOUS	USE	STAND BY/EM	IERGENCY	OTHER (DESCR	IBE):		
HEATING MECHANISM:	[\forall]	INDIRECT		DIRECT		·		
MAX. FIRING RATE (MMBTU/H	OUR):20	INDINCEOT		, blice i				
INVESTIGATE (MINISTER)	0011,.20		WOOD-	FIRED BURNER				
WOOD TYPE: BAR	rk 🗌	WOOD/BARK	☐ WET WO	OD DF	RY WOOD	ОТ	HER (DESCRIBE):	
PERCENT MOISTURE OF FUEL	_:							
UNCONTROLLE	D	CONTROLLE	D WITH FLYAS	H REINJECTION		CONTROLL	.ED W/O REINJEC	TION
FUEL FEED METHOD:			HEAT TRANS		STEAM AIR		(DESCRIBE)	
				FIRED BURNER	<u> </u>		(======================================	
TYPE OF BOILER		IF OTHER DESCR	IBE:					
PULVERIZED OVERFEED S	TOKER	UNDERFEED		SPREADER	STOKER	FLUI	DIZED BED	
□ WET BED □ UNCONTROLLED □ UNCONTRO			LED	UNCONTROLL	_ED	CIRC	CULATING	
☐ DRY BED ☐ CONTROL	LED	CONTROLLE	D	☐ FLYASH REIN	JECTION	REC	RCULATING	
				☐ NO FLYASH R	EINJECTION			
			OIL/GAS	FIRED BURNER	₹			
TYPE OF BOILER:	UTILIT	Y V INDU	STRIAL	COMMERCIAL		INSTITUTIO	DNAL	
TYPE OF FIRING:	✓ <mark>NORM</mark>	AL TANG	ENTIAL	LOW NOX BUR	NERS	NO LOW N	OX BURNER	
			OTHER FU	EL-FIRED BURN	IER			
TYPE(S) OF FUEL:		PE						
TYPE OF BOILER:	UTILIT	Y INDU	STRIAL	COMMERCIAL		INSTITUTIO	DNAL	
TYPE OF FIRING:		TYPE(S) OF	CONTROL(S) (I	F ANY):				
		FUEL USA	GE (INCLUI	DE STARTUP/BA	CKUP FUELS	<u>s)</u>		
				MAXIMUM DESIGN	١		REQUESTED CAP	PACITY
FUEL TYPE		UNITS		CAPACITY (UNIT/HE	₹)		LIMITATION (UNI	T/HR)
NATURAL GAS	MMSC	F			172			157
	FUE	L CHARACTER	•	MPLETE ALL TH	1			TENT
				PECIFIC	SULFUR CON		ASH CON	
FUEL T	YPE		ВІО	CONTENT	(% BY WEIG	HI)	(% BY WE	IGHT)
NATURAL GAS				1020				
COMMENTS:								

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B1 (ALREADY APPROVED)

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

REVISED 09/22/16	NCDEQ/Division of	Air Quality - Application	for Air Pe	rmit to Construct/	Operate	B1
EMISSION SOURCE DESCRIPTION	N:ONE 4MMBTU/HR NATU	RAL GAS FIRED DRYER	EMISSI	ON SOURCE ID N	IO:ES-D-1	
				OL DEVICE ID NO		
OPERATING SCENARIO:	1 OF	1			K) ID NO(S):EP-D-1	
DESCRIBE USE: PROCE	SS HEAT	SPACE HEAT		ELECTRICAL GEI		
		STAND BY/EMERGENC		OTHER (DESCRI		
		DIRECT		OTTIER (DESCRI	DL)	
HEATING MECHANISM:		☐ DIRECT				
MAX. FIRING RATE (MMBTU/HOU	JK).20	WOOD-FIRED I	BURNER			
WOOD TYPE: BARK	WOOD/BARK	☐ WET WOOD	☐ DF	RY WOOD	OTHER (DES	CRIBE):
PERCENT MOISTURE OF FUEL:		_				<i>-</i>
	CONTROLLE	O WITH FLYASH REINJE	CTION		CONTROLLED W/O R	EINJECTION
FUEL FEED METHOD:		HEAT TRANSFER MED		STEAM AIR	OTHER (DESCRIE	
. 021 . 225211105.		COAL-FIRED B		<u> </u>		
TYPE OF BOILER	IF OTHER DESCRI	BE:				
PULVERIZED OVERFEED STO			PREADER	STOKER	FLUIDIZED BED)
☐ WET BED ☐ UNCONTROL	LED UN	CONTROLL	_ED	CIRCULATING		
☐ DRY BED ☐ CONTROLLE	D CONTROLLE	D FLY	YASH REIN	JECTION	RECIRCULATI	NG
		□ NO	FLYASH R	EINJECTION		
		OIL/GAS-FIRED	BURNER	₹		
TYPE OF BOILER:	UTILITY INDUS	TRIAL COM	MERCIAL		INSTITUTIONAL	
TYPE OF FIRING:	NORMAL TANGE	NTIAL LOW	/ NOX BUR	NERS	NO LOW NOX BURNE	ER .
		OTHER FUEL-FIRE	ED BURN	IER		
TYPE(S) OF FUEL:	PE					
TYPE OF BOILER:	UTILITY INDUS	TRIAL COM	MERCIAL		INSTITUTIONAL	
TYPE OF FIRING:	TYPE(S) OF C	CONTROL(S) (IF ANY):				
	FUEL USA	GE (INCLUDE STAI	RTUP/BA	CKUP FUELS)	
		MAXIMU	JM DESIGN	1	REQUEST	ED CAPACITY
FUEL TYPE	UNITS	CAPACIT	ry (Unit/He	₹)	LIMITATI	ON (UNIT/HR)
NATURAL GAS	MMSCF			35		32
	FUEL CHARACTER	<u> </u>	E ALL TH			
		SPECIFIC		SULFUR CONT		SH CONTENT
FUEL TYF	Έ	BTU CONTEN	Т	(% BY WEIGH	HT) (%	BY WEIGHT)
NATURAL GAS			1020			
COMMENTS:						

ACTIVE ENERGY RENEWABLE POWER

LUMBERTON, NC AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM B9

EMISSION SOURCE (OTHER)

		for Air Permit to Construct/Operat			
EMISSION SOURCE DESCRIPTION: PRESSURE COOKER W/CONDEN	NSER	EMISSION SOURCE ID NO:ES-P-			
		CONTROL DEVICE ID NO(S):CD-			
OPERATING SCENARIO: 1 OF1		EMISSION POINT (STACK) ID NO	(S):EP-CD-1		
DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):PREDETAILS)	ESSURE COOK	ER WITH A CONDENSER (SEE PR	OCESS SCHEMATIC FOR		
MATERIALS ENTERING PROCESS - CONTINUOUS PROC	ESS	MAX. DESIGN	REQUESTED CAPACITY		
TYPE	UNITS	CAPACITY (UNIT/YR)	LIMITATION(UNITYHR)		
WOOD CHIPS	ODT/YR	39420	36000		
MATERIALS ENTERING PROCESS - BATCH OPERATION	MAX. DESIGN	REQUESTED CAPACITY			
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)		
ITE	UNITS	CAPACITI (UNIT/BATCH)	LIMITATION (UNIT/BATCH)		
MAXIMUM DESIGN (BATCHES / HOUR):	•				
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/Y	R):			
FUEL USED:NONE	TOTAL MAXI	MUM FIRING RATE (MILLION BTU/	HR):		
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED	CAPACITY ANNUAL FUEL USE:			
COMMENTS:	INLAGEOTED	ON NOTE I NICHE I GEE GGE.			

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM B9

EMISSION SOURCE (OTHER)

REVISED 09/22/16 NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate						
EMISSION SOURCE DESCRIPTION: SCREW PRESS AND A DRYER		EMISSION SOURCE ID NO:ES-	SPD-1			
		CONTROL DEVICE ID NO(S):C	D-2			
OPERATING SCENARIO:1 OF1	_	EMISSION POINT (STACK) ID N	NO(S):EP-SPD-1			
DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):S SCHEMATIC FOR DETAILS)	CREW PRESS	S W/DRYER TO REDUCE MOIST	FURE (SEE PROCE	SS		
MATERIALS ENTERING PROCESS - CONTINUOUS PROC	ESS	MAX. DESIGN	REQUESTED	CAPACITY		
TYPE	UNITS	CAPACITY (UNIT/YR)	LIMITATION(
WOOD CHIPS	ODT/YR	39420	,	36000		
		90.00				
MATERIAL O ENTERINO PROCESSO - DATOU OPERATI	ON		5-01-0	0.10.10.00		
MATERIALS ENTERING PROCESS - BATCH OPERATION TYPE		MAX. DESIGN CAPACITY (UNIT/BATCH)	REQUESTED			
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (U	NII/BATCH)		
MAXIMUM DESIGN (BATCHES / HOUR):						
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/Y	R):				
FUEL USED:NONE		MUM FIRING RATE (MILLION B	TU/HR):			
MAX. CAPACITY HOURLY FUEL USE:		CAPACITY ANNUAL FUEL USE	·			
COMMENTS:	1					

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM B9

EMISSION SOURCE (OTHER)

REVISED 09/22/16 NCDEQ/Division of Air Quality	- Application	plication for Air Permit to Construct/Operate B9					
EMISSION SOURCE DESCRIPTION: PELLETIZER AND PELLET CO	OLER	EMISSION SOURCE ID NO:ES-I	PP-1				
		CONTROL DEVICE ID NO(S):CI	D-3				
OPERATING SCENARIO:1 OF1	_	EMISSION POINT (STACK) ID N	IO(S):EP-PP-1				
DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):S SCHEMATIC FOR DETAILS)	SCREW PRES	S W/DRYER TO REDUCE MOIST	URE (SEE PROCE	SS			
MATERIALS ENTERING PROCESS - CONTINUOUS PROC	CESS	MAX. DESIGN	REQUESTED	CAPACITY			
TYPE	UNITS	CAPACITY (UNIT/YR)	LIMITATION(
WOOD CHIPS	ODT/YR	39420		36000			
MATERIALS ENTERING PROCESS - BATCH OPERATI	ION	MAX. DESIGN	REQUESTED	CAPACITY			
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (U	NIT/BATCH)			
MAXIMUM DESIGN (BATCHES / HOUR):							
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/Y	′R):					
FUEL USED:NONE	TOTAL MAX	IMUM FIRING RATE (MILLION BT	U/HR):				
MAX. CAPACITY HOURLY FUEL USE: COMMENTS:	REQUESTE	D CAPACITY ANNUAL FUEL USE	<u>:</u>				

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM B9

EMISSION SOURCE (OTHER)

B9

REVISED 09/22/16 NCDEQ/Division of Air Quality	- Application	for Air Permit to Construct/Opera	ate	B9
EMISSION SOURCE DESCRIPTION: PELLET SCREEN		EMISSION SOURCE ID NO:ES-P	SC-1	
		CONTROL DEVICE ID NO(S):CD	-4	
OPERATING SCENARIO:1 OF1	_	EMISSION POINT (STACK) ID NO	O(S):EP-PSC-1	
DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):S SCHEMATIC FOR DETAILS)	SCREW PRES	S W/DRYER TO REDUCE MOIST	JRE (SEE PROCES	Ö
MATERIALS ENTERING PROCESS - CONTINUOUS PROC	CESS	MAX. DESIGN	REQUESTED	CAPACITY
TYPE	UNITS	CAPACITY (UNIT/YR)	LIMITATION(L	
WOOD CHIPS	ODT/YR	39420	- (-	36000
11005 01 III 0	OB I/ III	00 120		
MATERIALS ENTERING PROCESS - BATCH OPERATI	ION	MAX. DESIGN	REQUESTED	CARACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UN	
1112	ONTO	CALACITA (CIVITZATION)	LIMITATION (OF	1176/(1011)
			_	
MAXIMUM DESIGN (BATCHES / HOUR):	(5.4.70)	(D)		
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/Y			
FUEL USED:NONE		MUM FIRING RATE (MILLION BT	•	
MAX. CAPACITY HOURLY FUEL USE: COMMENTS:	REQUESTEL	CAPACITY ANNUAL FUEL USE:		

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM C4

CONTROL DEVICE (CYCLONE, MULTICYCLONE, OR OTHER MECHANICAL)

REVISED 09/22/16	NCDEQ/Di	vision of Air Q	uality - App	lication	for Air Per	mit to Constru	uct/Opera	ite		C4
CONTROL DEVICE ID NO: CD-2		CONTROLS E	MISSIONS	FROM V	VHICH EMI	SSION SOURC	CE ID NO	(S):ES-SPD-1		
EMISSION POINT (STACK) ID NO(S):EP-SPD-1	POSITION IN	SERIES OF	CONTR	OLS	NO.	1	OF	1 UNITS	
OPERATIN	G SCENARIO:									
1 DESCRIBE CONTROL SYSTEM:C included with this documentation , v		•	e cyclone is	also a p		ection device so			NO amount shown in the	ne PFD
POLITANT(S) COLLECTED. (NE	FEODAL CYCLONE)		DM		DMAO	DMO				
POLLUTANT(S) COLLECTED: (INT	,		PM	-	PM10	PM2.			<u> </u>	
BEFORE CONTROL EMISSION RA	ATE (LB/HR):		6.67	-	0.07	0.02		-	_	
CAPTURE EFFICIENCY:			100	_%	100	% 100			%	
CONTROL DEVICE EFFICIENCY:			90	_%	90	% 90	%		%	
CORRESPONDING OVERALL EFF	FICIENCY:		90	%	90	% 90	%		%	
EFFICIENCY DETERMINATION CO	DDE:		-	=		<u> </u>		-	<u> </u>	
TOTAL AFTER CONTROL EMISSI	ON RATE (LB/HR):		6.67	=	0.07	0.02	2		_	
PRESSURE DROP (IN. H ₂ 0):	2_ MIN	6 MAX								
INLET TEMPERATURE (°F):	0F MIN	_400F N	1AX	OUTLE	T TEMPER	RATURE (°F):	0	F MIN	400F MAX	
INLET AIR FLOW RATE (ACFM):15	5556			BULK F	PARTICLE I	DENSITY (LB/F	⁻ T ³):			
POLLUTANT LOADING RATE (GR	/FT ³):0.05 (discharge)						1			
SETTLING CHAMBER	I		CYCLONE					M	ULTICYCLONE	
LENGTH (INCHES):	INLET VELOCITY (FT	/SEC): 50-60fp	s	Ľ C⊪	RCULAR L	RECTANGL	E NO.	TUBES:		
WIDTH (INCHES):	DIMENSIONS (INC	,	ructions			AY UTILIZED		METER OF TU		
HEIGHT (INCHES):	H:31' including dischar				USED:				TION SYSTEM?	
VELOCITY (FT/SEC.):	Inlet 50-60fps	Lb:			RATE (GPI	,		YES	□ NO	
NO. TRAYS:	De:	Lc: S:		MAKE	JP RATE (EMI):		IVERS? YES	□ NO	
NO. BAFFLES:	TYPE OF CYCLONE:		TIONAL	<u> </u>	HIGH EFF	ICIENCY		OTHER	□ NO	
DESCRIBE MAINTENANCE PROC						CILINGT	PAR		ISTRIBUTION	
airlock flaps to avoid carry over. Ac	tive control over cyclone	differential pre	essure.			SIZE (MICRONS		/EIGHT % F TOTAL	CUMULA %	TIVE
DESCRIBE INCOMING AIR STREA		•		•		0-1		0.25%		0.25%
portion shown above to be the portion over the portion over all the portion of th		•				1-10		0.75%		1.00%
SMALLER PARTICLES.						10-25		8%		9.00%
						25-50		15%		24.00%
						50-100		39%		63.00%
						>100		37%		100.00%
DESCRIBE ANY MONITORING DE	VICES CALICES TES	T DODTO FTO	. Differentia	1 ======		valene			TOTAL = 100	
ON A SEPARATE PAGE, ATTACH							ON SOUP	RCE(S):		

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM C4

CONTROL DEVICE (CYCLONE, MULTICYCLONE, OR OTHER MECHANICAL)

REVISED 09/22/16	NCDEQ/Div	vision of Air Qu	uality - App	lication fo	r Air Per	mit to Construct/	Operate	C4
CONTROL DEVICE ID NO: CD-3		CONTROLS E	MISSIONS	FROM WH	ICH EMI	SSION SOURCE I	D NO(S):ES-PP-1	
EMISSION POINT (STACK) ID NO(S):EP-PP-1	POSITION IN S	SERIES OF	CONTROL	S	NO.	1 OF	1 UNITS
OPERATIN	G SCENARIO:						_	
1 DESCRIBE CONTROL SYSTEM :C	OF1		P.E. SEAL				✓ YES	∐ NO
DESCRIBE CONTROL OF STEIN .C	TOLONE IOI COORE AIRC	a pelieuzei. Tiili	s system is	meant to c	onect an	y i w tilat anses itt	on the pentiang a	id cooling process.
POLLUTANT(S) COLLECTED:			PM		PM10			
BEFORE CONTROL EMISSION RA	ATE (LB/HR):		0.69		0.40	<u> </u>		<u> </u>
CAPTURE EFFICIENCY:			100	%	100	%		%
CONTROL DEVICE EFFICIENCY:			80	%	80	%		%
CORRESPONDING OVERALL EFF	FICIENCY:		80	%	80		%	%
EFFICIENCY DETERMINATION CO	DDE:			_			_	<u> </u>
TOTAL AFTER CONTROL EMISSI	ON RATE (LB/HR):		0.45		0.08		_	<u> </u>
PRESSURE DROP (IN. H ₂ 0):	4 MIN	6 MAX						
INLET TEMPERATURE (°F):	_0F MIN	400F M	1AX	OUTLET .	ΓEMPER	ATURE (°F):	0F MIN	400F MAX
INLET AIR FLOW RATE (ACFM):85	500			BULK PAF	RTICLE [DENSITY (LB/FT ³)	:	
POLLUTANT LOADING RATE (GR SETTLING CHAMBER	/FT ³):0.32		CYCLONE				l ,	MULTICYCLONE
LENGTH (INCHES):	INLET VELOCITY (FT	//SEC)·		√ CIRC	II AR T	JRECTANGLE	NO. TUBES:	
WIDTH (INCHES):	DIMENSIONS (INC		ructions			AY UTILIZED	DIAMETER OF T	UBES:
HEIGHT (INCHES):	H:253" Including outlet			LIQUID U		-		ATION SYSTEM?
VELOCITY (FT/SEC.):	W:50-60fps	Lb:		FLOW RA	TE (GPI	M):	YES	□ NO
NO. TRAYS:	De: N/A	Lc:		MAKE UP	RATE (GPM):	LOUVERS?	
NO. BAFFLES:	D:N/A	S:					☐ YES	□ _{NO}
	TYPE OF CYCLONE:	☑ CONVENT	ΓΙΟΝΑL	П	GH EFFI	CIENCY	OTHER	
DESCRIBE MAINTENANCE PROC	EDURES:						PARTICLE SIZE	
						SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATIVE %
DESCRIBE INCOMING AIR STREA	M: Hot air from pellitize	er and cooler. D	Distribution s	size unknov	n as	0-1		
minimal PM is expected.						1-10		
						10-25		
						25-50		
						50-100		
						>100		
								TOTAL = 100
DESCRIBE ANY MONITORING DE					DEVICE 3		SUIBCE(S).	
ON A SEPARATE PAGE, ATTACH	A DIAGRAM OF THE P	LLA I IONSHIP	OF THE C	ONIKULL	'L'VICE I	O II O EIVIIOOIUN	SOURCE(S):	

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM C1

CONTROL DEVICE (FABRIC FILTER)

REVISED 09/22/16	ICDEQ/Divis	sion of Air Quality -	Application f	or Air	Permit to Co	nstruct/Op	erate			C1
CONTROL DEVICE ID NO:CD-4		CONTROLS EMISS	SIONS FROM	WHIC	H EMISSION	SOURCE I	D NO	(S):ES-PSC-1		_
EMISSION POINT (STACK) ID NO(S): EP	-PSC-1	POSITION IN SERI	ES OF CONT	ROLS			NO.	1 OF	1 UNITS	
OPERATING SCEN	ARIO:									
1 0F1	l				RED (PER 20			YES	□ NO	
DESCRIBE CONTROL SYSTEM: CARTRIDGE	FILTER MAI	NUFACTURER BY S	LY, Informatio	n inciu	ded for remov	vai specifica	itions.	Set up to remove	PM from Scr	eening pro
POLLUTANTS COLLECTED:			PM		PM10	PM	2.5	·	_	
BEFORE CONTROL EMISSION RATE (LB/HR)	:		0.14		0.07	0.0	01		_	
CAPTURE EFFICIENCY:			100	%	100	%10	00	%	_%	
CONTROL DEVICE EFFICIENCY:			99.9	%	99.9	% 99	.9	%	%	
CORRESPONDING OVERALL EFFICIENCY:			99.9	%	99.9	%99	.9	%	%	
EFFICIENCY DETERMINATION CODE:									_	
TOTAL AFTER CONTROL EMISSION RATE (L			0.0001		0.0001	0.00	000			
PRESSURE DROP (IN H_20): MIN: MA BULK PARTICLE DENSITY (LB/FT 3):	.X:	GAUGE?	✓ YES INLET TEMI	DEDAT	NO NO	MIN:0		MAX: 100		
	_B/HR	GR/FT ³				MIN:0		MAX:100		
INLET AIR FLOW RATE (ACFM): 11200	.D/TIIX		-		NG TEMP (°F			WAX. 100		
	. OF BAGS	PER COMPARTMEN			(1)	LENGTH C)F BA	G (IN.):		
.	TER SURFA	CE AREA PER CAR	TRIDGE (FT²)	: аррх.	. 81	DIAMETER				
TOTAL FILTER SURFACE AREA (FT ²): 4869 so	ı ft	AIR TO CLOTH RA	TIO: 2.3:1							
DRAFT TYPE: ✓ INDUCED/NEGATIVI		FORCED/POSITIVI	E		FILTER MA	TERIAL:	\checkmark	WOVEN	FELTED	
DESCRIBE CLEANING PROCEDURES:					i		PAR	TICLE SIZE DIST	RIBUTION	
✓ AIR PULSE		SONIC				SIZE		WEIGHT %	CUMUL	_ATIVE
REVERSE FLOW	ᆜ	SIMPLE BAG COLL	LAPSE			(MICROI	NS)	OF TOTAL	%	Ď.
☐ MECHANICAL/SHAKER	Ш	RING BAG COLLAI	PSE			0-1		NOT KNOWN		
DESCRIBE INCOMING AIR STREAM: Screen	negative air	The screen is used to	to remove fine	duet fi	rom the	1-10				
pellets and this unit is used to ensure that dust is						10-25 25-50				
high efficienty of PM control.						50-100				
						>100				
								TOT	AL = 100	
ON A SEPARATE PAGE, ATTACH A DIAGRAM		THE RELATIONSHI	P OF THE CO	NTRO	L DEVICE TO	ITS EMIS	SION	SOURCE(S):		
COMMENTS:SEE THE PROCESS FLOW FOR	DETAILS									

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM C7

Already Approved

CONTROL DEVICE (CONDENSER)

REVISED 09/22/16 NCDEQ/Div	ision of Air Quality - Ap	plication for Air Perm	it to Co	nstruct/Ope	rate		C7	
AS REQUIRED BY 15A NCAC 2Q .0112, THIS F	ORM MUST BE SEALE	D BY A PROFESSION	AL ENG	SINEER (P.E	.) LICENS	SED IN NORTH	I CAROLINA.	
CONTROL DEVICE ID NO:CD-1	CONTROLS EMISSIO	NS FROM WHICH EM	ISSION	SOURCE ID	NO(S):E	S-P-1		
EMISSION POINT ID NO(S):EP-CD-1	POSITION IN SERIES	OF CONTROLS		NO1	_ OF	1UNITS		
OPERATING SCENARIO:								
10F1								
CONDENSER TYPE: DIRECT CONTACT SECURITY DESCRIBE CONTROL SYSTEM: CONDENSER	INDIRECT CONTACT	CONDENSER TYPE:	✓	SHELL AND	TUBE		THER	
DESCRIBE CONTROL SYSTEM:CONDENSER								
POLLUTANT(S) COLLECTED:		VOC						
CORRESPONDING EFFICIENCY:		80	%		%	9	, o	%
EFFICIENCY DETERMINATION CODE:			_					_
BEFORE CONTROL CONCENTRATION (PPMV):			_					
BEFORE CONTROL EMISSION RATE (LB/HR):		4.815						_
AFTER CONTROL CONCENTRATION (PPMV):								_
AFTER CONTROL EMISSION RATE (LB/HR):		0.9625						
BOILING POINT OF COLLECTED POLLUTANT (°F):		131-356						
HEAT OF VAPORIZATION OF COLLECTED POLLUTAN	IT (BTU/LB-MOL):							_
SPECIFIC HEAT OF POLLUTANT COLLECTED (BTU/LE	B-MOL °F):		_					_
EMISSION STREAM FLOW RATE (ACFM):75.25		INLET EMISSION STR	REAM T	EMPERATU	RE (°F): 4	139 (226C)		
MOISTURE CONTENT OF EMISSION STREAM (%):99.8	3	OUTLET EMISSION S	STREAM	1 TEMPERA	TURE (°F): 131 (50C)		
COOLANT USED: WATER		TEMPERATURE OF I		•		•		
TEMPERATURE OF CONDENSATION (°F):210 (99C)		TEMPERATURE OF ((60C)		
COOLANT FLOW RATE (LB/HR): 48,149 (1.6gal/sec) CONDENSER SURFACE AREA (FT ²):2015 (20 m2)		REFRIGERATION CA	PACITY	(TONS):NC	DNE			
DESCRIBE MAINTENANCE PROCEDURES:CLEAN CO	NDENSER AS PER THE	MANUFACTURER SE	PECS					
DESCRIBE ANY MONITORING DEVICES, GAUGES, TE	ST PORTS, ETC:TEMPI	ERATURE AND PRES	SURE G	SAUGES				
ATTACH A DIAGRAM OF THE RELATIONSHIP OF THE	CONTROL DEVICE TO	ITS EMISSION SOUR	CF(S)·S	FF THE PR	OCESS E	I OW DIAGRA	M	
	00011101		0=(0).0					
COMMENTS:								

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM D1

FACILITY-WIDE EMISSIONS SUMMARY

	EXPECTE EMIS: (AFTER CC LIMITA ton 28 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	D ACTUAL SIONS DNTROLS / TIONS) ss/yr .52 64 11 06 41 91 .63	POTENTIAL (BEFORE CC LIMITAT tons 32.3 0.1 0.0 10.3 8.6 52 2830 ION - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	EMISSIONS DNTROLS / TIONS) 192 18 18 18 16 16 17 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	(AFTER 0 LIMIT to 3 3 4 4 4 5 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	AL EMISSIONS CONTROLS / ATIONS) DOS/yr 11.23 0.69 0.12 0.06 10.31 8.66 10.31 8.3072 AL EMISSIONS CONTROLS / TATIONS) Dos/yr
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	EMIS: (AFTER CC LIMITA ton 28 0. 0. 0. 9. 7. 23 1130 IT EMISSION EXPECTE EMIS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	SIONS DNTROLS / ITIONS) S/yr .52 64 11 06 41 991 .63 D9.03 SINFORMAT D ACTUAL SIONS DNTROLS / ITIONS)	(BEFORE CC LIMITAT tons 32.1 2.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ONTROLS / CIONS) 292 288 88 66 31 66 67 72 C-WIDE EMISSIONS DNTROLS / TIONS)	(AFTER 0 LIMIT to 3 3 4 4 4 5 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	CONTROLS / CATIONS) cons/yr 31.23 0.69 0.12 0.06 0.31 8.66 35.73 33072 AL EMISSIONS CONTROLS / CATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	(AFTER CC LIMITA ton 28 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	ONTROLS / TIONS) s/yr .52 64 11 06 41 91 .63 09.03 SINFORMAT D ACTUAL SIONS DNTROLS / TIONS)	(BEFORE CC LIMITAT tons 32.1 2.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ONTROLS / CIONS) 292 288 88 66 31 66 67 72 C-WIDE EMISSIONS DNTROLS / TIONS)	(AFTER 0 LIMIT to 3 3 4 4 4 5 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	CONTROLS / CATIONS) cons/yr 31.23 0.69 0.12 0.06 0.31 8.66 35.73 33072 AL EMISSIONS CONTROLS / CATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	LIMITA ton 28 0. 0. 0. 9. 7. 23 1130 NT EMISSION EXPECTE EMIS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	TIONS) s/yr .52 64 11 06 41 91 .63 99.03 SINFORMAT D ACTUAL SIONS DNTROLS / TIONS)	LIMITAT tons 32.1 2.3 0.1 0.0 10.1 8.6 52 2830 TON - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	TIONS) 2/yr 292 88 8 66 31 66 60 772 **WIDE **EMISSIONS DNTROLS / TIONS)	POTENTIA (AFTER C LIMIT L 2530.777 0.00 659.58	ATIONS) pns/yr 31.23 0.69 0.12 0.06 10.31 8.66 35.73 33072 AL EMISSIONS CONTROLS / 'ATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	ton 28 0. 0. 0. 9. 7. 23 113(NT EMISSION EXPECTE EMISS (AFTER C(LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	s/yr .52 64 11 06 41 91 .63 09.03 S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	2.3 2.3 0.1 0.0 10.3 8.6 52 2830 10N - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	292 38 8 8 8 66 331 66 66 072 **WIDE **EMISSIONS DNTROLS / TIONS)	POTENTIA (AFTER 0 LIMIT L 2530.77 0.00 659.58	ons/yr 31.23 0.69 0.12 0.06 10.31 8.66 35.73 33072 AL EMISSIONS CONTROLS /
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	28 0.0 0.0 9. 7. 23 1130 NT EMISSION EXPECTE (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	.52 .64 .64 .61 .63 .63 .63 .63 .63 .63 .63 .63	32.9 2.3 0.1 0.0 10.0 8.6 52 2830 ION - FACILITY POTENTIAL (BEFORE COLIMITAT Lbs 4549.07 0.00 659.58 0.00	92 98 88 86 66 66 66 772 **WIDE EMISSIONS DNTROLS / TIONS)	POTENTIA (AFTER (LIMIT 2530.77 0.00 659.58	31.23 0.69 0.12 0.06 10.31 8.66 35.73 33072 AL EMISSIONS CONTROLS /
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	0.0 0.0 0.0 9. 7. 23 1130 NT EMISSION EXPECTE EMISS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	64 11 06 41 91 .63 09.03 S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	2.3 0.1 0.0 0.0 10.3 8.6 52 2830 10N - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	88 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	POTENTIA (AFTER (LIMIT 2530.77 0.00 659.58	0.69 0.12 0.06 0.31 8.66 35.73 33072 AL EMISSIONS CONTROLS /
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	0.0 0.0 9.7 7.23 1130 TEMISSION EXPECTE EMIS: (AFTER COLIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	111 06 41 91 .63 09.03 S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	0.1 0.0 0.0 10.1 8.6 52 2830 10N - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	8	POTENTIA (AFTER C LIMIT 2530.77 0.00 659.58	0.12 0.06 10.31 8.66 35.73 33072 AL EMISSIONS CONTROLS /
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	0. 9. 7. 23 113(NT EMISSION EXPECTE EMIS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	06 41 91 .63 09.03 SINFORMAT D ACTUAL SIONS DNTROLS / TIONS)	0.0 10.1 8.6 52 2830 10N - FACILITY POTENTIAL (BEFORE COLIMITAT Lbs 4549.07 0.00 659.58 0.00	166 131 166 166 172 17-WIDE EMISSIONS DNTROLS /	POTENTIA (AFTER C LIMIT 2530.77 0.00 659.58	0.06 10.31 18.66 135.73 133072 AL EMISSIONS CONTROLS /
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	9. 7. 23 113(NT EMISSION EXPECTE EMIS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	41 91 .63 09.03 S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	10 8.6. 52 2830 10N - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	31 66 6 072 7-WIDE EMISSIONS DNTROLS / TIONS)	POTENTIA (AFTER C LIMIT 2530.77 0.00 659.58	10.31 8.66 35.73 33072 33072 AL EMISSIONS CONTROLS /
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	7. 23 113(NT EMISSION EXPECTE EMIS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	91 .63 .99.03 S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	2830 2830 10N - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	66 66 072 7-WIDE EMISSIONS DNTROLS / TIONS)	POTENTIA (AFTER 0 LIMIT L 2530.77 0.00 659.58	8.66 35.73 33072 AL EMISSIONS CONTROLS /
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	23 1130 EXPECTE EMISSION EXPECTE EMISSION (AFTER COLUMN A COLU	.63 S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	2830 10N - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	66 272 2′-WIDE EMISSIONS DITROLS / TIONS)	POTENTIA (AFTER 0 LIMIT L 2530.77 0.00 659.58	35.73 B3072 AL EMISSIONS CONTROLS / TATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	1130 EXPECTE EMISSION EXPECTE EMISSION (AFTER COLUMN AFTER COLUMN A	S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	2830 TON - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	/-WIDE EMISSIONS DNTROLS /	POTENTIA (AFTER 0 LIMIT L 2530.77 0.00 659.58	33072 AL EMISSIONS CONTROLS / TATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	EXPECTE EMISSION	S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	/-WIDE EMISSIONS ONTROLS / TIONS)	POTENTIA (AFTER (LIMIT L 2530.77 0.00 659.58	AL EMISSIONS CONTROLS / "ATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	EXPECTE EMISSION	S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	/-WIDE EMISSIONS ONTROLS / TIONS)	POTENTIA (AFTER (LIMIT L 2530.77 0.00 659.58	AL EMISSIONS CONTROLS / "ATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	EXPECTE EMIS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	D ACTUAL SIONS ONTROLS / TIONS)	POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	EMISSIONS DNTROLS / TIONS)	(AFTER (LIMIT L 2530.77 0.00 659.58	CONTROLS / TATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	EXPECTE EMIS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	D ACTUAL SIONS ONTROLS / TIONS)	POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	EMISSIONS DNTROLS / TIONS)	(AFTER (LIMIT L 2530.77 0.00 659.58	CONTROLS / TATIONS)
75070 107028 7664417 ASC-other 71432 50328 7440417	(AFTER COLLIMITA LIB 3060.00 0.00 602.34 0.00 0.40 0.00	SIONS ONTROLS / TIONS)	(BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	ONTROLS / TIONS)	(AFTER (LIMIT L 2530.77 0.00 659.58	CONTROLS / TATIONS)
75070 107028 7664417 ASC-other 71432 50328 7440417	(AFTER C/ LIMITA 3060.00 0.00 602.34 0.00 0.40 0.00	ONTROLS / TIONS)	(BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	ONTROLS / TIONS)	(AFTER (LIMIT L 2530.77 0.00 659.58	CONTROLS / TATIONS)
75070 107028 7664417 ASC-other 71432 50328 7440417	1MITA 1000	TIONS)	LIMITAT Lbs 4549.07 0.00 659.58 0.00	TONS)	LIMIT L 2530.77 0.00 659.58	ATIONS)
75070 107028 7664417 ASC-other 71432 50328 7440417	0.00 0.00 602.34 0.00 0.40 0.00		4549.07 0.00 659.58 0.00		2530.77 0.00 659.58	
75070 107028 7664417 ASC-other 71432 50328 7440417	3060.00 0.00 602.34 0.00 0.40 0.00	sryl	4549.07 0.00 659.58 0.00	ryf	2530.77 0.00 659.58	.us/yr
107028 7664417 ASC-other 71432 50328 7440417	0.00 602.34 0.00 0.40 0.00		0.00 659.58 0.00		0.00 659.58	
7664417 ASC-other 71432 50328 7440417	0.00 0.40 0.00		659.58 0.00		659.58	
ASC-other 71432 50328 7440417	0.00 0.40 0.00		0.00			
71432 50328 7440417	0.40 0.00					
50328 7440417	0.00		0.42		0.00	
7440417			0.43		0.43	
	0.00		0.00		0.00	
7440439			0.00		0.00	
	0.00		0.00		0.00	
7738945	0.00		0.00		0.00	
COC-other	0.02		0.02		0.02	
50000	602.36		2794.57		659.58	
110543	338.81		371.01		371.01	
PBC-other	0.09		0.10		0.10	
MNC-other	0.00		0.00		0.00	
			1		0.00	
					0.13	
						•
		EODMATION		DE	004.02	
					ON DATE /TDE	D) IN 15 A
						IN) IN 15A
			Ī	Modelina	Required ?	TPER LIMIT
CAS NO	lb/hr	lb/dav	lb/vear		<u> </u>	†
		1				6.8 lbs/hr
			1			6.8 lbs/hr
			1 1			0.04 lbs/hr
						23 lb/day
			1 1			197.96 lb/da
100003	0.00	0.00	0.04		INU	
			+ +		 	58.97 lb/hr
			+		-	+
			+		 	+
			+		-	+
			1 1			4
			+ +			
)(ONTROLS / LING. USE NI CAS NO. 75070 7664417 50000 110543 108883	7439976 0.00 91203 0.11 7440020 0.00 SEC 0.00 108883 0.64 67561 538.56 108952 0.00 123386 606.96 OLLUTANT EMISSIONS IN ONTROLS / LIMITATIONS. EM ELING. USE NETTING FORM I CAS NO. Ib/hr 75070 0.35 7664417 0.07 50000 0.07 110543 0.04 108883 0.00	7439976 0.00 91203 0.11 7440020 0.00 SEC 0.00 108883 0.64 67561 538.56 108952 0.00 123386 606.96 OLLUTANT EMISSIONS INFORMATION ONTROLS / LIMITATIONS. EMISSIONS ABO' ELING. USE NETTING FORM D2 IF NECESS CAS NO. Ib/hr Ib/day 75070 0.35 8.38 7664417 0.07 1.65 50000 0.07 1.65 110543 0.04 0.93 108883 0.00 0.00	7439976 0.00 0.00 91203 0.11 0.13 7440020 0.00 0.00 SEC 0.00 0.00 108883 0.64 0.70 67561 538.56 1529.50 108952 0.00 0.00 123386 606.96 1903.99 OLLUTANT EMISSIONS INFORMATION - FACILITY-WI DNTROLS / LIMITATIONS. EMISSIONS ABOVE THE TOXIC PE ELING. USE NETTING FORM D2 IF NECESSARY. (NO MODE CAS NO. Ib/hr Ib/day Ib/year 75070 0.35 8.38 3060.00 7664417 0.07 1.65 602.34 50000 0.07 1.65 602.36 110543 0.04 0.93 338.81	7439976	7439976

Actual Hours of Operation/yr = 8000

Potential Hours of Operation/yr = 8760

early Potential/Actual emissions: B	oilare Dryo	re and Scrou	, S. Dollot I	Draccac	_				AFTER COL	NTROL DEVICE	:
Pollutant	CAS Number	Steam Boiler (ES-B-1)	Dryer (ES-D-1)	Pressure Cooker W/Condenser (ES-P-1) & CD-1	Screw Press/Dryer (ES-SPD-1) & CD-2	Pellet Press & Cooler (ES-PP-1) & CD-3	Pellet Screening (ES-PSC-1) & CD-4	Actual Emissions after CD	Actual Emissions	Potential Emissions after CD	Potential Emissions
		(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/hr)	(ton/yr)	(ton/hr)
riteria Air Pollutants											
PM	PM	0.04	0.01		26.67	1.80	0.0006	28.52	0.004	31.23	0.004
PM10	PM10	0.04	0.01		0.27	0.32	0.0003	0.64	0.000	0.70	0.000
PM2.5	PM2.5	0.03	0.01		0.07		0.0001	0.11	0.000	0.12	0.000
SULFUR DIOXIDE (SO2)	SO2	0.05	0.01					0.06	0.000	0.06	0.000
NITROGEN OXIDES (NOx)	NOx	7.84	1.57					9.41	0.001	10.31	0.001
CARBON MONOXIDE (CO)	CO	6.59	1.32					7.91	0.001	8.66	0.001
VOLATILE ORGANIC COMPOUNDS (VOC)	VOC	0.43	0.09	3.85	19.26			23.63	0.003	25.87	0.003
roonhouge Cae Emissions											
reenhouse Gas Emissions CARBON DIOXIDE (CO ₂)	CO ₂	9424.29	1884.74		1			11,309.03		12,383.39	
, -,	CO ₂				1					,	
METHANE (CH₄)		0.18	0.04					0.21		0.23	
NITROUS OXIDE (N ₂ O)	N ₂ O	0.02	0.00					0.02		0.02	
	(1) ()	(11 /)	(1) ()		(III /)	(1) (1)	(11()	// / \	(11 /1)	(II. 1.)	/II /II \
oxic/Hazardous Air Pollutants	(lbs/yr)	(lbs/yr)	(lbs/yr)	400.000	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/hr)	(lbs/yr)	(lbs/hr)
Acetaldehyde (TH)	75070 107028	0.002	0.000	460.800	1299.60	1299.60		3060.00	0.38	3350.70	0.38
Acrolein (TH)		0.003	0.001					0.00	0.00	0.004	0.00
Ammonia (T) Arsenic unlisted compounds (TH)	7664417	501.952	100.384		-			602.34 0.00	0.08	659.56 0.00	0.08
Benzene (TH)	ASC-other 71432	0.329	0.066		-			0.40	0.00	0.00	0.00
Benzo(a)pyrene (TH)	50328	0.329	0.000					0.40	0.00	0.00	0.00
Beryllium metal (unreacted) (TH)	7440417	0.000	0.000					0.00	0.00	0.00	0.00
Cadmium metal (elemental unreacted) (TH)	7440417							0.00	0.00	0.00	0.00
Chromic acid (VI) (TH)	7738945							0.00	0.00	0.00	0.00
Cobalt unlisted compounds (H)	COC-other	0.013	0.003					0.02	0.00	0.02	0.00
Formaldehyde (TH)	50000	11.765	2.353	487.440	50.40	50.40		602.36	0.08	659.58	0.08
Hexane, n- (TH)	110543	282.348	56.466	1071110	55.15	00.10		338.81	0.04	371.00	0.04
Lead unlisted compounds (H)	PBC-other	0.078	0.016					0.09	0.00	0.10	0.00
Manganese unlisted compounds (TH)	MNC-other	0.0.0						0.00	0.00	0.00	0.00
Mercury vapor (TH)	7439976							0.00	0.00	0.00	0.00
Napthalene (H)	91203	0.096	0.019					0.11	0.00	0.13	0.00
Nickel metal (TH)	7440020							0.00	0.00	0.00	0.00
Selenium compounds (H)	SEC	0.004	0.001					0.00	0.00	0.00	0.00
Toluene (TH)	108883	0.533	0.107					0.64	0.00	0.70	0.00
Methanol (H)	67561			214.560	162.00	162.00		538.56	0.07	589.72	0.07
Phenol (TH)	108952							0.00	0.00	0.00	0.00
Propionaldehyde (H)	123386			282.960	162.00	162.00		606.96	0.08	664.62	0.08
AP Indiv. Max		501.95	100.38		1299.60	1299.60	0.00	1		3350.70	
AP total		797.12	159.41		1674.00	1674.00	0.00	5750.30		6296.58	

¹ Xylenes (total) includes emission factors listed as o-Xylene.

Actual Hours of Operation/yr = 8000

Potential Hours of Operation/yr = 8760

Yearly Potential emissions: Boilers, D	ryers, and So	crew & Pe	ellet Press	ses, Pellet	Cooler a	nd Pellet S	Screening	3						BEFO	RE & AFTER	R CONTROL D	EVICES
Pollutant	CAS Number	Steam (ES-		Dry (ES-		Pressure W/Con (ES-P-1)	denser	Screw Pro (ES-SPD-		Pellet Pres (ES-PP-1		Pellet So (ES-PSC-		Potential Emissions before CD	Potential Emissions before CD	Potential Emissions after CD	Potential Emissions after CD
		Before CD	After CD	Before CD	After CD	Before CD	After CD	Before CD	After CD	Before CD	After CD	Before CD	After CD				
		(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/hr)	(ton/yr)	(ton/hr)
Criteria Air Pollutants													•				
PM	PM	0.04	0.04	0.01	0.01			29.20	29.20	3.04	1.97	0.62	0.0006	32.92	0.004	31.23	0.004
PM10	PM10	0.04	0.04	0.01	0.01			0.29	0.29	1.74	0.35	0.30	0.0003	2.38	0.000	0.69	0.000
PM2.5	PM2.5	0.04	0.04	0.01	0.01			0.07	0.07			0.06	0.0001	0.18	0.000	0.12	0.000
SULFUR DIOXIDE (SO2)	SO2	0.05	0.05	0.01	0.01									0.06	0.000	0.06	0.000
NITROGEN OXIDES (NOx)	NOx	8.59	8.59	1.72	1.72									10.31	0.001	10.31	0.001
CARBON MONOXIDE (CO)	CO	7.21	7.21	1.44	1.44									8.66	0.001	8.66	0.001
VOLATILE ORGANIC COMPOUNDS (VOC)	VOC	0.47	0.47	0.09	0.09	21.09	4.22	21.09	21.09	9.86	9.86			52.60	0.007	35.73	0.004
Greenhouse Gas Emissions																	
CARBON DIOXIDE (CO ₂)	CO ₂	10239.47	10239.47	2047.89	2047.89									12287.37		12287.37	
METHANE (CH ₄)	CH ₄	4.83	4.83	0.97	0.97									5.79		5.79	
NITROUS OXIDE (N ₂ O)	N ₂ O	5.76	5.76											6.91			
MITTOGG GAIDE (1420)	1420	5.76	5.76	1.15	1.15									0.91		6.91	
Toxic/Hazardous Air Pollutants	(lbs/yr)	(lbs/yr)		(lbs/yr)				(lbs/yr)		(lbs/yr)		(lbs/yr)		(lbs/yr)	(lbs/hr)	(lbs/yr)	(lbs/hr)
Acetaldehyde (TH)	75070	0.003	0.003	0.001	0.00	2522.88	504.58	1013.09	1013.09	1013.09	1013.09			4549.07	0.57	2530.77	0.29
Acrolein (TH)	107028	0.003	0.003	0.001	0.00									0.00	0.00	0.00	0.00
Ammonia (T)	7664417	549.65	549.65	109.93	109.93									659.58	0.08	659.58	0.08
Arsenic unlisted compounds (TH)	ASC-other													0.00	0.00	0.00	0.00
Benzene (TH)	71432	0.36	0.36	0.07	0.07									0.43	0.00	0.43	0.00
Benzo(a)pyrene (TH)	50328	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00
Beryllium metal (unreacted) (TH)	7440417													0.00	0.00	0.00	0.00
Cadmium metal (elemental unreacted) (TH)	7440439													0.00	0.00	0.00	0.00
Chromic acid (VI) (TH)	7738945	0.04	0.04	0.00	0.00									0.00	0.00	0.00	0.00
Cobalt unlisted compounds (H)	COC-other	0.01	0.01	0.00	0.00									0.02	0.00	0.02	0.00
Formaldehyde (TH)	50000	12.88	12.88	2.58	2.58	2668.73	533.75	55.19	55.19	55.19	55.19			2794.57	0.35	659.58	0.08
Hexane, n- (TH)	110543 PBC-other	309.18	309.18	61.84	61.84									371.01	0.05	371.01 0.10	0.04
Lead unlisted compounds (H) Manganese unlisted compounds (TH)	MNC-other	0.09	0.09	0.02	0.02									0.10	0.00	0.10	0.00
Manganese unlisted compounds (TH) Mercury vapor (TH)	7439976			 										0.00	0.00	0.00	0.00
Napthalene (H)	91203	0.10	0.10	0.02	0.02									0.13	0.00	0.00	0.00
Naptrialerie (H) Nickel metal (TH)	7440020	0.10	0.10	0.02	0.02									0.13	0.00	0.13	0.00
Selenium compounds (H)	7440020 SEC	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00
Toluene (TH)	108883	0.58	0.58	0.00	0.00									0.70	0.00	0.70	0.00
Methanol (H)	67561	0.00	0.00	0.12	0.12	1174.72	234.94	177.39	177.39	177.39	177.39			1529.50	0.00	589.72	0.07
Phenol (TH)	108952						2007							0.00	0.00	0.00	0.00
Propionaldehyde (H)	123386					1549.21	309.84	177.39	177.39	177.39	177.39			1903.99	0.24	664.62	0.08
				!								I					
HAP Indiv. Max		549.65		109.93				1013.09		1013.09		0.00				2530.77	
HAP total		872.87		174.57				1423.06		1423.06		0.00		11809.10		5476.67	

¹ Xylenes (total) includes emission factors listed as o-Xylene.

NATURAL GAS COMBUSTION EMISSIONS CALCULATOR REVISION N 01/05/2017 - INPUT SCREEN



Instructions: Enter emission source / facility data on the "INPUT" tab/screen. The air emission results and summary of input data are viewed / printed on the "OUTPUT" tab/screen. The different tabs are on the bottom of this screen.

This spreadsheet is for your use only and should be used with caution. NCDEQ does not guarantee the accuracy of the information contained. This spreadsheet is subject to continual revision and updating. It is your responsibility to be aware of the most current information available. NCDEQ is not responsible for errors or omissions that may be contained herein.

PERMIT N FACILITY FACILITY	Y NAME: ID NUMBER: NUMBER	SELECTION ACTIVE EN NA NA LUMBERTO ROBESON CHALAM PA	ERGY RENEWA	BLE POWER
	N SOURCE ID NO.: M HEAT INPUT (MILLION BTU PER HOUR):		ES-B-1 20.00	mmBTU/HR
TYPE OF	BOILER:	SMALL BOILER	? (<100 mmBTU/HR)	▼
DOES TH	E SOURCE ALSO BURN COAL OR FUEL OIL?	No	▼	
DATE OF	CONSTRUCTION:	10/1/2019 (mm/dd/yyyy	/)	
ADDITION	NAL INFORMATION FOR GREENHOUSE GAS (GHG)			
	alculation Tier from EPA Mandatory Reporting Rule (MR:://www.epa.gov/climatechange/emissions/ghgrulemaking		TIER 1: DEFAULT	HHV AND DEFAULT EF
SINCE TI	ER 3 IS NOT BEING USED, DO NOT ENTER FUEL C.	ARBON CONT	ENT	0.7500
SINCE TI	ER 3 IS NOT BEING USED, DO NOT ENTER MOLEC	ULAR WEIGH	Т	19.00 kg/kg-mole
FUEL HE	ATING VALUE		_	
ANNUAL	AVG MEASURED FUEL HEATING VALUE (BTU/SCF):	1,020	BTU/SCF	
DEFAULT	FUEL HEATING VALUE (BTU/SCF) will be used for 1,028 BTU/SCF default value is from EPA's man			
USAGE A	ND OTHER SOURCE-SPECIFIC DATA			
CALCULA	YEARLY FUEL USAGE (MILLION SCF): TED POTENTIAL YEARLY USAGE (MILLION SCF) TED ANNUAL LIMITATION (MILLION SCF)	156.86 171.76 171.76	MILLION SCF MILLION SCF MILLION SCF	(TYPEOVER IF NECESSARY - DEFAULT IS POTENTIAL)
DAILY HC	OURS OF OPERATION:	22	HOURS	
TYPE OF	EMISSION CONTROL:	NO CONTROL		▼
IS SNCR	APPLIED TO THE BOILER?	NO	▼	

NATURAL GAS COMBUSTION EMISSIONS CALCULATOR REVISION N 01/05/2017 - OUTPUT SCREEN



Instructions: Enter emission source / facility data on the "INPUT" tab/screen. The air emission results and summary of input data are viewed / printed on the "OUTPUT" tab/screen. The different tabs are on the bottom of this screen.

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SOU	RCE / FACILI	TY / USER INPU	T SUMMAR	Y (FROM INPUT	SCREEN)				
COMPANY: ACTIVE E	NERGY R	ENEWABL	E POWE	R		FACILITY ID NO		NA	
EMICOION COLIDOS DECODIDADAS COMMETINADA MAT	IDAL OAG FIE	SED DOU ED				PERMIT NUMB		NA	
EMISSION SOURCE DESCRIPTION: 20 MMBTU/HR NATU	JRAL GAS-FIF	RED BOILER				FACILITY CITY		LUMBERTO	
EMISSION SOURCE ID NO.: ES-B-1						FACILITY COU		ROBESON	
CONTROL DEVICE: NO CONTROL						POLLUT	ANI	CONTR	UL EFF.
SPREADSHEET PREPARED BY: CHALAM PAKALA, F						NOX	(CALC'D	AS 0%
ACTUAL FUEL THROUGHPUT: 156.86		FUEL HEAT VA		1,020					
POTENTIAL FUEL THROUGHPUT: 171.76				ILER (<100 mmB	TU/HR)		NO SNCR /	APPLIED	
REQUESTED MAX. FUEL THRPT: 171.76	10 ⁶ SCF/YR	HOURS OF OP	ERATIONS:	22					
	CRITERIA	AIR POLLUTAN	T EMISSION	IS INFORMATIO	N				
		ACTUAL EM	ISSIONS		POTENTIAL	EMSSIONS		EMISSION	FACTOR
		(AFTER CONTRO	LS / LIMITS)	(BEFORE CONTR	OLS / LIMITS)	(AFTER CONTROL	LS / LIMITS)	lb/mr	mBtu
AIR POLLUTANT EMITTED		lb/hr	tons/yr	lb/hr	tons/yr	lb/hr		uncontrolled	
PARTICULATE MATTER (Total)		0.01		0.01	0.04			0.001	0.001
ARTICULATE MATTER (Filterable)		0.00		0.00	0.02			0.000	0.000
PARTICULATE MATTER (Condensable)		0.01		0.01	0.03	0.01		0.000	0.000
M 2.5 (Total)		0.01		0.01	0.04			0.000	0.000
M 2.5 (Filterable)		0.00		0.00	0.01			0.000	0.000
SULFUR DIOXIDE (SO2)		0.01		0.01	0.05			0.001	0.001
IITROGEN OXIDES (NOx)		1.96		1.96	8.59			0.098	0.098
CARBON MONOXIDE (CO)		1.65		1.65	7.21 0.47	1.65		0.082	0.082
OLATILE ORGANIC COMPOUNDS (VOC)		0.11	0.43	0.11	0.47	0.11	0.47	0.005	0.005
	VIC / UAZADI	OUIS AIR BOLL	IITANT EM	SSIONS INFORM	ATION				
	NIO / HAZAKI			I		EMPRIONO		EMISSION	FACTOR
	0.0	ACTUAL EM			POTENTIAL				
OVIC / HAZARDOUS AIR BOLLUTART	CAS	(AFTER CONTRO		(BEFORE CONTR		(AFTER CONTROL		lb/mr	
OXIC / HAZARDOUS AIR POLLUTANT	NUMBER 75070	lb/hr 2.98E-07	lbs/yr 2.38E-03	lb/hr 2.98E-07	lbs/yr 2.61E-03	lb/hr 2.98E-07	lbs/yr 2.61E-03	uncontrolled 1.49E-08	controlled
cetaldehyde (TH) crolein (TH)	107028	2.98E-07 3.53E-07	2.38E-03 2.82E-03	2.98E-07 3.53E-07	3.09E-03	3.53E-07	3.09E-03	1.49E-08 1.76E-08	1.49E-08 1.76E-08
mmonia (T)	7664417	6.27E-02	5.02E+02	6.27E-02	5.50E+02	6.27E-02	5.50E+02	3.14E-03	3.14E-03
rsenic unlisted compounds (TH)	ASC-other	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.27E-02 0.00E+00	0.00E+00	0.00E+00	0.00E+00
enzene (TH)	71432	4.12E-05	3.29E-01	4.12E-05	3.61E-01	4.12E-05	3.61E-01	2.06E-06	2.06E-06
enzo(a)pyrene (TH)	50328	2.35E-08	1.88E-04	2.35E-08	2.06E-04	2.35E-08	2.06E-04	1.18E-09	1.18E-09
eryllium metal (unreacted) (TH)	7440417	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
admium metal (elemental unreacted) (TH)	7440439	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
hromic acid (VI) (TH)	7738945	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cobalt unlisted compounds (H)	COC-other	1.65E-06	1.32E-02	1.65E-06	1.44E-02	1.65E-06	1.44E-02	8.24E-08	8.24E-08
ormaldehyde (TH)	50000	1.47E-03	1.18E+01	1.47E-03	1.29E+01	1.47E-03	1.29E+01	7.35E-05	7.35E-05
exane, n- (TH)	110543	3.53E-02	2.82E+02	3.53E-02	3.09E+02	3.53E-02	3.09E+02	1.76E-03	1.76E-03
ead unlisted compounds (H)	PBC-other	9.80E-06	7.84E-02	9.80E-06	8.59E-02	9.80E-06	8.59E-02	4.90E-07	4.90E-07
anganese unlisted compounds (TH)	MNC-other	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ercury vapor (TH)	7439976	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
apthalene (H)	91203	1.20E-05	9.57E-02	1.20E-05	1.05E-01	1.20E-05	1.05E-01	5.98E-07	5.98E-07
ckel metal (TH)	7440020	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
elenium compounds (H)	SEC	4.71E-07	3.76E-03	4.71E-07	4.12E-03	4.71E-07	4.12E-03	2.35E-08	2.35E-08
oluene (TH)	108883	6.67E-05	5.33E-01	6.67E-05	5.84E-01	6.67E-05	5.84E-01	3.33E-06	3.33E-06
otal HAPs		2.005.00	0.055.00	2.005.02	3.23E+02	3.69E-02	3.23E+02	4 0 4 5 0 0	4 0 45 00
	Hexane	3.69E-02 3.53E-02	2.95E+02 2.82E+02	3.69E-02 3.53E-02	3.23E+02 3.09E+02	3.53E-02	3.23E+02 3.09E+02	1.84E-03	1.84E-03
ghest HAP				(FOR PERMITTI			3.09E+02	1.76E-03	1.76E-03
					10 1 010 001	LO)	1	EMISSION	FACTOR
EXPECTED AC	JUAL EMISS	IONS AFTER C	UNTROLS /	LIMITATIONS				lb/mr	
XIC AIR POLLUTANT	CAS Num.	lb/h	r	lb/da	ay	lb/yr		uncontrolled	
etaldehyde (TH)	75070	2.98E		6.56E		2.38E-		1.49E-08	1.49E-08
crolein (TH)	107028	3.53E		7.76E		2.82E-		1.76E-08	1.76E-08
mmonia (T)	7664417	6.27E		1.38E		5.02E+		3.14E-03	
rsenic unlisted compounds (TH)	ASC-other	0.00E-		0.00E		0.00E+		0.00E+00	
enzene (TH)	71432	4.12E		9.06E		3.29E-		2.06E-06	2.06E-06
enzo(a)pyrene (TH)	50328	2.35E		5.18E		1.88E-		1.18E-09	1.18E-09
eryllium metal (unreacted) (TH)	7440417	0.00E-		0.00E		0.00E+		0.00E+00	0.00E+00
admium metal (elemental unreacted) (TH)	7440439	0.00E-		0.00E		0.00E+		0.00E+00	0.00E+00
oluble chromate compounds, as chromium (VI) equivalent ormaldehyde (TH)	SolCR6 50000	0.00E- 1.47E		0.00E 3.24E		0.00E+ 1.18E+		0.00E+00 7.35E-05	0.00E+00 7.35E-05
exane, n- (TH)	110543	3.53E		7.76E		2.82E+		1.76E-03	7.35E-05 1.76E-03
langanese unlisted compounds (TH)	MNC-other	0.00E-		0.00E		0.00E+		0.00E+00	0.00E+00
Mercury vapor (TH)	7439976	0.00E-		0.00E		0.00E+		0.00E+00	0.00E+00
ickel metal (TH)	7440020	0.00E-		0.00E		0.00E+		0.00E+00 0.00E+00	0.00E+00
bluene (TH)	108883	6.67E		1.47E		5.33E-		3.33E-06	
								3.33L 30	
GREENHOUSE GAS EMISSIONS INFORMATION (FOR		INVENTORY PL E (MRR) METHO		CONSISTENT	VITH EPA MA	NDATORY REP	ORTING	NO	GHG - PO BASED C
REENHOUSE GAS POLLUTANT			EPA M	ACTUAL EN		TIER 1			POTENT
		metric to		metric tons/yr, C		short tor	ns/vr	short t	ons/vr
CARBON DIOXIDE (CO ₂)		8549.	•	8,549		9,424.		10,23	
METHANE (CH ₄)		1.61E		4.03E		1.78E-		1.93	
ITROUS OXIDE (N ₂ O)									
TITOGO ONIDE (1420)		1.61E	-UZ	4.81E	+00	1.78E-	UZ	1.93	E-UZ
				TOTAL CO2e	8,558.42				
IOTE: CO2e means CO2 equivalent				(metric tons)	-				

NOTE: The DAQ Air Emissions Reporting Online (AERO) system requires short tons be reported. The EPA MRR requires metric tons be reported.

NOTE: Do not use greenhouse gas emission estimates from this spreadsheet for PSD (Prevention of Significant Deterioration) purposes.

NATURAL GAS COMBUSTION EMISSIONS CALCULATOR REVISION N 01/05/2017 - INPUT SCREEN



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Directions: Enter and select information in the boxes in the c	olumn on the	right:	
FIELDS COMPANY NAME: FACILITY ID NUMBER: PERMIT NUMBER FACILITY CITY: FACILITY COUNTY: SPREADSHEET PREPARED BY:	SELECTI ACTIVE EN NA NA LUMBERTO ROBESON CHALAM PA	ERGY RENEWA	ABLE POWER
EMISSION SOURCE ID NO.: MAXIMUM HEAT INPUT (MILLION BTU PER HOUR):	E	ES-D-1 4.00	mmBTU/HR
TYPE OF BOILER:	SMALL BOILER	R (<100 mmBTU/HR)	▼
DOES THE SOURCE ALSO BURN COAL OR FUEL OIL?	No	<u> </u>	
DATE OF CONSTRUCTION:	5/1/2000 (mm/dd/yyy	y)	
ADDITIONAL INFORMATION FOR GREENHOUSE GAS (GHG)			
ENTER Calculation Tier from EPA Mandatory Reporting Rule (MR * See http://www.epa.gov/climatechange/emissions/ghgrulemaking SINCE TIER 3 IS NOT BEING USED, DO NOT ENTER FUEL C SINCE TIER 3 IS NOT BEING USED, DO NOT ENTER MOLEC	g.html	ENT	HHV AND DEFAULT EF 0.7500 19.00 kg/kg-mole
FUEL HEATING VALUE ANNUAL AVG MEASURED FUEL HEATING VALUE (BTU/SCF):	1,020	BTU/SCF	
DEFAULT FUEL HEATING VALUE (BTU/SCF) will be used fo			1 approach I, "Natural Gas Pipeline (Weighted U.S. Average)"
USAGE AND OTHER SOURCE-SPECIFIC DATA	, ,	,	
ACTUAL YEARLY FUEL USAGE (MILLION SCF): CALCULATED POTENTIAL YEARLY USAGE (MILLION SCF) REQUESTED ANNUAL LIMITATION (MILLION SCF)	31.37 34.35 34.35	MILLION SCF MILLION SCF MILLION SCF	(TYPEOVER IF NECESSARY - DEFAULT IS POTENTIAL)
DAILY HOURS OF OPERATION:	22	HOURS	
TYPE OF EMISSION CONTROL:	NO CONTROL		▼
 IS SNCR APPLIED TO THE BOILER?	NO	▼	

NATURAL GAS COMBUSTION EMISSIONS CALCULATOR REVISION N 01/05/2017 - OUTPUT SCREEN



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SOU									
SOL	DOE / EAOU 13	W/USED MOU	T 0////// 4 D	//EDOM INDUS	0005540				
				(FROM INPUT	SCREEN)	FACILITY ID NO) ·	NA	
COMPANY: ACTIVE E	NERGY R	ENEWABLI	E POWE	₹		PERMIT NUMBI		NA	
MISSION SOURCE DESCRIPTION: 4 MMBTU/HR NATU	RAL GAS-FIRE	D BOILER				FACILITY CITY:		LUMBERTO	ON
MISSION SOURCE ID NO.: ES-D-1						FACILITY COUN		ROBESON	
NTROL DEVICE: NO CONTROL						POLLUT.	ANT	CONTRO	OL EFF.
PREADSHEET PREPARED BY: CHALAM PAKAL, P		FUEL HEAT VA	LUE.	1.000	DTIJ/CCE	NOX		CALC'D	AS 0%
CTUAL FUEL THROUGHPUT: 31.37 OTENTIAL FUEL THROUGHPUT: 34.35				1,020 LER (<100 mmB		ļ	NO SNCR	ADDITED	
QUESTED MAX. FUEL THRPT: 34.35		HOURS OF OP			TU/HK)		NO SNCR	APPLIED	
QUESTED WAX. FUEL THIRFT. 34.33				S INFORMATIO	N				
		ACTUAL EM			POTENTIAL	EMSSIONS		EMISSION	FACTOR
		(AFTER CONTROL	LS / LIMITS)	(BEFORE CONTR	OLS / LIMITS)	(AFTER CONTROL	.S / LIMITS)	lb/mr	nBtu
R POLLUTANT EMITTED		lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr		controlled
ARTICULATE MATTER (Total) ARTICULATE MATTER (Filterable)		0.00		0.00	0.01			0.001 0.000	0.001
ARTICULATE MATTER (Condensable)		0.00		0.00				0.000	0.000
/ 2.5 (Total)		0.00		0.00			0.01	0.000	0.000
1 2.5 (Filterable)		0.00		0.00	0.00		0.00	0.000	0.000
JLFUR DIOXIDE (SO2)		0.00		0.00			0.01	0.001	0.001
TROGEN OXIDES (NOx) ARBON MONOXIDE (CO)		0.39 0.33		0.39 0.33				0.098 0.082	0.098
DLATILE ORGANIC COMPOUNDS (VOC)		0.02		0.02	0.09			0.002	0.002
` '								2.230	
тс	XIC / HAZARD			SSIONS INFORM					
		ACTUAL EM			POTENTIAL			EMISSION	
DXIC / HAZARDOUS AIR POLLUTANT	CAS NUMBER	(AFTER CONTROL lb/hr		(BEFORE CONTR	OLS / LIMITS) Ibs/yr	(AFTER CONTROL lb/hr	S / LIMITS) Ibs/yr	lb/mr uncontrolled	nBtu controlled
cetaldehyde (TH)	75070	5.96E-08	lbs/yr 4.77E-04	5.96E-08	5.22E-04	5.96E-08	5.22E-04	1.49E-08	1.49E-08
crolein (TH)	107028	7.06E-08	5.65E-04	7.06E-08	6.18E-04	7.06E-08	6.18E-04	1.76E-08	1.76E-08
mmonia (T)	7664417	1.25E-02	1.00E+02	1.25E-02	1.10E+02	1.25E-02	1.10E+02	3.14E-03	3.14E-03
rsenic unlisted compounds (TH)	ASC-other	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
enzene (TH) enzo(a)pyrene (TH)	71432 50328	8.24E-06 4.71E-09	6.59E-02 3.76E-05	8.24E-06 4.71E-09	7.21E-02 4.12E-05	8.24E-06 4.71E-09	7.21E-02 4.12E-05	2.06E-06 1.18E-09	2.06E-06 1.18E-09
eryllium metal (unreacted) (TH)	7440417	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
admium metal (elemental unreacted) (TH)	7440439	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
hromic acid (VI) (TH)	7738945	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
obalt unlisted compounds (H)	COC-other	3.29E-07	2.64E-03	3.29E-07	2.89E-03	3.29E-07	2.89E-03	8.24E-08	8.24E-08
ormaldehyde (TH) exane, n- (TH)	50000 110543	2.94E-04 7.06E-03	2.35E+00 5.65E+01	2.94E-04 7.06E-03	2.58E+00 6.18E+01	2.94E-04 7.06E-03	2.58E+00 6.18E+01	7.35E-05 1.76E-03	7.35E-05 1.76E-03
ad unlisted compounds (H)	PBC-other	1.96E-06	1.57E-02	1.96E-06	1.72E-02	1.96E-06	1.72E-02	4.90E-07	4.90E-07
anganese unlisted compounds (TH)	MNC-other	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ercury vapor (TH)	7439976	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
apthalene (H) ckel metal (TH)	91203 7440020	2.39E-06 0.00E+00	1.91E-02 0.00E+00	2.39E-06 0.00E+00	2.10E-02 0.00E+00	2.39E-06 0.00E+00	2.10E-02 0.00E+00	5.98E-07	5.98E-07
elenium compounds (H)	7440020 SEC	9.41E-08	7.53E-04	9.41E-08	8.24E-04	9.41E-08	8.24E-04	0.00E+00 2.35E-08	0.00E+00 2.35E-08
	108883	1.33E-05	1.07E-01	1.33E-05	1.17E-01	1.33E-05	1.17E-01	3.33E-06	3.33E-06
oluene (TH)	•		•			•			
oluene (TH)									
tal HAPs	1	7.38E-03	5.90E+01	7.38E-03	6.46E+01	7.38E-03	6.46E+01	1.84E-03	1.84E-03
tal HAPs phest HAP	Hexane	7.06E-03	5.65E+01	7.06E-03	6.18E+01	7.06E-03	6.46E+01 6.18E+01	1.84E-03 1.76E-03	1.84E-03 1.76E-03
tal HAPs phest HAP TOXIC AIR	POLLUTANT I	7.06E-03 EMISSIONS INF	5.65E+01 ORMATION	7.06E-03 (FOR PERMITTI	6.18E+01	7.06E-03		1.76E-03	1.76E-03
tal HAPs ghest HAP TOXIC AIR EXPECTED A	POLLUTANT I	7.06E-03	5.65E+01 ORMATION	7.06E-03 (FOR PERMITTI	6.18E+01	7.06E-03			1.76E-03
otal HAPs ghest HAP TOXIC AIR EXPECTED A DXIC AIR POLLUTANT	CTUAL EMISS CAS Num.	7.06E-03 EMISSIONS INF IONS AFTER CO	5.65E+01 ORMATION ONTROLS /	7.06E-03 (FOR PERMITTI LIMITATIONS	6.18E+01 NG PURPOS	7.06E-03 ES)	6.18E+01	1.76E-03 EMISSION Ib/mr uncontrolled	1.76E-03 FACTOR nBtu controlled
otal HAPs ighest HAP TOXIC AIR EXPECTED A OXIC AIR POLLUTANT cetaldehyde (TH)	CTUAL EMISS CAS Num. 75070	7.06E-03 EMISSIONS INF IONS AFTER CO Ib/hi 5.96E-	5.65E+01 ORMATION ONTROLS /	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/da 1.31E	6.18E+01 NG PURPOS ay -06	7.06E-03 ES) lb/yr 4.77E-	6.18E+01 04	EMISSION Ib/mr uncontrolled 1.49E-08	1.76E-03 FACTOR nBtu controlled 1.49E-08
otal HAPs ghest HAP TOXIC AIR EXPECTED A DXIC AIR POLLUTANT cetaldehyde (TH) crolein (TH)	CAS Num. 75070 107028	7.06E-03 EMISSIONS INF IONS AFTER CO Ib/hi 5.96E- 7.06E-	5.65E+01 ORMATION ONTROLS / I -08 -08	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/da 1.31E 1.55E	6.18E+01 NG PURPOS ay -06 -06	7.06E-03 ES) lb/yr	6.18E+01 04 04	EMISSION Ib/mr uncontrolled 1.49E-08 1.76E-08	1.76E-03 FACTOR nBtu controlled 1.49E-08 1.76E-08
otal HAPs ghest HAP TOXIC AIR EXPECTED A DXIC AIR POLLUTANT cetaldehyde (TH) crolein (TH) nmonia (T)	CTUAL EMISS CAS Num. 75070	7.06E-03 EMISSIONS INF IONS AFTER CO Ib/hi 5.96E-	5.65E+01 ORMATION ONTROLS / I 0.08 0.08 0.02	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/da 1.31E	6.18E+01 NG PURPOS ay -06 -06 -01	7.06E-03 ES) lb/yr 4.77E-	04 04 02	EMISSION Ib/mr uncontrolled 1.49E-08	1.76E-03 FACTOR nBtu controlled 1.49E-08
otal HAPs ghest HAP TOXIC AIR EXPECTED A DXIC AIR POLLUTANT tetaldehyde (TH) prolein (TH) mmonia (T) senic unlisted compounds (TH) mzene (TH)	CTUAL EMISS CAS Num. 75070 107028 7664417 ASC-other 71432	7.06E-03 EMISSIONS INF IONS AFTER CC Ib/h 5.96E- 7.06E- 1.25E- 0.00E+ 8.24E-	5.65E+01 ORMATION ONTROLS / 1 7.008 1.008 1.002 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/di 1.31E 1.55E 2.76E 0.00E 1.81E	6.18E+01 NG PURPOS ay -06 -06 -01 +00 -04	7.06E-03 ES) Ib/yr	04 04 02 00 02	1.76E-03 EMISSION Ib/mr uncontrolled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06	1.76E-03 FACTOR nBtu controlled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06
otal HAPs ghest HAP TOXIC AIR EXPECTED A DXIC AIR POLLUTANT retaldehyde (TH) rolein (TH) mmonia (T) senic unlisted compounds (TH) enzene (TH) enzene (TH) enzene(TH) enze(a)pyrene (TH)	CTUAL EMISS CAS Num. 75070 107028 7664417 ASC-other 71432 50328	7.06E-03 EMISSIONS INF IONS AFTER CC	5.65E+01 ORMATION DNTROLS / 1 6.08 6.08 6.02 6.00 6.0	7.06E-03 (FOR PERMITTI LIMITATIONS	6.18E+01 NG PURPOS ay -06 -06 -01 +00 -04 -07	7.06E-03 ES) lb/yr	04 04 02 00 02 05	1.76E-03 EMISSION Ib/mr uncontrolled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06 1.18E-09	1.76E-03 FACTOR nBtu controlled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06 1.18E-09
otal HAPs ghest HAP TOXIC AIR EXPECTED A DXIC AIR POLLUTANT retaldehyde (TH) rotolein (TH) nmonia (T) senic unlisted compounds (TH) rotolein (TH) senic unlisted compounds (TH) rotolein (TH) rotolein (TH) rotolein (TH) rotolein (TH) rotolein (TH) rotolein (TH) rotolein (TH) rotolein (TH) rotolein (TH) rotolein (TH) rotolein (TH)	CAS Num. 75070 107028 7664417 ASC-other 71432 50328 7440417	7.06E-03 EMISSIONS INF IONS AFTER CC Ib/hi 5.96E- 7.06E- 1.25E- 0.00E+ 8.24E- 4.71E- 0.00E+	5.65E+01 ORMATION DNTROLS / 1 6.08 6.08 6.02 6.00 6.0	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/da 1.31E 1.55E 2.76E 0.00E 1.81E 1.04E 0.00E	6.18E+01 NG PURPOS ay -06 -06 -01 +00 -04 -07 +00	7.06E-03 ES) Ib/yr 4.77E- 5.65E- 1.00E+ 0.00E+ 6.59E- 3.76E- 0.00E+ 0.00E	04 04 02 00 02 05 00	1.76E-03 EMISSION Ib/mr uncontrolled 1.49E-08 1.76E-08 2.06E-06 1.18E-09 0.00E+00	1.76E-03 FACTOR nBtu controlled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06 1.18E-09 0.00E+00
tal HAPs ghest HAP TOXIC AIR EXPECTED A OXIC AIR POLLUTANT tetaldehyde (TH) rolein (TH) mmonia (T) senic unlisted compounds (TH) senic unlisted compounds (TH) mzo(a)pyrene (TH) myollium metal (unreacted) (TH) idmium metal (elemental unreacted) (TH)	CTUAL EMISS CAS Num. 75070 107028 7664417 ASC-other 71432 50328 7440417 7440439	7.06E-03 EMISSIONS INF IONS AFTER CC	5.65E+01 ORMATION ONTROLS / 1 6.08 6.08 6.02 6.00 6.06 6.09 6.00 6.00	7.06E-03 (FOR PERMITTI LIMITATIONS	6.18E+01 NG PURPOS 3y -06 -06 -01 +00 -04 -07 +00 +00	7.06E-03 ES) lb/yr	04 04 04 02 00 02 05 00	1.76E-03 EMISSION Ib/mr uncontrolled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06 1.18E-09	1.76E-03 FACTOR nBtu controlled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06 1.18E-09 0.00E+00 0.00E+00
otal HAPs ghest HAP TOXIC AIR EXPECTED A DXIC AIR POLLUTANT cetaldehyde (TH) crolein (TH) mmonia (T) senic unlisted compounds (TH) enzene (TH) enzene (TH) enzene (TH) enzelium metal (unreacted) (TH) admium metal (elemental unreacted) (TH) oluble chromate compounds, as chromium (VI) equivalent predictions of the compounds of the co	CAS Num. 75070 107028 7664417 ASC-other 71432 50328 7440417	7.06E-03 EMISSIONS INF IONS AFTER CC Ib/hi 5.96E- 7.06E- 1.25E- 0.00E+ 8.24E- 4.71E- 0.00E+ 0.00E+ 2.94E- 2.94E-	5.65E+01 ORMATION ONTROLS / I 	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/da 1.31E 1.55E 2.76E 0.00E 1.81E 1.04E 0.00E 0.00E	6.18E+01 NG PURPOS ay -06 -06 -06 -01 +00 -04 -07 +00 +00 +00 +00	7.06E-03 ES) Ib/yr 4.77E- 5.65E- 1.00E+ 0.00E+ 6.59E- 3.76E- 0.00E+ 0.00E	04 04 02 00 02 00 05 00 00	1.76E-03 EMISSION Ib/mr uncontrolled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06 1.18E-09 0.00E+00 0.00E+00	1.76E-03 FACTOR nBtu controlled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06 1.18E-09 0.00E+00
otal HAPs ghest HAP TOXIC AIR EXPECTED A DXIC AIR POLLUTANT cetaldehyde (TH) crolein (TH) mmonia (T) senic unlisted compounds (TH) enzene (TH) enzene (TH) enzola)pyrene (TH) suplium metal (unreacted) (TH) admium metal (elemental unreacted) (TH) oluble chromate compounds, as chromium (VI) equivalent ormaldehyde (TH) exane, n- (TH)	CTUAL EMISS CAS Num. 75070 107028 7664417 ASC-other 71432 50328 7440417 7440439 SoiCR6 50000 1110543	7.06E-03 FMISSIONS INF IONS AFTER CC Ib/hi 5.96E- 7.06E- 1.25E- 0.00E+ 8.24E- 4.71E- 0.00E+ 0.00E+ 0.00E+ 2.94E- 7.06E- 7.06E- 7.06E- 7.06E- 7.06E- 7.06E-	5.65E+01 ORMATION DNTROLS / I F. 08 -08 -02 -00 -06 -09 -00 -00 -00 -00 -00	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/di 1.31E	6.18E+01 NG PURPOS. Ay -06 -06 -01 +00 -04 -07 +00 +00 -03 -01	7.06E-03 ES) Ib/yr	04 04 02 00 00 02 00 00 00 00 00 00	1.76E-03 EMISSION Ib/mr uncontrolled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06 1.18E-09 0.00E+00 0.00E+00 0.00E+00 7.35E-05 1.76E-03	1.76E-03 FACTOR mBtu controlled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-060 0.00E+00 0.00E+00 0.00E+00 1.76E-08
Data HAPs Ighest HAP IGHER FARE EXPECTED A DXIC AIR POLLUTANT Detaildehyde (TH) Crolein (TH) Immonia (T) Senic unlisted compounds (TH) Enzola pyrene (TH) Enzola pyrene (TH) Endium metal (unreacted) (TH) Endium metal (elemental unreacted) (TH) Diuble chromate compounds, as chromium (VI) equivalent Dimmaldehyde (TH) Enzone, n. (TH) Engane en enisted compounds (TH)	CTUAL EMISS CAS Num. 75070 107028 7664417 ASC-other 71432 50328 7440417 7440439 SolCR6 50000 110543 MNC-other	7.06E-03 EMISSIONS INF IONS AFTER CC Ib/hr 5.96E- 7.06E- 1.25E- 0.00E+ 8.24E- 4.71E- 0.00E+ 0.00E+ 2.94E- 7.06E- 0.00E+ 0.00E+	5.65E+01 ORMATION DNTROLS / I 6.08 0.08 0.02 0.00 0.06 0.09 0.00	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/da 1.31E 1.55E 2.76E 0.00E 1.81E 1.04E 0.00E 0.00E 0.00E 6.47E 1.55E 0.00E	6.18E+01 NG PURPOS. By -06 -06 -06 -01 +00 -04 -07 +00 +00 -03 -01 +00	7.06E-03 ES) lb/yr	04 04 02 00 02 00 05 00 00 00 00 00 00 00	1.76E-03 EMISSION Ib/mm uncontrolled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.7.5E-05 1.76E-03	1.76E-03 FACTOR nBtu controlled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06 1.18E-09 0.00E+00 0.00E+00 0.00E+00 0.175E-05 1.76E-03
tal HAPs ghest HAP TOXIC AIR EXPECTED A EXPECTED A EXIC AIR POLLUTANT etaldehyde (TH) rolein (TH) monia (T) senic unlisted compounds (TH) nzene (TH) nzo(a)pyrene (TH) nyllium metal (unreacted) (TH) dmium metal (elemental unreacted) (TH) luble chromate compounds, as chromium (VI) equivalent rmaldehyde (TH) xane, n- (TH) unganese unlisted compounds (TH) recury vapor (TH)	CTUAL EMISS CAS Num. 75070 107028 7664417 ASC-other 71432 50328 7440417 77440439 SolCR6 50000 110543 MNC-other 7439976	7.06E-03 EMISSIONS INF IONS AFTER CC Ib/ht 5.96E- 7.06E- 1.25E- 0.00E+ 8.24E- 4.71E- 0.00E+ 0.00E+ 2.94E- 7.06E- 0.00E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+	5.65E+01 ORMATION ONTROLS / I	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/di 1.31E	6.18E+01 NG PURPOS BY -06 -06 -06 -01 +00 -04 -07 +00 +00 +00 +00 +00 +00 +00 +00 +00 +	7.06E-03 ES) lb/yr	04 04 04 02 00 02 05 00 00 00 00 00 01 00 00	1.76E-03 EMISSION Ib/mr uncontrolled 1.49E-08 1.76E-08 3.00E+00 2.06E-06 1.18E-09 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	1.76E-03 FACTOR inBtu controlled 1.49E-08 1.76E-08 1.76E-08 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
tal HAPs ghest HAP TOXIC AIR EXPECTED A EXPECTED A EXIC AIR POLLUTANT etaldehyde (TH) rolein (TH) monia (T) senic unlisted compounds (TH) nzcene (TH) nzo(a)pyrene (TH) ryllium metal (unreacted) (TH) dmium metal (elemental unreacted) (TH) luble chromate compounds, as chromium (VI) equivalent rmaldehyde (TH) xane, n- (TH) inganese unlisted compounds (TH) recury vapor (TH) kel metal (TH)	CTUAL EMISS CAS Num. 75070 107028 7664417 ASC-other 71432 50328 7740417 7440439 SolCR6 50000 110543 MNC-other 7449976 77440020	7.06E-03 ID/NS AFTER CC Ib/hI 5.96E- 7.06E- 1.25E- 0.00E+ 8.24E- 4.71E- 0.00E+ 0.00E+ 2.94E- 7.06E- 0.00E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+ 0.00E+	5.65E+01 ORMATION DNTROLS / I F. 08 -08 -09 -00 -00 -00 -00 -00 -	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/da	6.18E+01 NG PURPOS ay -06 -06 -01 +00 -04 -07 +00 +00 -03 -01 +00 +00 +00 +00 +00 +00 +00 +00 +00 +	7.06E-03 ES) Ib/yr	04 04 04 02 00 00 00 00 00 00 00 00 00 00 00	1.76E-03 EMISSION Ib/mm uncontrolled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.7.5E-05 1.76E-03	1.76E-03 FACTOR nBtu controlled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06 1.18E-09 0.00E+00 0.00E+00 0.00E+00 0.175E-05 1.76E-03
I HAPS I HAPS I EXPECTED A ICC AIR POLLUTANT Laldehyde (TH) Indic III I I I I I I I I I I I I I I I I I	CTUAL EMISS CAS Num. 75070 107028 7664417 ASC-other 71432 50328 7440417 7440417 7440439 SolCR6 50000 110543 MNC-other 7439976 7440020 108883	7.06E-03 EMISSIONS INF IONS AFTER C Ib/hi 5.96E- 7.06E- 1.25E- 0.00E+ 8.24E- 4.71E- 0.00E+ 0.00E+ 0.00E+ 2.94E- 7.06E- 0.00E+ 0.00E+ 0.00E+ 1.33E-	5.65E+01 ORMATION DNTROLS / I F. 008 -008 -000	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/da	6.18E+01 NG PURPOS 39 -06 -06 -06 -01 +00 -04 -07 +00 +00 -03 -01 +00 +00 +00 +00 -04	7.06E-03 ES) Ib/yr	04 04 04 02 00 00 00 00 00 00 00 00 00 00 00 00	1.76E-03 EMISSION Ib/mr uncontrolled 1.49E-08 1.49E-08 3.14E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	1.76E-03 FACTOR ### REPUIS CONTROLL ### CONTROLL ### REPUIS CONTROLL
al HAPs hest HAP TOXIC AIR EXPECTED A XIC AIR POLLUTANT staldehyde (TH) olein (TH) monia (T) henic unlisted compounds (TH) hzo(a)pyrene (TH) hyllium metal (unreacted) (TH) drinium metal (elemental unreacted) (TH) uble chromate compounds, as chromium (VI) equivalent maldehyde (TH) kane, n- (TH) hyanese unlisted compounds (TH) rouny vapor (TH) kel metal (TH)	CTUAL EMISS CAS Num. 75070 107028 7664417 ASC-other 71432 50328 7440417 7440439 SoiCR6 50000 110543 MNC-other 7439976 7440991 108883	7.06E-03 EMISSIONS INF IONS AFTER C Ib/hi 5.96E- 7.06E- 1.25E- 0.00E+ 8.24E- 4.71E- 0.00E+ 0.00E+ 0.00E+ 2.94E- 7.06E- 0.00E+ 0.00E+ 0.00E+ 1.33E-	5.65E+01 ORMATION DNTROLS / I F. 08 -08 -09 -00 -00 -00 -00 -00 -	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/da	6.18E+01 NG PURPOS 39 -06 -06 -06 -01 +00 -04 -07 +00 +00 -03 -01 +00 +00 +00 +00 -04	7.06E-03 ES) Ib/yr	04 04 04 02 00 00 00 00 00 00 00 00 00 00 00 00	1.76E-03 EMISSION Ib/mr uncontrolled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.33E-06	1.76E-03 FACTOR ### REPURS ### Controlled 1.49E-08 3.14E-03 0.00E+000 0.00E+000 0.00E+000 0.00E+000 0.00E+00
DOUBLE HAPS TOXIC AIR EXPECTED A DOUBLE AIR POLLUTANT Cetaldehyde (TH) crolein (TH) mmonia (T) resenic unlisted compounds (TH) enzene (TH) enzene (TH) enzene (TH) enzene (TH) enzene (TH) enzenium metal (unreacted) (TH) admium metal (elemental unreacted) (TH) oluble chromate compounds, as chromium (VI) equivalent ormaldehyde (TH) exane, n- (TH) anganese unlisted compounds (TH) ercury vapor (TH) ickel metal (TH) oluene (TH) GREENHOUSE GAS EMISSIONS INFORMATION (FOR	CTUAL EMISS CAS Num. 75070 107028 7664417 ASC-other 71432 50328 7440417 7440439 SoiCR6 50000 110543 MNC-other 7439976 7440991 108883	7.06E-03 Ib/hi 5.96E- 7.06E- 1.25E- 0.00E+ 4.71E- 0.00E+ 0.00E+ 2.94E- 7.06E- 0.00E+ 0.00E+ 1.33E- INVENTORY PU	5.65E+01 ORMATION DNTROLS / I 1.08 1.08 1.02 1.00 1.0	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/da	6.18E+01 NG PURPOS Ay -06 -06 -01 +00 -04 +00 -03 -01 +00 +00 +00 -04 WITH EPA MA	7.06E-03 ES) Ib/yr	04 04 04 02 00 00 00 00 00 00 00 00 00 00 00 00	1.76E-03 EMISSION Ib/mr uncontrolled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.33E-06	1.76E-03 FACTOR BBtu controlled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06 0.00E+00 0.00
potal HAPs ighest HAP TOXIC AIR EXPECTED A EXPECTED A DIVIC AIR POLLUTANT cetaldehyde (TH) crolein (TH) mmonia (T) senic unlisted compounds (TH) enzo(a)pyrene (TH) enzo(a)pyren	CTUAL EMISS CAS Num. 75070 107028 7664417 ASC-other 71432 50328 7440417 7440439 SoiCR6 50000 110543 MNC-other 7439976 7440991 108883	7.06E-03 Ib/hi 5.96E- 7.06E-1.25E- 0.00E-1.25E- 0.00E-1.20E-	5.65E+01 ORMATION DNTROLS / I F. 08 -08 -09 -00 -00 -00 -00 -00 -	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/di	6.18E+01 NG PURPOS Ay -06 -06 -01 +00 -04 +00 -03 -01 +00 +00 +00 -04 WITH EPA MA BISSIONS DN METHOD:	7.06E-03 ES) Ib/yr	04 04 02 00 00 00 00 00 00 00 00 00 00 00 00	1.76E-03 EMISSION Ib/mr uncontrolled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 2.06E-06 1.18E-09 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	1.76E-03 FACTOR ### Controlled 1.49E-08 1.49E-08 1.76E-08 1.49E-08 1.
DOTAIC AIR EXPECTED A DIVIC AIR POLLUTANT Cetaildehyde (TH) crolein (TH) mmonia (T) resenic unlisted compounds (TH) enzene (TH) enzene (TH) enzene (TH) admium metal (unreacted) (TH) admium metal (elemental unreacted) (TH) puble chromate compounds, as chromium (VI) equivalent ormaldehyde (TH) enzene, n. (TH) anganese unlisted compounds (TH) ercury vapor (TH) ickel metal (TH) olublene (TH) GREENHOUSE GAS EMISSIONS INFORMATION (FOR	CTUAL EMISS CAS Num. 75070 107028 7664417 ASC-other 71432 50328 7440417 7440439 SoiCR6 50000 110543 MNC-other 7439976 7440991 108883	7.06E-03 Ib/hi 5.96E- 7.06E- 1.25E- 0.00E+ 8.24E- 0.00E+ 0.00E+ 0.00E+ 0.00E+ 1.33E- 0.00E+	5.65E+01 ORMATION DNTROLS / I 1.08 -0.08 -0.02 -0.00	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/di 1.31E 1.55E 2.76E 0.00E 0.0DE 6.18E+01 NG PURPOS ANY -06 -06 -06 -01 +00 -04 +00 -03 -01 +00 +00 -04 VITH EPA MA SISSIONS ON METHOD: O2e	7.06E-03 ES) lb/yr	04 04 02 00 00 00 00 00 00 00 00 00 00 00 00	1.76E-03 EMISSION Ib/mr uncontrolled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 0	1.76E-03 FACTOR BBtu controlled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 0.00	
otal HAPs lighest HAP TOXIC AIR EXPECTED A OXIC AIR POLLUTANT cetaldehyde (TH) crolein (TH) mmonia (T) rsenic unlisted compounds (TH) enzene (TH) enzene (TH) enzene (TH) enzelnium metal (unreacted) (TH) roluble chromate compounds, as chromium (VI) equivalent ormaldehyde (TH) leanne, n- (TH) langanese unlisted compounds (TH) lercury vapor (TH) lercury vapor (TH) GREENHOUSE GAS EMISSIONS INFORMATION (FOREIGNE (TOXIC)) GREENHOUSE GAS POLLUTANT	CTUAL EMISS CAS Num. 75070 107028 7664417 ASC-other 71432 50328 7440417 7440439 SoiCR6 50000 110543 MNC-other 7439976 7440991 108883	7.06E-03 EMISSIONS INF IONS AFTER CO Ib/hi 5.96E- 7.06E- 1.25E- 0.00E4 8.24E- 0.00E4 0.00E4 0.00E4 0.00E4 1.33E- INVENTORY PUE (MRR) METHO metric to 1709.	5.65E+01 ORMATION DNTROLS / I 6.08 -0.08 -0.00	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/da	6.18E+01 NG PURPOS ALY -06 -06 -06 -01 +00 -07 +00 +00 -03 -01 +00 +00 -04 -07 +00 +00 -08 -08 -09 -09 -09 -09 -09 -09 -09 -09 -09 -09	7.06E-03 ES) lb/yr	04 04 02 00 00 02 00 00 00 00 00 00 00 00 00	1.76E-03 EMISSION Ib/mr uncontrolled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 0	1.76E-03 FACTOR nBtu controlled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 0.00
EXPECTED A TOXIC AIR POLLUTANT (cetaldehyde (TH) (crolein (TH) (corolein (TH) (corolein curisted compounds (TH) (denzene (TH)	CTUAL EMISS CAS Num. 75070 107028 7664417 ASC-other 71432 50328 7440417 7440439 SoiCR6 50000 110543 MNC-other 7439976 7440991 108883	7.06E-03 EMISSIONS INF IONS AFTER CC Ib/hi 5.96E- 7.06E- 1.25E- 0.00E+ 8.24E- 4.71E- 0.00E+ 0.00E+ 0.00E+ 1.33E- INVENTORY PU E (MRR) METHO metric to 1709.3 3.22E-	5.65E+01 ORMATION DNTROLS / I F. 008 008 002 000 006 009 000 001 000 001 000 000	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/da	6.18E+01 NG PURPOS. 3y -06 -06 -06 -01 +00 -04 -07 +00 +00 +00 +00 +00 +00 +00 +00 NTH EPA MA IISSIONS NN METHOD: 02e -8.81 -01	7.06E-03 ES) Ib/yr	04 04 04 02 00 00 00 00 00 00 00 00 00 00 00 00	1.76E-03 EMISSION Ib/mr uncontrolled 1.49E-08 3.14E-03 0.00E+00 2.06E-06 1.18E-09 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.33E-06	1.76E-03 FACTOR ### REPUIS CONTROLL 1.49E-08 3.14E-03 0.00E+000 2.06E-06 1.18E-09 0.00E+000 7.35E-05 1.76E-03 0.00E+000 0.00E+000 0.00E+000 POSE-00 0.00E+000 0.00E+000 0.00E+000 0.00E+000 0.00E+000 7.35E-05 1.76E-03
otal HAPs lighest HAP TOXIC AIR EXPECTED A OXIC AIR POLLUTANT cetaldehyde (TH) crolein (TH) mmonia (T) rsenic unlisted compounds (TH) enzene (TH) enzene (TH) enzene (TH) enzelnium metal (unreacted) (TH) roluble chromate compounds, as chromium (VI) equivalent ormaldehyde (TH) leanne, n- (TH) langanese unlisted compounds (TH) lercury vapor (TH) lercury vapor (TH) GREENHOUSE GAS EMISSIONS INFORMATION (FOREIGNE (TOXIC)) GREENHOUSE GAS POLLUTANT	CTUAL EMISS CAS Num. 75070 107028 7664417 ASC-other 71432 50328 7440417 7440439 SoiCR6 50000 110543 MNC-other 7439976 7440991 108883	7.06E-03 EMISSIONS INF IONS AFTER CO Ib/hi 5.96E- 7.06E- 1.25E- 0.00E4 8.24E- 0.00E4 0.00E4 0.00E4 0.00E4 1.33E- INVENTORY PUE (MRR) METHO metric to 1709.	5.65E+01 ORMATION DNTROLS / I F. 008 008 002 000 006 009 000 001 000 001 000 000	7.06E-03 (FOR PERMITTI LIMITATIONS Ib/da	6.18E+01 NG PURPOS. 3y -06 -06 -06 -01 +00 -04 -07 +00 +00 +00 +00 +00 +00 +00 +00 NTH EPA MA IISSIONS NN METHOD: 02e -8.81 -01	7.06E-03 ES) lb/yr	04 04 04 02 00 00 00 00 00 00 00 00 00 00 00 00	1.76E-03 EMISSION Ib/mr uncontrolled 1.49E-08 1.76E-08 3.14E-03 0.00E+00 0	1.76E-03 FACTOR ### REPUIS CONTROLL 1.49E-08 3.14E-03 0.00E+000 2.06E-06 1.18E-09 0.00E+000 7.35E-05 1.76E-03 0.00E+000 0.00E+000 0.00E+000 POSE-00 0.00E+000 0.00E+000 0.00E+000 0.00E+000 0.00E+000 7.35E-05 1.76E-03

NOTE: The DAQ Air Emissions Reporting Online (AERO) system requires short tons be reported. The EPA MRR requires metric tons be reported.

NOTE: Do not use greenhouse gas emission estimates from this spreadsheet for PSD (Prevention of Significant Deterioration) purposes.

Calculations of NG usage based on Hours of Operation

Data Input (BOILER)

Maximum Heat Input	20.00	mmBtu/hr
Boiler Size/Type	Small Industrial	
Actual Fuel Usage		ft^3/yr
or	or	
Hours of Operation	8,000	hr/yr
and	and	
Heating Value	1,020	Btu/ft^3
Calculated Fuel Usage	156,862,745	ft^3/yr
	156.86	mmscf/yr

Data Input (DRYER)

Maximum Heat Input	4.00	mmBtu/hr
Boiler Size/Type	Small Industria	ı
Actual Fuel Usage		ft^3/yr
or	or	•
Hours of Operation	8,000	hr/yr
and	and	•
Heating Value	1,020	Btu/ft^3
Calculated Fuel Usage	31,372,549	ft^3/yr
	31.37	mmscf/yr
		•

Stack Test dated April 2017

NOTES:

Enviva Pellets Company makes their pellets from dry/green chips and therefore, the VOC are still in the chip. However, Active Energy first pressure cook the dry chips and condense the liquids using a condeser with a conservative efficieny of 80% (80-95%). Please note many VOCs boiling point is less than the steam temp and therefore, majority of the VOC will be condensed in the steam released from the Pressure Cooker operation. The condensed VOC liquids will be disposed of.

As a conservative estimate, we have estimated VOCs emissions from several permits and used the worst case for Pressure cooker emissions calcs

Actual Hrs of Operations = 8000 hrs
Potential Hrs of Operation = 8760 hrs

VOC from the Pressure Cooker & Condensor (80%-95% Efficiency)- @131°F Condenser 80-95% Used 80% (ES-P-1) & CD-1 Used 80% Potential Emissions (after Condenser 80% Max Throughput 43,800.00 Ton/yr @ 10% m.c. Emission Actual Emissions (after Actual Potential Emissions Potential Throughput Actual Throughput Factor¹ **Emissions** Condenser 80% Eff) Eff) 39,420.00 ODT/yr 36,000.00 ODT/yr 25% Hardwood 75% Softwood lbs/ODT tons/yr tons/yr tons/yr Composition Pollutant VOC 1.070 19.26 21.09 3.85 4.22 Acetaldehyde (BP-68.36F) 6.40E-02 2304.00 2522.88 460.80 504.58 0.00E+00 6.77E-02 2.98E-02 0.00E+00 0.00 487.44 214.56 Acrolein (BP-127.4F) Formaldehide (BP- (-2.2F) 0.00 2437.20 1072.80 2668.73 1174.72 533.75 234.94 Methanol (BP-148.5F) Phenol (BP-359.1F) Propionaldehyde (BP-119.8F) Ν 0.00 1549.21 0.00 1414.80 3.93E-02 282.96 309.84 HAPs total (lbs/yea 7,228.80 7,915.54 1,449.61 1,587.33 ODT Processed (ODT/Yr) Facility Wide VOC (ton/yr) Permit Name (Ib/ODT) 2016 Enviva Pellets-Sampson-Dryer Stack Test 1.070

PM, NOX, CO and VOC, HAPS from Screw Press/Pellet Drying with an INTEGRAL high Efficiency Cyclone (90% for PM)

ľ	ES-	SPD-	-1)	& (CD	٠

Max Throughput Potential Throughput	43,800.00 39,420.00	ODT/yr	2 10% m.c.		Emission Factor ¹	Actual Emissions	Potential Emissions	Actual Emissions After a CD (90 Eff for PM and 60% for PM10)	Potential Emissions After a CD (90% Eff for PM and 60% for PM10)
Actual Throughput Composition	36,000.00 25% Hardwood 759		od		lbs/ODT	lbs/yr	lbs/yr	lbs/yr	lbs/yr
Pollutant	Flow Rate (CFM)		Grains/cf	hrs					
PM	15556		0.05	8000		53334.80	58,401.61	53334.80	58401.61
Cyclone Loading rate cal	cs			Tons		26.67	29.20	26.67	29.20
PM10	1.0% of total PM fro	om C For	ms	8000	1.00%	533.35	584.02	533.35	584.02
	11070 OF TOTAL 1 111 11		1	Tons	1.0070	0.27	0.29	0.27	0.29
PM2.5	0.25% of total PM f	rom C Fo	rms	8000	0.25%	133.34	146.00	133.34	146.00
				Tons		0.07	0.07	0.07	0.07
voc					1.07	38520.00	42179.40	38520.00	42179.40
EF from Enviva Pellet Press -Stack Test Dated April 2017		7	Tons		19.26	21.09	19.26	21.09	
Pollutant		HAP	NC TAP	VOC					
						(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Acetaldehyde (BP-68	3.36F)	Y	Y	Υ	2.57E-02	925.20	1,013.09	925.20	1,013.09
Acrolein (BP-127.4F)	Υ	Υ	Υ	0.00E+00	-	-	-	-
Formaldehide (BP- (-2.2F)	Y	Y	Υ	1.40E-03	50.40	55.19	50.40	55.19
Methanol (BP-148.5)	-)	Υ	N	Υ	4.50E-03	162.00	177.39	162.00	177.39
Phenol (BP-359.1F)		Υ	Y	Υ	0.00E+00	-	-		-
Propionaldehyde (BF	P-119.8F)	Υ	N	Υ	4.50E-03	162.00	177.39	162.00	177.39
			HAP tot	al (lbs/year)		1,299.60	1,423.06	1,299.60	1,423.06
			HAP to	tal (tons/yr)		0.65	0.71	0.65	0.71
			TAP tot	al (lbs/year)		975.60	1,068.28	975.60	1,068.28
			TAP to	tal (tons/yr)		0.49	0.53	0.49	0.53
Permit Name			ODT Processed (ODT/Yr)	Facility Wide VOC (ton/yr)	Emission Factor (lb/ODT)				
2016 Enviva Pellets- Stack Test dated Ap		ick Test			1.070	Used as the worst ca	se		

Active Energy Renewable Power

Lumberton, Robeson County, NC

NOTES:

Pollutan

Enviva Pellets Company makes their pellets from dry/green chips and therefore, the VOC are still in the chip. However, Active Energy first pressure cook the dry chips and condense the liquids using a condesser with a conservative efficieny of 80% (80-95%). Please note many VOCs boiling point is less than the steam temp and therefore, majority of the VOC will be condensed in the steam released from the Pressure Cooker operation. The condensed VOC liquids will be disposed of.

As a conservative estimate, we have estimated VOCs emissions from several permits and used the worst case for Pressure cooker emissions calcs

Actual Hrs of Operations = 8000 hrs Potential Hrs of Operation = 8760 hrs

PM, VOCs and HAPS from Pellet Press & Pellet Cooler with a Conventional Cyclone (80-90% Eff)

(ES-PP-1) & CD-3

Max Throughput Potential Throughput	43,800.00 Ton/yr @ 10% m.c. 39,420.00 ODT/yr		Emission Factor ¹	Actual Emissions	Potential Emissions
Actual Throughput Composition	36,000.00 ODT/yr 25% Hardwood 75% Softwood		lbs/ODT	lbs/yr	lbs/yr
		-			

EF in kg/ton

	ī				
hrs					
8000	0.15	5554.08	6,081.72	3600.00	3942.00
Tons		2.78	3.04	1.80	1.97
8000	0.09	3170.88	3,472.11	634.18	694.42
					0.05

Actual Emissions

After a CD (80% Eff)

lbs/yr

Potential Emissions

After a CD (80% Eff)

lbs/yr

i Ollutalit	i ion itale (or in)		Li ili kg/toli	1113					
PM			0.07	8000	0.15	5554.08	6,081.72	3600.00	3942.00
PM and PM10 EFs a	are taken from ref IT	Q# dated	12/01/2008	Tons		2.78	3.04	1.80	1.97
PM10			0.04	8000	0.09	3170.88	3,472.11	634.18	694.42
PM and PM10 EFs a	are taken from ref IT	Q# dated	12/01/2008	Tons		1.59	1.74	0.32	0.35
Pollutant		HAP	NC TAP	VOC				- 1	-1
VOC				Y	0.5	18,000.00	19,710.00	18000.00	19710.00
EF from Enviva Pellet F	Press -Stack Test Dated	April 201	7	Tons		9.00	9.86	9.00	9.86
						(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Acetaldehyde (BP-6)	8.36F)	Υ	Y	Y	2.57E-02	925.20	1,013.09	925.20	1,013.09
Acrolein (BP-127.4F)	Υ	Y	Y	0.00E+00	-	-	-	•
Formaldehide (BP- (-2.2F)	Υ	Y	Y	1.40E-03	50.40	55.19	50.40	55.19
Methanol (BP-148.5)	F)	Υ	N	Y	4.50E-03	162.00	177.39	162.00	177.39
Phenol (BP-359.1F)		Y	Y	Υ	0.00E+00	-	-	-	
Propionaldehyde (BI	P-119.8F)	Υ	N	Y	4.50E-03	162.00	177.39	162.00	177.39
			HAP tota	al (lbs/year)		1,299.60	1,423.06	1,299.60	1,423.06
			HAP to	tal (tons/yr)		0.65	0.71	0.65	0.71
			TAP tota	al (lbs/year)		975.60	1,068.28	975.60	1,068.28
			TAP to	tal (tons/yr)		0.49	0.53	0.49	0.53
					F i a a i a a				

Permit Name	ODT Processed (ODT/Yr)	Facility Wide VOC (ton/yr)		
2016 Enviva Pellets-Sampson-Pellet Press Stack	Test		0.500	Used as the worst case
Stack Test dated April 2017				

PM from Pellet Screen with a Cartridge Filter (99.9% Eff)

(ES-PSC-1) & CD-4

Max Throughput Potential	43,800.00 Ton/yr @ 10% m.c.
Throughput	39,420.00 ODT/yr
Actual Throughput	36,000.00 ODT/yr
Composition	25% Hardwood 75% Softwood

Emission Factor1	Actual Emissions	Potential Emissions	Actual Emissions After a CD (99.9% Eff)	Potential Emissions After a CD (99.9% Eff)
lbs/ODT	lbs/yr	lbs/yr	lbs/yr	lbs/yr

PM, PM10 and PM2.5 E	Fs are taken from ref-P	innacle Re	enewable Energy-N	lewton Facility	/ dated August 20	019, revised in Jan 20	020		
PM				8000	3.15E-02	1134.00	1,241.73	1.13	1.24
				Tons		0.57	0.62	0.0006	0.0006
PM10				8000	1.50E-02	540.00	591.30	0.54	0.59
				Tons		0.27	0.30	0.0003	0.0003
PM2.5				8000	3.15E-03	113.40	124.17	0.11	0.12
				Tons		0.06	0.06	0.0001	0.0001

[External] revised B, D1 and excel sheets

CHUCK PAKALA < cvpakala@carolina.rr.com>

Wed 5/12/2021 12:47 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

3 attachments (133 KB)

D1 NEW 051021.pdf; All Emissions Calcs-GREG HAP EFs 051221.pdf; B_2019 NEW 051021-D1.pdf;

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to <u>Report Spam.</u>

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

Email: cvpakala@carolina.rr.com

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B (ALREADY APPROVED)

REVISED 09/22/16	ED 09/22/16 NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate							
EMISSION SOURCE DESCRIPTION: ONE	4MMBTU/HR NA	TURAL GAS FIREI	EMISSION SO					
				CONTROL DEVICE ID NO(S):NA				
OPERATING SCENARIO1	OF	1		EMISSION PO	DINT (STACK)	ID NO(S):EP-	D-1	
DESCRIBE IN DETAILTHE EMISSION SOI 4MMBTU/HR NATURAL GAS FIRED DRYE		•	-		,			
TYPE OF EMISSION S	SOURCE (CHECK	AND COMPLETE	APPROPRIA	TE FORM B1-	R9 ON THE F	OLLOWING P	AGES):	
Coal, wood, oil, gas, other burner (Form		Woodworkin		IL I OKWI BI-		of chemicals/		Form B7)
Int.combustion engine/generator (Form		_	g (1 01111 B 1) hing/printing (F	Form B5)	=	ation (Form B	•	
Liquid storage tanks (Form B3)	,		s/bins (Form B			(Form B9)	-,	
START CONSTRUCTION DATE:NOVEMBI	ER 2019			FACTURED: N		,		
MANUFACTURER / MODEL NO.:			ı	OP. SCHEDUL			AY/WK 52	WK/YR
	ISPS (SUBPART)	S?):NA			AP (SUBPART		NA	
PERCENTAGE ANNUAL THROUGHPUT (,	25 MAR-	MAY 25	JUN-AU		SEP-NOV	25	
		ITANT EMISSI						
-		SOURCE OF		D ACTUAL			EMISSIONS	
		EMISSION	(AFTER CONT	ROLS / LIMITS)	(BEFORE CONT	ROLS / LIMITS)	(AFTER CONT	ROLS / LIMITS)
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)		AP-42/NC DEQ	0.00	0.01	0.01	0.01	0.01	0.01
PARTICULATE MATTER<10 MICRONS (PM ₁₀	₅)	AP-42/NC DEQ	0.00		0.01	0.01	0.01	0.01
PARTICULATE MATTER<2.5 MICRONS (PM ₂	.5)	AP-42/NC DEQ	0.00	0.01	0.01	0.01	0.01	0.01
SULFUR DIOXIDE (SO2)	AP-42/NC DEQ	0.00	0.01	0.00	0.01	0.00	0.01	
NITROGEN OXIDES (NOx)		AP-42/NC DEQ	0.39	1.57	0.39	1.72	0.39	1.72
CARBON MONOXIDE (CO)	AP-42/NC DEQ	0.33	1.32	0.33	1.44	0.33	1.44	
VOLATILE ORGANIC COMPOUNDS (VOC)	AP-42/NC DEQ	0.02	0.09	0.02	0.09	0.02	0.09
LEAD								
OTHER								
HAZARDO	OUS AIR POLL	LUTANT EMISS	SIONS INFO	DRMATION	FOR THIS	SOURCE		
		SOURCE OF	EXPECTE	D ACTUAL		POTENTIAL	L EMISSIONS	
		EMISSION	(AFTER CONT	ROLS / LIMITS)	(BEFORE CONT	ROLS / LIMITS)	(AFTER CONT	ROLS / LIMITS)
HAZARDOUS AIR POLLUTANT	CAS NO.	FACTOR	lb/hr	lbs/yr	lb/hr	lbs/yr	lb/hr	lbs/yr
AMMONIA (T)	7664417	AP-42/NC DEQ	1.25E-02	100.38	1.25E-02	109.93	1.25E-02	109.93
Benzene (TH)	71432	AP-42/NC DEQ	8.24E-06	0.07	8.24E-06	0.07	8.24E-06	0.07
Cobalt unlisted compounds (H)	COC-other	AP-42/NC DEQ	3.29E-07	0.00	3.29E-07	0.00	3.29E-07	0.00
Formaldehyde (TH)	50000	AP-42/NC DEQ	2.94E-04	2.35	2.94E-04	2.58	2.94E-04	2.58
Hexane, n- (TH)	110543	AP-42/NC DEQ	7.06E-03	56.47	7.06E-03	61.84	7.06E-03	61.84
Lead unlisted compounds (H)	PBC-other	AP-42/NC DEQ	1.96E-06	0.02	1.96E-06	0.02	1.96E-06	0.02
Napthalene (H)	91203	AP-42/NC DEQ	2.39E-06	0.02	2.39E-06	0.02	2.39E-06	0.02
Toluene (TH)	108883	AP-42/NC DEQ	1.33E-05	0.11	1.33E-05	0.12	1.33E-05	0.12
TOXIC	AIR POLLUT	ANT EMISSIO	NS INFORM	<u>IATION FO</u>	R THIS SO	URCE		
		SOURCE OF EMISSION	EXPEC	CTED ACTUAL	EMISSIONS	AFTER CONT	ROLS / LIMIT	ATIONS
TOXIC AIR POLLUTANT	CAS NO.	FACTOR	lb	/hr	lb/d	day	lb	/yr
Acetaldehyde (TH)	75070	AP-42/NC DEQ	5.96	E-08	1.31	E-06	0.	00
Acrolein (TH)	107028	AP-42/NC DEQ	7.06	E-08	1.55	E-06	0.	00
Ammonia (T)	7664417	AP-42/NC DEQ	1.25	E-02	2.76	E-01	100	0.38
Arsenic unlisted compounds (TH)	ASC-other	AP-42/NC DEQ	0.00	E+00	0.00	E+00	0.	00
Benzene (TH)	71432	AP-42/NC DEQ	8.24	E-06	1.81	E-04	0.	07
Benzo(a)pyrene (TH)	50328	AP-42/NC DEQ	4.71	E-09	1.04E-07		0.	00
Formaldehyde (TH)	50000	AP-42/NC DEQ	2.94	E-04	6.47	E-03	2.	35
Hexane, n- (TH)	110543	AP-42/NC DEQ	7.06	E-03	1.55	E-01	56	.47
Toluene (TH)	108883	AP-42/NC DEQ	1.33	E-05	2.93	E-04	0.	11
Attachments: (1) emissions calculations and suppo	rting documentation;	(2) indicate all reques	ted state and fed	eral enforceable	permit limits (e.g	j. hours of operat	ion, emission rat	tes) and
describe how these are monitored and with what fre	equency; and (3) des	cribe any monitoring d	evices, gauges,	or test ports for the	nis source.			

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM D1

FACILITY-WIDE EMISSIONS SUMMARY

	EXPECTE EMIS: (AFTER CC LIMITA ton 28 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	D ACTUAL SIONS DNTROLS / TIONS) ss/yr .52 64 11 06 41 91 .63	POTENTIAL (BEFORE CC LIMITAT tons 32.3 0.1 0.0 10.3 8.6 52 2830 ION - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	EMISSIONS DNTROLS / TIONS) 192 18 18 18 16 16 17 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	(AFTER 0 LIMIT to 3 3 4 4 4 5 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	AL EMISSIONS CONTROLS / ATIONS) DOS/yr 11.23 0.69 0.12 0.06 10.31 8.66 10.31 8.3072 AL EMISSIONS CONTROLS / TATIONS) Dos/yr
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	EMIS: (AFTER CC LIMITA ton 28 0. 0. 0. 9. 7. 23 1130 IT EMISSION EXPECTE EMIS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	SIONS DNTROLS / ITIONS) S/yr .52 64 11 06 41 991 .63 D9.03 SINFORMAT D ACTUAL SIONS DNTROLS / ITIONS)	(BEFORE CC LIMITAT tons 32.1 2.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ONTROLS / CIONS) 292 288 88 66 31 66 67 72 C-WIDE EMISSIONS DNTROLS / TIONS)	(AFTER 0 LIMIT to 3 3 4 4 4 5 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	CONTROLS / CATIONS) cons/yr 31.23 0.69 0.12 0.06 0.31 8.66 35.73 33072 AL EMISSIONS CONTROLS / CATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	(AFTER CC LIMITA ton 28 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	ONTROLS / TIONS) s/yr .52 64 11 06 41 91 .63 09.03 SINFORMAT D ACTUAL SIONS DNTROLS / TIONS)	(BEFORE CC LIMITAT tons 32.1 2.3 0.1 0.0 10.0 10.0 10.0 10.0 10.0 10.0	ONTROLS / CIONS) 292 288 88 66 31 66 67 72 C-WIDE EMISSIONS DNTROLS / TIONS)	(AFTER 0 LIMIT to 3 3 4 4 4 5 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	CONTROLS / CATIONS) cons/yr 31.23 0.69 0.12 0.06 0.31 8.66 35.73 33072 AL EMISSIONS CONTROLS / CATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	LIMITA ton 28 0. 0. 0. 9. 7. 23 1130 NT EMISSION EXPECTE EMIS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	TIONS) s/yr .52 64 11 06 41 91 .63 99.03 SINFORMAT D ACTUAL SIONS DNTROLS / TIONS)	LIMITAT tons 32.1 2.3 0.1 0.0 10.1 8.6 52 2830 TON - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	TIONS) 2/yr 292 88 8 66 31 66 60 772 **WIDE **EMISSIONS DNTROLS / TIONS)	POTENTIA (AFTER C LIMIT L 2530.777 0.00 659.58	ATIONS) pns/yr 31.23 0.69 0.12 0.06 10.31 8.66 35.73 33072 AL EMISSIONS CONTROLS / 'ATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	ton 28 0. 0. 0. 9. 7. 23 113(NT EMISSION EXPECTE EMISS (AFTER C(LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	s/yr .52 64 11 06 41 91 .63 09.03 S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	2.3 2.3 0.1 0.0 10.3 8.6 52 2830 10N - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	292 38 8 8 8 66 331 66 66 072 **WIDE **EMISSIONS DNTROLS / TIONS)	POTENTIA (AFTER 0 LIMIT L 2530.77 0.00 659.58	ons/yr 31.23 0.69 0.12 0.06 10.31 8.66 35.73 33072 AL EMISSIONS CONTROLS /
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	28 0.0 0.0 9. 7. 23 1130 NT EMISSION EXPECTE (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	.52 .64 .64 .61 .63 .63 .63 .63 .63 .63 .63 .63	32.9 2.3 0.1 0.0 10.0 8.6 52 2830 ION - FACILITY POTENTIAL (BEFORE COLIMITAT Lbs 4549.07 0.00 659.58 0.00	92 98 88 86 66 66 66 772 **WIDE EMISSIONS DNTROLS / TIONS)	POTENTIA (AFTER (LIMIT 2530.77 0.00 659.58	31.23 0.69 0.12 0.06 10.31 8.66 35.73 33072 AL EMISSIONS CONTROLS /
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	0.0 0.0 0.0 9. 7. 23 1130 NT EMISSION EXPECTE EMISS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	64 11 06 41 91 .63 09.03 S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	2.3 0.1 0.0 0.0 10.3 8.6 52 2830 10N - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	88 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	POTENTIA (AFTER (LIMIT 2530.77 0.00 659.58	0.69 0.12 0.06 0.31 8.66 35.73 33072 AL EMISSIONS CONTROLS /
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	0.0 0.0 9.7 7.23 1130 TEMISSION EXPECTE EMIS: (AFTER COLIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	111 06 41 91 .63 09.03 S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	0.1 0.0 0.0 10.1 8.6 52 2830 10N - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	8	POTENTIA (AFTER C LIMIT 2530.77 0.00 659.58	0.12 0.06 10.31 8.66 35.73 33072 AL EMISSIONS CONTROLS /
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	0. 9. 7. 23 113(NT EMISSION EXPECTE EMIS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	06 41 91 .63 09.03 SINFORMAT D ACTUAL SIONS DNTROLS / TIONS)	0.0 10.1 8.6 52 2830 10N - FACILITY POTENTIAL (BEFORE COLIMITAT Lbs 4549.07 0.00 659.58 0.00	166 131 166 166 172 17-WIDE EMISSIONS DNTROLS /	POTENTIA (AFTER C LIMIT 2530.77 0.00 659.58	0.06 10.31 18.66 135.73 133072 AL EMISSIONS CONTROLS /
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	9. 7. 23 113(NT EMISSION EXPECTE EMIS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	41 91 .63 09.03 S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	10 8.6. 52 2830 10N - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	31 66 6 772 7-WIDE EMISSIONS DNTROLS / TIONS)	POTENTIA (AFTER C LIMIT 2530.77 0.00 659.58	10.31 8.66 35.73 33072 33072 AL EMISSIONS CONTROLS /
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	7. 23 113(NT EMISSION EXPECTE EMIS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	91 .63 .99.03 S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	2830 2830 10N - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	66 66 072 7-WIDE EMISSIONS DNTROLS / TIONS)	POTENTIA (AFTER 0 LIMIT L 2530.77 0.00 659.58	8.66 35.73 33072 AL EMISSIONS CONTROLS /
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	23 1130 EXPECTE EMISSION EXPECTE EMISSION (AFTER COLUMN A COLU	.63 S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	2830 10N - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	66 272 2′-WIDE EMISSIONS DITROLS / TIONS)	POTENTIA (AFTER 0 LIMIT L 2530.77 0.00 659.58	35.73 B3072 AL EMISSIONS CONTROLS / TATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	1130 EXPECTE EMISSION EXPECTE EMISSION (AFTER COLUMN AFTER COLUMN A	S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	2830 TON - FACILITY POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	/-WIDE EMISSIONS DNTROLS /	POTENTIA (AFTER 0 LIMIT L 2530.77 0.00 659.58	33072 AL EMISSIONS CONTROLS / TATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	EXPECTE EMISSION	S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	/-WIDE EMISSIONS DNTROLS / TONS)	POTENTIA (AFTER (LIMIT L 2530.77 0.00 659.58	AL EMISSIONS CONTROLS / "ATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	EXPECTE EMISSION	S INFORMAT D ACTUAL SIONS DNTROLS / TIONS)	POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	/-WIDE EMISSIONS DNTROLS / TONS)	POTENTIA (AFTER (LIMIT L 2530.77 0.00 659.58	AL EMISSIONS CONTROLS / "ATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	EXPECTE EMIS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	D ACTUAL SIONS ONTROLS / TIONS)	POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	EMISSIONS DNTROLS / TIONS)	(AFTER (LIMIT L 2530.77 0.00 659.58	CONTROLS / TATIONS)
CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417	EXPECTE EMIS: (AFTER CC LIMITA Lb 3060.00 0.00 602.34 0.00 0.40 0.00	D ACTUAL SIONS ONTROLS / TIONS)	POTENTIAL (BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	EMISSIONS DNTROLS / TIONS)	(AFTER (LIMIT L 2530.77 0.00 659.58	CONTROLS / TATIONS)
75070 107028 7664417 ASC-other 71432 50328 7440417	(AFTER COLLIMITA LIB 3060.00 0.00 602.34 0.00 0.40 0.00	SIONS ONTROLS / TIONS)	(BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	ONTROLS / TIONS)	(AFTER (LIMIT L 2530.77 0.00 659.58	CONTROLS / TATIONS)
75070 107028 7664417 ASC-other 71432 50328 7440417	(AFTER C/ LIMITA 3060.00 0.00 602.34 0.00 0.40 0.00	ONTROLS / TIONS)	(BEFORE CC LIMITAT Lbs 4549.07 0.00 659.58 0.00	ONTROLS / TIONS)	(AFTER (LIMIT L 2530.77 0.00 659.58	CONTROLS / TATIONS)
75070 107028 7664417 ASC-other 71432 50328 7440417	1MITA 1000	TIONS)	LIMITAT Lbs 4549.07 0.00 659.58 0.00	TONS)	LIMIT L 2530.77 0.00 659.58	ATIONS)
75070 107028 7664417 ASC-other 71432 50328 7440417	0.00 0.00 602.34 0.00 0.40 0.00		4549.07 0.00 659.58 0.00		2530.77 0.00 659.58	
75070 107028 7664417 ASC-other 71432 50328 7440417	3060.00 0.00 602.34 0.00 0.40 0.00	sryl	4549.07 0.00 659.58 0.00	ryf	2530.77 0.00 659.58	.us/yr
107028 7664417 ASC-other 71432 50328 7440417	0.00 602.34 0.00 0.40 0.00		0.00 659.58 0.00		0.00 659.58	
7664417 ASC-other 71432 50328 7440417	0.00 0.40 0.00		659.58 0.00		659.58	
ASC-other 71432 50328 7440417	0.00 0.40 0.00		0.00			
71432 50328 7440417	0.40 0.00					
50328 7440417	0.00		0.42		0.00	
7440417			0.43		0.43	
	0.00		0.00		0.00	
7440439			0.00		0.00	
	0.00		0.00		0.00	
7738945	0.00		0.00		0.00	
COC-other	0.02		0.02		0.02	
50000	602.36		2794.57		659.58	
110543	338.81		371.01		371.01	
PBC-other	0.09		0.10		0.10	
MNC-other	0.00		0.00		0.00	
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CAS NO	lb/hr	lb/dav	lb/vear		<u> </u>	†
		1				6.8 lbs/hr
			1			6.8 lbs/hr
			1 1			0.04 lbs/hr
						23 lb/day
			1 1			197.96 lb/da
100003	0.00	0.00	0.04		INU	
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)(ONTROLS / LING. USE NI CAS NO. 75070 7664417 50000 110543 108883	7439976 0.00 91203 0.11 7440020 0.00 SEC 0.00 108883 0.64 67561 538.56 108952 0.00 123386 606.96 OLLUTANT EMISSIONS IN ONTROLS / LIMITATIONS. EM ELING. USE NETTING FORM I CAS NO. Ib/hr 75070 0.35 7664417 0.07 50000 0.07 110543 0.04 108883 0.00	7439976 0.00 91203 0.11 7440020 0.00 SEC 0.00 108883 0.64 67561 538.56 108952 0.00 123386 606.96 OLLUTANT EMISSIONS INFORMATION ONTROLS / LIMITATIONS. EMISSIONS ABO' ELING. USE NETTING FORM D2 IF NECESS CAS NO. Ib/hr Ib/day 75070 0.35 8.38 7664417 0.07 1.65 50000 0.07 1.65 110543 0.04 0.93 108883 0.00 0.00	7439976 0.00 0.00 91203 0.11 0.13 7440020 0.00 0.00 SEC 0.00 0.00 108883 0.64 0.70 67561 538.56 1529.50 108952 0.00 0.00 123386 606.96 1903.99 OLLUTANT EMISSIONS INFORMATION - FACILITY-WI DNTROLS / LIMITATIONS. EMISSIONS ABOVE THE TOXIC PE ELING. USE NETTING FORM D2 IF NECESSARY. (NO MODE CAS NO. Ib/hr Ib/day Ib/year 75070 0.35 8.38 3060.00 7664417 0.07 1.65 602.34 50000 0.07 1.65 602.36 110543 0.04 0.93 338.81	7439976	7439976

Actual Hours of Operation/yr = 8000

Potential Hours of Operation/yr = 8760

early Potential/Actual emissions: B	oilers, Dryer	rs, and Screw	/ & Pellet F	Presses					AFTER CON	TROL DEVICE
Pollutant	CAS Number	Steam Boiler (ES-B-1)	Dryer (ES-D-1)	Pressure Cooker W/Condenser (ES-P-1) & CD-1	Screw Press/Dryer (ES-SPD-1) & CD-2	Pellet Press & Cooler (ES-PP-1) & CD-3	Pellet Screening (ES-PSC-1) & CD-4	Pellet Storage (ES-PS-1) No CD	Actual Emissions after CD	Actual Emission
		(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/hr)
riteria Air Pollutants										
PM	PM	0.04	0.01		26.67	1.80	0.0006		28.52	0.004
PM10	PM10	0.04	0.01		0.27	0.32	0.0003		0.64	0.000
PM2.5	PM2.5	0.03	0.01		0.07		0.0001		0.11	0.000
SULFUR DIOXIDE (SO2)	SO2	0.05	0.01						0.06	0.000
NITROGEN OXIDES (NOx)	NOx	7.84	1.57						9.41	0.001
CARBON MONOXIDE (CO)	CO	6.59	1.32						7.91	0.001
VOLATILE ORGANIC COMPOUNDS (VOC)	VOC	0.43	0.09	3.85	19.26	9.00		0.90	33.53	0.004
Greenhouse Gas Emissions										
CARBON DIOXIDE (CO ₂)	CO ₂	9424.29	1884.74						11,309.03	
METHANE (CH ₄)	CH ₄	0.18	0.04						0.21	İ
NITROUS OXIDE (N ₂ O)		0.02	0.00						0.02	
` '	<u> </u>			l	I					
oxic/Hazardous Air Pollutants	(lbs/yr)	(lbs/yr)	(lbs/yr)		(lbs/yr)	(lbs/yr)	(lbs/yr)		(lbs/yr)	(lbs/hr)
Acetaldehyde (TH)	75070	0.002	0.000	460.800	925.20	925.20		92.52	2403.72	0.30
Acrolein (TH)	107028	0.003	0.001						0.00	0.00
Ammonia (T)	7664417	501.952	100.384						602.34	0.08
Arsenic unlisted compounds (TH)	ASC-other								0.00	0.00
Benzene (TH)	71432	0.329	0.066						0.40	0.00
Benzo(a)pyrene (TH)	50328	0.000	0.000						0.00	0.00
Beryllium metal (unreacted) (TH)	7440417								0.00	0.00
Cadmium metal (elemental unreacted) (TH)	7440439								0.00	0.00
Chromic acid (VI) (TH)	7738945								0.00	0.00
Cobalt unlisted compounds (H)	COC-other	0.013	0.003						0.02	0.00
Formaldehyde (TH)	50000	11.765	2.353	487.440	50.40	50.40		5.04	607.40	0.08
Hexane, n- (TH)	110543	282.348	56.466						338.81	0.04
Lead unlisted compounds (H)	PBC-other	0.078	0.016						0.09	0.00
Manganese unlisted compounds (TH)	MNC-other								0.00	0.00
Mercury vapor (TH)	7439976								0.00	0.00
Napthalene (H)	91203	0.096	0.019						0.11	0.00
Nickel metal (TH)	7440020								0.00	0.00
Selenium compounds (H)	SEC	0.004	0.001						0.00	0.00
Toluene (TH)	108883	0.533	0.107						0.64	0.00
Methanol (H)	67561			214.560	162.00	162.00	_	16.20	554.76	0.07
Phenol (TH)	108952								0.00	0.00
Propionaldehyde (H)	123386		-	282.960	162.00	162.00		16.20	623.16	0.08
IAP Indiv. Max		501.95	100.38		925.20	925.20	0.00	92.52	2403.72	
IAP total		797.12	159.41		1299.60	1299.60	0.00	129.96	5131.46	1

¹ Xylenes (total) includes emission factors listed as o-Xylene.

Actual Hours of Operation/yr = 8000

Potential Hours of Operation/yr = 8760

Already Approved

BEFORE & AFTER CONTROL DEVICES Yearly Potential emissions: Boilers, Dryers, and Screw & Pellet Presses, Pellet Cooler and Pellet Screening Pellet Storage Screw Press/Drver Pellet Press & Coole Pellet Screening (ES-PS-1) (ES-B-1) (ES-D-1) (ES-SPD-1) & CD-2 (ES-PP-1) & CD-3 (ES-PSC-1) & CD-4 (ES-P-1) & CD-1 No CD before CD before CD CD CD Pollutant CAS Number Before CD After CD Before CD After CD Before CD After CD After CD Before CD After CD Before CD After CD After CD Before CD Before CD (ton/yr) (ton/hr) (ton/yr) (ton/hr) Criteria Air Pollutants PM 31.23 0.004 0.04 0.04 0.01 0.01 29 20 29 20 3.04 1 97 0.62 0.0006 32 92 0.004 PM10 PM10 0.04 0.04 0.01 0.01 0.29 0.29 1.74 0.35 0.30 0.0003 2.38 0.000 0.69 0.000 PM2.5 PM2.5 0.12 0.04 0.04 0.01 0.01 0.07 0.07 0.06 0.0001 0.18 0.000 0.000 SULFUR DIOXIDE (SO2) SO2 0.05 0.05 0.01 0.01 0.06 0.000 0.06 0.000 NITROGEN OXIDES (NOx) 8.59 8.59 1.72 1.72 10.31 0.001 10.31 0.001 CARBON MONOXIDE (CO) 1.44 1.44 8.66 8.66 7.21 7.21 0.001 0.001 VOLATILE ORGANIC COMPOUNDS (VOC VOC 0.47 0.47 0.09 0.09 21.09 4.22 21.09 21.09 9.86 9.86 0.99 0.99 53.59 0.007 36.71 0.004 Greenhouse Gas Emissions 2047.89 CARBON DIOXIDE (CO2) CO2 10239.47 10239.47 2047.89 12287.37 12287.37 METHANE (CH₄) 4.83 4.83 5.79 CH₄ 0.97 0.97 5.79 NITROUS OXIDE (N2C N₂O 5.76 6.91 6.91 5.76 1.15 1.15 Toxic/Hazardous Air Pollutants (lbs/yr) (lbs/yr) (lbs/yr) (lbs/yr) 4650.38 (lbs/yr) (lbs/hr) (lbs/yr) (lbs/yr) (lbs/yr) (lbs/hr) 0.00 2522.88 504.58 1013.09 1013.09 1013.09 1013.09 101.31 101.31 2632.08 Acetaldehyde (TH 75070 0.003 0.003 0.001 0.58 0.30 0.00 Acrolein (TH 107028 0.003 0.003 0.001 0.00 0.00 0.00 0.00 Ammonia (T) 7664417 549.65 549.65 109.93 109.93 659.58 0.08 659 58 0.08 Arsenic unlisted compounds (TH) ASC-other 0.00 0.00 0.00 0.00 0.36 0.36 0.07 0.07 0.43 0.00 0.43 0.00 0.00 0.00 Benzo(a)pyrene (TH) 50328 0.00 0.00 0.00 0.00 0.00 0.00 Beryllium metal (unreacted) (TH 7440417 0.00 0.00 0.00 0.00 Cadmium metal (elemental unreacted) (TH) 7440439 0.00 0.00 0.00 0.00 0.00 0.00 Chromic acid (VI) (TH 7738945 0.00 0.00 Cobalt unlisted compounds (H) COC-other 0.01 0.01 0.00 0.00 0.02 0.00 0.02 0.00 Formaldehyde (TH) 50000 12.88 12.88 2.58 2.58 2668.73 533.75 55.19 55.19 55.19 55.19 5.52 5.52 2800.09 0.35 665.10 0.08 110543 309.18 309.18 61.84 61.84 371.01 0.05 371.01 0.04 PBC-other 0.09 0.09 0.02 0.02 0.10 0.10 0.00 0.00 Lead unlisted compounds (H) Manganese unlisted compounds (TH) MNC-other 0.00 0.00 0.00 0.00 Mercury vapor (TH) 7439976 0.00 0.00 0.00 0.00 0.10 0.10 0.02 0.02 0.13 0.13 91203 0.00 0.00 Nickel metal (TH) 7440020 0.00 0.00 0.00 0.00 Selenium compounds (H SEC 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 108883 0.58 0.58 0.12 0.12 0.70 0.00 0.70 0.00 Methanol (H 234.94 177.39 1547.24 607.46 Phenol (TH) 0.00 0.00 108952 0.00 0.00 Propionaldehyde (H 1549 21 309.84 177.39 177 39 177.39 177 39 17 74 17 74 682.36 0.08 123386 1921.73 0.24 HAP Indiv. Max 549.65 109.93 1013.09 1013.09 1013.09 0.00 101.31 101.31 4650.38 2632.08 872.87 174.57 1423.06 1423.06 0.00 142.31 142.31 11951.41 5618.98 AP total

¹ Xylenes (total) includes emission factors listed as o-Xylene.

NOTES:

Enviva Pellets Company makes their pellets from dry/green chips and therefore, the VOC are still in the chip. However, Active Energy first pressure cook the dry chips and condense the liquids using a condeser with a conservative efficieny of 80% (80-95%). Please note many VOCs boiling point is less than the steam temp and therefore, majority of the VOC will be condensed in the steam released from the Pressure Cooker operation. The condensed VOC liquids will be disposed of.

As a conservative estimate, we have estimated VOCs emissions from several permits and used the worst case for Pressure cooker emissions calcs

Actual Hrs of Operations = 8000 hrs

Potential Hrs of Operation = 8760 hrs

VOC from the Pressure Cooker & Condensor (80%-95% Efficiency)- @131°F Condenser 80-95% Used 80% (ES-P-1) & CD-1 Used 80% Potential Emissions (after Condenser 80% Max Throughput 43,800.00 Ton/yr @ 10% m.c. Emission Actual Emissions (after Actual Potential Emissions Potential Throughput Actual Throughput Factor¹ **Emissions** Condenser 80% Eff) Eff) 39,420.00 ODT/yr 36,000.00 ODT/yr 25% Hardwood 75% Softwood lbs/ODT tons/yr tons/yr tons/yr Composition Pollutant VOC 1.070 19.26 21.09 3.85 4.22 Acetaldehyde (BP-68.36F) 6.40E-02 2304.00 2522.88 460.80 504.58 0.00E+00 6.77E-02 2.98E-02 0.00E+00 0.00 487.44 214.56 Acrolein (BP-127.4F) Formaldehide (BP- (-2.2F) 0.00 2437.20 1072.80 533.75 234.94 2668.73 1174.72 Methanol (BP-148.5F) Phenol (BP-359.1F) Propionaldehyde (BP-119.8F) Ν 0.00 1414.80 0.00 1549.21 3.93E-02 282.96 309.84 HAPs total (lbs/yea 7,228.80 7,915.54 1,449.61 1,587.33

PM, NOX, CO and VOC, HAPS from Screw Press/Pellet Drying with an INTEGRAL high Efficiency Cyclone (90% for PM)

(ES-SPD-1) & CD-2

Max Throughput Potential Throughput	43,800.00 39,420.00	ODT/yr	2 10% m.c.		Emission Factor ¹	Actual Emissions	Potential Emissions	Actual Emissions After a CD (90 Eff for PM and 60% for PM10)	Potential Emissions After a CD (90% Eff for PM and 60% for PM10)
Actual Throughput Composition	36,000.00 25% Hardwood 759		od		lbs/ODT	lbs/yr	lbs/yr	lbs/yr	lbs/yr
Pollutant	Flow Rate (CFM)		Grains/cf	hrs					
PM	15556		0.05	8000		53334.80	58,401.61	53334.80	58401.61
Cyclone Loading rate ca	alcs			Tons		26.67	29.20	26.67	29.20
PM10 1.0% of total PM from C Forms			8000	1.00%	533.35	584.02	533.35	584.02	
				Tons		0.27	0.29	0.27	0.29
PM2.5	0.25% of total PM f	rom C Fo	rms	8000	0.25%	133.34	146.00	133.34	146.00
				Tons		0.07	0.07	0.07	0.07
voc					1.07	38520.00	42179.40	38520.00	42179.40
EF from Enviva Pellet Press -Stack Test Dated April 2017				Tons		19.26	21.09	19.26	21.09
Pollutant		HAP	NC TAP	VOC		•			
						(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Acetaldehyde (BP-6	88.36F)	Υ	Υ	Υ	2.57E-02	925.20	1,013.09	925.20	1,013.09
Acrolein (BP-127.4F	-)	Υ	Υ	Υ	0.00E+00	-	-		-
Formaldehide (BP-	(-2.2F)	Υ	Υ	Υ	1.40E-03	50.40	55.19	50.40	55.19
Methanol (BP-148.5	iF)	Υ	N	Υ	4.50E-03	162.00	177.39	162.00	177.39
Phenol (BP-359.1F)		Υ	Y	Υ	0.00E+00	-	-		•
Propionaldehyde (B	P-119.8F)	Υ	N	Υ	4.50E-03	162.00	177.39	162.00	177.39
			HAP tot	al (lbs/year)		1,299.60	1,423.06	1,299.60	1,423.06
			HAP to	tal (tons/yr)		0.65	0.71	0.65	0.71
			TAP tot	al (lbs/year)		975.60	1,068.28	975.60	1,068.28
			TAP to	tal (tons/yr)		0.49	0.53	0.49	0.53
Permit Name	Permit Name ODT Processed Fa (ODT/Yr) VC				Emission Factor (lb/ODT)		•		
2016 Enviva Pellets Stack Test dated Ap	-Sampson-Dryer Sta oril 2017	ck Test			1.070	Used as the worst ca	se		

Active Energy Renewable Power

Lumberton, Robeson County, NC

NOTES:

Enviva Pellets Company makes their pellets from dry/green chips and therefore, the VOC are still in the chip. However, Active Energy first pressure cook the dry chips and condense the liquids using a condeser with a conservative efficieny of 80% (80-95%). Please note many VOCs boiling point is less than the steam temp and therefore, majority of the VOC will be condensed in the steam released from the Pressure Cooker operation. The condensed VOC liquids will be disposed of.

As a conservative estimate, we have estimated VOCs emissions from several permits and used the worst case for Pressure cooker emissions calcs

Actual Hrs of Operations = 8000 hrs Potential Hrs of Operation = 8760 hrs

PM, VOCs and HAPS from Pellet Press & Pellet Cooler with a Conventional Cyclone (80-90% Eff) (ES-PP-1) & CD-3

Max Throughput	43,800.00 Ton/yr @ 10% m.c.
Potential	
Potential Throughput	39,420.00 ODT/yr
Actual Throughput	36,000.00 ODT/yr
Composition	25% Hardwood 75% Softwood

Emission Factor ¹	n Actual Emissions	Potential Emissions	Actual Emissions After a CD (80% Eff)	Potential Emissions After a CD (80% Eff)	
lbs/ODT	lbs/yr	lbs/yr	lbs/yr	lbs/yr	

Pollutant	Flow Rate (CFM)		EF in kg/ton	hrs					
PM			0.07	8000	0.15	5554.08	6,081.72	3600.00	3942.00
PM and PM10 EFs are taken from ref ITQ# dated 12/01/2008			Tons		2.78	3.04	1.80	1.97	
PM10			0.04	8000	0.09	3170.88	3,472.11	634.18	694.42
PM and PM10 EFs a	PM and PM10 EFs are taken from ref ITQ# dated 12/01/2008			Tons		1.59	1.74	0.32	0.35
Pollutant		HAP	NC TAP	VOC				-	-

Pollutant		HAP	NC TAP	VOC				-	-
VOC				Y	0.5	18,000.00	19,710.00	18000.00	19710.00
EF from Enviva Pellet Pr	ess -Stack Test Date	d April 201	7	Tons		9.00	9.86	9.00	9.86
						(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Acetaldehyde (BP-68	.36F)	Υ	Υ	Υ	2.57E-02	925.20	1,013.09	925.20	1,013.09
Acrolein (BP-127.4F)		Υ	Υ	Υ	0.00E+00	-	•	-	-
Formaldehide (BP- (-2	2.2F)	Υ	Υ	Y	1.40E-03	50.40	55.19	50.40	55.19
Methanol (BP-148.5F)	Υ	N	Y	4.50E-03	162.00	177.39	162.00	177.39
Phenol (BP-359.1F)		Υ	Υ	Y	0.00E+00	-	-	-	-
Propionaldehyde (BP	-119.8F)	Υ	N	Y	4.50E-03	162.00	177.39	162.00	177.39
			HAP tot	al (lbs/year)		1,299.60	1,423.06	1,299.60	1,423.06
			HAP to	tal (tons/yr)		0.65	0.71	0.65	0.71
TAP total (lbs/year) TAP total (tons/yr)						975.60	1,068.28	975.60	1,068.28
						0.49	0.53	0.49	0.53
ODT Processed F			Facility Wide	Emission			•		

Permit Name	ODT Processed (ODT/Yr)	Facility Wide VOC (ton/yr)		
2016 Enviva Pellets-Sampson-Pellet Press Stack	Test		0.500	Used as the wo
Stack Test dated April 2017				

PM from Pellet Screen with a Cartridge Filter (99.9% Eff)

(ES-PSC-1) & CD-4

Max Throughput 43,800. Potential	
	.00 ODT/yr
Actual Throughput 36,000.	.00 ODT/yr
Composition 25% Hardwood	75% Softwood

Emission Factor1	Actual Emissions	Potential Emissions	Actual Emissions After a CD (99.9% Eff)	Potential Emissions After a CD (99.9% Eff)	
lbs/ODT	lbs/yr	lbs/yr	lbs/yr	lbs/yr	

PM, PM10 and PM2.5 E	EFs are taken from ref-F	innacle Re	newable Energy-N	lewton Facility	dated August 20	019, revised in Jan 20	020		
PM				8000	3.15E-02	1134.00	1,241.73	1.13	1.24
				Tons		0.57	0.62	0.0006	0.0006
PM10				8000	1.50E-02	540.00	591.30	0.54	0.59
				Tons		0.27	0.30	0.0003	0.0003
PM2.5				8000	3.15E-03	113.40	124.17	0.11	0.12
				Tone		0.06	0.06	0.0001	0.0001

Hazardous Air Pollutants and VOC from Pellet Storage

(ES-PS-1)

Max Throughput	43,800.00 39,420.00	-	2 10% m.c.		Emission Factor ¹	Actual Emissions	Potential Emissions
Actual Throughput Composition 2	36,000.00 25% Hardwood 75%	ODT/yr	od		lbs/ODT	lbs/yr	lbs/yr
Pollutant		HAP	NC TAP	VOC			
VOC				Y	0.050	1,800.00	1,971.00
EF from Enviva Pellet Pre	ess -Stack Test Dated	April 201	7	Tons		0.90	0.9
						(lbs/yr)	(lbs/yr)
Acetaldehyde (BP-68.3	36F)	Y	Y	Y	2.57E-02	92.52	101.31
Acrolein (BP-127.4F)		Y	Y	Y	0.00E+00	-	-
Formaldehide (BP- (-2	.2F)	Y	Y	Υ	1.40E-03	5.04	5.52
Methanol (BP-148.5F)		Y	N	Υ	4.50E-03	16.20	17.74
Phenol (BP-359.1F)		Y	Υ	Υ	0.00E+00	-	-
Propionaldehyde (BP-	119.8F)	Y	N	Υ	4.50E-03	16.20	17.74
			HAP tot	al (lbs/year)		129.96	142.31
			HAP to	tal (tons/yr)		0.06	0.07
			TAP tot	al (lbs/year)		97.56	106.83
			TAP to	tal (tons/yr)		0.05	0.05
Permit Name			ODT Processed (ODT/Yr)	Facility Wide VOC (ton/yr)	Emission Factor (lb/ODT)	Emission Factor (10%) (lb/ODT)	
2016 Enviva Pellets-Sa	ampson-Pellet Pre	ss Stack	Test		0.500	0.050	Used as the worst case
Stack Test dated April	2017						

[External] b form for D1

CHUCK PAKALA < cvpakala@carolina.rr.com>

Wed 5/12/2021 12:54 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

2 attachments (34 KB)

B_2019 NEW 051021-D1.pdf; D1 NEW 051021.pdf;

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to <u>Report Spam.</u>

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

ACTIVE ENERGY RENEWABLE POWER LUMBERTON, NC

AIR PERMIT: 10636R00; FACILITY ID # 7800242 FORM B (ALREADY APPROVED)

SPECIFIC EMISSION SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 09/22/16	NCDEQ/Division	of Air Quality - Ap	oplication for	Air Permit to	Construct/Ope	erate		В		
EMISSION SOURCE DESCRIPTION: ONE	4MMBTU/HR NA	TURAL GAS FIREI	D DRYER	EMISSION SO	OURCE ID NO	:ES-D-1				
				CONTROL DI	EVICE ID NO(VICE ID NO(S):NA				
OPERATING SCENARIO1	OF	1		EMISSION PO	DINT (STACK)	ID NO(S):EP-	D-1			
DESCRIBE IN DETAILTHE EMISSION SON 4MMBTU/HR NATURAL GAS FIRED DRYE		•	-		,					
TYPE OF EMISSION S	SOURCE (CHECK	AND COMPLETE	APPROPRIA	TE FORM B1-	R9 ON THE F	OLLOWING P	AGES):			
Coal, wood, oil, gas, other burner (Form		Woodworkin		IL I OKWI BI-		of chemicals/		Form B7)		
Int.combustion engine/generator (Form		_	g (1 01111 B 1) hing/printing (F	Form B5)	=	ation (Form B	•			
Liquid storage tanks (Form B3)	,		s/bins (Form B			(Form B9)	-,			
START CONSTRUCTION DATE:NOVEMBI	ER 2019			FACTURED: N		,				
MANUFACTURER / MODEL NO.:			ı	OP. SCHEDUL			AY/WK 52	WK/YR		
	ISPS (SUBPART)	S?):NA			AP (SUBPART		NA			
PERCENTAGE ANNUAL THROUGHPUT (,	25 MAR-	MAY 25	JUN-AU		SEP-NOV	25			
		ITANT EMISSI								
-		SOURCE OF		D ACTUAL			EMISSIONS			
		EMISSION	(AFTER CONT	ROLS / LIMITS)	(BEFORE CONT	ROLS / LIMITS)	(AFTER CONT	ROLS / LIMITS)		
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr		
PARTICULATE MATTER (PM)		AP-42/NC DEQ	0.00	0.01	0.01	0.01	0.01	0.01		
PARTICULATE MATTER<10 MICRONS (PM ₁₀	₅)	AP-42/NC DEQ	0.00		0.01	0.01	0.01	0.01		
PARTICULATE MATTER<2.5 MICRONS (PM ₂	.5)	AP-42/NC DEQ	0.00	0.01	0.01	0.01	0.01	0.01		
SULFUR DIOXIDE (SO2)	,	AP-42/NC DEQ	0.00	0.01	0.00	0.01	0.00	0.01		
NITROGEN OXIDES (NOx)		AP-42/NC DEQ	0.39	1.57	0.39	1.72	0.39	1.72		
CARBON MONOXIDE (CO)		AP-42/NC DEQ	0.33	1.32	0.33	1.44	0.33	1.44		
VOLATILE ORGANIC COMPOUNDS (VOC)	AP-42/NC DEQ	0.02	0.09	0.02	0.09	0.02	0.09		
LEAD										
OTHER										
HAZARDO	OUS AIR POLL	LUTANT EMISS	SIONS INFO	DRMATION	FOR THIS	SOURCE				
		SOURCE OF	EXPECTE	D ACTUAL		POTENTIAL	EMISSIONS			
		EMISSION	(AFTER CONT	ROLS / LIMITS)	(BEFORE CONT	ROLS / LIMITS)	(AFTER CONT	ROLS / LIMITS)		
HAZARDOUS AIR POLLUTANT	CAS NO.	FACTOR	lb/hr	lbs/yr	lb/hr	lbs/yr	lb/hr	lbs/yr		
AMMONIA (T)	7664417	AP-42/NC DEQ	1.25E-02	100.38	1.25E-02	109.93	1.25E-02	109.93		
Benzene (TH)	71432	AP-42/NC DEQ	8.24E-06	0.07	8.24E-06	0.07	8.24E-06	0.07		
Cobalt unlisted compounds (H)	COC-other	AP-42/NC DEQ	3.29E-07	0.00	3.29E-07	0.00	3.29E-07	0.00		
Formaldehyde (TH)	50000	AP-42/NC DEQ	2.94E-04	2.35	2.94E-04	2.58	2.94E-04	2.58		
Hexane, n- (TH)	110543	AP-42/NC DEQ	7.06E-03	56.47	7.06E-03	61.84	7.06E-03	61.84		
Lead unlisted compounds (H)	PBC-other	AP-42/NC DEQ	1.96E-06	0.02	1.96E-06	0.02	1.96E-06	0.02		
Napthalene (H)	91203	AP-42/NC DEQ	2.39E-06	0.02	2.39E-06	0.02	2.39E-06	0.02		
Toluene (TH)	108883	AP-42/NC DEQ	1.33E-05	0.11	1.33E-05	0.12	1.33E-05	0.12		
TOXIC	AIR POLLUT	ANT EMISSIO	NS INFORM	<u>IATION FO</u>	R THIS SO	URCE				
		SOURCE OF EMISSION	EXPEC	CTED ACTUAL	EMISSIONS	AFTER CONT	ROLS / LIMIT	ATIONS		
TOXIC AIR POLLUTANT	CAS NO.	FACTOR	lb	/hr	lb/d	day	lb	/yr		
Acetaldehyde (TH)	75070	AP-42/NC DEQ	5.96	E-08	1.31	E-06	0.	00		
Acrolein (TH)	107028	AP-42/NC DEQ	7.06	E-08	1.55	E-06	0.	00		
Ammonia (T)	7664417	AP-42/NC DEQ	1.25	E-02	2.76	E-01	100	0.38		
Arsenic unlisted compounds (TH)	ASC-other	AP-42/NC DEQ	0.00	E+00	0.00	E+00	0.	00		
Benzene (TH)	71432	AP-42/NC DEQ	8.24	E-06	1.81	E-04	0.	07		
Benzo(a)pyrene (TH)	50328	AP-42/NC DEQ	4.71	E-09	1.04	E-07	0.	00		
Formaldehyde (TH)	50000	AP-42/NC DEQ	2.94	E-04	6.47	E-03	2.	35		
Hexane, n- (TH)	110543	AP-42/NC DEQ	7.06	E-03	1.55	E-01	56	.47		
Toluene (TH)	108883	AP-42/NC DEQ	1.33	E-05	2.93	E-04	0.	11		
Attachments: (1) emissions calculations and suppo	rting documentation;	(2) indicate all reques	ted state and fed	eral enforceable	permit limits (e.g	j. hours of operat	ion, emission rat	tes) and		
describe how these are monitored and with what fre	equency; and (3) des	cribe any monitoring d	evices, gauges,	or test ports for the	nis source.					

ACTIVE ENERGY RENEWABLE POWER LUMBERTON, NC

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM D1

FACILITY-WIDE EMISSIONS SUMMARY

		,		to Construct/Op			D1
CRITERIA A	IK POLLUTAN			ON - FACILITY-	WIDE	l l	
			D ACTUAL SIONS	POTENTIAL	EMISSIONS	DOTENTI/	AL EMISSIONS
			ONTROLS /	(BEFORE CO			CONTROLS /
		,	ATIONS)	LIMITAT			FATIONS)
AID DOLL LITANT EMITTED					,		,
AIR POLLUTANT EMITTED			is/yr	tons	•		ons/yr
PARTICULATE MATTER (PM)			.52	32.9			31.23
PARTICULATE MATTER < 10 MICRONS (PM ₁₀)			.64	2.3			0.69
PARTICULATE MATTER < 2.5 MICRONS (PM _{2.5})		0.	.11	0.1	8		0.12
SULFUR DIOXIDE (SO ₂)		0.	.06	0.0	6		0.06
NITROGEN OXIDES (NOx)		9.	.41	10.3	31	,	10.31
CARBON MONOXIDE (CO)		7.	.91	8.6	6		8.66
/OLATILE ORGANIC COMPOUNDS (VOC)		33	.53	53.5	59	3	36.71
EAD							
GREENHOUSE GASES (GHG) (SHORT TONS)		1130	09.03	12287	7.37	12	287.37
OTHER						-	
	AIR POLLUTA	NT EMISSION	IS INFORMAT	TION - FACILITY	Y-WIDE		
	7	1		1		I	
			D ACTUAL SIONS	POTENTIAL	EMISSIONS	POTENTIA	AL EMISSIONS
			ONTROLS /	(BEFORE CO			CONTROLS /
		`	(TIONS)	LIMITAT		,	FATIONS)
HAZARDOUS AIR POLLUTANT EMITTED	CAS NO.		s/yr	Lbs			_bs/yr
			5/yI	1	ryı		LD5/yI
Acetaldehyde (TH)	75070	2403.72		4650.38		2632.08	
Acrolein (TH)	107028	0.00		0.00		0.00	
Ammonia (T)	7664417	602.34		659.58		659.58	
Arsenic unlisted compounds (TH)	ASC-other	0.00		0.00		0.00	
Benzene (TH)	71432	0.40		0.43		0.43	
Benzo(a)pyrene (TH)	50328	0.00		0.00		0.00	
Beryllium metal (unreacted) (TH)	7440417	0.00		0.00		0.00	
Cadmium metal (elemental unreacted) (TH)	7440439	0.00		0.00		0.00	
Chromic acid (VI) (TH)	7738945	0.00		0.00		0.00	
						0.00	
Cobalt unlisted compounds (H)	COC-other	0.02		0.02			
Formaldehyde (TH)	50000	607.40		2800.09		665.10	
Hexane, n- (TH)	110543	338.81		371.01		371.01	
Lead unlisted compounds (H)	PBC-other	0.09		0.10		0.10	
Manganese unlisted compounds (TH)	MNC-other	0.00		0.00		0.00	
Mercury vapor (TH)	7439976	0.00		0.00		0.00	
Napthalene (H)	91203	0.11		0.13		0.13	
Nickel metal (TH)	7440020	0.00		0.00		0.00	
Selenium compounds (H)	SEC	0.00		0.00		0.00	
Toluene (TH)	108883	0.64		0.70		0.70	
Methanol (H)	67561	554.76		1547.24		607.46	
Phenol (TH)	108952	0.00		0.00		0.00	
Propionaldehyde (H)		1		+			
	123386	623.16	IEODMATION	1921.73	IDE	682.36	
				I - FACILITY-W			555) 11.454
NDICATE REQUESTED ACTUAL EMISSIONS AFTER NCAC 2Q .0711 MAY REQUIRE AIR DISPERSION MO							PER) IN 15A
10/10/20/10/11/11/11/11/20/11/2/11/2/01/2/11/2/01/2/11/2/01/2/11/2/01/2/2/11/2/01/2/2/11/2/2/2/2			D2 11 1120200	л			Птрер шит
TOYIO AID DOLL LITANT EMITTED	04040		H. / I	11. /		Required ?	TPER LIMIT
TOXIC AIR POLLUTANT EMITTED	CAS NO.	lb/hr	lb/day	lb/year	Yes	No	0.0 :: :
Acetaldehyde (TH)	75070	0.27	6.59	2403.72		NO	6.8 lbs/hr
Ammonia (T)	7664417	0.07	1.65	602.34		NO	6.8 lbs/hr
Formaldehyde (TH)	50000	0.07	1.66	607.40		NO	0.04 lbs/hr
Hexane, n- (TH)	110543	0.04	0.93	338.81		NO	23 lb/day
Toluene (TH)	108883	0.00	0.00	0.64		NO	197.96 lb/da
							58.97 lb/hr
	· · · · · · · · · · · · · · · · · · ·						
				1			
				1		 	+
		-		+		-	-
COMMENTS		<u> </u>				L	
COMMENTS:							

[External] D1, C Form and calcs

CHUCK PAKALA < cvpakala@carolina.rr.com>

Wed 5/12/2021 4:20 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

3 attachments (129 KB)

All Emissions Calcs-GREG HAP EFs 051221.pdf; D1 NEW 051021.pdf; C_Forms Tyler051021-CD3.pdf;

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to <u>Report Spam.</u>

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

ACTIVE ENERGY RENEWABLE POWER LUMBERTON, NC

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM D1

FACILITY-WIDE EMISSIONS SUMMARY

	sion of Air Quali IR POLLUTAN						D1
		1	D ACTUAL				
			SIONS	POTENTIAL			L EMISSION
		`	ONTROLS /	(BEFORE C		,	CONTROLS /
UD DOLLUTANT EMITTED			ATIONS)	LIMITA			ATIONS)
AIR POLLUTANT EMITTED PARTICULATE MATTER (PM)			ns/yr 7.28	32.	-		ons/yr 29.86
PARTICULATE MATTER (PM) PARTICULATE MATTER < 10 MICRONS (PM ₁₀)			.64	2.3			0.69
PARTICULATE MATTER < 2.5 MICRONS (PM ₂₅)			.11	0.4			0.12
SULFUR DIOXIDE (SO ₂)			.06	0.0			0.06
NITROGEN OXIDES (NOx)			.41	10.			0.31
CARBON MONOXIDE (CO)			.91	8.6			8.66
/OLATILE ORGANIC COMPOUNDS (VOC)		33	3.53	53.		3	36.71
EAD							
GREENHOUSE GASES (GHG) (SHORT TONS)		1130	09.03	1228	7.37	12	287.37
OTHER							
HAZARDOUS	AIR POLLUTA	NT EMISSION	IS INFORMAT	TION - FACILIT	Y-WIDE		
			D ACTUAL				
			SIONS	POTENTIAL		_	L EMISSION
		`	ONTROLS /	(BEFORE C		`	CONTROLS /
			ATIONS)	LIMITA			ATIONS)
HAZARDOUS AIR POLLUTANT EMITTED	CAS NO.		s/yr	Lbs	s/yr		.bs/yr
Acetaldehyde (TH)	75070	2403.72		4650.38		2632.08	
Acrolein (TH)	107028	0.00		0.00		0.00	
Ammonia (T)	7664417	602.34		659.58		659.58	
Arsenic unlisted compounds (TH)	ASC-other	0.00		0.00		0.00	
Benzene (TH)	71432	0.40		0.43		0.43	
Benzo(a)pyrene (TH)	50328	0.00		0.00		0.00	
Beryllium metal (unreacted) (TH)	7440417	0.00		0.00		0.00	
Cadmium metal (elemental unreacted) (TH)	7440439	0.00		0.00		0.00	
Chromic acid (VI) (TH)	7738945	0.00		0.00		0.00	
Cobalt unlisted compounds (H)	COC-other	0.02 607.40		0.02		665.10	
Formaldehyde (TH)	50000 110543	338.81		2800.09 371.01		371.01	
Hexane, n- (TH)		0.09		+		0.10	
Lead unlisted compounds (H) Manganese unlisted compounds (TH)	PBC-other MNC-other	0.09		0.10		0.00	
Mercury vapor (TH)	7439976	0.00		0.00		0.00	
Napthalene (H)	91203	0.00		0.00		0.13	
Nickel metal (TH)	7440020	0.00		0.00		0.00	
Selenium compounds (H)	SEC	0.00		0.00		0.00	
Toluene (TH)	108883	0.64		0.70		0.70	
Methanol (H)	67561	554.76		1547.24		607.46	
Phenol (TH)	108952	0.00		0.00		0.00	
Propionaldehyde (H)	123386	623.16		1921.73		682.36	
TOXIC AIR	POLLUTANT I		NFORMATION		IDE		
NDICATE REQUESTED ACTUAL EMISSIONS AFTER							PER) IN 15A
NCAC 2Q .0711 MAY REQUIRE AIR DISPERSION MC	DELING. USE N	ETTING FORM	D2 IF NECESS	SARY (NO MODE	LING IS REQU	IRED)	
		1			Modeling	Required ?	TPER LIMI
OXIC AIR POLLUTANT EMITTED	CAS NO.	lb/hr	lb/day	lb/year	Yes	No	+
Acetaldehyde (TH)	75070	0.27	6.59	2403.72		NO	6.8 lbs/hr
Ammonia (T)	7664417	0.07	1.65	602.34		NO	6.8 lbs/hr
Formaldehyde (TH)	50000	0.07	1.66	607.40		NO	0.04 lbs/hr
Hexane, n- (TH)	110543	0.04	0.93	338.81		NO	23 lb/day
Toluene (TH)	108883	0.00	0.00	0.64		NO	197.96 lb/d
							58.97 lb/hr
							+
						 	+
			-			1	+
							+
							+
		1	1	1		1	
COMMENTS:				-			
COMMENTS:							
COMMENTS:							

ACTIVE ENERGY RENEWABLE POWER LUMBERTON, NC

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM C4

CONTROL DEVICE (CYCLONE, MULTICYCLONE, OR OTHER MECHANICAL)

REVISED 09/22/16	NCDEQ/Div	vision of Air Qu	uality - App	lication fo	or Air Pe	rmit to Construct/	Operate	•	C4
CONTROL DEVICE ID NO: CD-3		CONTROLS E	MISSIONS	FROM WI	HICH EMI	ISSION SOURCE	ID NO(S):ES-PP-1		
EMISSION POINT (STACK) ID NO(S):EP-PP-1	POSITION IN S	SERIES OF	CONTRO	LS	NO.	1 of	1 UNITS	
OPERATIN	G SCENARIO:							_	
	OF1		P.E. SEAL				✓ YES	□ NO	
DESCRIBE CONTROL SYSTEM :C	TOLONE IOI COOLEI AIIC	r peneuzer. Triis	s system is	meant to t	onect an	y Fivi ulat alises itt	on the pentizing an	id cooling process.	
POLLUTANT(S) COLLECTED:			PM		PM10				
BEFORE CONTROL EMISSION RA	ATE (LB/HR):		0.69	. <u> </u>	0.40				
CAPTURE EFFICIENCY:			100	% _	100	%	%	%	
CONTROL DEVICE EFFICIENCY:			80	% _	80		%	%	
CORRESPONDING OVERALL EFF	FICIENCY:		80	% _	80	%	%	%	
EFFICIENCY DETERMINATION CO	DDE:					<u> </u>	<u> </u>		
TOTAL AFTER CONTROL EMISSION	ON RATE (LB/HR):		0.14		0.08				
PRESSURE DROP (IN. H ₂ 0):	4 MIN	6 MAX							
INLET TEMPERATURE (°F):	_0F MIN	400F M	IAX	OUTLET	TEMPER	RATURE (°F):	0F MIN	400F MAX	
INLET AIR FLOW RATE (ACFM):85				BULK PA	RTICLE	DENSITY (LB/FT ³)	:		
POLLUTANT LOADING RATE (GR. SETTLING CHAMBER	/FT ³):0.32		CYCLONE				ı	MULTICYCLONE	
LENGTH (INCHES):	INLET VELOCITY (FT.	/SEC):		☑ CIRC	CULAR [RECTANGLE	NO. TUBES:		
WIDTH (INCHES):	DIMENSIONS (INC		ructions			AY UTILIZED	DIAMETER OF T	TUBES:	
HEIGHT (INCHES):	H:253" Including outlet	Dd: 6 feet nom	inal	LIQUID (JSED:		HOPPER ASPIR	ATION SYSTEM?	
VELOCITY (FT/SEC.):	W:50-60fps					M):	☐ YES ☐ NO		
NO. TRAYS:	De: N/A	Lc:		MAKE UI	PRATE (GPM):	LOUVERS?	<u></u>	
NO. BAFFLES:	D:N/A	S:					YES	□ NO	
DECODIDE MAINTENANCE DDOO	TYPE OF CYCLONE:	☑ CONVENT	TIONAL	Шн	IGH EFF	ICIENCY	OTHER		
DESCRIBE MAINTENANCE PROC	EDURES:					0.75	PARTICLE SIZE		-
						SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATI %	/E
DESCRIBE INCOMING AIR STREA	M: Hot air from pellitize	er and cooler. D	Distribution s	size unkno	wn as	0-1			
minimal PM is expected.						1-10			
						10-25			
						25-50			
						50-100			
						>100			
								TOTAL = 100	
DESCRIBE ANY MONITORING DE				ONTROL	DEVICE T	TO ITS EMISSION	SOURCE(S):		
	31 11121	A44 1 A 1		01	A 1		/-/-		

Actual Hours of Operation/yr = 8000
Potential Hours of Operation/yr = 8760

Already Approved

Yearly Potential/Actual emissions: B	oilers, Dryer	s, and Screw	& Pellet F	resses	_			AFTER CONTRO		
Pollutant	CAS Number	Steam Boiler (ES-B-1)	Dryer (ES-D-1)	Pressure Cooker W/Condenser (ES-P-1) & CD-1	Screw Press/Dryer (ES-SPD-1) & CD-2	Pellet Press & Cooler (ES-PP-1) & CD-3	Pellet Screening (ES-PSC-1) & CD-4	Pellet Storage (ES-PS-1) No CD	Actual Emissions after CD	Actual Emissions
		(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/hr)
Criteria Air Pollutants										
PM	PM	0.04	0.01		26.67	0.56	0.0006		27.28	0.003
PM10	PM10	0.04	0.01		0.27	0.32	0.0003		0.64	0.000
PM2.5	PM2.5	0.03	0.01		0.07		0.0001		0.11	0.000
SULFUR DIOXIDE (SO2)	SO2	0.05	0.01						0.06	0.000
NITROGEN OXIDES (NOx)	NOx	7.84	1.57						9.41	0.001
CARBON MONOXIDE (CO)	CO	6.59	1.32						7.91	0.001
VOLATILE ORGANIC COMPOUNDS (VOC)	VOC	0.43	0.09	3.85	19.26	9.00		0.90	33.53	0.004
Greenhouse Gas Emissions										
CARBON DIOXIDE (CO ₂)	CO ₂	9424.29	1884.74						11,309.03	
METHANE (CH ₄)	CH₄	0.18	0.04						0.21	İ
NITROUS OXIDE (N ₂ O)	N ₂ O	0.02	0.00						0.02	
	2 -	0.02	0.00						0.02	
Toxic/Hazardous Air Pollutants	(lbs/yr)	(lbs/yr)	(lbs/yr)		(lbs/yr)	(lbs/yr)	(lbs/yr)		(lbs/yr)	(lbs/hr)
Acetaldehyde (TH)	75070	0.002	0.000	460.800	925.20	925.20		92.52	2403.72	0.30
Acrolein (TH)	107028	0.003	0.001						0.00	0.00
Ammonia (T)	7664417	501.952	100.384						602.34	0.08
Arsenic unlisted compounds (TH)	ASC-other								0.00	0.00
Benzene (TH)	71432	0.329	0.066						0.40	0.00
Benzo(a)pyrene (TH)	50328	0.000	0.000						0.00	0.00
Beryllium metal (unreacted) (TH)	7440417								0.00	0.00
Cadmium metal (elemental unreacted) (TH)	7440439								0.00	0.00
Chromic acid (VI) (TH)	7738945								0.00	0.00
Cobalt unlisted compounds (H)	COC-other	0.013	0.003						0.02	0.00
Formaldehyde (TH)	50000	11.765	2.353	487.440	50.40	50.40		5.04	607.40	0.08
Hexane, n- (TH)	110543	282.348	56.466						338.81	0.04
Lead unlisted compounds (H)	PBC-other	0.078	0.016						0.09	0.00
Manganese unlisted compounds (TH)	MNC-other								0.00	0.00
Mercury vapor (TH)	7439976	ļ							0.00	0.00
Napthalene (H)	91203	0.096	0.019						0.11	0.00
Nickel metal (TH)	7440020								0.00	0.00
Selenium compounds (H)	SEC	0.004	0.001						0.00	0.00
Toluene (TH)	108883	0.533	0.107						0.64	0.00
Methanol (H)	67561			214.560	162.00	162.00		16.20	554.76	0.07
Phenol (TH)	108952			000 000	100.00	400.00		40.00	0.00	0.00
Propionaldehyde (H)	123386			282.960	162.00	162.00		16.20	623.16	0.08
HAP Indiv. Max		501.95	100.38		925.20	925.20	0.00	92.52	2403.72	Ī
HAP total		797.12	159.41		1299.60	1299.60	0.00	129.96	5131.46	ł
IAF IUIAI		191.12	159.41		1299.00	1299.00	0.00	129.90	3131.46	Į.

¹ Xylenes (total) includes emission factors listed as o-Xylene.

Actual Hours of Operation/yr = 8000

Potential Hours of Operation/yr = 8760

Already Approved

BEFORE & AFTER CONTROL DEVICES Yearly Potential emissions: Boilers, Dryers, and Screw & Pellet Presses, Pellet Cooler and Pellet Screening Pellet Storage Screw Press/Drver Pellet Press & Coole Pellet Screening (ES-PS-1) (ES-B-1) (ES-D-1) (ES-SPD-1) & CD-2 (ES-PP-1) & CD-3 (ES-PSC-1) & CD-4 (ES-P-1) & CD-1 No CD before CD before CD CD CD Pollutant CAS Number Before CD After CD Before CD After CD Before CD After CD After CD Before CD After CD Before CD After CD After CD Before CD Before CD (ton/yr) (ton/hr) (ton/yr) (ton/hr) Criteria Air Pollutants PM 29.86 0.003 0.04 0.04 0.01 0.01 29 20 29 20 3.04 0.61 0.62 0.0006 32 92 0.004 PM10 PM10 0.04 0.04 0.01 0.01 0.29 0.29 1.74 0.35 0.30 0.0003 2.38 0.000 0.69 0.000 PM2.5 PM2.5 0.12 0.04 0.04 0.01 0.01 0.07 0.07 0.06 0.0001 0.18 0.000 0.000 SULFUR DIOXIDE (SO2) SO2 0.05 0.05 0.01 0.01 0.06 0.000 0.06 0.000 NITROGEN OXIDES (NOx) 8.59 8.59 1.72 1.72 10.31 0.001 10.31 0.001 CARBON MONOXIDE (CO) 1.44 1.44 8.66 8.66 7.21 7.21 0.001 0.001 VOLATILE ORGANIC COMPOUNDS (VOC VOC 0.47 0.47 0.09 0.09 21.09 4.22 21.09 21.09 9.86 9.86 0.99 0.99 53.59 0.007 36.71 0.004 Greenhouse Gas Emissions 2047.89 CARBON DIOXIDE (CO2) CO2 10239.47 10239.47 2047.89 12287.37 12287.37 METHANE (CH₄) 4.83 4.83 5.79 CH₄ 0.97 0.97 5.79 NITROUS OXIDE (N2C N₂O 5.76 6.91 6.91 5.76 1.15 1.15 Toxic/Hazardous Air Pollutants (lbs/yr) (lbs/yr) (lbs/yr) 4650.38 (lbs/yr) (lbs/hr) (lbs/yr) (lbs/yr) (lbs/yr) (lbs/hr) 0.00 2522.88 504.58 1013.09 1013.09 1013.09 101.31 101.31 2632.08 Acetaldehyde (TH 75070 0.003 0.003 0.001 1013.09 0.58 0.30 0.00 Acrolein (TH 107028 0.003 0.003 0.001 0.00 0.00 0.00 0.00 Ammonia (T) 7664417 549.65 549.65 109.93 109.93 659.58 0.08 659 58 0.08 Arsenic unlisted compounds (TH) ASC-other 0.00 0.00 0.00 0.00 Benzene (TH 0.36 0.36 0.07 0.07 0.43 0.00 0.43 0.00 0.00 0.00 Benzo(a)pyrene (TH) 50328 0.00 0.00 0.00 0.00 0.00 0.00 Beryllium metal (unreacted) (TH 7440417 0.00 0.00 0.00 0.00 Cadmium metal (elemental unreacted) (TH) 7440439 0.00 0.00 0.00 0.00 0.00 0.00 Chromic acid (VI) (TH 7738945 0.00 0.00 Cobalt unlisted compounds (H) COC-other 0.01 0.01 0.00 0.00 0.02 0.00 0.02 0.00 Formaldehyde (TH) 50000 12.88 12.88 2.58 2.58 2668.73 533.75 55.19 55.19 55.19 55.19 5.52 5.52 2800.09 0.35 665.10 0.08 110543 309.18 309.18 61.84 61.84 371.01 0.05 371.01 0.04 PBC-other 0.09 0.09 0.02 0.02 0.10 0.10 0.00 0.00 Lead unlisted compounds (H) Manganese unlisted compounds (TH) MNC-other 0.00 0.00 0.00 0.00 Mercury vapor (TH) 7439976 0.00 0.00 0.00 0.00 0.10 0.10 0.02 0.02 0.13 0.13 91203 0.00 0.00 Nickel metal (TH) 7440020 0.00 0.00 0.00 0.00 Selenium compounds (H SEC 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 108883 0.58 0.58 0.12 0.12 0.70 0.00 0.70 0.00 Methanol (H 234.94 177.39 1547.24 607.46 Phenol (TH) 0.00 0.00 108952 0.00 0.00 Propionaldehyde (H 1549 21 309.84 177.39 177 39 177.39 177 39 17 74 17 74 682.36 0.08 123386 1921.73 0.24 HAP Indiv. Max 549.65 109.93 1013.09 1013.09 1013.09 0.00 101.31 101.31 4650.38 2632.08 872.87 174.57 1423.06 1423.06 0.00 142.31 142.31 11951.41 5618.98 AP total

¹ Xylenes (total) includes emission factors listed as o-Xylene.

NOTES:

Permit Name

Stack Test dated April 2017

2016 Enviva Pellets-Sampson-Dryer Stack Test

Enviva Pellets Company makes their pellets from dry/green chips and therefore, the VOC are still in the chip. However, Active Energy first pressure cook the dry chips and condense the liquids using a condeser with a conservative efficieny of 80% (80-95%). Please note many VOCs boiling point is less than the steam temp and therefore, majority of the VOC will be condensed vIOC eliquids will be disposed of, As a conservative estimate, we have estimated VOCs emissions from several permits and used the worst case for Pressure cooker emissions calcs

Actual Hrs of Operations = 8000 hrs

Potential Hrs of Operation = 8760 hrs

VOC from the Pressure Cooker & Condensor (80%-95% Efficiency)- @131°F Condenser 80-95% Used 80% (ES-P-1) & CD-1 Used 80% Potential Emissions (after Condenser 80% Max Throughput 43,800.00 Ton/yr @ 10% m.c. Emission Actual Emissions (after Actual Potential Emissions Potential Throughput Actual Throughput Factor¹ **Emissions** Condenser 80% Eff) Eff) 39,420.00 ODT/yr 36,000.00 ODT/yr 50% Hardwood 50% Softwood lbs/ODT tons/yr tons/yr tons/yr Composition Pollutant VOC 1.070 19.26 21.09 3.85 4.22 Acetaldehyde (BP-68.36F) 6.40E-02 2304.00 2522.88 460.80 504.58 0.00E+00 6.77E-02 2.98E-02 0.00E+00 0.00 487.44 214.56 Acrolein (BP-127.4F) Formaldehide (BP- (-2.2F) 0.00 2437.20 1072.80 533.75 234.94 2668.73 1174.72 Methanol (BP-148.5F) Phenol (BP-359.1F) Propionaldehyde (BP-119.8F) Ν 0.00 1414.80 0.00 1549.21 3.93E-02 282.96 309.84 HAPs total (lbs/yea 7,228.80 7,915.54 1,449.61 1,587.33

PM, NOX, CO and VOC, HAPS from Screw Press/Pellet Drying with an INTEGRAL high Efficiency Cyclone (90% for PM)

Facility Wide VOC (ton/yr)

(Ib/ODT)

1.070

ODT Processed (ODT/Yr)

(ES-SPD-1) & CD-2

								•	
Max Throughput Potential Throughput	43,800.00 39,420.00	ODT/yr	2 10% m.c.		Emission Factor ¹	Actual Emissions	Potential Emissions	Actual Emissions After a CD (90 Eff for PM and 60% for PM10)	Potential Emissions After a CD (90% Eff for PM and 60% for PM10)
Actual Throughput Composition	36,000.00 50% Hardwood 50%		od		lbs/ODT	lbs/yr	lbs/yr	lbs/yr	lbs/yr
Pollutant	Flow Rate (CFM)		Grains/cf	hrs					
PM	15556		0.05	8000		53334.80	58,401.61	53334.80	58401.61
Cyclone Loading rate cale				Tons		26.67	29.20	26.67	29.20
PM10	1.0% of total PM fro	om C Forr	ms	8000	1.00%	533.35	584.02	533.35	584.02
				Tons		0.27	0.29	0.27	0.29
PM2.5	0.25% of total PM f	rom C Fo	rms	8000	0.25%	133.34	146.00	133.34	146.00
				Tons		0.07	0.07	0.07	0.07
voc					1.07	38520.00	42179.40	38520.00	42179.40
EF from Enviva Pellet P	ress -Stack Test Dated	April 2017	7	Tons		19.26	21.09	19.26	21.09
Pollutant		HAP	NC TAP	VOC					
						(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Acetaldehyde (BP-68	3.36F)	Υ	Y	Υ	2.57E-02	925.20	1,013.09	925.20	1,013.09
Acrolein (BP-127.4F)		Υ	Y	Υ	0.00E+00	-	-	-	-
Formaldehide (BP- (-	-2.2F)	Υ	Υ	Υ	1.40E-03	50.40	55.19	50.40	55.19
Methanol (BP-148.5F	=)	Υ	N	Υ	4.50E-03	162.00	177.39	162.00	177.39
Phenol (BP-359.1F)		Υ	Y	Υ	0.00E+00	-		•	-
Propionaldehyde (BF	P-119.8F)	Υ	N	Υ	4.50E-03	162.00	177.39	162.00	177.39
			HAP total	al (lbs/year)		1,299.60	1,423.06	1,299.60	1,423.06
			HAP to	tal (tons/yr)		0.65	0.71	0.65	0.71
			TAP tot	al (lbs/year)		975.60	1,068.28	975.60	1,068.28
			TAP to	tal (tons/yr)		0.49	0.53	0.49	0.53
Permit Name			ODT Processed (ODT/Yr)	Facility Wide VOC (ton/yr)	Emission Factor (lb/ODT)				
2016 Enviva Pellets-		ck Test			1.070	Used as the worst cas	se		
Stack Test dated Apr	ril 2017		l						

Active Energy Renewable Power

Lumberton, Robeson County, NC

NOTES:

Enviva Pellets Company makes their pellets from dry/green chips and therefore, the VOC are still in the chip. However, Active Energy first pressure cook the dry chips and condense the liquids using a condesser with a conservative efficieny of 80% (80-95%). Please note many VOCs boiling point is less than the steam temp and therefore, majority of the VOC will be condensed in the steam released from the Pressure Cooker operation. The condensed VOC liquids will be disposed of.

As a conservative estimate, we have estimated VOCs emissions from several permits and used the worst case for Pressure cooker emissions calcs

Actual Hrs of Operations = 8000 hrs Potential Hrs of Operation = 8760 hrs

PM, VOCs and HAPS from Pellet Press & Pellet Cooler with a Conventional Cyclone (80-90% Eff) (ES-PP-1) & CD-3

Max Throughput	43,800.00 Ton/yr @ 10% m.c.
Potential	
Potential Throughput	39,420.00 ODT/yr
Actual Throughput Composition	36,000.00 ODT/yr
Composition	50% Hardwood 50% Softwood

Emission Factor ¹	Actual Emissions	Potential Emissions	Actual Emissions After a CD (80% Eff)	Potential Emissions After a CD (80% Eff)
lbs/ODT	lbs/yr	lbs/yr	lbs/yr	lbs/yr

Pollutant	Flow Rate (CFM)		EF in kg/ton	hrs					
PM			0.07	8000	0.15	5554.08	6,081.72	1110.82	1216.34
PM and PM10 EFs	are taken from ref IT	Q# dated	12/01/2008	Tons		2.78	3.04	0.56	0.61
PM10			0.04	8000	0.09	3170.88	3,472.11	634.18	694.42
PM and PM10 EFs	are taken from ref IT	Q# dated	12/01/2008	Tons		1.59	1.74	0.32	0.35
Pollutant		HAP	NC TAP	VOC				1	-
VOC				Υ	0.5	18,000.00	19,710.00	18000.00	19710.00
EF from Enviva Pellet	Press -Stack Test Dated	d April 201	7	Tons		9.00	9.86	9.00	9.86
						(lbe/yr)	(lhe/yr)	(lbe/vr)	(lhe/vr)

FUIIULAIIL		IIAI	NO IAI	VOC				-	
VOC				Y	0.5	18,000.00	19,710.00	18000.00	19710.00
EF from Enviva Pellet Pre	ss -Stack Test Dated	April 201	7	Tons		9.00	9.86	9.00	9.86
						(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Acetaldehyde (BP-68.3	36F)	Υ	Y	Y	2.57E-02	925.20	1,013.09	925.20	1,013.09
Acrolein (BP-127.4F)		Υ	Y	Y	0.00E+00	-	-	-	-
Formaldehide (BP- (-2	.2F)	Υ	Y	Y	1.40E-03	50.40	55.19	50.40	55.19
Methanol (BP-148.5F)		Υ	N	Y	4.50E-03	162.00	177.39	162.00	177.39
Phenol (BP-359.1F)		Υ	Υ	Y	0.00E+00	-	-	-	-
Propionaldehyde (BP-	119.8F)	Υ	N	Y	4.50E-03	162.00	177.39	162.00	177.39
			HAP tot	al (lbs/year)		1,299.60	1,423.06	1,299.60	1,423.06
			HAP to	tal (tons/yr)		0.65	0.71	0.65	0.71
			TAP tot	al (lbs/year)		975.60	1,068.28	975.60	1,068.28
			TAP to	tal (tons/yr)		0.49	0.53	0.49	0.53
			ODT Processed	Facility Wide	Emission				

Permit Name	ODT Processed (ODT/Yr)	Facility Wide VOC (ton/yr)		
2016 Enviva Pellets-Sampson-Pellet Press Stack	Test		0.500	Used as the v
Stack Test dated April 2017				

PM from Pellet Screen with a Cartridge Filter (99.9% Eff)

(ES-PSC-1) & CD-4

Throughput 39,420.00 ODT/yr	
11110ugriput 39,420.00 OD 1/yi	
Actual Throughput 36,000.00 ODT/yr	
Composition 50% Hardwood 50% Softwood	

Emission Factor1	Actual Emissions	Potential Emissions	Actual Emissions After a CD (99.9% Eff)	Potential Emissions After a CD (99.9% Eff)
lbs/ODT	lbs/yr	lbs/yr	lbs/yr	lbs/yr

PM, PM10 and PM2.5 EFs are t	taken from ref-Pinnacle Re	enewable Energy-Newton F	acility dated August 2	2019, revised in Jan 2	020		
PM		800	00 3.15E-02	1134.00	1,241.73	1.13	1.24
		Tor	ns	0.57	0.62	0.0006	0.0006
PM10		800	00 1.50E-02	540.00	591.30	0.54	0.59
		Tor	ns	0.27	0.30	0.0003	0.0003
PM2.5		800	00 3.15E-03	113.40	124.17	0.11	0.12
		To	00	0.06	0.06	0.0004	0.0001

Hazardous Air Pollutants and VOC from Pellet Storage

(ES-PS-1)

Max Throughput	43,800.00 39,420.00	-	2 10% m.c.		Emission Factor ¹	Actual Emissions	Potential Emissions
Actual Throughput Composition 5	36,000.00 50% Hardwood 50%	ODT/yr	od		lbs/ODT	lbs/yr	lbs/yr
Pollutant		HAP	NC TAP	VOC			
VOC				Y	0.050	1,800.00	1,971.00
EF from Enviva Pellet Pre	ess -Stack Test Dated	April 201	7	Tons		0.90	
						(lbs/yr)	(lbs/yr)
Acetaldehyde (BP-68.	36F)	Y	Y	Y	2.57E-02	92.52	101.31
Acrolein (BP-127.4F)		Υ	Y	Y	0.00E+00	-	-
Formaldehide (BP- (-2	2.2F)	Υ	Y	Υ	1.40E-03	5.04	5.52
Methanol (BP-148.5F)		Υ	N	Υ	4.50E-03	16.20	17.74
Phenol (BP-359.1F)		Υ	Y	Υ	0.00E+00	-	-
Propionaldehyde (BP-	119.8F)	Υ	N	Υ	4.50E-03	16.20	17.74
			HAP tot	al (lbs/year)		129.96	142.31
			HAP to	tal (tons/yr)		0.06	0.07
			TAP tot	al (lbs/year)		97.56	106.83
			TAP to	tal (tons/yr)		0.05	0.05
Permit Name			ODT Processed (ODT/Yr)	Facility Wide VOC (ton/yr)	Emission Factor (lb/ODT)	Emission Factor (10%) (lb/ODT)	
2016 Enviva Pellets-S	Test		0.500	0.050	Used as the worst case		
Stack Test dated April	2017						

[External] PSC B form

CHUCK PAKALA < cvpakala@carolina.rr.com>

Wed 5/12/2021 10:09 AM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

1 attachments (15 KB)

B_2019 NEW 051021 PSC.pdf;

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to <u>Report Spam.</u>

Greg,

Please see the attached B Form for PSC

Regards

Chuck Pakala, PE
CP Engineering and Environmental Solutions
704-756-7451 (cell)
704-541-4043 (fax)

ACTIVE ENERGY RENEWABLE POWER LUMBERTON, NC

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM B

SPECIFIC EMISSION SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 09/22/16 NO	CDEQ/Division	of Air Quality - A	pplication for	Air Permit to	Construct/Op	erate		В
EMISSION SOURCE DESCRIPTION: PELLET	SCREEN			EMISSION SO	OURCE ID NO):ES-PSC-1		,
				CONTROL DI				
OPERATING SCENARIO1	OF	1		EMISSION PO	DINT (STACK) ID NO(S):EP-	PSC-1	
DESCRIBE IN DETAILTHE EMISSION SOUR SCREW PRESS AND DRYER	CE PROCESS	(ATTACH FLOW	DIAGRAM):					
TYPE OF EMISSION SO	LIRCE (CHECK	AND COMPLETE	APPROPRIA	TE FORM B1-	R9 ON THE E	OLLOWING P	AGES):	
Coal,wood,oil, gas, other burner (Form B1	•	Woodworkin		i E i Okili Bi	_	of chemicals/	•	Form B7)
Int.combustion engine/generator (Form B2	,	Coating/finis		ation (Form B	•	, o <i>D1</i>)		
Liquid storage tanks (Form B3)	-/		s/bins (Form B	•		(Form B9)	•)	
START CONSTRUCTION DATE:NOVEMBER	2019		-	FACTURED: N		,		
MANUFACTURER / MODEL NO.:	20.0			OP. SCHEDUL			AY/WK52	WK/YR
	PS (SUBPARTS	52).			AP (SUBPART			
PERCENTAGE ANNUAL THROUGHPUT (%):	•	25 MAR-	MAY 25	JUN-AU	,	SEP-NOV	25	
		TANT EMISSI						
_		SOURCE OF		D ACTUAL			EMISSIONS	
		EMISSION		ROLS / LIMITS)	(BEFORE CONT			ROLS / LIMITS)
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)			0.00	i -	0.14	0.62	0.00	· · · · · · · · · · · · · · · · · · ·
PARTICULATE MATTER<10 MICRONS (PM ₁₀)			0.00		0.07	0.32	0.00	
PARTICULATE MATTER <2.5 MICRONS (PM _{2.5})		0.00	0.0001	0.01	0.06	0.00		
SULFUR DIOXIDE (SO2)								
NITROGEN OXIDES (NOx)								
CARBON MONOXIDE (CO)								
VOLATILE ORGANIC COMPOUNDS (VOC)		AP-42/NC DEQ						
LEAD								
OTHER								
HAZARDOU	S AIR POLL	UTANT EMIS	SIONS INFO	DRMATION	FOR THIS	SOURCE		
		SOURCE OF	EXPECTE	D ACTUAL		POTENTIAL	EMISSIONS	
		EMISSION	(AFTER CONTROLS / LIMITS)		(BEFORE CONT	TROLS / LIMITS)	(AFTER CONT	ROLS / LIMITS)
HAZARDOUS AIR POLLUTANT	CAS NO.	FACTOR	lb/hr	lbs/yr	lb/hr	lbs/yr	lb/hr	lbs/yr
TOXIC A	IR POLLUT	ANT EMISSIO	NS INFORM	IATION FO	R THIS SO	URCE		
		SOURCE OF EMISSION	EXPEC	CTED ACTUAL	. EMISSIONS	AFTER CONT	ROLS / LIMITA	ATIONS
TOXIC AIR POLLUTANT	CAS NO.	FACTOR	lb	/hr	lb/e	day	lb	o/yr
	1		<u> </u>					
			1					
Attachments: (1) emissions calculations and supporting	g documentation:	(2) indicate all reque	sted state and fe	deral enforceable	e permit limits (e	.g. hours of opera	ation, emission r	ates) and
describe how these are monitored and with what frequ						5	,	, -

[External] revsied the tables and D1 Form

CHUCK PAKALA < cvpakala@carolina.rr.com>

Wed 5/12/2021 12:16 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

2 attachments (114 KB)

All Emissions Calcs-GREG HAP EFs 051221.pdf; D1 NEW 051021.pdf;

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to <u>Report Spam.</u>

Revised Actual and Potentials and also added D1 Form. Thanks for all your help. Just rushing.

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

Actual Hours of Operation/yr = 8000

Potential Hours of Operation/yr = 8760

Already Approved

		~	Iready App	proveu						
Yearly Potential/Actual emissions: B	oilers, Dryei	ers, Dryers, and Screw & Pellet Presses						AFTER CONTROL DEVICE		
Pollutant	CAS Number	Steam Boiler (ES-B-1)	Dryer (ES-D-1)	Pressure Cooker W/Condenser (ES-P-1) & CD-1	Screw Press/Dryer (ES-SPD-1) & CD-2	Pellet Press & Cooler (ES-PP-1) & CD-3	Pellet Screening (ES-PSC-1) & CD-4	Pellet Storage (ES-PS-1) No CD	Actual Emissions after CD	Actual Emission
		(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/hr)
Criteria Air Pollutants										
PM		0.04	0.01		26.67	1.80	0.0006		28.52	0.004
PM10	PM10	0.04	0.01		0.27	0.32	0.0003		0.64	0.000
PM2.5	PM2.5	0.03	0.01		0.07		0.0001		0.11	0.000
SULFUR DIOXIDE (SO2)	SO2	0.05	0.01						0.06	0.000
NITROGEN OXIDES (NOx)	NOx	7.84	1.57						9.41	0.001
CARBON MONOXIDE (CO)	CO	6.59	1.32						7.91	0.001
VOLATILE ORGANIC COMPOUNDS (VOC)	VOC	0.43	0.09	3.85	19.26	9.00		0.90	33.53	0.004
Greenhouse Gas Emissions										
CARBON DIOXIDE (CO ₂)	CO ₂	9424.29	1884.74						11,309.03	
METHANE (CH ₄)	CH₄	0.18	0.04						0.21	İ
NITROUS OXIDE (N ₂ O)	N ₂ O	0.02	0.00						0.02	i
MITTOGO GAIDE (1420)	1120	0.02	0.00						0.02	
'avia/Harandaya Air Dallytanta	(11 - 1 -)	(11 - 1 -)	(11 - 1 - 2		(11 - 1 -)	(11 - 1 - 2	(11 - 1 -)		(11 - 1 - 2	/II - A - A
oxic/Hazardous Air Pollutants	(lbs/yr)	(lbs/yr)	(lbs/yr)	400.000	(lbs/yr)	(lbs/yr)	(lbs/yr)		(lbs/yr)	(lbs/hr)
Acetaldehyde (TH)	75070	0.002	0.000	460.800	1299.60	1299.60		92.52	3152.52	0.39
Acrolein (TH)	107028	0.003	0.001						0.00	0.00
Ammonia (T)	7664417	501.952	100.384						602.34	0.08
Arsenic unlisted compounds (TH)	ASC-other								0.00	0.00
Benzene (TH)	71432	0.329	0.066						0.40	0.00
Benzo(a)pyrene (TH)	50328	0.000	0.000						0.00	0.00
Beryllium metal (unreacted) (TH)	7440417								0.00	0.00
Cadmium metal (elemental unreacted) (TH)	7440439								0.00	0.00
Chromic acid (VI) (TH)	7738945								0.00	0.00
Cobalt unlisted compounds (H)	COC-other	0.013	0.003						0.02	0.00
Formaldehyde (TH)	50000	11.765	2.353	487.440	50.40	50.40		5.04	607.40	0.08
Hexane, n- (TH)	110543	282.348	56.466						338.81	0.04
Lead unlisted compounds (H)	PBC-other	0.078	0.016						0.09	0.00
Manganese unlisted compounds (TH)	MNC-other								0.00	0.00
Mercury vapor (TH)	7439976								0.00	0.00
Napthalene (H)	91203	0.096	0.019						0.11	0.00
Nickel metal (TH)	7440020								0.00	0.00
Selenium compounds (H)	SEC	0.004	0.001						0.00	0.00
Toluene (TH)	108883	0.533	0.107	047.500	400.00	400.00		40.00	0.64	0.00
Methanol (H)	67561	1		214.560	162.00	162.00		16.20	554.76	0.07
Phenol (TH)	108952			202.000	400.00	400.00		40.00	0.00	0.00
Propionaldehyde (H)	123386	<u> </u>	<u> </u>	282.960	162.00	162.00		16.20	623.16	0.08
IAP Indiv. Max		501.95	100.38		1299.60	1299.60	0.00	92.52	3152.52	Ī
HAP total		797.12	159.41		1674.00	1674.00	0.00	129.96	5880.26	
irii totai		191.12	133.41		1074.00	1074.00	0.00	123.30	3000.20	l

¹ Xylenes (total) includes emission factors listed as o-Xylene.

Actual Hours of Operation/yr = 8000

Potential Hours of Operation/yr = 8760

Already Approved

BEFORE & AFTER CONTROL DEVICES Yearly Potential emissions: Boilers, Dryers, and Screw & Pellet Presses, Pellet Cooler and Pellet Screening Pellet Storage Screw Press/Drver Pellet Press & Coole Pellet Screening (ES-PS-1) (ES-B-1) (ES-D-1) (ES-SPD-1) & CD-2 (ES-PP-1) & CD-3 (ES-PSC-1) & CD-4 (ES-P-1) & CD-1 No CD before CD before CD CD CD Pollutant CAS Number Before CD After CD Before CD After CD Before CD After CD After CD Before CD After CD Before CD After CD After CD Before CD Before CD (ton/yr) (ton/hr) (ton/yr) (ton/hr) Criteria Air Pollutants PM 31.23 0.004 0.04 0.04 0.01 0.01 29 20 29 20 3.04 1 97 0.62 0.0006 32 92 0.004 PM10 PM10 0.04 0.04 0.01 0.01 0.29 0.29 1.74 0.35 0.30 0.0003 2.38 0.000 0.69 0.000 PM2.5 PM2.5 0.12 0.04 0.04 0.01 0.01 0.07 0.07 0.06 0.0001 0.18 0.000 0.000 SULFUR DIOXIDE (SO2) SO2 0.05 0.05 0.01 0.01 0.06 0.000 0.06 0.000 NITROGEN OXIDES (NOx) 8.59 8.59 1.72 1.72 10.31 0.001 10.31 0.001 CARBON MONOXIDE (CO) 1.44 1.44 8.66 8.66 7.21 7.21 0.001 0.001 VOLATILE ORGANIC COMPOUNDS (VOC VOC 0.47 0.47 0.09 0.09 21.09 4.22 21.09 21.09 9.86 9.86 0.99 0.99 53.59 0.007 36.71 0.004 Greenhouse Gas Emissions 2047.89 CARBON DIOXIDE (CO2) CO2 10239.47 10239.47 2047.89 12287.37 12287.37 METHANE (CH₄) 4.83 4.83 5.79 CH₄ 0.97 0.97 5.79 NITROUS OXIDE (N2C N₂O 5.76 6.91 6.91 5.76 1.15 1.15 Toxic/Hazardous Air Pollutants (lbs/yr) (lbs/yr) (lbs/yr) (lbs/yr) 4650.38 (lbs/yr) (lbs/hr) (lbs/yr) (lbs/yr) (lbs/yr) (lbs/hr) 0.00 2522.88 504.58 1013.09 1013.09 1013.09 1013.09 101.31 101.31 2632.08 Acetaldehyde (TH 75070 0.003 0.003 0.001 0.58 0.30 0.00 Acrolein (TH 107028 0.003 0.003 0.001 0.00 0.00 0.00 0.00 Ammonia (T) 7664417 549.65 549.65 109.93 109.93 659.58 0.08 659 58 0.08 Arsenic unlisted compounds (TH) ASC-other 0.00 0.00 0.00 0.00 0.36 0.36 0.07 0.07 0.43 0.00 0.43 0.00 0.00 0.00 Benzo(a)pyrene (TH) 50328 0.00 0.00 0.00 0.00 0.00 0.00 Beryllium metal (unreacted) (TH 7440417 0.00 0.00 0.00 0.00 Cadmium metal (elemental unreacted) (TH) 7440439 0.00 0.00 0.00 0.00 0.00 0.00 Chromic acid (VI) (TH 7738945 0.00 0.00 Cobalt unlisted compounds (H) COC-other 0.01 0.01 0.00 0.00 0.02 0.00 0.02 0.00 Formaldehyde (TH) 50000 12.88 12.88 2.58 2.58 2668.73 533.75 55.19 55.19 55.19 55.19 5.52 5.52 2800.09 0.35 665.10 0.08 110543 309.18 309.18 61.84 61.84 371.01 0.05 371.01 0.04 PBC-other 0.09 0.09 0.02 0.02 0.10 0.10 0.00 0.00 Lead unlisted compounds (H) Manganese unlisted compounds (TH) MNC-other 0.00 0.00 0.00 0.00 Mercury vapor (TH) 7439976 0.00 0.00 0.00 0.00 0.10 0.10 0.02 0.02 0.13 0.13 91203 0.00 0.00 Nickel metal (TH) 7440020 0.00 0.00 0.00 0.00 Selenium compounds (H SEC 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 108883 0.58 0.58 0.12 0.12 0.70 0.00 0.70 0.00 Methanol (H 234.94 177.39 1547.24 607.46 Phenol (TH) 0.00 0.00 108952 0.00 0.00 Propionaldehyde (H 1549 21 309.84 177.39 177 39 177.39 177 39 17 74 17 74 682.36 0.08 123386 1921.73 0.24 HAP Indiv. Max 549.65 109.93 1013.09 1013.09 1013.09 0.00 101.31 101.31 4650.38 2632.08 872.87 174.57 1423.06 1423.06 0.00 142.31 142.31 11951.41 5618.98 AP total

¹ Xylenes (total) includes emission factors listed as o-Xylene.

NOTES:

Enviva Pellets Company makes their pellets from dry/green chips and therefore, the VOC are still in the chip. However, Active Energy first pressure cook the dry chips and condense the liquids using a condeser with a conservative efficieny of 80% (80-95%). Please note many VOCs boiling point is less than the steam temp and therefore, majority of the VOC will be condensed in the steam released from the Pressure Cooker operation. The condensed VOC liquids will be disposed of.

As a conservative estimate, we have estimated VOCs emissions from several permits and used the worst case for Pressure cooker emissions calcs

Actual Hrs of Operations = 8000 hrs

Potential Hrs of Operation = 8760 hrs

VOC from the Pressure Cooker & Condensor (80%-95% Efficiency)- @131°F Condenser 80-95% Used 80% (ES-P-1) & CD-1 Used 80% Potential Emissions (after Condenser 80% Max Throughput 43,800.00 Ton/yr @ 10% m.c. Emission Actual Emissions (after Actual Potential Emissions Potential Throughput Actual Throughput Factor¹ **Emissions** Condenser 80% Eff) Eff) 39,420.00 ODT/yr 36,000.00 ODT/yr 25% Hardwood 75% Softwood lbs/ODT tons/yr tons/yr tons/yr Composition Pollutant VOC 1.070 19.26 21.09 3.85 4.22 Acetaldehyde (BP-68.36F) 6.40E-02 2304.00 2522.88 460.80 504.58 0.00E+00 6.77E-02 2.98E-02 0.00E+00 0.00 487.44 214.56 Acrolein (BP-127.4F) Formaldehide (BP- (-2.2F) 0.00 2437.20 1072.80 533.75 234.94 2668.73 1174.72 Methanol (BP-148.5F) Phenol (BP-359.1F) Propionaldehyde (BP-119.8F) Ν 0.00 1414.80 0.00 1549.21 3.93E-02 282.96 309.84 HAPs total (lbs/yea 7,228.80 7,915.54 1,449.61 1,587.33

PM, NOX, CO and VOC, HAPS from Screw Press/Pellet Drying with an INTEGRAL high Efficiency Cyclone (90% for PM)

(ES-SPD-1) & CD-2

Max Throughput Potential Throughput	43,800.00 39,420.00	ODT/yr	0 10% m.c.		Emission Factor ¹	Actual Emissions	Potential Emissions	Actual Emissions After a CD (90 Eff for PM and 60% for PM10)	Potential Emissions After a CD (90% Eff for PM and 60% for PM10)
Actual Throughput Composition	36,000.00 25% Hardwood 759		od		lbs/ODT	lbs/yr	lbs/yr	lbs/yr	lbs/yr
Pollutant	Flow Rate (CFM)		Grains/cf	hrs					
PM	15556		0.05	8000		53334.80	58,401.61	53334.80	58401.61
Cyclone Loading rate ca	alcs			Tons		26.67	29.20	26.67	29.20
PM10	1.0% of total PM fro	om C For	ms	8000	1.00%	533.35	584.02	533.35	584.02
				Tons		0.27	0.29	0.27	0.29
PM2.5	0.25% of total PM f	rom C Fo	rms	8000	0.25%	133.34	146.00	133.34	146.00
				Tons		0.07	0.07	0.07	0.07
voc					1.07	38520.00	42179.40	38520.00	42179.40
EF from Enviva Pellet Press -Stack Test Dated April 2017			7	Tons		19.26	21.09	19.26	21.09
Pollutant		HAP	NC TAP	VOC					
						(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Acetaldehyde (BP-6	88.36F)	Υ	Υ	Υ	2.57E-02	925.20	1,013.09	925.20	1,013.09
Acrolein (BP-127.4F	-)	Υ	Υ	Υ	0.00E+00	-	-		-
Formaldehide (BP-	(-2.2F)	Υ	Υ	Υ	1.40E-03	50.40	55.19	50.40	55.19
Methanol (BP-148.5	iF)	Υ	N	Υ	4.50E-03	162.00	177.39	162.00	177.39
Phenol (BP-359.1F)		Υ	Y	Υ	0.00E+00	-	-		•
Propionaldehyde (B	P-119.8F)	Υ	N	Υ	4.50E-03	162.00	177.39	162.00	177.39
			HAP tot	al (lbs/year)		1,299.60	1,423.06	1,299.60	1,423.06
			HAP to	tal (tons/yr)		0.65	0.71	0.65	0.71
			TAP tot	al (lbs/year)		975.60	1,068.28	975.60	1,068.28
			TAP to	tal (tons/yr)		0.49	0.53	0.49	0.53
Permit Name			ODT Processed (ODT/Yr)	Facility Wide VOC (ton/yr)	Emission Factor (lb/ODT)		•		
2016 Enviva Pellets Stack Test dated Ap	-Sampson-Dryer Sta oril 2017	ck Test			1.070	Used as the worst ca	se		

Active Energy Renewable Power

Lumberton, Robeson County, NC

NOTES:

Enviva Pellets Company makes their pellets from dry/green chips and therefore, the VOC are still in the chip. However, Active Energy first pressure cook the dry chips and condense the liquids using a condeser with a conservative efficieny of 80% (80-95%). Please note many VOCs boiling point is less than the steam temp and therefore, majority of the VOC will be condensed in the steam released from the Pressure Cooker operation. The condensed VOC liquids will be disposed of.

As a conservative estimate, we have estimated VOCs emissions from several permits and used the worst case for Pressure cooker emissions calcs

Actual Hrs of Operations = 8000 hrs Potential Hrs of Operation = 8760 hrs

PM, VOCs and HAPS from Pellet Press & Pellet Cooler with a Conventional Cyclone (80-90% Eff) (ES-PP-1) & CD-3

Max Throughput	43,800.00 Ton/yr @ 10% m.c.
Potential	
Potential Throughput	39,420.00 ODT/yr
Actual Throughput	36,000.00 ODT/yr
Composition	25% Hardwood 75% Softwood

Emission Factor ¹	n Actual Emissions	Potential Emissions	Actual Emissions After a CD (80% Eff)	Potential Emissions After a CD (80% Eff)	
lbs/ODT	lbs/yr	lbs/yr	lbs/yr	lbs/yr	

Pollutant	Flow Rate (CFM)		EF in kg/ton	hrs					
PM			0.07	8000	0.15	5554.08	6,081.72	3600.00	3942.00
PM and PM10 EFs a	re taken from ref IT0	Q# dated	12/01/2008	Tons		2.78	3.04	1.80	1.97
PM10			0.04	8000	0.09	3170.88	3,472.11	634.18	694.42
PM and PM10 EFs a	re taken from ref ITO	Q# dated	12/01/2008	Tons		1.59	1.74	0.32	0.35
Pollutant		HAP	NC TAP	VOC				-	-

Pollutant		HAP	NC TAP	VOC				-	-
VOC				Y	0.5	18,000.00	19,710.00	18000.00	19710.00
EF from Enviva Pellet Pr	ess -Stack Test Date	d April 201	7	Tons		9.00	9.86	9.00	9.86
						(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Acetaldehyde (BP-68	.36F)	Υ	Υ	Υ	2.57E-02	925.20	1,013.09	925.20	1,013.09
Acrolein (BP-127.4F)		Υ	Υ	Υ	0.00E+00	-	•	-	-
Formaldehide (BP- (-2	2.2F)	Υ	Υ	Y	1.40E-03	50.40	55.19	50.40	55.19
Methanol (BP-148.5F)	Υ	N	Y	4.50E-03	162.00	177.39	162.00	177.39
Phenol (BP-359.1F)		Υ	Υ	Y	0.00E+00	-	-	-	-
Propionaldehyde (BP	-119.8F)	Υ	N	Y	4.50E-03	162.00	177.39	162.00	177.39
			HAP tot	al (lbs/year)		1,299.60	1,423.06	1,299.60	1,423.06
			HAP to	tal (tons/yr)		0.65	0.71	0.65	0.71
			TAP tot	al (lbs/year)		975.60	1,068.28	975.60	1,068.28
			TAP to	tal (tons/yr)		0.49	0.53	0.49	0.53
	·		ODT Processed	Facility Wide	Emission			•	

Permit Name	ODT Processed (ODT/Yr)	Facility Wide VOC (ton/yr)		
2016 Enviva Pellets-Sampson-Pellet Press Stack	Test		0.500	Used as the wo
Stack Test dated April 2017				

PM from Pellet Screen with a Cartridge Filter (99.9% Eff)

(ES-PSC-1) & CD-4

Max Throughput 43,800. Potential	
	.00 ODT/yr
Actual Throughput 36,000.	.00 ODT/yr
Composition 25% Hardwood	75% Softwood

Emission Factor1	Actual Emissions	Potential Emissions	Actual Emissions After a CD (99.9% Eff)	Potential Emissions After a CD (99.9% Eff)
lbs/ODT	lbs/yr	lbs/yr	lbs/yr	lbs/yr

PM, PM10 and PM2.5 E	EFs are taken from ref-F	innacle Re	newable Energy-N	lewton Facility	dated August 20	019, revised in Jan 20	020		
PM				8000	3.15E-02	1134.00	1,241.73	1.13	1.24
				Tons		0.57	0.62	0.0006	0.0006
PM10				8000	1.50E-02	540.00	591.30	0.54	0.59
				Tons		0.27	0.30	0.0003	0.0003
PM2.5				8000	3.15E-03	113.40	124.17	0.11	0.12
				Tone		0.06	0.06	0.0001	0.0001

Hazardous Air Pollutants and VOC from Pellet Storage

(ES-PS-1)

Max Throughput	ughput 43,800.00 Ton/yr @ 39,420.00 ODT/yr		0 10% m.c.		Emission Factor ¹	Actual Emissions	Potential Emissions
Actual Throughput Composition 2	36,000.00 25% Hardwood 75%	ODT/yr	od		lbs/ODT	lbs/yr	lbs/yr
Pollutant		HAP	NC TAP	VOC			
VOC				Y	0.050	1,800.00	1,971.00
EF from Enviva Pellet Pre	ess -Stack Test Dated	April 201	7	Tons		0.90	0.9
						(lbs/yr)	(lbs/yr)
Acetaldehyde (BP-68.36F) Y			Y	Y	2.57E-02	92.52	101.31
Acrolein (BP-127.4F) Y		Y	Y	Y	0.00E+00	-	-
Formaldehide (BP- (-2	.2F)	Y	Y	Υ	1.40E-03	5.04	5.52
Methanol (BP-148.5F)		Y	N	Υ	4.50E-03	16.20	17.74
Phenol (BP-359.1F)		Y	Y	Υ	0.00E+00	-	-
Propionaldehyde (BP-	119.8F)	Y	N	Υ	4.50E-03	16.20	17.74
			HAP tot	al (lbs/year)		129.96	142.31
			HAP to	tal (tons/yr)		0.06	0.07
		TAP tot	al (lbs/year)		97.56	106.83	
			TAP to	tal (tons/yr)		0.05	0.05
Permit Name	ODT Processed (ODT/Yr)	Facility Wide VOC (ton/yr)	Emission Factor (lb/ODT)	Emission Factor (10%) (lb/ODT)			
2016 Enviva Pellets-S	Test		0.500	0.050	Used as the worst case		
Stack Test dated April	2017						

ACTIVE ENERGY RENEWABLE POWER LUMBERTON, NC

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM D1

FACILITY-WIDE EMISSIONS SUMMARY

AIR POLLUTAN	EXPECTE EMIS: (AFTER CO	D ACTUAL SIONS	POTENTIAL		POTENTIA	AL EMISSIONS		
	EMIS: (AFTER CO	SIONS		EMISSIONS	POTENTIA	AL EMISSIONS		
		ANTROLS /	(DEECS = -					
		JIVIINOLO /	(RFLOKE CO	ONTROLS /	(AFTER	CONTROLS /		
	LIMITA	ATIONS)	LIMITA	ΓIONS)	LIMI	TATIONS)		
	ton	ns/yr	tons/yr		tons/yr			
	28	3.52	32.9	92	3	31.23		
	0.	.64	2.3	18		0.69		
	0.	.11	0.1	8		0.12		
	0.	.06	0.0	0.06		0.06		
	9.	.41	10.3	31		10.31		
CARBON MONOXIDE (CO)			8.6	i6		8.66		
	33	1.53	53.	59	;	36.71		
	1130	09.03	1228	7.37	12	287.37		
AIR POLLUTA	NT EMISSION	IS INFORMAT	TION - FACILIT	Y-WIDE				
	EXPECTE	D ACTUAL						
	_					AL EMISSIONS		
	(AFTER CO	ONTROLS /	(BEFORE CO	ONTROLS /	(AFTER CONTROLS /			
т						TATIONS)		
CAS NO.		s/yr		/yr		_bs/yr		
75070	3152.52		4650.38		2632.08			
107028	0.00		0.00		0.00			
7664417	602.34		659.58		659.58			
ASC-other	0.00		0.00		0.00			
71432	0.40		0.43		0.43			
50328	0.00		0.00		0.00			
7440417	0.00		0.00		0.00			
7440439	0.00	•	0.00		0.00			
7738945	0.00		0.00		0.00			
COC-other	0.02		0.02		0.02			
50000	607.40		2800.09		665.10			
110543	338.81		371.01		371.01			
PBC-other	0.09		0.10	0.10		0.10		
MNC-other	0.00		0.00		0.00			
7439976	0.00		0.00		0.00			
91203	0.11		0.13		0.13			
1	0.00		0.00		0.00			
SEC	0.00		0.00		0.00			
1					0.70			
	554.76		1547.24		607.46			
					0.00			
			+		682.36			
		FORMATION		IDE				
R CONTROLS / LI	MITATIONS. E	MISSIONS ABO	OVE THE TOXIC F	PERMIT EMISS	SION RATE (T	PER) IN 15A		
ODELING. USE N	IETTING FORM	D2 IF NECESS	ARY (NO MODEL	ING IS REQU	IRED)			
				Modeling	Required?	TPER LIMIT		
CAS NO.	lb/hr	lb/day	lb/year	Yes	No			
75070	0.36	8.64	3152.52		NO	6.8 lbs/hr		
7664417	0.07	1.65	602.34		NO	6.8 lbs/hr		
50000	0.07	1.66	607.40		NO	0.04 lbs/hr		
110543	0.04	0.93	338.81		NO	23 lb/day		
108883	0.00	0.00	0.64		NO	197.96 lb/da		
						58.97 lb/hr		
			1			1		
			1			1		
	†		1		†	+		
	<u> </u>							
	CAS NO. 75070 107028 7664417 ASC-other 71432 50328 7440417 7440439 7738945 COC-other 50000 110543 PBC-other MNC-other 91203 7440020 SEC 108883 67561 108952 123386 R POLLUTANT I R CONTROLS / LI ODELING. USE N CAS NO. 75070 7664417 50000 110543	SAIR POLLUTANT EMISSION	EXPECTED ACTUAL EMISSIONS (AFTER CONTROLS / LIMITATIONS) CAS NO. Lbs/yr 75070 3152.52 107028 0.00 7664417 602.34 ASC-other 0.00 71432 0.40 50328 0.00 7440417 0.00 7440439 0.00 7738945 0.00 COC-other 0.02 50000 607.40 110543 338.81 PBC-other 0.09 MNC-other 0.00 7439976 0.00 91203 0.11 7440020 0.00 SEC 0.00 108883 0.64 67561 554.76 108952 0.00 123386 623.16 R POLLUTANT EMISSIONS INFORMATION R CONTROLS / LIMITATIONS. EMISSIONS ABC ODELING. USE NETTING FORM D2 IF NECESS CAS NO. Ib/hr Ib/day 75070 0.36 8.64 7664417 0.07 1.65 50000 0.07 1.66 110543 0.04 0.93	7.91	7.91	7.91		

Re: [External] D1, C Form and calcs

CHUCK PAKALA < cvpakala@carolina.rr.com>

Thu 5/13/2021 10:04 AM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

1 attachments (15 KB)

B_2019 NEW 051021 PP1.pdf;

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Greg,

I do not remember whether I emailed you or not. I made sure, I checked the data and resaved it again. Attached now. Thanks.

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

Email: cvpakala@carolina.rr.com

From: Reeves, Gregory W

Sent: Thursday, May 13, 2021 8:57 AM

To: CHUCK PAKALA

Subject: Re: [External] D1, C Form and calcs

Chuck, is there an updated Form B for the pelletier/pellet cooler ES-PP-1? You updated the numbers on the C4 form for CD-3.



Greg Reeves
Compliance Coordinator
Division of Air Quality, Fayetteville Regional Office
225 Green Street, Suite 714 910.433.3373 (Office)
Fayetteville, NC 28301-5043
Gregory.Reeves@ncdenr.gov

Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: CHUCK PAKALA < cvpakala@carolina.rr.com>

Sent: Wednesday, May 12, 2021 4:18 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Subject: [External] D1, C Form and calcs

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to <u>Report Spam.</u>

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

ACTIVE ENERGY RENEWABLE POWER LUMBERTON, NC

AIR PERMIT: 10636R00; FACILITY ID # 7800242

FORM B

SPECIFIC EMISSION SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 09/22/16 NC	DEQ/Division	of Air Quality - A	pplication for	Air Permit to	Construct/Op	erate		D
EMISSION SOURCE DESCRIPTION: PELLET	ZER AND PEI	LET COOLER EMISSION S			SOURCE ID NO:ES-PP-1			
				CONTROL DEVICE ID NO(S):CD-3				
OPERATING SCENARIO1	OF	1		EMISSION PO	DINT (STACK)	ID NO(S):EP-	PP-1	
DESCRIBE IN DETAILTHE EMISSION SOURG SCREW PRESS AND DRYER	CE PROCESS	(ATTACH FLOW	DIAGRAM):					
TYPE OF EMISSION SOU	IRCE (CHECK	AND COMPLETE	APPROPRIA	TE FORM B1-	B9 ON THE F	OLLOWING P	AGES):	
Coal,wood,oil, gas, other burner (Form B1)	•	Woodworkin					coatings/inks (I	Form B7)
Int.combustion engine/generator (Form B2)			hing/printing (F	Form B5)	_	ation (Form B8	•	,
Liquid storage tanks (Form B3)		= "	s/bins (Form B	,	_	Form B9)	-,	
START CONSTRUCTION DATE:NOVEMBER 2	2019		DATE MANU	FACTURED: N	OVEMBER 20	019		
MANUFACTURER / MODEL NO.:			1	OP. SCHEDUL			AY/WK52_	WK/YR
	S (SUBPARTS	S?): NA			AP (SUBPART		NA	
PERCENTAGE ANNUAL THROUGHPUT (%):		25 MAR-	MAY 25	JUN-AU		SEP-NOV		
		TANT EMISSI				OURCE		
		SOURCE OF		D ACTUAL			EMISSIONS	
		EMISSION		ROLS / LIMITS)	(BEFORE CONT		(AFTER CONTR	ROLS / LIMITS)
AIR POLLUTANT EMITTED		FACTOR	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)			0.14	<u> </u>	0.69	3.04	0.14	0.61
PARTICULATE MATTER<10 MICRONS (PM ₁₀)			0.08		0.40	1.74	0.08	0.35
PARTICULATE MATTER<2.5 MICRONS (PM _{2.5})			1					0.00
SULFUR DIOXIDE (SO2)								
NITROGEN OXIDES (NOx)								
CARBON MONOXIDE (CO)								
VOLATILE ORGANIC COMPOUNDS (VOC)		AP-42/NC DEQ	2.25	9.00	2.25	9.86	2.25	9.86
LEAD								
OTHER								
	S AIR POLL	UTANT EMIS	SIONS INFO	ORMATION	FOR THIS	SOURCE		
		SOURCE OF	EXPECTE	D ACTUAL	POTENTIAL EMISSION			
		EMISSION		(AFTER CONTROLS / LIMITS)		(BEFORE CONTROLS / LIMITS) (AFTER C		
HAZARDOUS AIR POLLUTANT	CAS NO.	FACTOR	lb/hr	lbs/yr	lb/hr	lbs/yr	lb/hr	lbs/yr
Acetaldehyde (TH)	75070	AP-42/NC DEQ	1.16E-01	925.20	1.16E-01	1013.09	1.16E-01	1013.09
Acrolein (TH)	107028	AP-42/NC DEQ	0.00E+00	0.00	0.00E+00	0.00	0.00E+00	0.00
Formaldehyde (TH)	50000	AP-42/NC DEQ	6.30E-03	50.40	6.30E-03	55.19	6.30E-03	55.19
Methanol	67561	AP-42/NC DEQ	2.03E-02	162.00	2.03E-02	177.39	2.03E-02	177.39
Phenol	108952	AP-42/NC DEQ	0.00E+00	0.00	0.00E+00	0.00	0.00E+00	0.00
Propionaldehyde	123386	AP-42/NC DEQ	2.03E-02	162.00	2.03E-02	177.39	2.03E-02	177.39
TOXIC AI	R POLLUT	ANT EMISSIO	NS INFORM	MATION FO	R THIS SO	URCE		
		SOURCE OF EMISSION	EXPE	CTED ACTUAL	. EMISSIONS	AFTER CONT	ROLS / LIMITA	ATIONS
TOXIC AIR POLLUTANT	CAS NO.	FACTOR	lb	/hr	lb/day		lb/yr	
Acetaldehyde (TH)	75070	AP-42/NC DEQ	1.16	SE-01	2.54		925.20	
Acrolein (TH)	107028	AP-42/NC DEQ	0.00E+00		0.00		0.00	
Formaldehyde (TH) 50000		AP-42/NC DEQ	6.30	E-03	0.	14	50.	.40
				-				
				-				
Attachments: (1) emissions calculations and supporting						g. hours of opera	ation, emission ra	ates) and
describe how these are monitored and with what frequence	auch, and the god	scrine any monitorina	LIEVICES USTINGS	or test norte for	TITLE SOURCE			

Re: [External] D1, C Form and calcs

CHUCK PAKALA < cvpakala@carolina.rr.com>

Fri 5/14/2021 8:59 AM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Cc: Tyler Player <tyler@playerdesign.net>; Ron Gaskins <Ronald.Gaskins@aegplc.com>; Doris Sampson <doris.sampson@aegplc.com>

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Greg,

AERP is comfortable to leave the old permit wording"AS IS" in the new permit also. Please move forward with the permit process. Please let me know if you need anything else. Thanks for all your help.

Look forward to seeing our permit soon.

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

Email: cvpakala@carolina.rr.com

From: Reeves, Gregory W

Sent: Thursday, May 13, 2021 2:58 PM

To: CHUCK PAKALA

Subject: Re: [External] D1, C Form and calcs

Chuck, I also still need you to confirm what the suggested permit limit for temperature of the exhaust gases from the cooker process condenser should be in the permit. Currently listed in the existing permit as less than 99 deg C (210 deg F).



Greg Reeves
Compliance Coordinator
Division of Air Quality, Fayetteville Regional Office
225 Green Street, Suite 714 910.433.3373 (Office)
Fayetteville, NC 28301-5043
Gregory.Reeves@ncdenr.gov

Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: CHUCK PAKALA < cvpakala@carolina.rr.com>

Sent: Thursday, May 13, 2021 10:02 AM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Subject: Re: [External] D1, C Form and calcs

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Greg,

I do not remember whether I emailed you or not. I made sure, I checked the data and resaved it again. Attached now. Thanks.

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

Email: cvpakala@carolina.rr.com

From: Reeves, Gregory W

Sent: Thursday, May 13, 2021 8:57 AM

To: CHUCK PAKALA

Subject: Re: [External] D1, C Form and calcs

Chuck, is there an updated Form B for the pelletier/pellet cooler ES-PP-1? You updated the numbers on the C4 form for CD-3.



Greg Reeves
Compliance Coordinator
Division of Air Quality, Fayetteville Regional Office
225 Green Street, Suite 714 910.433.3373 (Office)
Fayetteville, NC 28301-5043
Gregory.Reeves@ncdenr.gov

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From: CHUCK PAKALA < cvpakala@carolina.rr.com>

Sent: Wednesday, May 12, 2021 4:18 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Subject: [External] D1, C Form and calcs

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Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

[External] Re: AERP Application - Pellet Storage Emission Calculations

Chuck Pakala < cvpakala@carolina.rr.com>

Fri 5/14/2021 4:43 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Cc: Carter, Heather < Heather. Carter@ncdenr.gov>

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to Report Spam.

I am in concurrence with you for the two scenarios. Thanks for all your help. Have a great weekend!

Sent from my iPhone

On May 14, 2021, at 3:51 PM, Reeves, Gregory W < gregory.reeves@ncdenr.gov > wrote:

Chuck, based on our phone conversation and discussion of the process, it does not seem that the emissions from the pellet storage area are reasonable. I would not expect to see any VOC emissions from the finished, cooled pellets once they are packaged in super sacks. Therefore, I will remove these emissions from the emission calculation totals.

Also, in our discussion, we talked about possible VOC emissions from wood chips stored in piles at the facility awaiting processing. It would appear from our conversations and from previous conversations with the facility representatives that the storage pile will be very small, and thus would have insignificant VOC emissions. Therefore, we will not include any VOC emissions in the facility totals for this wood storage.

If you have any questions, please call me.

<Outlook-axlmmny0.jpg>

[External] Re: AERP Application - Pellet Storage Emission Calculations

Chuck Pakala < cvpakala@carolina.rr.com>

Fri 5/14/2021 8:41 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to <u>Report Spam.</u>

Great. That is fine.

Sent from my iPhone

On May 14, 2021, at 4:43 PM, Reeves, Gregory W < gregory.reeves@ncdenr.gov > wrote:

Chuck, as a result of this, I will be removing the pellet storage (ID No. IES-PS-1) from the insignificant/exempt activities listing on the permit.

<Outlook-153325sh.jpg>

From: Reeves, Gregory W

Sent: Friday, May 14, 2021 3:51 PM

To: CHUCK PAKALA <cvpakala@carolina.rr.com> **Cc:** Carter, Heather <Heather.Carter@ncdenr.gov>

Subject: AERP Application - Pellet Storage Emission Calculations

Chuck, based on our phone conversation and discussion of the process, it does not seem that the emissions from the pellet storage area are reasonable. I would not expect to see any VOC emissions from the finished, cooled pellets once they are packaged in super sacks. Therefore, I will remove these emissions from the emission calculation totals.

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If you have any questions, please call me.

<Outlook-axlmmny0.jpg>

Re: [External] Just checking

Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Mon 5/17/2021 1:48 PM

To: CHUCK PAKALA < cvpakala@carolina.rr.com>

Cc: Lowery-jacobs, Evangelyn <evangelyn.lowery-jacobs@ncdenr.gov>

done with forms and calcs. Still awaiting a response to my question about where to set the maximum temperature for the exhaust gases from the condenser. I still think that 210 deg F is too high. What does the facility suggest as a reasonable temperature?



Greg Reeves
Compliance Coordinator
Division of Air Quality, Fayetteville Regional Office
225 Green Street, Suite 714 910.433.3373 (Office)
Fayetteville, NC 28301-5043
Gregory.Reeves@ncdenr.gov

Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: CHUCK PAKALA < cvpakala@carolina.rr.com>

Sent: Monday, May 17, 2021 1:39 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Subject: [External] Just checking

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to Report Spam.

Greg,

Are you done with my calcs and Forms. Please advise.

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

[External] Condenser Exit gas temperature

CHUCK PAKALA < cvpakala@carolina.rr.com>

Tue 5/18/2021 12:27 PM

To: Reeves, Gregory W <gregory.reeves@ncdenr.gov>; Tyler Player <tyler@playerdesign.net>; Michael Rowan <michael.rowan@aegplc.com>; Jennifer Scott <jscott@SHIPMANLAW.COM>

Cc: Ron Gaskins <Ronald.Gaskins@aegplc.com>; Doris Sampson <doris.sampson@aegplc.com>; Andrew Diamond <andrew.diamond@aegplc.com>; jkohn@kohnassociates.net <jkohn@kohnassociates.net>; CHUCK PAKALA <cvpakala@carolina.rr.com>

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to <u>Report Spam.</u>

Greg,

I spoke with Tyler and on behalf of AERP, Tyler is comfortable to the set the exit gas temperature for the proposed condenser to 170^{0} F (76^{0} C) in the permit. As per your suggestion, I will draft a letter and sedn it AERP to sign and make it official this condition for the air permit. Please let us know if you need anything else.

Regards

Chuck Pakala, PE
CP Engineering and Environmental Solutions
704-756-7451 (cell)
704-541-4043 (fax)

[External] Pellet HAP EFs

CHUCK PAKALA < cvpakala@carolina.rr.com>

Wed 5/19/2021 5:10 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

1 attachments (153 KB)

Greg - Enviva HAP EF.pdf;

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to <u>Report Spam.</u>

Greg,

Attached please see the Pellet Press/Cooler HAP EFs are given by you from Enviva and I used them in 2019 and the same were used now. Attached is a copy of your email. Please call me if you have any questions.

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-756-7451 (cell) 704-541-4043 (fax)

CHUCK PAKALA

From: "Reeves, Gregory W" < gregory.reeves@ncdenr.gov>

Date: Monday, October 28, 2019 8:26 AM

To: "CHUCK PAKALA" <cvpakala@carolina.rr.com>

Subject: RE: [External] Dryer EF

Chuck, here are the results of stack testing at Enviva – Sampson for HAP: (All results expressed in Ib/ODT)

March 2017

	<u>Dryer</u>	Green Hammermills	<u>Pellet</u>
Press/Coolers			
Methanol	0.0428	0.00008	0.0045
Formaldehyde	0.0760	0.00008	0.0014
Acetaldehyde	0.0640	0	0.0257
Propionaldehyde	0.0319	0	0.0045
Total HAP	0.215	0.00016	0.036

March 2018

Dryer
0.0298
0.0677
0.0393
0.1757

Testing was also conducted in March 2019 for Formaldehyde, but that was on the dryer including thermal oxidizer control, so I don't think that would be similar to the Active Energy process. I think you could use any of these factors. I don't think any of these factors would cause an exceedance of the toxic TPERs in 02Q .0711.

Call me if questions......Greg



Greg Reeves Permits Coordinator

Division of Air Quality, Fayetteville Regional Office

225 Green Street, Suite 714 910.433.3373 (Office) Fayetteville, NC 28301-5043 910.485.7467 (Fax)

Gregory.Reeves@ncdenr.gov

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From: CHUCK PAKALA [mailto:cvpakala@carolina.rr.com]

Sent: Saturday, October 26, 2019 10:59 AM

To: Reeves, Gregory W <gregory.reeves@ncdenr.gov> **Cc:** Antonio Esposito <antonio.esposito@aegplc.com>

Subject: Re: [External] Dryer EF

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Greg,

Having used the Enviva stack test data for VOC calculations. Did Enviva have EFs for HAPS listed below or do you have any idea what you want me to use based on your past reviews. Looks like there is so much data on Enviva that you agree as recent and some you told me that it was old. Sorry to bother you many times like this.

Acetaldehyde	
Acrolein	
Formaldehide	
Methanol	
Phenol	
Propionaldehyde	

Regards

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Email: cvpakala@carolina.rr.com

From: Reeves, Gregory W

Sent: Friday, October 25, 2019 8:48 AM

To: CHUCK PAKALA

Subject: RE: [External] Dryer EF



Greg Reeves Permits Coordinator

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From: CHUCK PAKALA [mailto:cvpakala@carolina.rr.com]

Sent: Thursday, October 24, 2019 6:57 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Subject: [External] Dryer EF

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Greg,

I saw a stack test data on Enviva-Ahoskie in June 2014 and the Dryer EF is given as 0.781 lb/ODT. Would you be okay to use this number for my Dryer emissions at Screw Press/Dryer. Please note the purpose of this Dryer is to remove moisture content from 30% to 15% so that pellet making would be easier. Attached is the copy of that test. Currently I am using the same EF as the pressure cooker (1.07 lb/ODT). What are your thoughts.

Regards

Chuck Pakala, PE CP Engineering and Environmental Solutions 704-541-4042 704-756-7451 (cell) 704-541-4043 (fax)

Email: cvpakala@carolina.rr.com

[External] AERP Condenser Temperature Limit Letter

Doris Sampson <doris.sampson@aegplc.com>

Wed 5/19/2021 1:03 PM

To: Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Cc: Michael Rowan <tmr@aegplc.com>; CHUCK PAKALA <cvpakala@carolina.rr.com>; Tyler Player <tyler@playerdesign.net>;

Ron Gaskins < Ronald.Gaskins@aegplc.com>



1 attachments (118 KB)

Condenser Temp. Limit Letter.pdf;

CAUTION: External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to Report Spam.

Hi Greg,

Attached is a copy of the signed official letter to confirm the Condenser Exit Gas Temperature limit to 170F (76C). I will also mail 2 copies of this letter to you today.

Thank you,

Doris Sampson Active Energy Renewable Power LLC 1885 Alamac Road Lumberton, NC 28358

Phone: 910-734-5863

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Active Energy Renewable Power, LLC

1885 Alamac Road Lumberton, NC 28358

May 18, 2021

Ms. Heather Carter, Regional Supervisor Systel Building 225 Green Street, Suite 714 Fayetteville, North Carolina 28301

Re: Air Permit – Condenser Exit Gas Temperature Limit Pellet Pressure

Cooker Operations

Active Energy Renewable Power

1885 Alamac Road

Lumberton, Robeson County, North Carolina Air Permit #10636R00; Facility ID#7800242

Dear Ms. Carter:

Per our discussions with Mr. Greg Reeves, Permit Engineer, with NC DEQ - Division of Air Quality, Active Energy Renewable Power (AERP), is pleased to propose Condenser Exit Gas Temperature limit to 170°F (76°C) instead of 210°F (99°C) already approved in the current air permit for our pressure cooker and condenser operations at the subject facility. Please note, the current air permit had condition that the condenser exit gas temperature limit as 210°F (99°C). However, Mr. Reeves intends to revise the temperature number to control/mitigate the VOC releases from the above said operations. Therefore, AERP intends follow Mr. Greg Revees's request to revise the exit condenser gas temperature to 170°F (76°C) in the new permit. Please make this limit a rolling sum for 3-5 hrs to mitigate any hiccups in the process temperature.

Please call Mr. Tyler Player at 207-554-7122 or me at 910-840-7922 or Mr. Chuck Pakala at (704) 756-7451 if you have any questions or comments on this revised temperature limit. We appreciate your continued help and cooperation on the progress of this project.

Respectfully submitted,

Ron Gaskins Plant Manager

AERP Dryer Emission Factor Discussion

Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Fri 5/21/2021 8:32 AM

To: CHUCK PAKALA <cvpakala@carolina.rr.com>; Tyler Player <tyler@playerdesign.net>

Cc: Carter, Heather < Heather.Carter@ncdenr.gov>

Chuck/Tyler

It would appear to me in review of the emission calculations spreadsheets for the AERP project that the emission factors used for Formaldehyde and Acetaldehyde emissions from the Screw Press/Rotary Dryer operation (ID No. ES-SPD-1) may be incorrect. It was my understanding that in lieu of source test data, AERP was going to assume that the emissions from this unit were similar to the emissions of the rotary dryer operation at Enviva Sampson. It would appear that the emission factors used for these two toxic pollutants from this emission source are the emission factors from the Enviva Sampson pellet cooler operation, not the dryer operation.

In my discussions with Chuck, it was asserted that much of the VOC (and therefore HAP/TAP) will have already been removed in the cooker operation and that the dryer was operating at a low temperature, and therefore the emission factors should be lower than those for the Enviva facility. Without definitive test data or a rigorous engineering analysis, I do not agree that this approach is appropriate, and I suggest that the dryer emission factors from Enviva be used as most representative of the emissions from the AERP process.

My preliminary emission calculations using the Enviva dryer emission factors would seem to indicate that a toxics TPER might be exceeded for Formaldehyde, and toxics modeling might therefore be required.

I would like to discuss this with you at your earliest convenience. Please call me at 910-624-6469.



Greg Reeves
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AERP Emissions Questions - Status Update

Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Fri 5/21/2021 11:37 AM

To: Tyler Player <tyler@playerdesign.net>; CHUCK PAKALA <cvpakala@carolina.rr.com>

Cc: Carter, Heather < Heather.Carter@ncdenr.gov>

Tyler/Chuck

Based on my conversation with Tyler this morning, this is the status of the Lumberton project:

- The <u>Lumberton application is on hold</u> pending operation and emission testing at a temporary facility in Maine.
- Testing at the Maine facility will be conducted using hardwood only, producing about 1,000 tons
 of black wood pellets from a steam explosion process.
- The Maine facility will be starting operation in the next few weeks.
- Design of the Lumberton facility may change depending on the results of the operation and testing of the temporary facility in Maine.
- AERP will re-submit the application for Lumberton, using data from the emission testing at the Maine facility.
- Testing of the Maine facility will include analysis of emissions of PM, VOC, and HAP/TAP from the various processes, including the pressure cooker, screw press/dryer, and the pelletizer/pellet cooler. Other processes may be tested depending on the requirements of the Maine regulators.

Please let me know if any of this information is incorrect. I would be happy to discuss this further with you.



Greg Reeves

Compliance Coordinator

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AERP – Phone conversation with Tyler Player (207-554-7122)

AERP/PDI have a current permitted facility in Maine. This facility produces the standard white wood pellets, similar to Enviva.

Maine has authorized a temporary permit associated with the main air permit for a test run for a steam explosion black wood pellet plant to produce about 1,000 tons of black pellets. Emissions testing will be conducted during this test run to determine VOC and HAP/TAP emissions from the pressure cooker operation, from the screw press/dryer operation, and from the pelletizer/pellet cooler operation. The facility will be utilizing FTIR analysis using EPA Method 320. Testing will also be conducted to determine PM emissions from the screw press/dryer operation and from the pelletizer/pellet cooler operation. Additional process testing may also be conducted based on the requirements in Maine.

The Maine black wood pellet test facility will be starting operation in the next few weeks. This process involves the use of only hardwood. <u>No softwood</u> will be processed. This process does not include a green hammermill.

If any problems in the process are discovered, it may prompt some re-design of the process. The need for re-design will be evaluated based on the results of the test run and emissions testing.

The <u>Lumberton project will be placed on hold</u> until after the testing is completed in Maine and results obtained for process viability and process emissions. Process equipment may be re-designed based on the results of the Maine testing.

Permit application forms will be re-submitted for Lumberton based on emissions determined in Maine.

The Lumberton project will now involve the use of <u>hardwood only</u>. No softwood will be utilized. Mr. Player indicated that hammermills (green or dried wood) may not be in the final design of the process.

Some of the process machinery that had been installed but not yet permitted at Lumberton has been removed.

As a side note, Mr. Player indicated that his company, Player Design Inc (PDI) does work for a number of wood pellet manufacturers, including Enviva, and has been involved with the construction of about half the pellet mills in Canada. PDI and AERP are in a joint venture in the permitted Maine facility. PDI does design/engineering work, fabricates and supplies some of the process machinery, and serves as the mechanical installation contractor for some of these facilities. Mr. Player indicated that he owns a couple of the small pellet manufacturing facilities in Canada.

Mr. Player indicated that he was not aware of any facility that is currently producing or testing pellet production facilities using the steam explosion process.

Status of Lumberton Project

Reeves, Gregory W < gregory.reeves@ncdenr.gov>

Mon 5/24/2021 11:54 AM

To: ronald.gaskins@aegplc.com < ronald.gaskins@aegplc.com >

Cc: Carter, Heather < Heather.Carter@ncdenr.gov>

Ron, per our conversation on Friday 05/21, please confirm the status of the project at the Lumberton facility. Is the project on hold with the company, or do you wish to withdraw your current application pending the source tests at the test facility in Maine and resubmit the application with new data?

Note that the application is currently on hold with DAQ pending submittal of additional information.



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