NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date: TBD, 2022

Region: Mooresville Regional Office
County: Iredell
NC Facility ID: 4900339
Inspector's Name:
Date of Last Inspection:
Compliance Code:

Facility Data

Applicant (Facility's Name): Automated Solutions, LLC - Plant #3

Facility Address:
Automated Solutions, LLC - Plant #3
2020 West Front Street
Statesville, NC 28677

SIC: 3086 / Plastics Foam Products
NAICS: 32615 / Urethane and Other Foam Product (except Polystyrene) Manufacturing

Facility Classification: Before: Permit/Registration Pending **After:** Title V
Fee Classification: Before: N/A **After:** Title V

Permit Applicability (this application only)

SIP: 15A NCAC 02D .0515, .0521, .0535, .0540, .1111, .1806, and .2100; 15A NCAC 02Q .0207, .0304, .0317 of 02D .0530, and .0504
NSPS: NA
NESHAP: 40 CFR 63, Subpart ZZZZ
PSD: NA
PSD Avoidance: Yes (VOCs)
NC Toxics: NA
112(r): Yes
Other: NA

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Tony Smith Director of Operations PO Box 1068 Sawmills, NC 28630	Tony Smith Director of Operations PO Box 1068 Sawmills, NC 28630	Tony Smith Director of Operations PO Box 1068 Sawmills, NC 28630

Application Data

Application Number: 4900339.21A
Date Received: 10/15/2021
Application Type: Greenfield Facility
Application Schedule: State

Existing Permit Data
Existing Permit Number: N/A
Existing Permit Issue Date: N/A
Existing Permit Expiration Date: N/A

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP

<No Inventory>

Review Engineer: Richard Simpson

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

Comments / Recommendations:
Issue: 10717/R00
Permit Issue Date: TBD, 2022
Permit Expiration Date: TBD, 2030

I. Introduction:

Automated Solutions, LLC – Plant #3 (referred to Automated Solutions throughout this document) will hold Title V Permit No. 10717R00 with an expiration date of TBD, 2030 for a polyethylene (PE) foam extruder and scrap processing manufacturing plant in Statesville, Iredell County, North Carolina.

II. Description of Facility:

This facility is a Greenfield facility that has never operated. Polyethylene (PE) foam is used to protect packaged items such as furniture. PE foam is also used in construction, for example as a vapor barrier and to protect in-ground pool liners. Manufacture of PE foam involves melting PE in an extruder. A volatile organic compound (VOC), non- toxic air pollutant, non-hazardous air pollutant, blowing agent is injected into the melted PE and mixed in the extruder. At the exit end of the extruder is a die. The die controls the thickness and shape of the extruded material.

When the PE - blowing agent mixture exits the die, the mixture rapidly expands creating PE foam. Most commonly PE foam is produced in sheets which are rolled into 50 to 100 pound bundles. During the extruder startup, PE scrap is produced. PE scrap also results from off-specification production and trimming rolls. Scrap is typically ground and extruded to produce PE pellets. The PE pellets are recycled back into the PE foam extruder.

III. Purpose of Application

A. Permit application No. 4900339.21A was received on October 15, 2021 and deemed complete with payment on October 20, 2021 for a new Greenfield facility. This application will be processed as a first step significant modification in accordance with 15A NCAC 02Q .0501(b)(2). The permit will require the submittal of a first time Title V application within 12 months of startup. Automated Solutions' potential emissions of all regulated pollutants are below the PSD major source threshold values. This permit action will address the following sources and control devices associated with the application:

- Add an isobutane storage tank (ID No. I-1), two polyethylene resin silos (ID No. I-2), natural gas space heaters (ID No. I-3) and a diesel-fired emergency generator (ID No. I-4) as insignificant activities.
- Add a polyethylene foam extruder with scrap reprocessing (ID No. ES-1).
- Add foam grinder and reclaim extruder with integral cyclone (ID No. ES-10) controlled by bagfilter (ID No. CD-10A).

IV. History/Background/Application Chronology

October 15-20, 2021 - Permit application 4900339.21A was received for a Greenfield facility. Payment was received and an acknowledgement letter was sent.

November 10, 2021 – DAQ permit engineer requested additional calculations from facility representatives.

December 3 – December 17, 2021 – The facility, RRO and DAQ permitting staff were requested by the permit engineer, Richard Simpson, to comment on the draft permit and review. Additional comments were received and included in the permit.

December ##, 2021– TVEE changes were approved by Jenny Sheppard TVEE Coordinator.

TBD, 2022 – Permit 10717R00 was issued.

V. Permit Modifications/Changes and TVEE Discussion

The following changes were made to Automated Solutions, LLC Plant #3, Statesville, NC Air Permit No. 101717R00:

Page No.	Section	Description of Changes
NA	NA	This is a Greenfield permit

There were changes made to the Title V Equipment Editor (TVEE) under this permit application.

VI. Statement of Compliance

This is a Greenfield facility. There are no compliance issues or inspections.

VII. Application Description

The Automated Solutions application seeks approval for the installation and operation of a polyethylene foam extruder with scrap reprocessing operation. With this Greenfield application, the facility will be categorized as a Title V facility and is requesting a 250 ton per year VOC NSR/PSD avoidance limit. The facility will have four (4) insignificant activities, two (2) significant sources, and one bagfilter.

Polyethylene (PE) foam is used to protect packaged items such as furniture and can be used in the residential and commercial construction industries. The manufacturing of PE foam involves melting PE in an extruder. A blowing agent is injected into the melted PE and mixed in the extruder. A die controls the thickness and shape of the extruded material. A blowing agent mixture expands the PE to create the foam. The facility also recycles PE scrap back into the initial process.

VIII. Potential Emission Estimates

Automated Solutions are a mainly a source of VOC emissions and will have a facility-wide limitation of less than 250 tons per year and be subject to a 15A NCAC 02Q .0317 Avoidance condition for 15A NCAC 02D .0530: Prevention of Significant Deterioration. The majority of VOCs are emitted when the blowing agent mixture is released at the exit of the die where the mixture rapidly expands creating the foam. The facility conservatively assumed that all (100%) of the blowing agent is released as VOCs. Since 100% VOC emissions are used to determine PE foam line potential estimates, retained VOCs released in reprocessing have already been accounted for. For this reason, the PE foam extruding and reprocessing is considered as one emissions source. Detailed emission calculations are provided in Appendix 1.

Emission Scenario	CO (tpy)	NO_x (tpy)	VOC (tpy)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	SO_2 (tpy)	Total HAPs (tpy)
Proposed PTE	1.5	5.1	250	2.1	1.0	1.0	0.3	1.0

For this extruder and type of foam produced, a maximum of 14% blowing agent is used (80 pounds isobutane/ 600 pounds of polyethylene).

Maximum blowing agent (isobutane) annual feed rate is 106,195 gallons/year
VOC annual PTE = ((106,195 gallons of isobutane/year x 100% VOC x 4.70 pounds of isobutane/gallon) / 2,000 pounds/ton) + (0.44 ton/year VOC of All Insignificant Activities)

VOC annual PTE = 250 tons/year

IX. Regulatory Review

Automated Solutions is subject to the following regulations:

a. 15A NCAC 02D .0515, "Particulates from Miscellaneous Industrial Processes**"**
b. 15A NCAC 02D .0521, "Control of Visible Emissions"
c. 15A NCAC 02D .0535, "Excess Emissions Reporting and Malfunctions**"**
d. 15A NCAC 02D .0540, "Particulates from Fugitive Dust Emission Sources"
e. 15A NCAC 02D .1806, "Control and Prohibition of Odorous Emissions"
f. 15A NCAC 02D .1111, "General Achievable Control Technology (40 CFR 63, Subpart ZZZZ)"
g. 15A NCAC 02Q .0207 "Annual Emissions Reporting"
h. 15A NCAC 02Q .0304 "Applications"
i. 15A NCAC 02Q .0504 "Option for Obtaining Construction and Operation Permit" duplicate
j. 15A NCAC 02D .2100, "Risk Management Program"
k. 15A NCAC 02Q .0317, "Avoidance Conditions" (for 15A NCAC 2D .0530, Prevention of Significant Deterioration)

Detailed requirements are provided below for the regulations associated with the proposed emission sources with this Greenfield application. For a discussion of NSPS, MACT, CAM, and PSD requirements, see Section X.

1. 15 NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes**:** This rule applies to the polyethylene feed rate and limits the allowable PM emission from these sources to:

   $E = 4.10(P)^{0.67}$

   where: P = the process weight rate (ton/hr) = 600 pound/hr maximum rate (0.3 tons/hour), and
   E = allowable emissions (lb PM/hr)

   $E = 4.10(0.3)^{0.67} = 1.83$ lb PM/hr *for process rates ≤ 30 ton/hr*

The following table lists estimated uncontrolled and controlled worst case emission estimates from the foam grinder and reclaim hopper (**ID No. ES-10**). The bagfilter reduces PM/PM_{10}/$PM_{2.5}$ by 99.9%.

Emission Source	PM Emissions, Uncontrolled, lb/hr	PM Emissions, Controlled, lb/hr
ES-10	1.5	0.0015

The permit requires monthly and annual inspections of the bagfilter to ensure they provide effective control. Compliance is anticipated.

2. 15 NCAC 02D .0521, Control of Visible Emissions: This rule limits visible emissions to 20% opacity (except a six-minute averaging period can exceed 20% once per hour and four times per 24-hour period, provided visible emissions do not exceed 87% opacity). To ensure compliance, Automated Solutions performs monthly visible emission observations, maintains records, and submits semiannual summary reports of visible emission observations to NC DAQ. Compliance is anticipated.

3. 15 NCAC 02D .0614, Compliance Assurance Monitoring: Uncontrolled potential PM emissions from the foam grinder and reclaim hopper are 6.57 ton/yr, which is less than the 100 ton/yr major source threshold. Therefore, this rule does not apply to this facility.

4. 15 NCAC 02D .1806, Control and Prohibition of Odorous Emissions: The Permittee shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary. Compliance is anticipated.

5. 15A NCAC 02D .0535: Excess Emissions Reporting and Malfunctions: The Permittee of a source of excess emissions that last for more than four hours and that results from a malfunction, a breakdown of process or control equipment or any other abnormal conditions, shall notify the Director or his designee of any such occurrence by 9:00 a.m. Eastern time of the Division's next business day of becoming aware of the occurrence and describe:
   i. the name and location of the facility,
   ii. the nature and cause of the malfunction or breakdown,
   iii. the time when the malfunction or breakdown is first observed,
   iv. the expected duration, and
   v. an estimated rate of emissions.

   The facility shall also notify the Director or his designee immediately when the corrective measures have been accomplished. Compliance is anticipated.

6. 15A NCAC 02D .0540: Particulates from Fugitive Dust Emission Sources: The Permittee shall not cause or allow fugitive dust emissions to cause or contribute to substantive complaints or excess visible emissions beyond the property boundary. If substantive complaints or excessive fugitive dust emissions from the facility are observed beyond the property boundaries for six minutes in any one hour (using Reference Method 22 in 40 CFR, Appendix A), the owner or operator may be required to submit a fugitive dust plan as described in 02D .0540(f).

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

X. NSPS, NESHAPS/MACT/GACT, PSD, 112(r), CAM

NSPS – The Permittee is not subject to 15A NCAC 02D .0524 "New Source Performance Standards (NSPS)" as promulgated in 40 CFR Part 60.

NESHAPS/MACT/GACT – The Permittee is currently subject to the 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (MACT) as promulgated in 40 CFR 63, Subpart ZZZZ, "National Emission Standards For Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines" and Subpart A "General Provisions." The applicable source is for a 587 horsepower diesel-fired emergency generator (I.D. No. I-4). The engine was manufactured in 1996 and must have a non-resettable hour meter. If these requirements are not met, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111. Compliance is anticipated.

PSD – The facility is currently a minor source with respect to the Prevention of Significant Deterioration (PSD) permitting program as the facility is located in an area of attainment for all PSD regulated pollutants and the annual potential to emit (PTE) VOC emissions is less than the major applicable threshold (250 tons per year). The facility SIC codes 3086 and 32615 are for non-polyethylene foam products, which is not one of the 28-listed stationary sources with a 100 ton per year major threshold. The facility has assessed the PSD applicability for the new facility and will be subject to a VOC emissions facility-wide limitation of less than 250 tons per year and subject to 15A NCAC 02Q .0317 Avoidance conditions for 15A NCAC 02D .0530: Prevention of Significant Deterioration. See Section VIII above for specific production limits. Compliance is anticipated.

112(r) – NCAC 02D .2100, Risk Management Program (RMP) applies to any facility with more than a threshold quantity of a regulated substance listed in 40 CFR 68.130, with certain exceptions. Because the facility will have a 10,000 gallon isobutane tank which is above the quantities established threshold. The isobutane tank it is subject to the Chemical Accident Prevention Provisions in 40 CFR Part 68, which implement the requirements of Section 112(r) of the Clean Air Act. The facility must follow the reporting and recordkeeping per the Risk Management Plan. Compliance is anticipated.

CAM – 40 CFR 64 requires that a compliance assurance monitoring plan be developed for all equipment located at a major facility, that have pre-controlled emissions above the major source threshold of Title V, and use a control device to meet an applicable standard. CAM is not applicable for this facility.

X. Other Regulatory Considerations

- An application fee of $10,325 was received electronically by the DAQ on October 20, 2021.
- The appropriate number of application copies was received by the DAQ.
- A Professional Engineer's Seal is not required for this application.
- A zoning consistency determination is required for this application and was approved on October 14, 2021 by Donald Cole, Senior Planner, from the City of Statesville Planning Department.
- The application was signed by Mr. Tony Smith , Director of Operations, on October 15, 2021.
- Public notice for this application will be based on an Environmental Justice determination. At the moment, public notice is not required for this application due to the construction and operation permit being issued under 15A NCAC 02Q .0300. The application is classified as a first step significant per 15A NCAC 02Q .0501(b)(2). The permit will require the submittal of a first time Title V application within 12 months of startup.
- Iredell County has triggered increment tracking under PSD for NOx, SO_2, and PM-10. This modification will result in an increase of 1.16 pounds per hour of NOx, an increase of 0.07 pounds per hour of SO_2, and an increase of 0.23 pounds per hour of PM-10.

XI. Recommendations

The application for Automated Solutions, LLC – Plant #3 in Statesville, Iredell County, North Carolina has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. The DAQ recommends the issuance of Air Permit No. 10717R00.

Appendix 1

AUTOMATED SOLUTIONS, LLC - PLANT #3
STATESVILLE, NORTH CAROLINA
AIR PERMIT APPLICATION CALCULATIONS

ES-1 PE Extruder System			
The blowing agent feed rate is nominally 14 percent.			
Description	Value	Units	Source or Calculation
Polyethylene feed rate	600.00	lb/hr	From manufacturer.
Blowing agent feed rate (maximum)	84.00	lb/hr	Polyethylene feed rate in pounds per hour x 0.14
Potential VOC emissions	735,840.00	lb/yr	Blowing agent maximum feed rate in pounds per hour x 8,760 hours per year
Potential VOC emissions	367.92	ton/yr	Emissions in pounds per hour / 2,000 pounds per ton
PSD avoidance VOC limit at extruder	***249.56***	***ton/yr***	***Requested limit (250 minus VOC from storage transfer, heaters, and emergency generator)***
PSD avoidance VOC limit	499,113.99	lb/yr	Limit in tons per year x 2,000 pounds per ton
Maximum operating hours	5941.83	hr/yr	Limit in pounds per year / blowing agent typical feed rate in pounds per hour
Maximum operating days	247.58	day/yr	Maximum operating hours / 24 hours per day
Maximum operating weeks	49.52	wk/yr	Maximum operating days / 5 days per week
ES-10 Foam grinder with in-line cyclone and bagfilter (CD-10A)			
Inlet air flow rate	2100.00	ACFM	From manufacturer (existing equipment)
Outlet grain loading (estimate)	0.005	gr/dscf	Estimate
Emission Rate (PM/PM10/PM2.5)	0.0015	lb/hr	ACFM * gr/dscf / 7000
Emission Rate (PM/PM10/PM2.5)	0.0066	tpy	lb/hr * 8760/2000
Typical Control Efficiency	99.90	Percent	Estimate for bagfilter
Uncontrolled Emission Rate	1.50	lb/hr	lb/hr controlled * (1-control efficiency/100)
Uncontrolled Emission Rate	6.57	tpy	lb/hr * 8760/2000

AUTOMATED SOLUTIONS, LLC - PLANT #3
STATESVILLE, NORTH CAROLINA
AIR PERMIT APPLICATION CALCULATIONS

I-4 Diesel-Fired Emergency Generator (400kW, Model # SR4, Year 1996, CAT, Engine Model # 3406, 587HP)			
AP-42 Table 3.2-3 emissions factors are applicable to command power control engines.			
Generator rating	587.00	HP	Manufacturer
Generator rating	4,109,000.00	BTU/hr	Btu/hr @ 7000 Btu/hp-hr
Generator rating	4.11	mmBTU/hr	Generator rating in BTU per hour / 1,000,000
Natural gas BTU content	140,000.00	BTU/gal	Assumed
Gas use	29.35	gal/hr	Calculated
Potential fuel use	14,675.00	gal/yr	Fuel use in gal/hr x 500 hours per year
NOx emission factor	0.031	lb/hp-hr	AP-42 Table 3.3-1
Potential NOx emissions	18.20	lb/hr	Emission factor x generator rating in HP
Potential NOx emissions	9,038.50	lb/yr	Emission factor x 500 hrs/yr
Potential NOx emissions	4.55	ton/yr	Emission in pounds per year / 2,000 pounds per ton
CO emission factor	6.68E-03	lb/hp-hr	AP-42 Table 3.3-1
Potential CO emissions	3.92	lb/hr	Emission factor x generator rating in HP
Potential CO emissions	1960.58	lb/yr	Emission factor x 500 hrs/yr
Potential CO emissions	0.98	ton/yr	Emission in pounds per year / 2,000 pounds per ton
SO2 emission factor	2.05E-03	lb/hp-hr	AP-42 Table 3.3-1
Potential SO2 emissions	1.20	lb/hr	Emission factor x generator rating in HP
Potential SO2 emissions	601.68	lb/yr	Emission factor x 500 hrs/yr
Potential SO2 emissions	0.30	ton/yr	Emission in pounds per year / 2,000 pounds per ton
VOC emission factor	2.1141E-03	lb/hp-hr	AP-42 Table 3.3-1
Potential VOC emissions	1.24	lb/hr	Emission factor x generator rating in HP
Potential VOC emissions	620.49	lb/yr	Emission factor x 500 hrs/yr
Potential VOC emissions	0.31	ton/yr	Emission in pounds per year / 2,000 pounds per ton
PM/PM10/PM2.5 emission factor	2.20E-03	lb/hp-hr	AP-42 Table 3.3-1
Potential PM emissions	1.29	lb/hr	Emission factor x generator rating in HP
Potential PM emissions	645.70	lb/yr	Emission factor x 500 hrs/yr
Potential PM emissions	0.32	ton/yr	Emission in pounds per year / 2,000 pounds per ton
Formaldehyde emission factor	1.18E-03	lb/hp-hr	AP-42 Table 3.3-1
Potential Formaldehyde emissions	0.69	lb/hr	Emission factor x generator rating in HP
Potential Formaldehyde emissions	346.33	lb/yr	Emission factor x 500 hrs/yr
Potential Formaldehyde emissions	0.17	ton/yr	Emission in pounds per year / 2,000 pounds per ton
HAPs emission factor (total)	6.45E-03	lb/hp-hr	AP-42 Table 3.3-2 (total for all HAPs)
Potential Formaldehyde emissions	3.79	lb/hr	Emission factor x generator rating in HP
Potential Formaldehyde emissions	1894.13	lb/yr	Emission factor x 500 hrs/yr
Potential Formaldehyde emissions	0.95	ton/yr	Emission in pounds per year / 2,000 pounds per ton

AUTOMATED SOLUTIONS, LLC - PLANT #3
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Generator rating	4.11	mmBTU/hr	Generator rating in BTU per hour / 1,000,000
Natural gas BTU content	140,000.00	BTU/gal	Assumed
Gas use	29.35	gal/hr	Calculated
Potential fuel use	14,675.00	gal/yr	Fuel use in gal/hr x 500 hours per year
NOx emission factor	0.031	lb/hp-hr	AP-42 Table 3.3-1
Potential NOx emissions	18.20	lb/hr	Emission factor x generator rating in HP
Potential NOx emissions	9,038.50	lb/yr	Emission factor x 500 hrs/yr
Potential NOx emissions	4.55	ton/yr	Emission in pounds per year / 2,000 pounds per ton
CO emission factor	6.68E-03	lb/hp-hr	AP-42 Table 3.3-1
Potential CO emissions	3.92	lb/hr	Emission factor x generator rating in HP
Potential CO emissions	1960.58	lb/yr	Emission factor x 500 hrs/yr
Potential CO emissions	0.98	ton/yr	Emission in pounds per year / 2,000 pounds per ton
SO2 emission factor	2.05E-03	lb/hp-hr	AP-42 Table 3.3-1
Potential SO2 emissions	1.20	lb/hr	Emission factor x generator rating in HP
Potential SO2 emissions	601.68	lb/yr	Emission factor x 500 hrs/yr
Potential SO2 emissions	0.30	ton/yr	Emission in pounds per year / 2,000 pounds per ton
VOC emission factor	2.1141E-03	lb/hp-hr	AP-42 Table 3.3-1
Potential VOC emissions	1.24	lb/hr	Emission factor x generator rating in HP
Potential VOC emissions	620.49	lb/yr	Emission factor x 500 hrs/yr
Potential VOC emissions	0.31	ton/yr	Emission in pounds per year / 2,000 pounds per ton
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Potential PM emissions	1.29	lb/hr	Emission factor x generator rating in HP
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Potential PM emissions	0.32	ton/yr	Emission in pounds per year / 2,000 pounds per ton
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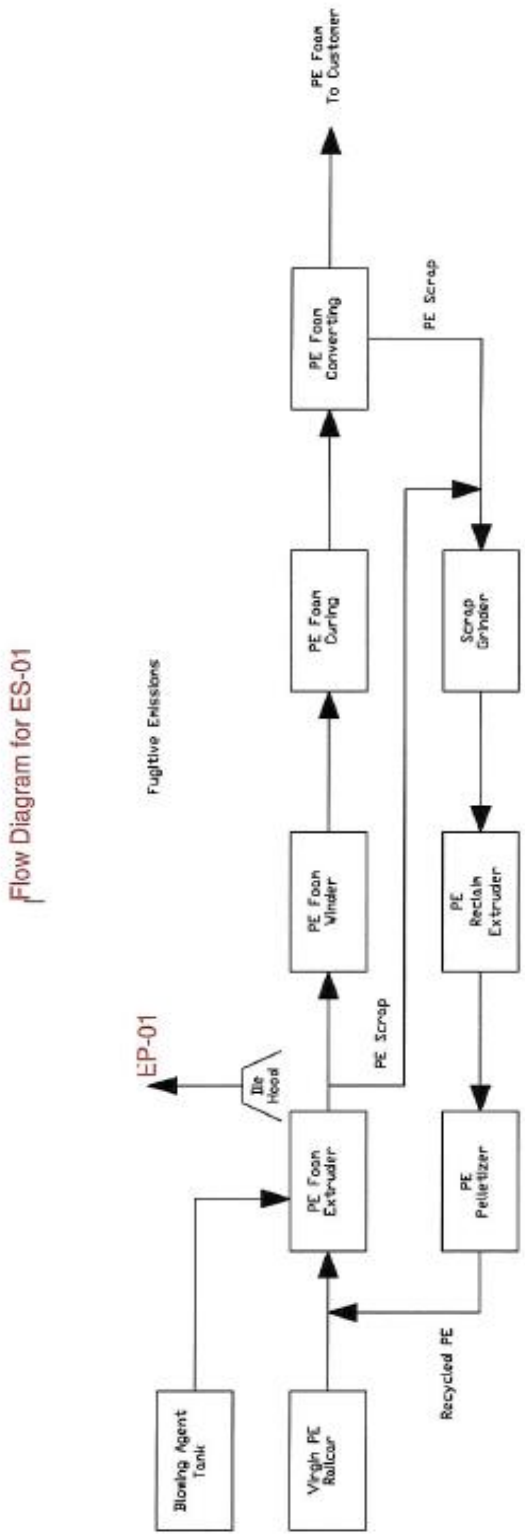
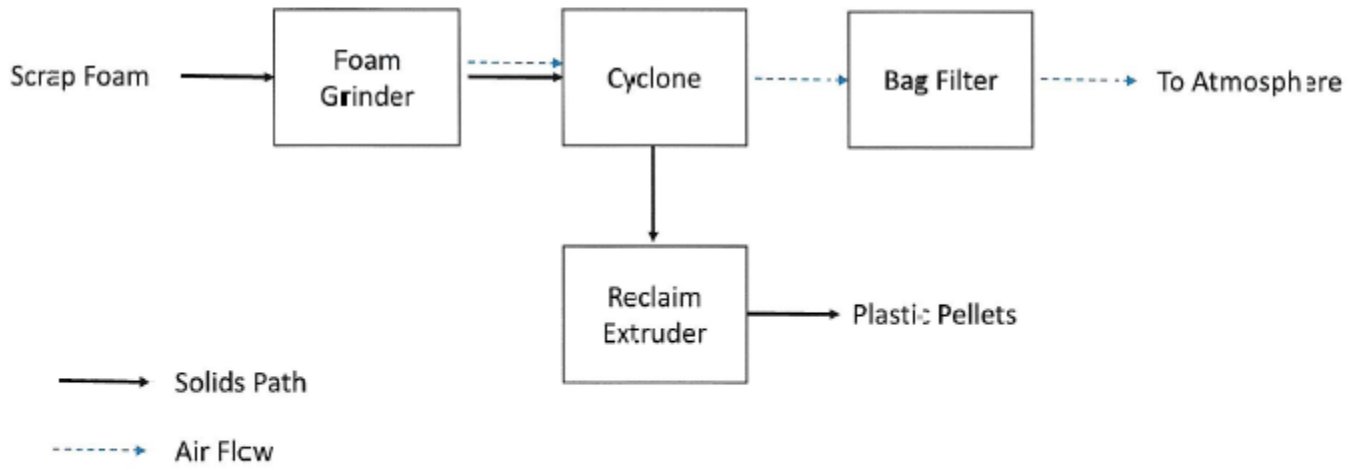
Potential Formaldehyde emissions	346.33	lb/yr	Emission factor x 500 hrs/yr
Potential Formaldehyde emissions	0.17	ton/yr	Emission in pounds per year / 2,000 pounds per ton
HAPs emission factor (total)	6.45E-03	lb/hp-hr	AP-42 Table 3.3-2 (total for all HAPs)
Potential Formaldehyde emissions	3.79	lb/hr	Emission factor x generator rating in HP
Potential Formaldehyde emissions	1894.13	lb/yr	Emission factor x 500 hrs/yr
Potential Formaldehyde emissions	0.95	ton/yr	Emission in pounds per year / 2,000 pounds per ton

Totals	
VOC	<250
NOx	5.13
CO	1.47
SO2	0.30
PM	2.08
PM10	1.04
PM2.5	1.04
HAPs	**0.96**


Flow Diagram for ES-01
EP-01
Die Hood
Fugitive Emissions
Blowing Agent Tank
Virgin PE Railcar
PE Foam Extruder
PE Foam Winder
PE Foam Curing
PE Foam Converting
PE Foam To Customer
PE Scrap
PE Scrap
Recycled PE
PE Pelletizer
PE Reclaim Extruder
Scrap Grinder

Foam scrap process flow diagram



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.

SOURCE / FACILITY / USER INPUT SUMMARY (FROM INPUT SCREEN)

COMPANY:	Automated Solutions LLC - Plant #3			FACILITY ID NO.:	None
				PERMIT NUMBER:	N/A
EMISSION SOURCE DESCRIPTION:	1.25 MMBTU/HR NATURAL GAS-FIRED BOILER			FACILITY CITY:	Statesville
EMISSION SOURCE ID NO.:	1-3			FACILITY COUNTY:	Iredell
CONTROL DEVICE:	NO CONTROL			POLLUTANT	CONTROL EFF.
SPREADSHEET PREPARED BY:	MDH			NOX	CALC'D AS 0%
ACTUAL FUEL THROUGHPUT:	11.59	10^6 SCF/YR	FUEL HEAT VALUE: 1,000 BTU/SCF		
POTENTIAL FUEL THROUGHPUT:	11.59	10^6 SCF/YR	BOILER TYPE: SMALL BOILER (<100 mmBTU/HR)	NO SNCR APPLIED	
REQUESTED MAX. FUEL THRPT:	11.59	10^6 SCF/YR	HOURS OF OPERATIONS: 24		

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION

AIR POLLUTANT EMITTED	ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS) lb/hr	ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) tons/yr	EMISSION FACTOR (lb/mmBtu) uncontrolled	EMISSION FACTOR (lb/mmBtu) controlled
PARTICULATE MATTER (Total)	0.00	0.00	0.00	0.00	0.00	0.00	0.001	0.001
PARTICULATE MATTER (Filterable)	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000
PARTICULATE MATTER (Condensable)	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000
PM 2.5 (Total)	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000
PM 2.5 (Filterable)	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000
SULFUR DIOXIDE (SO2)	0.00	0.00	0.00	0.00	0.00	0.00	0.001	0.001
NITROGEN OXIDES (NOx)	0.13	0.58	0.13	0.58	0.13	0.58	0.098	0.098
CARBON MONOXIDE (CO)	0.11	0.49	0.11	0.49	0.11	0.49	0.082	0.082
VOLATILE ORGANIC COMPOUNDS (VOC)	0.01	0.03	0.01	0.03	0.01	0.03	0.005	0.005

TOXIC / HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION

TOXIC / HAZARDOUS AIR POLLUTANT	CAS NUMBER	ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS) lb/hr	ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS) lbs/yr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) lbs/yr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) lbs/yr	EMISSION FACTOR (lb/mmBtu) uncontrolled	EMISSION FACTOR (lb/mmBtu) controlled
Acetaldehyde (TH)	75070	2.01E-06	1.76E-04	2.01E-06	1.76E-04	2.01E-06	1.76E-04	1.48E-06	1.48E-06
Acrolein (TH)	107028	2.39E-06	2.09E-04	2.39E-06	2.09E-04	2.39E-06	2.09E-04	1.76E-06	1.76E-06
Ammonia (T)	7664417	4.24E-03	3.71E+01	4.24E-03	3.71E+01	4.24E-03	3.71E+01	3.14E-03	3.14E-03
Arsenic 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
Benzene (TH)	71432	2.78E-06	2.43E-02	2.78E-06	2.43E-02	2.78E-06	2.43E-02	2.06E-06	2.06E-06
Benzo(a)pyrene (TH)	50328	1.59E-09	1.39E-05	1.59E-09	1.39E-05	1.59E-09	1.39E-05	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
Cobalt unlisted compounds (H)	COC-other	1.11E-07	9.74E-04	1.11E-07	9.74E-04	1.11E-07	9.74E-04	8.24E-08	8.24E-08
Formaldehyde (TH)	50000	9.93E-05	8.70E-01	9.93E-05	8.70E-01	9.93E-05	8.70E-01	7.35E-05	7.35E-05
Hexane, n- (TH)	110543	2.39E-03	2.09E+01	2.39E-03	2.09E+01	2.39E-03	2.09E+01	1.76E-03	1.76E-03
Lead unlisted compounds (H)	PBC-other	6.62E-07	5.80E-03	6.62E-07	5.80E-03	6.62E-07	5.80E-03	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
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
Napthalene (H)	91203	8.07E-07	7.07E-03	8.07E-07	7.07E-03	8.07E-07	7.07E-03	5.96E-07	5.96E-07
Nickel 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
Selenium compounds (H)	SEC	3.18E-08	2.78E-04	3.18E-08	2.78E-04	3.18E-08	2.78E-04	2.35E-08	2.35E-08
Toluene (TH)	108883	4.50E-06	3.94E-02	4.50E-06	3.94E-02	4.50E-06	3.94E-02	3.33E-06	3.33E-06
Total HAPs		2.49E-03	2.18E+01	2.49E-03	2.18E+01	2.49E-03	2.18E+01	1.84E-03	1.84E-03
Highest HAP	Hexane	2.39E-03	2.09E+01	2.39E-03	2.09E+01	2.39E-03	2.09E+01	1.76E-03	1.76E-03

TOXIC AIR POLLUTANT EMISSIONS INFORMATION (FOR PERMITTING PURPOSES)

TOXIC AIR POLLUTANT	CAS Num.	EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS lb/hr	lb/day	lb/yr	EMISSION FACTOR (lb/mmBtu) uncontrolled	EMISSION FACTOR (lb/mmBtu) controlled
Acetaldehyde (TH)	75070	2.01E-06	4.83E-07	1.76E-04	1.48E-06	1.48E-06
Acrolein (TH)	107028	2.39E-06	5.72E-07	2.09E-04	1.76E-06	1.76E-06
Ammonia (T)	7664417	4.24E-03	1.02E-01	3.71E+01	3.14E-03	3.14E-03
Arsenic unlisted compounds (TH)	ASC-other	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene (TH)	71432	2.78E-06	6.67E-05	2.43E-02	2.06E-06	2.06E-06
Benzo(a)pyrene (TH)	50328	1.59E-09	3.81E-08	1.39E-05	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
Cadmium metal (elemental unreacted) (TH)	7440439	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Soluble chromate compounds, as chromium (VI) equivalent	SolCR6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde (TH)	50000	9.93E-05	2.38E-03	8.70E-01	7.35E-05	7.35E-05
Hexane, n- (TH)	110543	2.39E-03	5.72E-02	2.09E+01	1.76E-03	1.76E-03
Manganese unlisted compounds (TH)	MNC-other	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mercury vapor (TH)	7439976	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel metal (TH)	7440020	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene (TH)	108883	4.50E-06	1.08E-04	3.94E-02	3.33E-06	3.33E-06

GREENHOUSE GAS EMISSIONS INFORMATION (FOR EMISSIONS INVENTORY PURPOSES) - CONSISTENT WITH EPA MANDATORY REPORTING RULE (MRR) METHOD

GREENHOUSE GAS POLLUTANT	ACTUAL EMISSIONS EPA MRR CALCULATION METHOD: TIER 1 metric tons/yr	metric tons/yr, CO2e	short tons/yr	GHG - POTENTIAL TO EMIT NOT BASED ON EPA MRR METHOD POTENTIAL EMISSIONS short tons/yr	short tons/yr, CO2e
CARBON DIOXIDE (CO_2)	631.93	631.93	696.59	691.16	691.16
METHANE (CH_4)	1.19E-02	2.98E-01	1.31E-02	1.30E-02	3.26E-01
NITROUS OXIDE (N_2O)	1.19E-03	3.55E-01	1.31E-03	1.30E-03	3.88E-01
		TOTAL CO2e (metric tons) 632.59			TOTAL CO2e (short tons) 691.88

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.