VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office
INTRA-AGENCY MEMORANDUM
Engineering Analysis

Permit Writer	Lisa A. Childress
Air Permit Manager	James E. Kyle, P.E.
Memo To	File
Date	DRAFT
Facility Name	Mundet Roslyn Converters, Inc
Registration Number	50833
Application No.	15
Date Fee Paid	February 10, 2025 (Processed by CO)
Amount ($)	$4,119 (Minor NSR Permitting is triggered so its application fee is charged rather than the SOP amendment application fee because it is a higher application fee.)
Distance to SNP (km)	>100 km
Distance to JRF (km)	>100 km
FLM Notification (Y/N)	N
Application Fee Classification (Title V, Synthetic Minor, True Minor)	Synthetic Minor
Permit Writer Signature	
Permit Manager Signature	

I. Introduction

Company Background
Milprint Inc. built the current facility located at 1106 West Roslyn Road, Colonial Heights, VA in 1977. Since that time, the facility has been bought by other companies. Colonial Heights Packaging took over the plant from Milprint, Inc. in the 1980s. Mundet Inc. purchased the Colonial Heights Packaging plant on June 1, 1992 and renamed the facility as Roslyn Coverters, Inc. In 2016, Mundet Inc. joined the delfortgroup, a global specialty paper producer. The facility is currently referred to as Mundet Roslyn Converters, Inc.(Roslyn Converters).

The facility has specialized in custom decorative printing of cigarette-tipping paper while also providing other paper coating services. Since 1977, the facility's operations have been subject to various permitting actions such as minor NSR, PSD, Title V and SOP. Currently, the facility operates under a SOP, last amended on December 18, 2018.

Compliance Background
Based on CEDSAir data, a Full Compliance (FCE) was last conducted at the site on September 14, 2023. The facility was determined to be out of compliance with Conditions 5, 9, 10, 11, 15, 17, 18, 19, 20, 21, 22, 24, 26, 28, 30, 36, and 42. A Warning Letter dated October 19, 2023 was sent to the facility regarding the noted compliance issues from the inspection. The facility submitted supporting data to show compliance with the noted permit conditions. PRO compliance personnel requested additional information to demonstrate compliance with Conditions 5, 9, 10, 11 36o, and 42d. The requested data was submitted December 18, 2023 by the facility. It was determined by PRO personnel that compliance was demonstrated with the noted permit conditions. No further action would be required.

Proposed Project Summary

Roslyn Converters initially proposed to install and operate an additional coater and a laminating machine for new printing applications at the plant. During the application review process, the initial proposal changed as follows:

- February 6, 2025: Facility indicates that the proposed laminator machine will not be installed, and current press (P9) is no longer at the facility.
- February 14, 2025: Facility confirms that the new coater's web speed is 150 m/min rather than the 75 m/min used in the submitted application's calculations.
- February 19, 2025: Facility confirms that there are currently 2 separate and identical RTO's onsite, listed as Unit 1 and Unit 2.
- March 6, 2025: The impression rolls process emissions must be revised due to P9 press being removed. The coater's annual solvent usage limit is based upon the associated oven dryer's annual operating hours of 2080.
- March 13, 2025: Facility requests the addition of a fluid heater (H3) to the proposal.
- April 14, 2025: Facility requests annual operating hours be increased from 2080 hrs to 3500 hrs.
- May 9, 2025: Facility submitted operating parameter changes for the proposed coater. They will now be-150 meter/min, 15.40 grams coating/m2, web width of 0.00170 meters, and maximum web area throughput of 0.26 m2/min. There will also now be ten 1 mmbtu/hr natural gas burners for drying.
- May 16, 2025: The proposed fluid heater will no longer be installed. There will now be 2 drying ovens associated with the new coater rather than 1 drying oven. Each oven will have 5 burners rated at 1 mmbtu/hr on natural gas. One oven will dry top portion of coated substrate while the other oven simultaneously dries the bottom portion of coated substrate.

The final proposal for changes would be (1) installing one solvent coater and two associated drying ovens, with each having 5 MMBTU/hr burners, and (2) updating the roll grinder's current throughput and emission limits since press P9 has been removed. The new coater will be placed within the current permanent total enclosure on-site where its VOC emissions along with the other current presses VOC emissions will be collected and sent to one of the current RTOs for control purposes.

Site Evaluation

The current facility location is considered suitable from an air pollution standpoint. The area is in attainment for all criteria pollutants. A Local Governing Body Certification form and an Air Pollution Activity Siting and Value form are not required for this request. The proposed changes do not trigger major modification applicability and no public interest in the request has been shown to date.

Project Schedule

Date permit application received in region: *January 14, 2025*
Date application was deemed complete: *June 9, 2025 (Facility approved last draft permit revision. See the Proposed Project Summary for timeline of comments and requests received on proposal.)*
Proposed construction commencement date: *Upon permit issuance*
Proposed start-up date: *Upon permit issuance*

Permitting History

April 7, 1977 – Construct and operate a rotogravure press (F-1) and coater (F-2) (96.3 TPY VOC)
September 8, 1980 - Install one 8-color press with incinerator (143.8 TPY VOC).
July 31, 1989 (PSD) –Modify and operate two 8-station presses and construct and operate one 5-station press (387 TPY).
October 12, 1989 – (PSD) Amend July 31, 1989 permit to change performance testing requirement to include each press (387 TPY VOC).
November 5, 1990 – (PSD) Modify three rotogravure presses and incinerators and construct one rotogravure press with incinerator (477 TPY VOC)
August 31, 1994 – (Minor NSR) Install a new 6-station rotogravure press and remove one 8-station press and reference to a 5-station press that was never constructed. The facility nets out of triggering Nonattainment permitting (Colonial Heights was a non-attainment area beginning January 1, 1993) (405 TPY VOC).
January 25, 2001 – (Minor NSR) Correct typographical error and remove obsolete conditions (405 TPY VOC).
May 17, 2001 – (Title V) Issue Initial Title V permit
September 13, 2002 – (Minor NSR) – Add 10/25 HAP limit for MACT (405 TPY VOC)
July 3, 2003 – (Minor NSR) Change recordkeeping for demonstrating VOC content of inks (405 TPY VOC).
September 10, 2003 – (Title V) Remove language regarding thermocouples and change HAPs recordkeeping.
May 4, 2006 – (SOP) Replace Title V permit and NSR permit with SOP (72.5 TPY VOC).
September 27, 2006 – (SOP) Increase fuel throughput and lbs of VOC per gallon of coating (72.6 TPY VOC).
March 27, 2008 – (SOP) Revise control efficiency for RTO, and emissions from solvent storage tanks and rubber grinders (76.1 TPY VOC)
December 18, 2018-(SOP Significant Amendment) Add the 50 gallon hand wash tank (HWT) to the permit and revise annual throughput for the PW1 unit.

II. Emission Units / Process Descriptions

Emission Units Listing

Please see the Equipment List contained in the permit for the specific rated capacities and more detailed descriptions for the facility's emission units. List below are brief descriptions for the facility's current emissions units as well as proposed units and changes.

The emission units at this printing facility currently subject to Article 6 permitting are as follows:

- P10 & P11-Rotogravure printing presses with VOC emissions controlled by a permanent total enclosure and an RTO, either Unit 1 or Unit 2, with each rated at 97.5% destruction efficiency.
- PW1-Renzmann Distillation Unit & Parts Washer (PW1) with VOC emissions controlled by maintaining 100% capture efficiency and an RTO, either Unit 1 or Unit 2, with each rated at 97.5% destruction efficiency .
- T1&T2-Solvent storage tanks with VOC emissions controlled by maintaining indoor fixed-roof tanks.

The emission units at this printing facility currently subject to other permitting are as follows:

- HWT & mPW-Washers with VOC emissions controlled by meeting requirements of Rule 4-24 for Non-Halogenated Solvent Metal Cleaning Operations (using methods in 9 VAC 5-40-3290.C & D).
- LP,EP1,EP2-Perforators with particulate matter emissions controlled by a wet scrubber.
- BG-Paper trimming collection with particulate matter emissions controlled by a baghouse.
- H1,H2, and HC1-24- Various natural gas fired space heaters and fluid heaters with emissions limited by a combined natural gas throughput.

The emission units at this printing facility to be constructed and subject to Article 6 permitting are as follows:

- CO-01-A two coating station rotogravure solvent coating press with 65.34 inches of web width and rated at 495 feet/minute having VOC emissions controlled by a permanent total enclosure and an RTO, either Unit 1 or Unit 2, with each rated at 97.5% destruction efficiency.

The emission units at this printing facility to be constructed and subject to other permitting are as follows:

- DR-01 & DR-02-Natural gas fired drying ovens with each having 5 MMBTU/hr burners and used with the CO-01 emission unit.

The emission units at this printing facility to be removed are as follows:

- P9-Two color station rotogravure printing press with web width of 48 inches and rated at 2,000 feet/minute. VOC emissions controlled by a permanent total enclosure and an RTO, either Unit 1 or Unit 2, with each rated at 97.5% destruction efficiency.

Other units affected by the proposed changes are as follows

- Roll Grinder-The throughput and emission limits require revision due to press P9 being removed. Impression roll 9 for press P9 is no longer needed. Requirements for the roll grinder need to be updated to reflect the change.

Emissions Calculations Basis-New Coater (CO-01)

VOC emissions have been calculated using a mass balance approach. This means that however much VOC is contained in the coating, all of it is assumed to be emitted during the printing process. The following formula has been used in determining the VOC emissions:

Maximum web speed (ft/min) x Maximum web width (ft) x Maximum coating coverage (lbs ctg/ft2) x Maximum VOC content (lb VOC/gal ctg) x Coating Density (gal ctg/lb ctg) x 60 min/hr x (1- ctg retention factor)

The New Uncontrolled Emissions from the proposed solvent coater (CO-01) have been based upon the worst case emissions occurring from the machine which were the operating parameters initially submitted in the application along with 8760 hours per year operation and no add-on control. The worst case operating parameters are as follows:

- Machine Web Speed – 150 meters/minute
- Maximum Coating Coverage – 33.40 grams coating/meter^2
- Maximum Web Width – 1.65 meters

The facility revised the coater's operating parameters later in the application process due to a more definite plan on what the new printing operation would be. The new operating parameters as well as the add-on control efficiency were used to calculate the hourly and annual permitted VOC emissions

- Machine Web Speed – 150 meters/minute
- Maximum Coating Coverage – 15.40 grams coating/meter^2
- Maximum Web Width – 0.00170 meter

The following assumptions were also used in the VOC emissions calculations:

- Using either ethyl acetate or methyl ethyl ketone for solvents
- 100% VOC content for solvent being used as coating
- No retention of solvent coating on the substrate
- 100% emissions collected by the current permanent total enclosure
- Collected emissions exhausted to one of the RTOs for 97.50% control efficiency

Emissions Calculations Basis-New Drying ovens (DR-01 & DR-02)
Emissions for the two proposed drying ovens have been calculated using the emission factors listed in AP-42, Table 1.4-2 and Table 1.4-1, dated July 1998 for natural gas combustion. A 1,000 BTU/standard cubic foot of natural gas has been assumed for the fuel's heat input. The new drying ovens will share the current permitted annual throughput of 58 MMSCF/yr for facility wide natural gas fired emissions units.

Emissions Calculations Basis-Impression Rolls (10 & 11)
The emissions for the impression rolls require updating due to press P9 being removed from the facility. The emissions for units 9, 10, and 11 were divided by 3 and then multiplied by 2 to obtain the emissions for only units 10 and 11.

III. Regulatory Review

A. 9VAC5 Chapter 80, Part II, Article 6 – Minor New Source Review
The provisions of Article 6[1] apply throughout Virginia to (i) the construction of any new stationary source, (ii) the construction of any project (which includes the affected emissions units), and (iii) the reduction of any stack outlet elevation at any stationary source.

Since new emission units will be added to the facility, then the definition of "project" as listed in 9VAC5-80-1110 C is met. For the project to be exempt from permitting, the regulations provide that a project must be exempt under both the provisions of 9VAC5-80-1105 B through D as a group and the provisions of 9VAC5-80-1105 E and F.

The first step in the permit applicability test is determining whether any of the emission units involved in the project are listed in 9VAC5-80-1105 B. Since the proposed drying ovens meet the fuel burning equipment unit definition, they can be reviewed for exemption under 9VAC5-80-1105 B. Due to the ovens having a heat input of 10 MMBTU/hr combined, they meet the

[1] Language is paraphrased from 9VAC5-80-1100.

exemption of 50 MMBTU/hr heat input listed in 9VAC5-80-1105B.1.a(4). The ovens emissions are then not included in the project's permit applicability test.

The second step in the permit applicability test is to determine whether the project would cause an uncontrolled emission rates (UER) increase above any of the pollutants limits listed in 9VAC5-80-1105 D. The UER increase of a project is determined by summing all the project's emission units uncontrolled emissions together and subtracting out the project's emissions units current uncontrolled emissions. In the case of installing new emission units, the current uncontrolled emissions are zero.

Since DR-01 and DR-02 are exempt from being included in the UER increase analysis, then only the uncontrolled emissions from the new coater are evaluated. As shown in the summary table below, the coater's uncontrolled VOC emissions increase exceeds the respective VOC permitting threshold. The new coater is then subject to the permitting requirements of Article 6 as well as BACT.

	CUE (TPY)	**NUE (TPY)**	**UER Increase (NUE-CUE) (TPY)**	**Exemption (TPY)**	**Applicable to Permitting/BACT**
SO_2	0.0	0.0	0.0	10	N
PM	0.0	0.0	0.0	15	N
PM10	0.0	0.0	0.0	10	N
PM2.5	0.0	0.0	0.0	6	N
CO	0.0	0.0	0.0	100	N
NOx	0.0	0.0	0.0	10	N
VOC	0.0	4,785.1	4,785.1	10	Y

Note: Coater's new uncontrolled VOC emissions based on the operating parameters initially submitted in the application and explained in Section II, Emissions Calculations Basis.

Since the proposed solvents (ethyl acetate and MEK) to be used in the coating process do not contain any HAPs as defined under the CAA or contain any toxics under state regulations, a toxics review analysis is not required. The project is then exempt from 9VAC5-80-1105 E and F. Article 6 permitting for toxic pollutant emissions is not applicable.

B. 9VAC5 Chapter 80, Part II, Article 8 and Article 9 – PSD Major New Source Review and Non-Attainment Major New Source Review

The City of Colonial Heights is a PSD area for all pollutants as designated in 9VAC5-20-205. The facility is in the 250 TPY major stationary source category.

After issuance of this permit, the facility does not have the potential to emit any regulated NSR pollutant at major stationary source thresholds. PSD review does not apply.

C. 9VAC5 Chapter 80, Part II, Article 5 – State Operating Permit (SOP)

From 1989 to 1990, the facility was subject to a PSD permit containing an annual facility wide VOC emission limit of over 300 tons. Due to the Colonial Heights area being re-designated as a non-attainment area in 1993, the facility would then be subject to non-attainment permitting requirements for future projects. The facility in 1994 was able to net out of non-attainment

permitting for a project and received a minor NSR permit with a facility-wide permit limit of 405 tons/year of VOC.

In 2006, a State Operating Permit (SOP)was first issued to the facility and superseded the current New Source Review permit. The facility obtained the SOP so that facility wide VOC emissions would be limited to 72.7 TPY and HAP emissions would be limited to 24.9 TPY combined/9.9 TPY single. These limitations result in the facility being designated as an area source for both Title V and MACT applicability. The initial SOP was amended in 2018 using the significant amendment procedures due to a proposed facility change being subject to minor NSR permit applicability. The amended SOP permit triggered public notice requirements which required a 30 day comment period. The current SOP permit contains several conditions with both Article 5 and Article 6 regulatory references as was done at that time. It was viewed as being a combined permit.

Since the current proposed project, triggers minor New Source Review permitting, the current SOP requires revision. New and updated emissions as well as throughput limits related to the project must be inserted. In addition, emissions control requirements need to be revised. These revision changes to the current SOP changes trigger SOP significant amendment procedures. Public participation is then required as detailed in Section XX. Further explanation regarding the combined minor New Source Permit and the current SOP are provided in Section XX.

D. 9VAC5 Chapter 50, Part II, Article 5 – NSPS
The proposed solvent coater does not trigger applicability to any current NSPS requirements.

E. 9VAC5 Chapter 60, Part II, Article 1 – NESHAPS
There are no NESHAPS applicable to rotogravure printing facilities.

F. 9VAC5 Chapter 60, Part II, Article 2 – MACT
MACT Subpart KK would be applicable to the printing presses (CO-01, P10, P11) but the current SOP has limitations that are federally enforceable in making the facility an area source for HAPs.

G. State Only Enforceable (SOE) Requirements (9VAC5-80-1120 F)
There are no SOE requirements in the current permit and none are being added as a result of this permit action.

H. 9VAC5 Chapter 40, Part II, Existing Sources - Emission Standards
Rule 4-36 does not apply to this source since facility wide VOC emissions are limited to less than 100 TPY. Also, BACT requirements for the source are more stringent than the current rule's requirements and must be followed as BACT is triggered.

IV. Best Available Control Technology Review (BACT)

Since Article 6 permitting is triggered by the project for VOC emissions, BACT is also triggered for VOC emissions being emitted by units in the proposed project.

BACT for the proposed coater's VOC emissions has determined to be (1) permanent total enclosure meeting specific criteria and (2) an RTO having a minimum combustion zone temperature of 1400 deg F and a residence time of 1 second. The proposed unit will be installed in the current

permanent total enclosure for presses 10 and 11 with 100% collection of VOC emissions being exhausted to the current RTO, either Unit 1 or Unit 2, with each rated at 97.5% destruction efficiency. The current visible emissions limit of 5 percent opacity for each RTO is still appropriate as BACT.

V. Summary of Potential Emissions Increase

The facility's change in PTE is shown in the table below.

Pollutant	Past PTE Condition 31: December 18, 2018 Permit (TPY)	Future PTE Condition 31: Proposed Permit (TPY)	PTE Change (TPY)
PM	2.9	2.8	-0.1
PM-10	2.9	2.8	-0.1
SO_2	0.0	0.0	0.0
NOx	2.9	2.9	0.0
CO	2.4	2.4	0.0
VOC	77.1	59.3	-17.8

Notes:

- There are no PM2.5 emission limits in current SOP.
- PM and PM10 emissions decreased due to removing impression roll 9's particulate emissions. It is no longer needed due to press P9 removal.
- The NOx and CO did not change because the current 58 MMCF/yr facility wide limit for natural gas did not change.
- The VOC emissions decreased due to press P9 being removed and the proposed coater's updated operational parameters needing less solvent for coating.

VI. Dispersion Modeling

A. Criteria Pollutants

As shown in the table in Section V, the project does not cause an increase in PTE greater than the respective value of "significant" in 9VAC 5-80-1110C. Therefore, modeling is not required.

Pollutant	PTE Increase[1] (TPY)	Modeling Applicability Levels[2] (TPY)	Modeling Applicable (Yes or No)
PM	0.0	----------	No
PM10	0.0	15	No
PM2.5[3]	------	10	No
SO2	0.0	40	No
NOx	0.0	40	No
CO	0.0	100	No

[1] PTE increase is the PTE Change from table in Section V. PTE increases cannot be less than zero.
[2] Modeling applicability levels are the significant rates for regulated criteria pollutants listed in definition for "significant" in Article 6. Modeling for VOC and PM is currently not conducted based on VA DEQ modeling guidance dated March 2015.
[3]No PM2.5 emission limits in SOP.

B. Toxic Pollutants

No toxics modeling is required since the request is exempt from the state toxics rule (9VAC5-80-1105F) as detailed in Section III A.

VII. Boilerplates and Boilerplate Deviations

The APD-111 Skel NSR boilerplate was used in revising the current SOP permit document with the combined minor NSR/SOP limitations and references. Requirements for the new coater, CO-01, were inserted into current permit condition requirements for press P9 since it has been removed from the facility. This enables current permit numbering to remain as is. Deviations from the boilerplate and procedures are as follows:

- Emissions limits less than 0.5 tpy were listed in the permit. Annual operating or fuel limits should have corresponding emission limits as an enforceable mechanism.

- All listed emissions were rounded up to the nearest tenth due to CEDS issues with emissions calculations for annual emissions updates. There have been times when a facility has an exceedance in the emissions limits due to a CEDS rounding error.

- No PM10 emissions limits are listed in the proposed permit. The current SOP does not contain PM10 emissions limits and the project did not trigger permit applicability for PM10. There then isn't a regulatory requirement for inserting them.

- The permit conditions referencing the RTO were updated to reflect that there are 2 separate units at the facility that can be used. Those permit conditions have the permit issuance date for this permit action. Those permit conditions that were not revised due to the project, the prior permit date of December 18, 2018 was inserted.

VIII. Compliance Demonstration

Since the BACT requirements for the new coater are those currently in place for the current presses, then the current monitoring and recordkeeping requirements for the add-on control is valid for this project. This includes: (1) a device to continuously measure and record the temperature for each RTO's combustion zone; (2) the device being maintained, calibrated, and operated in accordance as a minimum with manufacturer's written recommendations; (3) differential pressure meter readings across the permanent total enclosure; (4) air flow direction to the permanent total enclosure; (5) MSDS or other documentation showing the VOC and HAP content of products used in the new coater; and (6) annual throughput records of products used by the new coater.

IX. Combination of Permits

This combined permit document has the implementing program regulatory citation for each condition, has the most recent effective date of each condition, and notes that each condition is state and federally-enforceable unless marked SOE (9VAC5-80-1255D.1-3). Changes to permit terms

and conditions have been to facilitate this combining action have been made in accordance with 9VAC5-80-1255E:

- Conditions 1, 2, 7, 8, 10, 11, 15-17, 21-25, 28-31, 33, and 36-51 are those that pertain to the proposed new coater, CO-01 or the two new associated drying ovens, DR-01 & DR-02, the removal of press P9, the updated identification for the current RTOs as Unit 1 & Unit 2, and the updated throughput/emissions for the impression roll process due to press P9 removal.

X. Title V Review – 9VAC5 Chapter 80 Part II Article 1 or Article 3

As shown by the table in Section V, the permitted PTE for the site is below TV applicability levels for criteria pollutants. Also, the facility is not in a category required to obtain a Title V permit regardless of emission rate. Therefore, Title V permitting does not apply.

XI. Public Participation and Notifications

This permit action is a significant amendment to the facility's State Operating Permit in accordance with 9VAC5-80-990 A.2.b, since the proposed project triggers minor NSR review permitting which changes current permit requirements and limitations.

This draft permit must proceed through a public participation period of 30 days. The notice was published in The Progress Index on August 26, 2025. The comment period began on the following day and ended on September 25, 2025. *[The following comments were received and addressed as follows:] OR [No comments were received.]*

XII. Other Considerations

Confidentiality
Confidentiality has not been requested by the facility.

Draft Comments (Source)
Please see Section I, Proposed Project Summary for timeline regarding draft permit comments.

Draft Comments (Air Inspector)
Received comments on April 4, 2025 from assigned air inspector. They were mainly about formatting and nomenclature. Corrected the formatting inconsistencies.

XIII. Recommendations

Sections I-XI of and all attachments to this document demonstrate the legal basis, scientific rationale and justification that the applicant has met the regulatory requirements for issuing this permit. Approval of the draft permit is recommended.

Attachments
Calculations
[Public Notice Comments, if applicable]

Article 6 permit applicability determination for PW-1 throughput increase
50833-14
11/2/2018

Current Uncontrolled Emissions:

	Pollutant	potential throughput of VOC (lbs/hr)	potential annual uncontrolled VOC emissions (tons/year)
Partswasher (ref. no. PW-1)	VOCs	76.99	54.60

New Uncontrolled Emissions

		potential throughput of VOC (lbs/hr)	potential annual uncontrolled VOC emissions (tons/year)
Partswasher (ref. no. PW-1)	VOCs	126.90	555.82

Potential Increase in Uncontrolled Emissions: 501.22 tons/year

Article 6 permitting is triggered for the increase in uncontrolled VOC emissions from PW-1. The SOP will be updated to include Article 6 citations for this unit in addition to Article 5 citations.

50833-Application 15: Roslyn Converters

Determination for Article 6 Permit Applicability

Proposed project: Install a new solvent coater

Emission Units involved in proposed project: CO-01-Solvent Coater; DR-01 & DR-02-Oven dryers associated with coater; P9 press removal

Uncontrolled Emissions Rate Increase analysis must be conducted
to determine if increases exceed Article 6 permitting exemption
levels. Need to only analyze CO-01 for permitting applicability since DR-01 & DR-02 meet the exempt catergory criteria.

Current Uncontrolled Emissions for CO-01 is "zero" since it is a new unit.

New Uncontrolled Emissions for CO-01 is based on no controls and 8760 hr/hr operation
It is a new unit and the current permit contains no limitations for it.

Uncontrolled Emissions Rate (UER) = NUE - CUE

NEW UNCONTROLLED EMISSIONS RATES-NUE FOR PROJECT

Pollutant	NUE (TPY)	CUE (TPY)	UER Increase (TPY)	Exemption Level (TPY)	Applicable to Permitting/BACT Y or N
PM[1]	0.00	0.00	0.00	15.00	N
PM10[1]	0.00	0.00	0.00	10.00	N
PM2.5[1]	0.00	0.00	0.00	6.00	N
CO	0.00	0.00	0.00	100.00	N
NOx	0.00	0.00	0.00	10.00	N
SO2	0.00	0.00	0.00	10.00	N
VOC	4785.10	0.00	4785.10	10.00	Y

Notes:

1 Proposed solvents contain zero particulate matter. All VOCs.

Project is subject to Article 6 permitting (minor NSR) due to VOC UER increase exceeding applicability level. BACT is applicable to VOC emissions since it is the pollutant that triggered permitting.

97.5% of EMISSION ESTIMATES FROM PRINTING OPERATIONS + THINNING INKS AFTER CONTROL OF (RTO)

APPLICATION 15

Company Name: Roslyn Converters, Inc. Date: 4/24/2025
Source Location: 1106 West Roslyn Road, Colonial Heights, VA 23834 Engineer: Lisa Childress
Registration #: 50833-15

Printers
COMB. EMISSIONS at 100% VOC Load to RTO

Source	Pollutant	lb/gal VOC as applied	Max. Ctg. Usage as Applied (gals/hr)	Max. Ctg. Usage as Applied (gals/yr)	Hourly (lb/hr)	Based on Ann. Usage (ton/yr)
solvent coating (ref. no. CO-01)	VOCs	7.53	0.07	603.98	0.52	2.27
rotogravure printing ink (ref. no. P10)	VOCs	5.99	76.00	335000.00	455.24	1003.33
rotogravure printing ink (ref. no. P11)	VOCs	6.24	76.00	344000.00	474.24	1073.28
5% - Worst case of Dibutyl Phthalate (Used 5% of VOC EMF)						
solvent coating (ref. no. CO-01)	Dibutyl Phthalate	0.00	0.07	603.98	0.00	0.00
rotogravure printing ink (ref. no. P10)	Dibutyl Phthalate	0.30	76.00	335000.00	22.76	50.17
rotogravure printing ink (ref. no. P11)	Dibutyl Phthalate	0.31	76.00	344000.00	23.71	53.66
Total VOC throughput from printing operations at 100% =					930.0	2078.9

Combined throughput controlled by RTO

Printers and parts washers

Source	Pollutant	Hourly (lb/hr)	Based on Ann. Usage (ton/yr)	Capture Efficiency	Destruction Control Efficiency	Overall Efficiency (Rule 4-24)	Hourly (lb/hr)	Based on Ann. Usage (ton/yr)
solvent coating (ref. no. CO-01)	VOCs	0.52	2.27	100.00	97.50		0.01	0.06
rotogravure printing ink (ref. no. P10)	VOCs	455.24	1003.33	100.00	97.50		11.38	25.08
rotogravure printing ink (ref. no. P11)	VOCs	474.24	1073.28	100.00	97.50		11.86	26.83
Partswasher (ref. no. PW-1)	VOCs	**76.99**	93.04	100.00	97.50		1.92	2.33
50 gallon hand wash tank (ref. no. HWT)	VOCs		29.40			85.00		4.41
maintenance partswasher	VOCs	0.02	0.56			85.00	0.0029	0.083
solvent coating (ref. no. CO-01)	Dibutyl Phthalate	0.00	0.00	100.00	97.50		0.00	0.00
rotogravure printing ink (ref. no. P10)	Dibutyl Phthalate	22.76	50.17	100.00	97.50		0.57	1.25
rotogravure printing ink (ref. no. P11)	Dibutyl Phthalate	23.71	53.66	100.00	97.50		0.59	1.34

Tot. VOC emiss. from Solvent tanks (T1 + T2) combined =	129.3	0.36
Tot. VOC emiss. from PW-1 from RTO=	1.92	2.33
Tot. VOC emiss. from 50 gallon HWT =		4.4
Tot. VOC emiss. from maintenance partswasher =	0.0029	0.083
Tot. VOC emiss. from print. opers. from RTO=	23.2	52.0
Tot. VOC emiss. from partswash. + print. oper. from RTO + Tanks (T1 + T2) =	154.52	59.15
Tot. HAP emiss. (Dibutyl Phthalate) from print. opers. from RTO=	1.2	2.6

Facility requested on April 14, 2025 coater/dryer emissions be based on 3500 hr/yr rather than the 2080 hr/yr as listed in application for the coater's dryer.
Request would put facility wide emissions greater than 100 tpy for VOCs and subject facility back to TV applicability.
Recommend 2200 hours/yr for operation to keep source from TV applicability again.

EMISSION ESTIMATE

Company Name: Roslyn Converters, Inc.
Source Location: 1106 West Roslyn Road, Colonial Heights, VA 23834
Registration No.: 50833

Date: 05/21/25
Engineer: Lisa Childress

TOTAL UNCONTROLLED EMISSIONS FROM 2 NG FULTON FLUID HEATERS (REF. NOS. H1&H2), 24 NG MODINE SPACE HEATERS (REF. NOS. HC1-24), 8 NG BURNERS FOR THE RTO, AND THE 2 NEW NG DRYER OVENS (DR-01,DR-O2)

Total Natural Gas Consumption by the listed units for the entire facility: **58.0000** mmScf/yr No additional consumption for dryer ovens.Keep limit as is.

Pollutant By AP-42			Control Technology	Control Eff. %	Total Permitted Emissions Facility Wide Natural Gas Units (lb/hr)	(tons/yr)
Criteria Pollutants						
TSP			None	0.00	0.1049	0.0551
PM10			None	0.00	0.1049	0.0551
CO			None	0.00	4.6368	2.4360
NOx			None	0.00	5.5200	2.9000
SO2			None	0.00	0.0331	0.0174
VOC Non-methane			None	0.00	0.3036	0.1595

FACILITY WIDE EMISSIONS FROM 2 NG FULTON FLUID HEATERS (REF. NOS. H1&H2), 24 NG MODINE SPACE HEATERS (REF. NOS. HC1-24) AND EIGHT NG BURNERS FOR THE RTO NEW NG DRYER OVEN (DR-01), NEW NG FULTON FLUID HEATER (H3), THREE PRESS LINES, PARTSWASHER & TWO TANKS, LASER & ELECTROSTATIC PERFORATORS & PAPER TRIMMING COLLECTION SYSTEM AND INCLUSION OF RUBBER GRINDING PROCESS WHICH HAS REDUCED EMISSIONS DUE TO P9 BEING REMOVED.

Pollutant			Control Technology	Control Eff. %	Total Facility Wide Emissions (lb/hr)	Ann. Limits (tons/yr)
Criteria Pollutants						
TSP			None	0.00	2.3	2.8
PM10			None	0.00	2.3	2.8
CO			None	0.00	4.6	2.4
NOx			None	0.00	5.5	2.9
SO2			None	0.00	0.0	0.0
VOC Non-methane			None	0.00	154.8	59.3

PLEASE SEE REVISED LIMITATION BELOW AFTER CALCULATIONS CHART

LINES 9, 10 and 11 IMPRESSION ROLLS (Combined)

specific gravity of impression roll material	multiplier weight of water per cu. In.	weight per cu. Inch in lbs.	amount machined off per pass (per side)	amount machined off after 3 passes (per side)	maximum dia. of impression roll	impression roll radius	impression roll length		diameter after grinding	radius after grinding
1.56	0.0361	0.05632	0.01	0.04	8.50	4.25	46.50		8.43	4.214

1.56 x .0361 = .05632

(4.25^2 x 3.14159)-(4.214^2 x 3.14159)=.95726

	weight of rubber per ground roll in pounds	number of rolls ground	total weight in pounds	total weight of DEHP in pounds per hour (based on 3.20% DEHP per roll & one roll machined in an hour	total weight of DEHP in tons per year
.95726 x .05632 x 46.5 = 2.41036	2.507	294.00	736.99	0.08	0.0118

TOTAL TONS OF GROUND RUBBER FOR ALL 3 PRESSES PER YEAR **0.368**

REVISED LIMITATION FOR APPLICATION 15

For 50833-15 application, facility indicated in email dated February 6, 2025 that press P9 had been removed from facility.
As a result, all emissions or limitations related to P9 in the permit must be removed so that the limitations are reflective of current operations.
Divide all current limits and emissions by 3 and then multiply by 2 since P10 and P11 will continue to share these.

Wt of rubber per ground roll	No. of rolls ground
1.67	196.00

Total tons of ground rubber for P10 & P11
0.25

EMISSION ESTIMATE-DRYER OVENS FOR UNIT CO-01

Company Name: Roslyn Converters, Inc. Date: 05/20/25

Source Location: 1106 West Roslyn Road, Colonial Heights, VA 23834 Engineer: Lisa Childress

Registration No.: 50833-Application 15 Facility changed proposed installation to 2 drying ovens. May 16, 2025 email

RATING	10.00	MMBtu/hr	There are ten 1 MMBTU/hr burners total. 5 burners per drying oven.	
Natural Gas	1000.00	Btu/scf		
Oil		Btu/gal	See Note 3 regarding proposed annual usage.	
Natural Gas Usage	0.0100	mmScf/hr	87.60 mmScf/yr	87.6000 mmScf/yr (based on 8760 hrs/yr)
Oil Usage		Kgal/hr		8760.00 Hr/yr (proposed annual operating hours)
Assume Distillate Oil		%byWt		
		Permitted	Nat. Gas Emiss. for dryer oven only	

Pollutant By AP-42	Emissions Factor	Units	Reference	Control Technology	Control Eff. %	Emiss. based on max. expected burned/yr. Annual (ton/yr)
Criteria Pollutants						
TSP	1.90	lbs/mmScf	(1)	None	0.00	0.08
PM10	1.90	lbs/mmScf	(1)	None	0.00	0.08
CO	84.00	lbs/mmScf	(2)	None	0.00	3.68
NOx	100.00	lbs/mmScf	(2)	None	0.00	4.38
SO2	0.60	lbs/mmScf	(1)	None	0.00	0.03
VOC Non-methane	5.50	lbs/mmScf	(1)	None	0.00	0.24

Uncontrolled Nat. Gas Emiss. for dryer oven

Pollutant By AP-42	Emissions Factor	Units	Reference	UNCONTROLLED EMISSIONS Hourly (lb/hr)	Daily (lbs/day)	Annual Tons/yr	Control Technology	Control Eff. %	(lb/hr)	lbs/day	8760.00 (ton/yr)
Criteria Pollutants											
TSP	1.90	lbs/mmScf	(1)	0.02	0.46	0.08	None	0.00	0.02	0.46	0.08
PM10	1.90	lbs/mmScf	(1)	0.02	0.46	0.08	None	0.00	0.02	0.46	0.08
CO	84.00	lbs/mmScf	(2)	0.84	20.16	3.68	None	0.00	0.84	20.16	3.68
NOx	100.00	lbs/mmScf	(2)	1.00	24.00	4.38	None	0.00	1.00	24.00	4.38
SO2	0.60	lbs/mmScf	(1)	0.01	0.14	0.03	None	0.00	0.01	0.14	0.03
VOC Non-methane	5.50	lbs/mmScf	(1)	0.06	1.32	0.24	None	0.00	0.06	1.32	0.24

Hourly Usage:

10,000,000.00	Btu	1.00	scf	1.00E+00	mmScf	1.00E-02	mmScf
	hr	1000.00	Btu	1000000.00	scf	1.00	hr

(1) AP-42 Table 1.4-2 Date July 98

(2) AP-42 Table 1.4-1 Date July 98

(3) Facility submitted comments via email on May 16, 2025 that there would now be 2 natural gas fired drying ovens (DR-01 & DR-02) for the project.
Each drying oven would have 5 burners rated at 1 MMBTU/hr. Total would be 10 MMBTU/hr. One oven will dry top of coated sheet while other oven dries bottom of coated sheet.
Facility also requested 8760 hours/yr operation for ovens since the solvent coater's changed operating parameters will keep controlled facility wide VOC emissions below 100 tpy.
However, at 8760 hr/yr operation, the ovens would exceed all of the current facility wide annual natural gas throughput. All facility wide natural gas fired units must share the current 58 mmscf/yr limit.

EMISSION ESTIMATE-Additional Fulton Thermal Fluid Heater FT-0800-C Unit H3

Company Name: Roslyn Converters, Inc. Date: 05/20/25

Source Location: 1106 West Roslyn Road, Colonial Heights, VA 23834 Engineer: Lisa Childress

Registration No.: 50833-Application 15 Facility no longer installing heater. May 16, 2025 email

RATING	0.00	MMBtu/hr			
Natural Gas	1000.00	Btu/scf			
Oil		Btu/gal	Usage based on 6800 hr/yr. Listed in application		
Natural Gas Usage	0.0000	mmScf/hr	0.00 mmScf/yr	0.0000 mmScf/yr (based on 8760 hrs/yr)	
Oil Usage		Kgal/hr			
Assume Distillate Oil		%byWt			

Nat. Gas Emiss. for additional fluid heater only

Pollutant By AP-42	Emissions Factor	Units	Reference	Control Technology	Control Eff. %	Emiss. based on max. expected burned/yr. Annual (ton/yr)
Criteria Pollutants						
TSP	1.90	lbs/mmScf	(1)	None	0.00	0.00
PM10	1.90	lbs/mmScf	(1)	None	0.00	0.00
CO	84.00	lbs/mmScf	(2)	None	0.00	0.00
NOx	100.00	lbs/mmScf	(2)	None	0.00	0.00
SO2	0.60	lbs/mmScf	(1)	None	0.00	0.00
VOC Non-methane	5.50	lbs/mmScf	(1)	None	0.00	0.00

Nat. Gas Emiss. for fluid heater

Pollutant By AP-42	Emissions Factor	Units	Reference	UNCONTROLLED EMISSIONS Hourly (lb/hr)	Daily (lbs/day)	Annual Tons/yr	Control Technology	Control Eff. %	(lb/hr)	lbs/day	8760.00 (ton/yr)
Criteria Pollutants											
TSP	1.90	lbs/mmScf	(1)	0.00	0.00	0.00	None	0.00	0.00	0.00	0.00
PM10	1.90	lbs/mmScf	(1)	0.00	0.00	0.00	None	0.00	0.00	0.00	0.00
CO	84.00	lbs/mmScf	(2)	0.00	0.00	0.00	None	0.00	0.00	0.00	0.00
NOx	100.00	lbs/mmScf	(2)	0.00	0.00	0.00	None	0.00	0.00	0.00	0.00
SO2	0.60	lbs/mmScf	(1)	0.00	0.00	0.00	None	0.00	0.00	0.00	0.00
VOC Non-methane	5.50	lbs/mmScf	(1)	0.00	0.00	0.00	None	0.00	0.00	0.00	0.00

Hourly Usage:

0.00	Btu	1.00	scf	1.00E+00	mmScf	0.00E+00	mmScf
	hr	1000.00	Btu	1000000.00	scf	1.00	hr

(1) AP-42 Table 1.4-2 Date July 98

(2) AP-42 Table 1.4-1 Date July 98

50833-Application 15 Roslyn Converters dba Mudet

Date: 05/16/25
Engineer: Lisa Childress

Project Description: The facility's initial application proposed to install and operate both a solvent coater and a laminator.
An email submitted February 6, 2025 provided updated info on the project: a laminator would not be installed at this time;
current press P9 is no longer at the facility but the proposed solvent coater would have similar characteristics
and will be installed in P9's former location. The proposed solvent coater will be a 2 station rotogravure web coater.

[14]Solvent Coater Operating Parameters-Permitted Conditions

Machine Web Speed[1]:	150.00	m/min
Maximum Coating Coverage[2]:	15.40	grams ctg/m2
Maximum Web Width:	0.00170	m
Maximum Web Area Throughput[3]:	0.26	m2/min
[4]:	15.30	m2/hr
Maximum Coating Web Rate[5]:	235.62	grams ctg/hr
[6]:	0.52	lbs ctg/hr

Conversion Factors

1 pound =	454.00	grams
Water Density	8.34	lb/gal
1 meter =	3.30	feet
1 sq meter =	10.76	ft2
1 gram/cm3 =	62.43	lb/ft3
1 cm3 =	35.32	ft3
1 ft3 =	7.48	gallons
1 milimeter =	0.001	meter

Solvent Properties[7]:

Ethyl Acetate (CAS# 141-78-6)			MEK (CAS# 78-93-3)			
Density:	0.902	grams/cm3	Specific Gravity:	0.8054	0.07	gal ethyl acetate/hr
Density:	7.5273	lbs ctg/gal ctg	Density:	6.7170 lbs ctg/gal ctg	0.08	gal MEK/hr
VOC Content:	100.00	%, by wt	VOC Content:	100.00 %, by wt		
	7.5273	lbs VOC/gal ctg		6.7170 lbs VOC/gal ctg		

Neither solvent contains any HAPs as defined under the Clean Air Act.

Emissions Calculations[8]:

Formula to calculate VOC emissions from a web coating press.
Maximum web speed (ft/min) x Maximum web width (ft) x Maximum coating coverage (lbs ctg/ft2) x Maximum VOC content (lb VOC/gal ctg) x Coating Density (gal ctg/lb ctg) x 60 min/hr x (1- ctg retention factor)

Operating at 8760 hr/yr[12]

Proposed Annual Operating Hours: 8760

4,546.32 lbs ctg/yr 603.98 gal ethyl acetate/yr
2.27 tons ctg/yr 676.83 gal MEK/yr

Collection Efficiency to RTO[9]: 100.00
RTO Control Efficiency[10]: 97.50

	Total Uncontrolled		Uncollected		Collected Controlled	
	VOC lbs/hr	VOC TPY	VOC lbs/hr	VOC TPY	VOC lbs/hr	VOC TPY
Ethyl Acetate	0.52	2.27	0.00	0.00	0.01	0.06
MEK	0.52	2.27	0.00	0.00	0.01	0.06
Worst Case[13]:					0.0130	0.0568

NOTES:

1 The initial application listed the machine web speed as 75 m/min but 150 m/min was used in the proposed coater's emissions calculations.
The facility confirmed in an email dated Feb.14,2025 that 150 m/min is the correct web speed and should be used in the calculations.
The facility also confirmed in same email that the proposed solvent coater would be a web based machine.
The facility submitted new actual operating parameters for the coater on May 9, 2025. Highest machine web speed is still 150 m/min
2 The facility confirmed in an email dated Feb 6, 2025 that solvent is coated on both sides of the paper at same time and only one solvent can used at a time for coating.
The coverage rate given in application is the total amount of solvent required to coat both sides.
New coverage rate submitted in May 9, 2025 email.
3 Maximum Web Area Throughput = Machine Web Speed x Maximum Web Width = m/min x m=m2/min
New maximum web width of 1.700 milimeters submitted in May 9, 2025 email.
4 Maximum Web Area Throughput = m2/min x 60 min/hr = m2/hr
New operating parameters submitted in May 9, 2025 email changes prior area throughput estimates.
5 Maximum Coating Web Rate = Web Coating Coverage x Maximum Web Area Throughput = grams ctg/m2 x m2/hr = grams ctg/hr
New operating parameters submitted in May 9, 2025 email changes prior coating web rate estimates.
6 Maximum Coating Web Rate (lbs ctg/hr) = 495,990 gram ctg/hr x 1 lb/454 gram = 1,092.49 lb ct/hr
New operating parameters submitted in May 9, 2025 email changes prior coating web rate estimates.
7 Each solvent's physical properties based on MSDS/SDS submitted with application.
8 There is no retention of solvent coating on substrate.
9 The proposed solvent coater will be placed within the current permanent total enclosure on site and its emissions will be collected along with other current units there.
10 The proposed solvent coater emissions after collected by the current permanent total enclosure will be sent along with other units emissions to current RTOs (Unit 1 or Unit 2)
12 Facility requested on April 14, 2025 coater/dryer emissions be based on 3500 hr/yr rather than the 2080 hr/yr as listed in application for the coater's dryer.
Request would put facility wide emissions greater than 100 tpy for VOCs and subject facility back to TV applicability.
Recommend 2200 hours/yr for operation to keep source from TV applicability again.
Facility requested in May 9, 2025 email that operating hours be increased again to 8760 hr/yr since the updated operating parameters for the coater
would reduce VOC controlled emissions below 100 tpy.
13 The highest emission rate on hourly and annual basis from the proposed solvents is used as worst case.
14 Coater's operational parameters for permitted emissions based on those listed in May 9, 2025 email. Based on how coater will actual operate.

50833-Application 15 Roslyn Converters dba Mudet

Date: 05/16/25
Engineer: Lisa Childress

Project Description: The facility's initial application proposed to install and operate both a solvent coater and a laminator.
An email submitted February 6, 2025 provided updated info on the project: a laminator would not be installed at this time;
current press P9 is no longer at the facility but the proposed solvent coater would have similar characteristics
and will be installed in P9's former location. The proposed solvent coater will be a 2 station rotogravure web coater.

[14]Solvent Coater Operating Parameters-Uncontrolled (Worst Case) Emissions

Machine Web Speed[1]:	150.00	m/min
Maximum Coating Coverage[2]:	33.40	grams ctg/m2
Maximum Web Width:	1.65000	m
Maximum Web Area Throughput[3]:	247.50	m2/min
[4]:	14,850.00	m2/hr
Maximum Coating Web Rate[5]:	495,990.00	grams ctg/hr
[6]:	1092.49	lbs ctg/hr

Conversion Factors

1 pound =	454.00	grams
Water Density	8.34	lb/gal
1 meter =	3.30	feet
1 sq meter =	10.76	ft2
1 gram/cm3 =	62.43	lb/ft3
1 cm3 =	35.32	ft3
1 ft3 =	7.48	gallons
1 milimeter =	0.001	meter

Solvent Properties[7]:

Ethyl Acetate (CAS# 141-78-6)			MEK (CAS# 78-93-3)				
Density:	0.902	grams/cm3	Specific Gravity:	0.8054		145.14	gal ethyl acetate/hr
Density:	7.5273	lbs ctg/gal ctg	Density:	6.7170	lbs ctg/gal ctg	162.64	gal MEK/hr
VOC Content:	100.00	%, by wt	VOC Content:	100.00	%, by wt		
	7.5273	lbs VOC/gal ctg		6.7170	lbs VOC/gal ctg		

Neither solvent contains any HAPs as defined under the Clean Air Act.

Emissions Calculations[8]:

Formula to calculate VOC emissions from a web coating press.
Maximum web speed (ft/min) x Maximum web width (ft) x Maximum coating coverage (lbs ctg/ft2) x Maximum VOC content (lb VOC/gal ctg) x Coating Density (gal ctg/lb ctg) x 60 min/hr x (1- ctg retention factor)

Operating at 8760 hr/yr[11]

Collection Efficiency to RTO[9]: 100.00
RTO Control Efficiency[10]: 97.50

	Total Uncontrolled VOC lbs/hr	Total Uncontrolled VOC TPY	Uncollected VOC lbs/hr	Uncollected VOC TPY	Uncontrolled VOC lbs/hr	Uncontrolled VOC TPY
Ethyl Acetate	1092.49	4785.10	0.00	0.00	1092.49	4785.10
MEK	1092.49	4785.10	0.00	0.00	1092.49	4785.10
Worst Case:	1092.49	4785.10		Worst Case[13]:	1092.49	4785.10

NOTES:

1 The initial application listed the machine web speed as 75 m/min but 150 m/min was used in the proposed coater's emissions calculations.
The facility confirmed in an email dated Feb.14,2025 that 150 m/min is the correct web speed and should be used in the calculations.
The facility also confirmed in same email that the proposed solvent coater would be a web based machine.
The facility submitted new actual operating parameters for the coater on May 9, 2025. Highest machine web speed is still 150 m/min

2 The facility confirmed in an email dated Feb 6, 2025 that solvent is coated on both sides of the paper at same time and only one solvent can used at a time for coating.
The coverage rate given in application is the total amount of solvent required to coat both sides.
New coverage rate submitted in May 9, 2025 email.

3 Maximum Web Area Throughput = Machine Web Speed x Maximum Web Width = m/min x m = m2/min
New maximum web width of 1.700 milimeters submitted in May 9, 2025 email.

4 Maximum Web Area Throughput = m2/min x min/hr = m2/hr
New operating parameters submitted in May 9, 2025 email changes prior area throughput estimates.

5 Maximum Coating Web Rate = Web Coating Coverage x Maximum Web Area Throughput = grams ctg/m2 x m2/hr = grams ctg/hr
New operating parameters submitted in May 9, 2025 email changes prior coating web rate estimates.

6 Maximum Coating Web Rate (lbs ctg/hr) = gram ctg/hr x 1 lb/454 gram = lb ct/hr
New operating parameters submitted in May 9, 2025 email changes prior coating web rate estimates.

7 Each solvent's physical properties based on MSDS/SDS submitted with application.

8 There is no retention of solvent coating on substrate.

9 The proposed solvent coater will be placed within the current permanent total enclosure on site and its emissions will be collected along with other current units there.

10 The proposed solvent coater emissions after collected by the current permanent total enclosure will be sent along with other units emissions to current RTOs (Unit 1 or Unit 2)

11 The uncontrolled solvent coater emissions must be calculated at 8760 hrs/yr and maximum operational parameters to determine permit applicability.

13 The highest emission rate on hourly and annual basis from the proposed solvents is used as worst case.

14 Coater's operational parameters for uncontrolled emissions based on those listed initially in application.

EMISSION ESTIMATE-All facility wide natural gas units combined as one unit

Company Name: Roslyn Converters, Inc.
Source Location: 1106 West Roslyn Road, Colonial Heights, VA 23834
Registration No.: 50833-Application 15

Date: 05/20/25
Engineer: Lisa Childress

RATING	55.20	MMBtu/hr	Combined total rating for plant wide natural gas units: RTO,Fulton heaters new and current, Modine, and dryer ovens
Natural Gas	1000.00	Btu/scf	
Oil		Btu/gal	Usage is the current permit limit for all natural gas fired units at the facility
Natural Gas Usage	0.0552	mmScf/hr	58.00 mmScf/yr 483.5520 mmScf/yr (based on 8760 hrs/yr)
Oil Usage		Kgal/hr	
Assume Distillate Oil		%byWt	

Emissions from combining ratings from all facility natural gas fired units

Pollutant By AP-42	Emissions Factor	Units	Reference	Control Technology	Control Eff. %	Emiss. based on max. expected burned/yr. Annual (ton/yr)
Criteria Pollutants						
TSP	1.90	lbs/mmScf	(1)	None	0.00	0.06
PM10	1.90	lbs/mmScf	(1)	None	0.00	0.06
CO	84.00	lbs/mmScf	(2)	None	0.00	2.44
NOx	100.00	lbs/mmScf	(2)	None	0.00	2.90
SO2	0.60	lbs/mmScf	(1)	None	0.00	0.02
VOC Non-methane	5.50	lbs/mmScf	(1)	None	0.00	0.16

Emissions from combining ratings from all facility natural gas fired units

Pollutant By AP-42	Emissions Factor	Units	Reference	UNCONTROLLED EMISSIONS Hourly (lb/hr)	Daily (lbs/day)	Annual Tons/yr	Control Technology	Control Eff. %	8760.00 (lb/hr)	lbs/day	(ton/yr)
Criteria Pollutants											
TSP	1.90	lbs/mmScf	(1)	0.10	2.52	0.46	None	0.00	0.10	2.52	0.46
PM10	1.90	lbs/mmScf	(1)	0.10	2.52	0.46	None	0.00	0.10	2.52	0.46
CO	84.00	lbs/mmScf	(2)	4.64	111.28	20.31	None	0.00	4.64	111.28	20.31
NOx	100.00	lbs/mmScf	(2)	5.52	132.48	24.18	None	0.00	5.52	132.48	24.18
SO2	0.60	lbs/mmScf	(1)	0.03	0.79	0.15	None	0.00	0.03	0.79	0.15
VOC Non-methane	5.50	lbs/mmScf	(1)	0.30	7.29	1.33	None	0.00	0.30	7.29	1.33

Hourly Usage:

55200000.00	Btu	1.00	scf	1.00E+00	mmScf	5.52E-02	mmScf
	hr	1000.00	Btu	1000000.00	scf	1.00	hr

(1) AP-42 Table 1.4-2 Date July 98
(2) AP-42 Table 1.4-1 Date July 98

97.5% of EMISSION ESTIMATES FROM PRINTING OPERATIONS + THINNING INKS AFTER CONTROL OF (RTO)

APPLICATION 14

Company Name: Roslyn Converters, Inc. Date: 11/2/2018

Source Location: 1106 West Roslyn Road, Colonial Heights, VA 23834 Engineer: AMS

Registration #: 50833

Printers

COMB. EMISSIONS at 100% VOC Load to RTO

Source	Pollutant	lb/gal VOC as applied	Max. Ctg. Usage as Applied (gals/hr)	Max. Ctg. Usage as Applied (gals/yr)			Hourly (lb/hr)	Based on Ann. Usag (ton/yr)
rotogravure printing ink (ref. no. P9)	VOCs	5.22	79.00	273000.00			412.38	712.53
rotogravure printing ink (ref. no. P10)	VOCs	5.99	76.00	335000.00			455.24	1003.33
rotogravure printing ink (ref. no. P11)	VOCs	6.24	76.00	344000.00			474.24	1073.28
5% - Worst case of Dibutyl Phthalate (Used 5% of VOC EMF)								
rotogravure printing ink (ref. no. P9)	Dibutyl Phthalate	0.26	79.00	273000.00			20.62	35.63
rotogravure printing ink (ref. no. P10)	Dibutyl Phthalate	0.30	76.00	335000.00			22.76	50.17
rotogravure printing ink (ref. no. P11)	Dibutyl Phthalate	0.31	76.00	344000.00			23.71	53.66
Total VOC throughput from printing operations at 100% =							1341.9	2789.1

Combined throughput controlled by RTO

Printers and parts washers

Source	Pollutant	Hourly (lb/hr)	Based on Ann. Usage (ton/yr)	Capture Capture Efficiency	Destruction Control Efficiency	Overall Efficiency (Rule 4-24)	Hourly (lb/hr)	Based on Ann. Usag (ton/yr)
rotogravure printing ink (ref. no. P9)	VOCs	412.38	712.53	100.00	97.50		10.31	17.81
rotogravure printing ink (ref. no. P10)	VOCs	455.24	1003.33	100.00	97.50		11.38	25.08
rotogravure printing ink (ref. no. P11)	VOCs	474.24	1073.28	100.00	97.50		11.86	26.83
Partswasher (ref. no. PW-1)	VOCs	**76.99**	93.04	100.00	97.50		1.92	2.33
50 gallon hand wash tank (ref. no. HWT)	VOCs		29.40			85.00		4.41
maintenance partswasher	VOCs	0.02	0.56			85.00	0.0029	0.083
rotogravure printing ink (ref. no. P9)	Dibutyl Phthalate	20.62	35.63	100.00	97.50		0.52	0.89
rotogravure printing ink (ref. no. P10)	Dibutyl Phthalate	22.76	50.17	100.00	97.50		0.57	1.25
rotogravure printing ink (ref. no. P11)	Dibutyl Phthalate	23.71	53.66	100.00	97.50		0.59	1.34

Tot. VOC emiss. from Solvent tanks (T1 + T2) combined =	129.3	0.36
Tot. VOC emiss. from PW-1 from RTO=	1.92	2.33
Tot. VOC emiss. from 50 gallon HWT =		4.4
Tot. VOC emiss. from maintenance partswasher =	0.0029	0.083
Tot. VOC emiss. from print. opers. from RTO=	33.5	69.7
Tot. VOC emiss. from partswash. + print. oper. from RTO + Tanks (T1 + T2) =	164.81	76.90
Tot. HAP emiss. (Dibutyl Phthalate) from print. opers. from RTO=	1.7	3.5

EMISSION ESTIMATE

Company Name: Roslyn Converters, Inc.
Source Location: 1106 West Roslyn Road, Colonial Heights, VA 23834
Registration No.: 50833

Date: 11/2/2018
Engineer: AMS

TOTAL UNCONTROLLED EMISSIONS FROM 2 NG FULTON FLUID HEATERS (REF. NOS. H1&H2), 24 NG MODINE SPACE HEATERS (REF. NOS. HC1-24) AND 8 NG BURNERS FOR THE R

Total Natural Gas Consumption by the listed units for the entire facility: **58.0000** mmScf/yr

Pollutant By AP-42	Control Technology	Control Eff. %	Total Uncontrolled Emissions (lb/hr)	Ann. Fuel Cons. (tons/yr)
Criteria Pollutants				
TSP	None	0.00	0.0859	0.0551
PM10	None	0.00	0.0859	0.0551
CO	None	0.00	3.7968	2.4360
NOx	None	0.00	4.5200	2.9000
SO2	None	0.00	0.0271	0.0174
VOC Non-methane	None	0.00	0.2486	0.1595

FACILITY WIDE EMISSIONS FROM 2 NG FULTON FLUID HEATERS (REF. NOS. H1&H2), 24 NG MODINE SPACE HEATERS (REF. NOS. HC1-24) AND EIGHT NG BURNERS FOR THE RTO THREE PRESS LINES, PARTSWASHER & TWO TANKS, LASER & ELECTROSTATIC PERFORATORS & PAPER TRIMMING COLLECTION SYSTEM

Pollutant	Control Technology	Control Eff. %	Total Facility Wide Emissions (lb/hr)	Ann. Limits (tons/yr)
Criteria Pollutants				
TSP	None	0.00	3.2	2.9
PM10	None	0.00	3.2	2.9
CO	None	0.00	3.8	2.4
NOx	None	0.00	4.5	2.9
SO2	None	0.00	0.0	0.0
VOC Non-methane	None	0.00	165.1	77.1

EMISSION ESTIMATES FROM LASER & ELECTROSTATIC PERFORATORS & PAPER TRIMMING COLLECTION SYSTEM

Company Name: Roslyn Converters, Inc.
Source Location: 1106 West Roslyn Road, Colonial Heights, VA 23834
Registration #: 50833

Date: 11/2/2018
Engineer: AMS

Source	Pollutant	lbs (Pollutant) / hr	x	Max. No. of Hours of Operation (hrs/yr)	% Control Efficiency	Hourly (lb/hr)	Based on Ann. Usage (ton/yr)
							Uncontrolled
Laser Perforator (ref. no. LP)	PM/PM10	0.20 (as per stack test)		8760		0.20	0.88
							Controlled
	PM/PM10	0.20 (as per stack test)		8760	50.0	0.100	0.438
		0.20		8760	30.0	0.14	0.613
					(lowest calc. eff. from stack test - possibly bad data.)		
							Uncontrolled
Electrostatic Perforator (ref. no. EP1)	PM/PM10	0.20 (as per stack test)		8760		0.20	0.88
							Controlled
	PM/PM10	0.20 (as per stack test)		8760	50.0	0.100	0.438
		0.20		8760	30.0	0.14	0.613
					(lowest calc. eff. from stack test - possibly bad data.)		
							Uncontrolled
Electrostatic Perforator (ref. no. EP2)	PM/PM10	0.72 (as supplied by Roslyn)		8760		0.72	3.15

From previous submittals, it appears Roslyn used the mid range value from stack test of 0.18 lbs/hr multiplied by 4 rather than using worst case of 0.20 multiplied by 4.

							Controlled
	PM/PM10	0.72 (as supplied by Roslyn)		8760	50.0	0.360	1.577
		0.20		8760	30.0	0.14	0.613
					(lowest calc. eff. from stack test - possibly bad data.)		
Paper Trim. Coll. Sys. (ref. no. BG)	PM/PM10	0.03 (as per stack test - 2.4056 oz. over a period of six days - divided 2.4056 oz. by six days and assumed this is emitted in an hour)		8760		0.03	0.11
							Controlled
	PM/PM10	0.03 (as per stack test - 2.4056 oz. over a period of six days) - divided 2.4056 oz. by six days and used this as what is emitted in an hour)		8760	99.0	0.00025	0.00110
	Worst Case:						Uncontrolled
	PM/PM10	0.15 (as per stack test - 2.4056 oz. over a period of six days) - assumed all of the 2.4056 oz. over six days is emitted in an hour)		8760		0.150	0.659
	Worst Case:						Controlled
	PM/PM10	0.15 (as per stack test - 2.4056 oz. over a period of six days) - assumed all of the 2.4056 oz. over six days is emitted in an hour)		8760	99.0	0.00150	0.00659

Total **PM/PM10** from Laser & Electrostatic Perforators + Paper Trimmer Collection System = 0.560251 2.45390

EMISSION ESTIMATE

Company Name: Roslyn Converters, Inc. Date: 11/2/2018

Source Location: 1106 West Roslyn Road, Colonial Heights, VA 23834 Engineer: AMS

Registration No.: 50833

RATING	32.00	MMBtu/hr	= 4.0 mmbtu/hr x 8 burners in operation		
Natural Gas	1000.00	Btu/scf			
Oil		Btu/gal			
Natural Gas Usage	0.0320	mmScf/hr	36.00 mmScf/yr	280.3200 mmScf/yr (based on 8760 hrs/yr)	
Oil Usage		Kgal/hr			
Assume Distillate Oil		%byWt			

Nat. Gas Emiss. for a total of eight 6.5 MMBtu burners (without the use of VOCs as supplemental fuel) for RTO

Pollutant By AP-42	Emissions Factor	Units	Reference	Control Technology	Control Eff. %	Emiss. based on max. expected burned/yr. Annual (ton/yr)
Criteria Pollutants						
TSP	1.90	lbs/mmScf	(1)	None	0.00	0.03
PM10	1.90	lbs/mmScf	(1)	None	0.00	0.03
CO	84.00	lbs/mmScf	(2)	None	0.00	1.51
NOx	100.00	lbs/mmScf	(2)	None	0.00	1.80
SO2	0.60	lbs/mmScf	(1)	None	0.00	0.01
VOC Non-methane	5.50	lbs/mmScf	(1)	None	0.00	0.10

Nat. Gas Emiss. for a total of eight 6.5 MMBtu heaters (without the use of VOCs as supplemental fuel) for RTO

				UNCONTROLLED EMISSIONS								
Pollutant By AP-42	Emissions Factor	Units	Reference	Hourly (lb/hr)	Daily (lbs/day)	Annual Tons/yr	Control Technology	Control Eff. %	(lb/hr)	lbs/day	8760.00 (ton/yr)
Criteria Pollutants											
TSP	1.90	lbs/mmScf	(1)	0.06	1.46	0.27	None	0.00	0.06	1.46	0.27
PM10	1.90	lbs/mmScf	(1)	0.06	1.46	0.27	None	0.00	0.06	1.46	0.27
CO	84.00	lbs/mmScf	(2)	2.69	64.51	11.77	None	0.00	2.69	64.51	11.77
NOx	100.00	lbs/mmScf	(2)	3.20	76.80	14.02	None	0.00	3.20	76.80	14.02
SO2	0.60	lbs/mmScf	(1)	0.02	0.46	0.08	None	0.00	0.02	0.46	0.08
VOC Non-methane	5.50	lbs/mmScf	(1)	0.18	4.22	0.77	None	0.00	0.18	4.22	0.77

Hourly Usage:

32000000.00	Btu	1.00	scf	1.00E+00	mmScf		3.20E-02	mmScf
1.00	hr	1000.00	Btu	1000000.00	scf		1.00	hr

(1) AP-42 Table 1.4-2 Date July 98

(2) AP-42 Table 1.4-1 Date July 98

EMISSION ESTIMATE

Company Name: Roslyn Converters, Inc. Date: 11/2/2018

Source Location: 1106 West Roslyn Road, Colonial Heights, VA 23834 Engineer: AMS

Registration No.: 50833

RATING	1.20	mmBtu/hr			
Natural Gas	1000.00	Btu/scf			
Oil		Btu/gal			
Natural Gas Usage	0.0012	mmScf/hr	2.00 mmScf/yr	10.51 mmScf/yr (Based on 8760 hrs/yr)	
Oil Usage		Kgal/hr			
Assume Distillate Oil		% S byWt			
Assume Natural Gas		% S byWt			

Nat. Gas Emiss. Comb. for 24 Modine Space Heaters x 0.05 mmbtu/hr (rating for each)

Pollutant By AP-42	Emissions Factor	Units	Reference	Control Technology	Control Eff. %	Emiss. based on max. expected burned/yr. Annual (ton/yr)
Criteria Pollutants						
TSP	1.90	lbs/mmScf	(1)	None	0.00	0.00190
PM10	1.90	lbs/mmScf	(1)	None	0.00	0.00190
CO	84.00	lbs/mmScf	(2)	None	0.00	0.08400
NOx	100.00	lbs/mmScf	(2)	None	0.00	0.10000
SO2	0.60	lbs/mmScf	(1)	None	0.00	0.00060
VOC Non-methane	5.50	lbs/mmScf	(1)	None	0.00	0.00550

Nat. Gas Emiss. Comb. for 24 Modine Space Heaters x 0.05 mmbtu/hr (rating for each)

Pollutant By AP-42	Emissions Factor	Units	Reference	UNCONTROLLED EMISSIONS Hourly (lb/hr)	Daily (lbs/day)	Annual Tons/yr	Control Technology	Control Eff. %	(lb/hr)	lbs/day	8760.00 (ton/yr)
Criteria Pollutants											
TSP	1.90	lbs/mmScf	(1)	0.0023	0.05	0.01	None	0.00	0.0023	0.05	0.0100
PM10	1.90	lbs/mmScf	(1)	0.0023	0.05	0.01	None	0.00	0.0023	0.05	0.0100
CO	84.00	lbs/mmScf	(2)	0.1008	2.42	0.44	None	0.00	0.1008	2.42	0.4415
NOx	100.00	lbs/mmScf	(2)	0.1200	2.88	0.53	None	0.00	0.1200	2.88	0.5256
SO2	0.60	lbs/mmScf	(1)	0.0007	0.02	0.00	None	0.00	0.0007	0.02	0.0032
VOC Non-methane	5.50	lbs/mmScf	(1)	0.0066	0.16	0.03	None	0.00	0.0066	0.16	0.0289

Hourly Usage

1200000.00	Btu	1.00	scf	1.00E+00	mmScf		1.20E-03	mmScf
1.00	hr	1000.00	Btu	1000000.00	scf		1.00	hr

(1) AP-42 Table 1.4-2 Date July 98

(2) AP-42 Table 1.4-1 Date July 98

EMISSION ESTIMATE

Company Name: Roslyn Converters, Inc. Date: 11/2/2018
Source Location: 1106 West Roslyn Road, Colonial Heights, VA 23834 Engineer: AMS
Registration No.: 50833

RATING 12.00 mmBtu/hr
Natural Gas 1000.00 Btu/scf
Oil Btu/gal
Natural Gas Usage 0.0120 mmScf/hr 105.12 mmScf/yr
Oil Usage Kgal/hr
Assume Distillate Oil % S byWt
Assume Natural Gas % S byWt

Nat. Gas Emiss. Comb. for 2 Fulton Fluid Heaters x 6.0 mmbtu/hr (rating for each)

Pollutant By AP-42	Emissions Factor	Units	Reference	Control Technology	Control Eff. %	Emiss. based on max. expected burned/yr. Annual (ton/yr)
Criteria Pollutants						
TSP	1.90	lbs/mmScf	(1)	None	0.00	0.10
PM10	1.90	lbs/mmScf	(1)	None	0.00	0.10
CO	84.00	lbs/mmScf	(2)	None	0.00	4.42
NOx	100.00	lbs/mmScf	(2)	None	0.00	5.26
SO2	0.60	lbs/mmScf	(1)	None	0.00	0.03
VOC Non-methane	5.50	lbs/mmScf	(1)	None	0.00	0.29

Nat. Gas Emiss. Comb. for 2 Fulton Fluid Heaters x 6.0 mmbtu/hr (rating for each)

Pollutant By AP-42	Emissions Factor	Units	Reference	UNCONTROLLED EMISSIONS Hourly (lb/hr)	Daily (lbs/day)	Annual Tons/yr	Control Technology	Control Eff. %	8760.00 (lb/hr)	lbs/day	(ton/yr)
Criteria Pollutants											
TSP	1.90	lbs/mmScf	(1)	0.0228	0.55	0.10	None	0.00	0.02	0.55	0.10
PM10	1.90	lbs/mmScf	(1)	0.0228	0.55	0.10	None	0.00	0.02	0.55	0.10
CO	84.00	lbs/mmScf	(2)	1.0080	24.19	4.42	None	0.00	1.01	24.19	4.42
NOx	100.00	lbs/mmScf	(2)	1.2000	28.80	5.26	None	0.00	1.20	28.80	5.26
SO2	0.60	lbs/mmScf	(1)	0.0072	0.17	0.03	None	0.00	0.01	0.17	0.03
VOC Non-methane	5.50	lbs/mmScf	(1)	0.0660	1.58	0.29	None	0.00	0.07	1.58	0.29

Hourly Usage

12000000.00	Btu	1.00	scf	1.00E+00	mmScf		1.20E-02	mmScf
1.00	hr	1000.00	Btu	1000000.00	scf		1.00	hr

(1) AP-42 Table 1.4-2 Date July 98
(2) AP-42 Table 1.4-1 Date July 98

EMISSION ESTIMATE

Company Name: Roslyn Converters, Inc. Date: 11/2/2018
Source Location: 1106 West Roslyn Road, Colonial Heights, VA 23834 Engineer: AMS
Registration No.: 50833

RATING 6.00 mmBtu/hr
Natural Gas 1000.00 Btu/scf
Oil Btu/gal
Natural Gas Usage (Ea 0.0060 mmScf/hr 10.00 mmScf/yr 52.56 mmScf/yr based on 8760 hrs/yr
Oil Usage Kgal/hr
Assume Distillate Oil % S byWt
Assume Natural Gas % S byWt

Nat. Gas Emiss. 1 Fulton Fluid Heater with a rating of 6.0 mmbtu/hr

Pollutant By AP-42	Emissions Factor	Units	Reference	Control Technology	Control Eff. %	Emiss. based on max. expected burned/yr. Annual (ton/yr)
Criteria Pollutants						
TSP	1.90	lbs/mmScf	(1)	None	0.00	0.010
PM10	1.90	lbs/mmScf	(1)	None	0.00	0.010
CO	84.00	lbs/mmScf	(2)	None	0.00	0.420
NOx	100.00	lbs/mmScf	(2)	None	0.00	0.500
SO2	0.60	lbs/mmScf	(1)	None	0.00	0.003
VOC Non-methane	5.50	lbs/mmScf	(1)	None	0.00	0.028

Nat. Gas Emiss. for 1 Fulton Fluid Heater with a rating of 6.0 mmbtu/hr

Pollutant By AP-42	Emissions Factor	Units	Reference	UNCONTROLLED EMISSIONS Hourly (lb/hr)	Daily (lbs/day)	Annual Tons/yr	Control Technology	Control Eff. %	8760.00 (lb/hr)	lbs/day	(ton/yr)
Criteria Pollutants											
TSP	1.90	lbs/mmScf	(1)	0.0114	0.27	0.05	None	0.00	0.011	0.274	0.050
PM10	1.90	lbs/mmScf	(1)	0.0114	0.27	0.05	None	0.00	0.011	0.274	0.050
CO	84.00	lbs/mmScf	(2)	0.5040	12.10	2.21	None	0.00	0.504	12.096	2.208
NOx	100.00	lbs/mmScf	(2)	0.6000	14.40	2.63	None	0.00	0.600	14.400	2.628
SO2	0.60	lbs/mmScf	(1)	0.0036	0.09	0.02	None	0.00	0.004	0.086	0.016
VOC Non-methane	5.50	lbs/mmScf	(1)	0.0330	0.79	0.14	None	0.00	0.033	0.792	0.145

Total emissions based on 2 (6 mmbtu/hr) heaters burning the requested combined Annual Fuel Consumption:

	(lb/hr)	(ton/yr)
TSP	0.02	0.02
PM10	0.02	0.02
CO	1.01	0.84
NOx	1.20	1.00
SO2	0.01	0.01
VOC Non-methane	0.07	0.06

Hourly Usage

6000000.00	Btu	1.00	scf	1.00E+00	mmScf		6.00E-03	mmScf
1.00	hr	1000.00	Btu	1000000.00	scf		1.00	hr