pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MEMO

FROM: Rick Millard
Air Quality Permitting RM
Air Quality

TO: William Weaver WRW 11/7/23
Regional Manager
Air Quality

THRU: Tom Hanlon, Environmental Engineering Manager ***TJH / 11/6/23***
Air Quality Permitting
Air Quality

DATE: July 3, 2023

RE: RACT 3 Review Memo
ASC Engineered Solutions
Title V Operating Permit No. 36-05019
Columbia Borough, Lancaster County

Procedural History

As part of the Reasonably Available Control Technology (RACT) regulations codified at 25 Pa. Code §§ 129.111—129.115 (relating to additional RACT requirements for major sources of NO_x and VOCs for the 2015 ozone NAAQS) (RACT III), the Pennsylvania Department of Environmental Protection (Department) has established a method under § 129.114(i) (relating to alternative RACT proposal and petition for alternative compliance schedule) for an applicant to demonstrate that the alternative RACT compliance requirements incorporated under § 129.99 (relating to alternative RACT proposal and petition for alternative compliance schedule) (RACT II) for a source that commenced operation on or before October 24, 2016, and which remain in force in the applicable operating permit continue to be RACT under RACT III as long as no modifications or changes were made to the source after October 24, 2016. The date of October 24, 2016, is the date specified in § 129.99(i)(1) by which written RACT proposals to address the 1997 and 2008 8-hour ozone National Ambient Air Quality Standards (NAAQS) were due to the Department or the appropriate approved local air pollution control agency from the owner or operator of an air contamination source located at a major NO_x emitting facility or a major VOC emitting facility subject to § 129.96(a) or (b) (relating to applicability).

The procedures to demonstrate that RACT II is RACT III are specified in § 129.114(i)(1)(i), 129.114(i)(1)(ii) and 129.114(i)(2), that is, subsection (i), paragraphs (1) and (2). An applicant may submit an analysis, certified by the responsible official, that the RACT II permit requirements remain RACT for RACT III by following the procedures established under subsection (i), paragraphs (1) and (2).

Paragraph (1) establishes cost effectiveness thresholds of $7,500 per ton of NO_x emissions reduced and $12,000 per ton of VOC emissions reduced as ‘‘screening level values’’ to determine the amount of analysis and due diligence that the applicant shall perform if there is no new pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis. Paragraph (1) has two subparagraphs.

Subparagraph (i) under paragraph (1) specifies that the applicant that evaluates and determines that there is no new pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis and that each technically feasible air cleaning device, air pollution control technology or technique evaluated for the alternative RACT requirement or RACT emission limitation approved by the Department (or appropriate approved local air pollution control agency) under § 129.99(e) had a cost effectiveness equal to or greater than $7,500 per ton of NO_x emissions reduced or $12,000 per ton of VOC emissions reduced shall include the following information in the analysis:

- A statement that explains how the owner or operator determined that there is no new pollutant specific air cleaning device, air pollution control technology or technique available.
- A list of the technically feasible air cleaning devices, air pollution control technologies or techniques previously evaluated under RACT II.
- A summary of the economic feasibility analysis performed for each technically feasible air cleaning device, air pollution control technology or technique in the previous bullet and the cost effectiveness of each technically feasible air cleaning device, air pollution control technology or technique as submitted previously under RACT II.
- A statement that an evaluation of each economic feasibility analysis summarized in the previous bullet demonstrates that the cost effectiveness remains equal to or greater than $7,500 per ton of NO_x emissions reduced or $12,000 per ton of VOC emissions reduced.

Subparagraph (ii) under paragraph (1) specifies that the applicant that evaluates and determines that there is no new pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis and that each technically feasible air cleaning device, air pollution control technology or technique evaluated for the alternative RACT requirement or RACT emission limitation approved by the Department (or appropriate approved local air pollution control agency) under § 129.99(e) had a cost effectiveness less than $7,500 per ton of NO_x emissions reduced or $12,000 per ton of VOC emissions reduced shall include the following information in the analysis:

- A statement that explains how the owner or operator determined that there is no new pollutant specific air cleaning device, air pollution control technology or technique available.
- A list of the technically feasible air cleaning devices, air pollution control technologies or techniques previously evaluated under RACT II.
- A summary of the economic feasibility analysis performed for each technically feasible air cleaning device, air pollution control technology or technique in the previous bullet and the cost effectiveness of each technically feasible air cleaning device, air pollution control technology or technique as submitted previously under RACT II.
- A statement that an evaluation of each economic feasibility analysis summarized in the previous bullet demonstrates that the cost effectiveness remains less than $7,500 per ton of NO_x emissions reduced or $12,000 per ton of VOC emissions reduced.
- A new economic feasibility analysis for each technically feasible air cleaning device, air pollution control technology or technique.

Paragraph (2) establishes the procedures that the applicant that evaluates and determines that there is a new or upgraded pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis shall follow.

- Perform a technical feasibility analysis and an economic feasibility analysis in accordance with § 129.92(b) (relating to RACT proposal requirements).
- Submit that analysis to the Department (or appropriate approved local air pollution control agency) for review and approval.

The applicant shall also provide additional information requested by the Department (or appropriate approved local air pollution control agency) that may be necessary for the evaluation of the analysis submitted under § 129.114(i).

<u>Introduction/Facility Description</u>

On December 27, 2022, ASC Engineered Solutions (ASC) submitted a RACT 3 proposal regarding sources at their Columbia Facility in Lancaster County. The facility is a major source of VOCs that has been in operation prior to August 3, 2018, and therefore, in in accordance with 25 Pa. Code Section 129.111, the facility is subject to DEP's RACT 3 requirements cited in 25 Pa. Code Sections 129.111 thru 129.115. The facility is not a major source of NOx with a current PTE of 95.81 tpy.

The facility's RACT 3 submission indicates that the following sources at the facility have VOC PTE greater than 2.7 tpy, and therefore, are subject to a case-by-case VOC RACT 3 analysis in accordance with Section 129.114(d):

Affected Source	Source Description	PTE VOC Emissions (tpy)
199	Annealing	4.16
200	Shell Core	31.19
201	Coremaking	18.26 *
203	Coldbox Coremaking	7.48
501	Pouring Casting/Cooling	57.49
503	Shakeout	16.37
601	Pouring Casting/Cooling	27.38
603	Shakeout	7.80

* PTE was adjusted based on information from the RACT 2 addendum memo dated 1/29/2020.

<u>VOC RACT 3 Applicability</u>

Exempt VOC RACT 3 Sources

The following sources were identified by Anvil as having VOC PTE's of less than 1.0 tpy, and therefore, are exempt from the RACT 3 requirements in accordance with Section 129.111(c).

Source ID No.	Process	RACT Requirements
36A	Johnston Boiler	None
033	Superior Mohawk Boiler	None
034	General Hearing (Various)	None
130	Hot Dip Galvanized #4 Kettle	None
131	Hot Dip Galvanized #5 Kettle	None
188	Melting Operations	None
189	Preheat/Charge Handling	None
190	Burn Off Furnace	None
196	Parts Washer	None
504	Disa Sand	None
505	Grinding	None
506	Disa Casting Cleaning	None
187	Sprue Crusher	None
305	N/F Cleaning	None
502	Disa Casting Cooling	None
602	Savelli Casting/Cooling	None

Source ID #191 – Surface Coating Dip Line is exempt from the RACT 3 requirements in accordance with Section 129.111(a): compliance with an emission limit established under Section 129.52.

Source ID #197 – Maintenance Parts Cleaner is exempt from the RACT 3 requirements in accordance with Section 129.111(a): compliance with an emission limit established under Section 129.63.

Presumptive VOC RACT 3 Sources

ASC currently has no sources subject to the presumptive VOC RACT 3 requirements of Section 129.112.

Case-by-Case VOC RACT 3 Evaluation

Per 25 Pa. Code Section 129.114, Alternative RACT proposal and petition for alternative compliance schedule, in Section (i), "*An owner or operator subject to subsection (a), (b) or (c) and § 129.99 that has not modified or changed a source that commenced operation on or before October 24, 2016, and has not installed and commenced operation of a new source after October 24, 2016, may, in place of the alternative RACT requirement or RACT emission limitation required under subsection (d), submit an analysis, certified by the responsible official, in writing or electronically to the Department or appropriate approved local air pollution control agency on or before December 31, 2022, that demonstrates that compliance with the alternative RACT requirement or RACT emission limitation approved by the Department or appropriate approved local air pollution Control agency under § 129.99(e) (relating to alternative RACT proposal and petition for alternative compliance schedule) assures compliance with the provisions in subsections (a)—(c) and (e)—(h), except for sources subject to § 129.112(c)(11) or (i)—(k)*."

As a review, DEP's 11/13/2019 RACT 2 review memo assessed the technical feasibility in using various control options in the reduction of VOCs from those sources in Table 2 below. Those technologies presented by ASC included the following:

- Recuperative Thermal Oxidation
- Regenerative Thermal Oxidation
- Catalytic Oxidation
- Combustion Units
- Adsorption
- Absorption
- Condensers
- Flares
- Combined Adsorption and Thermal Oxidation
- Advanced Oxidation
- Innovative Technologies
- Low VOC Materials

Recuperative thermal oxidation units are generally used for low to moderate exhaust rates and medium to heavy solvent vapor concentrations. Based on a review of the RBLC, this type of control has been used for controlling VOC emissions from iron foundry cupolas but has not been typically used for other foundry processes. This would not be an appropriate control method for the high exhaust rate and low VOC exhaust stream from the foundry operations. Of the three oxidation technologies, the RTO option was selected as the most cost-effective solution in addressing RACT2, due to the high heat recovery and lower fuel usage in comparison to the other oxidation technologies. **[DEP concurred that this technology was not technically feasible for RACT 2].**

Regenerative thermal oxidizers offer control for high air flow rates with low VOC concentrations. A review of the RBLC indicates that this type of control has been used for controlling VOCs at a variety of facilities, including an asphalt shingle and coatings materials manufacturing facility, at dry mill fuel-grade ethanol manufacturing facilities, at oriented strand board manufacturing facilities, at a graphic arts and coating operation, at a tire retread manufacturing facility, at a refinery, for coating lines, at an animal feed supplement production facility, and at a municipal waste combustor plant, and at wood products production facility. RTOs have not typically been used for VOC control at foundries. This control is considered to be technically feasible for the foundry processes, however, and will be evaluated further in this analysis. **[DEP concurred that this technology was technically feasible and therefore required further evaluation under a RACT 2 cost analysis].**

Catalytic Oxidation has generally been used to control VOCs for combustion turbines, engines, paint booths, and printing presses. This type of control has not been typically used in the foundry industry. While catalytic oxidation may be capable of handling higher air flow rates and lower VOC concentration exhaust streams, it is believed that the loading of other pollutants in the exhaust stream could foul the catalyst; therefore, this type of control is not considered technically feasible for this application**. [DEP concurred that this technology was not technically feasible for RACT 2].**

Combustion Units have been used to treat VOC-laden exhaust streams. Due to the low concentration of VOC in the exhaust stream of the foundry operations, this option is not considered technically feasible. **[DEP concurred that this technology was not technically feasible for RACT 2].**

Adsorption can be used to capture VOCs in low concentration exhaust; however, it is typically only used for exhaust that is not loaded with other pollutants which can plug the bed. Based on a review of the RBLC, this type of control has been used in the printing and petroleum refinery industries. This type of control is not typically used in the foundry industry and based on the pollutant loading of the exhaust stream, adsorption is not considered technically feasible for the foundry operations as plugging of the adsorption media would likely occur. **[DEP concurred that this technology was not technically feasible for RACT 2].**

Absorption is typically used to recover products or purify gas streams with high concentrations of organic compounds such as in the ethanol production and soybean oil refinery industries. In the foundry industry, scrubbers are sometimes used to control emissions from core making processes; however, it is not considered a technically feasible application for VOC control of emissions from the other foundry operations due to the low concentration of VOC in the exhaust. **[DEP concurred that absorption is technically feasible for core making processes but not feasible for other foundry operations]**

Condensers may be used to control VOC emissions with high VOC concentrations (usually greater than 5,000 ppmv). The RBLC shows that this type of control has been used for botanical extraction processes and petroleum refineries. Condensers are not typically used in the foundry industry for VOC control and are not considered technically feasible for the application of controlling VOC emissions from the foundry operations due to the low concentration of VOC in the exhaust. **[DEP concurred that this technology was not technically feasible for RACT 2].**

Flares are typically used for exhaust streams with high VOC concentrations to sustain combustion. This type of control is used at such facilities as ethanol plants, petroleum refineries, and other chemical manufacturing plants. A review of the RBLC does not indicate that this type of control is typically used at foundries and it would not be a technically feasible option for the foundry processes based on the low VOC concentration of the exhaust stream. **[DEP concurred that this technology was not technically feasible for RACT 2].**

Combined Adsorption and Thermal Incineration Based on the above examination of the adsorption process alone, the combined control approach of adsorption and thermal incineration is not considered to be technically feasible for the foundry operations. **[DEP concurred that this technology was not technically feasible for RACT 2].**

Advanced oxidation has been determined to be BACT for the foundry processes at some foundries in Indiana. This innovative technology has only been shown to be applicable to foundries that use greensand systems. Anvil uses chemically bonded mold lines. Therefore, advanced oxidation is not considered to be technically feasible for the foundry operations. **[DEP concurred that this technology was not technically feasible for RACT 2].**

Innovative Technologies There is not adequate documentation or application of other innovative technologies to make a determination of technical feasibility; therefore, no other innovative technologies have been further considered. **[DEP concurred that this technology was not technically feasible for RACT 2].**

Low VOC Materials The resins used in the foundry processes are chosen to meet product specifications. Since resin choices have a direct impact on the quality of the final product, the variability of resin VOC contents were not evaluated for technical feasibility**. [DEP concurred that this technology was not technically feasible for RACT 2].**

Only two control technologies were considered technically feasible. Their effectiveness in controlling VOCs is shown in Table 1 below:

Table 1

Control Technologies	Control Efficiency
Regenerative Thermal Oxidizer (RTO)	98%
Absorption – Wet Scrubber	98% *

* Only effective in controlling amine emissions from the cold box core maker

ASC considered the use of an RTO to control multiple sources at the facility. However, due to spatial limitations within the facility, it was determined that control of multiple sources with a single RTO would not be technically feasible and for this reason the cost to control each source with an RTO was only considered on an individual source basis.

Table 2 below shows the RACT 2 cost effectiveness per ton of VOC removed when installing an RTO on each affected source.

Table 2

Source ID No.	Process	RTO Cost Effectiveness $/ton removed
199	Annealing	$59,213.91
200	Shell Core	$23,833.59
201	Coremaking	$28,346.00
501	Pouring Casting/Cooling	$41,656.33
503	Shakeout	$51,749.38
601	Pouring Casting/Cooling	$50,996.27
603	Shakeout	$71,247.26

RACT 2 Case-by-Case Determination & Compliance

Per Table 2 above, all costs for an RTO in dollars per ton of VOC removed were well above the RACT 2 threshold of $7,000.00 per ton removed. For this reason, an RTO was not considered to be economically feasible for RACT 2 for any of the affected sources. The facility already employed a wet acid scrubber for controlling VOC emissions from the ColdBox Coremaking Operation - ID 203, and so cost was not a consideration for that option.

RACT 3 ANALYSES:

With the preceding RACT 2 case-by-case analyses as a background, we now turn to the re-evaluations required under Sections 129.114(i)(1)(i)(A) thru (E) and/or 129.114(i)(1)(ii)(A) thru (F). Because the RACT 3 application indicates that the VOC RACT 3 feasible control options have a cost effectiveness greater than $12,000/ton VOC removed, only Section 129.114(i)(1)(i) (A) thru (E) applies to the RACT 3 re-evaluation. The RACT 3 evaluation is as follows:

Section 129.114(i)(1)(i):

(A) A statement that explains how the owner or operator determined that there is no new pollutant specific air cleaning device, air pollution control technology or technique available.

In order to determine that there is no new pollutant specific air cleaning device, air pollution control technology or technique available for the foundry operations, ASC reviewed the USEPA's RACT/BACT/LAER Clearinghouse (RBLC) under process code 81.400 (Iron Foundry Processes) and electronic versions of permits available at the websites of various permitting agencies. The review identified the following permits with VOC BACT evaluations for iron foundry processes:

Facility Name	Year Issued	RBLC ID/ Permit Number	Process Description	Control Equipment selected
Grede-Reedsburg LLC	2019	18-RAB-012	Cold Box Coremaking	Wet Scrubber
Harrison Steel Castings Company	Pending	IN-SSM 045-42512-00002	North Shakeout	RTO
East Jordan Foundry LLC	2019	MI-0429/PTI 185-16A	EU Shakeout	RTO

In additional to the RBLC and operating permit evaluations, ASC obtained information contained in the EPA Air Pollution Control Cost Manual, Sixth Edition, November 2017 and online searches of various VOC abatement equipment vendors. The findings indicate that there are no new control technologies or techniques available for foundry operations. Based on DEP's review of RBLC data and other foundry RACT submissions, and contact with the American Foundry Society, DEP concurs with this assessment.

(B) A list of the technically feasible air cleaning devices, air pollution control technologies or techniques previously identified and evaluated under § 129.92(b)(1)-(3) included in the written RACT proposal submitted under § 129.99(d) and approved by the Department or appropriate approved local air pollution control agency under § 129.99(e).

In the RACT 3 application the facility identified the use of wet scrubbers for Cold Box Coremaking operations and RTO's for any of the foundry operations, as technically feasible control options.

(C) A summary of the economic feasibility analysis performed for each technically feasible air cleaning device, air pollution control technology or technique listed in clause (b) and the cost effectiveness of each technically feasible air cleaning device, air pollution control technology or technique as submitted previously under § 129.99(d) or as calculated consistent with the "EPA Air Pollution Control Cost Manual" (sixth edition), EPA/452/b-02-001, January 2002, as amended.

The regenerative thermal oxidizer (RTO) was the only control technology that was considered to be technically feasible for controlling VOC emissions from all the foundry operations at ASC. A wet scrubber is considered to be technically feasible for controlling VOC emissions from the coldbox coremaking operations. An economic analyses was performed and submitted previously under § 129.99(d) for estimating the cost of an RTO for each of the foundry operations: pouring casting ID #501, pouring casting ID #601, annealing ID #199, shakeout ID #503, shakeout ID #603, coremaking ID #201 and shell core ID #200.

As previously submitted under Section 129.99(d), ASC has an existing wet scrubber which controls VOC emissions from the facility's coldbox core making machines, Source ID #203. The use of the wet scrubber achieves the same level of control as an RTO, so no further evaluation under RACT 3 was performed for the core making machines. Below is a summary of the cost figures for the RACT 3 analysis based on 2022 dollars:

Source ID No.	Process	RTO Cost Effectiveness $/ton removed
199	Annealing	$79,474.34
200	Shell Core	$32,003.05
201	Coremaking	$38,085.42
501	Pouring Casting/Cooling	$62,750.02
503	Shakeout	$69,521.57
601	Pouring Casting/Cooling	$76,826.05
603	Shakeout	$95,750.13

(D) A statement that an evaluation of each economic feasibility analysis summarized in clause (c) demonstrates [whether] the cost effectiveness [is] equal to or greater than $7,500 per ton of NOx emissions reduced or $12,000 per ton of VOC emissions reduced.

The cost effectiveness analysis in the above table shows that an RTO would cost from $38,085.42 to $95,750.13 per ton of VOC removed for the pouring casting IDs #501 & #601, annealing ID #199, shakeout IDs #503 & #603, coremaking ID #201 and shell core ID #200. The results summarized for the RTO in the table demonstrates that RTO control is not cost effective for RACT 3 for any of the affected sources.

(E) additional information requested by the Department or appropriate approved local air pollution control agency that may be necessary for the evaluation of the analysis.

DEP did not require any additional information regarding the case-by-case aspect of the ASC RACT 3 analysis.

DEP ASSESSMENT:

DEP concurs that the technically feasible add-on-controls (except the existing Source 203 wet acid scrubber) remain cost-ineffective for RACT 3.

DEP has reviewed the source information, control technologies or measures, and cost analysis performed by the company. The Department also performed an independent analysis which included, the Department's continuous review of permit applications since the applicability date of RACT II, internet searches, BACT/RACT/LAER Clearinghouse search, contact with the American Foundry Association, and knowledge gained from the Department permitting staff participating in technical presentations by several vendors and manufacturers of pollution control technology. Based on our review of these materials, along with training and the expertise of the reviewing staff, the Department concludes that there are no new or updated air pollution control technologies available for the sources found at this facility, and that that good management practices, including an OM&M plan and appropriate recordkeeping, plus the use of the existing coremaking scrubber, as embodied in the existing approved case-by-case RACT 2 requirements in Group 008 in the facility's Title V permit, assure compliance with requirements for RACT 3 in § 129.111 - § 129.115 for the affected sources, as follows:

I. Requirements for all sources under this group

a.) The facility shall operate and maintain the pouring casting/ cooling, annealing, shell core machines, coremaking, cold box coremaking, and shakeout operations in a manner consistent with good operating and maintenance practices. Good work practices include but are not limited to storing VOC-containing materials in closed tanks or containers, cleaning up spills, and minimizing cleaning with VOC compounds.

b.) The permittee shall demonstrate the VOC content of each binder and chemical used in the foundry operation by maintaining VOC data sheets from the manufacturer.

c.) The permittee shall maintain monthly records of the following. These records shall be maintained onsite for 5 years and shall be made available to the Department upon request.

i. The monthly amount of material processed in each source in tons, separately.
ii. The monthly emissions of VOC emissions, in tons, for each source, separately and combined.

d.) The permittee shall submit reports to the Department no later than March 1 of each year. Each report shall include the VOC emissions for the previous operating year (January 1 to December 31).

II. Additional requirements for source 203

a.) The permittee shall utilize the existing wet acid scrubber for controlling VOC emissions.

b.) The scrubber shall be in operation at all times when one or more of the coldbox coremaking machines are in operation.

c.) The permittee shall continuously measure and display the pressure drop across the scrubber, the scrubbing pH and the scrubber solution recirculation flow rate.

d.) The permittee shall maintain records of all maintenance performed on the scrubber. These records shall be kept at the facility for a period of 5 years and be made available to the Department upon request.

e.) The permittee shall record the following parameters once per week while the coldbox coremaking machine(s) are in operation: the pressure drop across the scrubber, the scrubbing pH and the scrubber solution recirculation flow rate. The permittee shall maintain these records for a period of 5 years and be made available to the Department upon request.

III. Source Specific Throughput Restrictions

a.) The resin coated sand consumption from source 200, the shell core operation, shall not exceed 1,950 tons per 1 month period.

b.) The resin coated sand consumption from source 201, coremaking, shall not exceed 1,500 tons per 1 month period.

c.) The metal throughput to source 199, annealing operations, shall not exceed 7,000 tons per 1 month period.

d.) The throughput to sources 501, 503, 601, 603, foundry operations, shall not exceed 20,500 tons of metal per 1 month period.

e.) The resin consumption from source 203, coldbox coremaking operations, shall not exceed 7.6 tons per 1 month period.

Recommendations:

Unless otherwise required, the facility's RACT 3 submission does not need to be part of a plan approval or operating permit modification and no fee would be charged. No changes are needed to the facility's Title V operating permit, as the case-by-case determination for RACT 3 for this facility is the same as for RACT 2.

cc: OnBase

Weaver, William (DEP)

From:	Greg Wise <gwise@asc-es.com>
Sent:	Thursday, March 16, 2023 3:06 PM
To:	Weaver, William (DEP)
Cc:	Colton Lynn; Borst, William; Matty, Kelley; Hanlon, Thomas
Subject:	[External] RE: ASC/Anvil RACT 3 submission
Attachments:	RACT III - Case-by-case Reply.pdf

Good Afternoon,

Please find attached our re-submittal for the RACT III evaluation. I apologize for the delay as we were working with a consultant to complete this reply.

Thanks,
Greg

From: Weaver, William (DEP) <wiweaver@pa.gov>
Sent: Friday, January 20, 2023 12:05 PM
To: Greg Wise <gwise@asc-es.com>
Cc: Colton Lynn <clynn@asc-es.com>; Borst, William <wborst@pa.gov>; Matty, Kelley <kmatty@pa.gov>; Hanlon, Thomas <thanlon@pa.gov>
Subject: [EXTERNAL] ASC/Anvil RACT 3 submission

Greg,

DEP is in receipt of ASC/Anvil's RACT 3 submission (attached). Given the facility's status as a RACT 2 case-by-case facility, the attached submission does not provide adequate information as required by RACT 3. Please be advised that if a source was previously subject to a RACT II case-by-case determination, and that source has not been modified or changed, the owner or operator may, in lieu of doing another full case-by-case proposal for RACT III, submit a limited analysis, as specified in 25 Pa. Code Section 129.114(i). Unless otherwise required, this submission does not need to be part of a plan approval or operating permit modification and no fee would be charged.

The key for the abovementioned analysis is to make sure that you follow the details of the regulation. Below I have pasted the relevant excerpt of the regulation, with some ALL CAPS blue annotations that I have made (specific to your facility and not part of the regulation), and some additional yellow highlighting of the actual regulatory text, to better show the flow of it. As you can see from what is presented below, you will need to provide more than was included in your 12/16/22 submission to address this, however it will not need to be nearly as complicated as RACT 2 was. You or a consultant will need to do some research and analysis and justification, to demonstrate the conclusions reached for RACT 2 are still valid for RACT 3. Also attached, in case it helps, are DEP's RACT 2 memo and addendum. For your follow-up submission, please do not send a hard copy in the mail, but rather simply email a pdf to me.

Note: It is possible that the deficiency of your 12/16/22 submission could lead to your receiving a notice of violation from DEP, however we have not yet sufficiently evaluated this situation to make a final decision on that. In any case, we recommend that you correct and resubmit your RACT 3 submission, as outlined below, as soon as possible.

129.114 excerpt:

(i) An owner or operator subject to subsection (a), (b) or (c) and § 129.99 that has not modified or changed a source that commenced operation on or before October 24, 2016, and has not installed and commenced operation of a new source after October 24, 2016, may, in place of the alternative RACT requirement or RACT emission limitation required under subsection (d), submit an analysis, certified by the responsible official, in writing or electronically to the Department or appropriate approved local air pollution control agency on or before December 31, 2022, that demonstrates that compliance with the alternative RACT requirement or RACT emission limitation approved by the Department or appropriate approved local air pollution Control agency under § 129.99(e) (relating to alternative RACT proposal and petition for alternative compliance schedule) assures compliance with the provisions in subsections (a)—(c) and (e)—(h), except for sources subject to § 129.112(c)(11) or (i)—(k).

(1) [IF ASC DETERMINES THAT NO NEW VOC CONTROL TECHNOLOGIES ARE AVAILABLE, THEN THIS SECTION (1) WOULD APPLY. OTHERWISE YOU WOULD BE SUBJECT TO (2) BELOW] the owner or operator of a subject source or facility that evaluates and determines that there is no new pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis and that each technically feasible air cleaning device, air pollution control technology or technique evaluated for the alternative RACT requirement or RACT emission limitation approved by the Department or appropriate approved local air pollution control agency under § 129.99(e) had a cost effectiveness:

(i) equal to or greater than $7,500 per ton of NOx emissions reduced or $12,000 per ton of VOC emissions reduced shall include the following information in the analysis:

W. WEAVER NOTE: ASC MAY QUALIFY FOR THIS OPTION, BASED ON THE FOLLOWING COST TABLE FROM DEP'S RACT 2 MEMO FOR THE FACILITY:

ID	Source	RTO Cost Effectiveness $/ton
199	Annealing	$59,213.91
200	Shell Core	$23,833.59
201	Coremaking	$29,016.10
501	Pouring Casting/Cooling	$41,656.33
601	Pouring Casting/Cooling	$50,996.27
503	Shakeout	$51,749.38
603	Shakeout	$71,247.26

(A) a statement that explains how the owner or operator determined that there is no new pollutant specific air cleaning device, air pollution control technology or technique available.

(B) a list of the technically feasible air cleaning devices, air pollution control technologies or techniques previously identified and evaluated under § 129.92(b)(1)—(3) included in the written RACT proposal submitted under § 129.99(d) and approved by the Department or appropriate approved local air pollution control agency under § 129.99(e).

(C) a summary of the economic feasibility analysis performed for each technically feasible air cleaning device, air pollution control technology or technique listed in clause (b) and the cost effectiveness of each technically feasible air cleaning device, air pollution control technology or technique as submitted previously under § 129.99(d) or as calculated consistent with the "EPA Air Pollution Control Cost Manual" (sixth edition), EPA/452/b-02-001, January 2002, as amended.

(D) a statement that an evaluation of each economic feasibility analysis summarized in clause (c) demonstrates that the cost effectiveness remains equal to or greater than $7,500 per ton of NOx emissions reduced or $12,000 per ton of VOC emissions reduced.

(E) additional information requested by the Department or appropriate approved local air pollution control agency that may be necessary for the evaluation of the analysis.

(ii) [THIS SUBSECTION (ii) WOULD SEEM NOT TO APPLY TO ASC, AND SO I HAVE GRAYED IT OUT – W. WEAVER] less than $7,500 per ton of NOx emissions reduced or $12,000 per ton of VOC emissions reduced shall include the following information in the analysis:

(A) a statement that explains how the owner or operator determined that there is no new pollutant specific air cleaning device, air pollution control technology or technique available.

(B) a list of the technically feasible air cleaning devices, air pollution control technologies or techniques previously identified and evaluated under § 129.92(b)(1)—(3) in the written RACT proposal submitted under § 129.99(d) and approved by the Department or appropriate approved local air pollution control agency under § 129.99(e).

(C) a summary of the economic feasibility analysis performed for each technically feasible air cleaning device, air pollution control technology or technique listed in clause (b) and the cost effectiveness of each technically feasible air cleaning device, air pollution control technology or technique as submitted previously under § 129.99(d) or as calculated consistent with the "EPA Air Pollution Control Cost Manual" (sixth edition), EPA/452/b-02-001, January 2002, as amended.

(D) a statement that an evaluation of each economic feasibility analysis summarized in clause (c) demonstrates that the cost effectiveness remains less than $7,500 per ton of NOx emissions reduced or $12,000 per ton of VOC emissions reduced.

(E) a new economic feasibility analysis for each technically feasible air cleaning device, air pollution control technology or technique listed in clause (b) in accordance with § 129.92(b)(4).

(F) additional information requested by the Department or appropriate approved local air pollution control agency that may be necessary for the evaluation of the analysis.

(2) [IF ASC DETERMINES THAT NO NEW VOC CONTROL TECHNOLOGIES ARE AVAILABLE, THEN THIS SECTION WOULD NOT APPLY. OTHERWISE IT WOULD APPLY INSTEAD OF (1)] the owner or operator of a subject source or facility that evaluates and determines that there is a new or upgraded pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis shall:

(i) perform a technical feasibility analysis and an economic feasibility analysis in accordance with § 129.92(b).

(ii) submit the analyses performed under subparagraph (i) to the Department or appropriate approved local air pollution control agency for review.

(iii) provide additional information requested by the Department or appropriate approved local air pollution control agency that may be necessary for the evaluation of the analysis.

William Weaver | Air Quality Program Manager
Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue | Harrisburg, PA 17110
Phone: 717.705.4868
wiweaver@pa.gov

August Mack
ENVIRONMENTAL

717.399.9587 ▪ www.augustmack.com
941 Wheatland Avenue, Suite 202 ▪ Lancaster, Pennsylvania 17603

March 15, 2023

Pennsylvania Department of Environmental Protection
South-Central Regional Office
Engineering Services Chief
909 Elmerton Avenue
Harrisburg, Pennsylvania 17110-8200

Re: RACT III Analysis
ASC Engineered Solutions
Columbia, Pennsylvania
August Mack Project Number: JX0436.253

To Whom It May Concern:

ASC Engineered Solutions (ASC) is submitting the enclosed Reasonably Available Control technology (RACT III) analysis for volatile organic compound (VOC) emissions. This review is in response to an email request by the Pennsylvania Department of Environmental Protection (PADEP), dated January 20, 2023, for a RACT III analysis.

The result of the analysis is provided as Attachment A.

If you have any questions regarding this RACT III analysis, please feel free to contact August Mack Environmental, Inc. at 717.399.9587.

Sincerely,

Greg Wise

Greg Wise
EHS Manager

Attachment

ATTACHMENT A

RACT III Analysis

REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT) ANALYSIS

ASC Engineered Solutions

PROJECT #: JX0436.253

PREPARED FOR:
ASC Engineered Solutions
1411 Lancaster Avenue
Columbia, Pennsylvania 17512

SUBMITTED TO:
DEP South-Central Regional Office
909 Elmerton Ave.
Harrisburg, Pennsylvania 17110

August Mack
ENVIRONMENTAL

REASONABLY AVAILABLE CONTROL TECHNOLOGY ANALYSIS
ASC ENGINEERED SOLUTIONS
1411 LANCASTER AVENUE
COLUMBIA, PENNSYLVANIA 17512
AUGUST MACK PROJECT NUMBER JX0436.253

INTRODUCTION

ASC Engineered Solutions (ASC) is a cast (gray), malleable and ductile iron foundry located in Columbia, Pennsylvania. The facility produces pipe fittings, grooved products, threaded fittings, pipe hangers and custom castings. The foundry mixes and prepares the sand, manufactures the molds and cores, melts and casts the metals, and cleans and grinds the castings. The emission sources at the facility include preheating, charge handling, melting, annealing, pouring casting/cooling, shakeout, sand handling, coremaking, abrasive cleaning, grinding, parts washing, surface coating and various heating equipment.

The potential and allowable volatile organic compounds (VOCs) emissions from the ASC facility exceed 50 ton per year and it is located in an ozone transport region (OTR). Therefore, ASC is considered a major VOC emitting facility, as defined in 25 Pa. Code 129.91. As a major VOC emitting facility ASC is subject to reasonably available control technology (RACT) requirements according to 25 Pa. Code 129. Facilities for which presumptive RACT III provisions do not exist, as provided in 25 Pa. Code 129.112, and which are not subject to a requirement or emission limitation, or both, as established in § § 129.51, 129.52(a)—(k) and Table I categories 1—11, 129.52a—129.52e, 129.54—129.63a, 129.64—129.69, 129.71—129.75, 129.77 and 129.101—129.107, must comply with RACT through the preparation and submission of an alternative RACT III proposal, including a case-by-case control cost analysis, in accordance with 25 Pa. Code 129.114d. The foundry operations VOC emitting sources at ASC are required to prepare a VOC RACT III proposal.

25 Pa. Code Section 129.114(i) states that an owner or operator subject to subsection (a), (b) or (c) and § 129.99 that has not modified or changed a source that commenced operation on or before October 24, 2016, and has not installed and commenced operation of a new source after October 24, 2016, may, in place of the alternative RACT requirement or RACT emission limitation required under subsection 25 Pa. Code 29.114(d), submit an analysis, certified by the responsible official, in writing or electronically to the Department or appropriate approved local air pollution control agency on or before December 31, 2022, that demonstrates that compliance with the alternative RACT requirement or RACT emission limitation approved by the Department or appropriate approved local air pollution control agency under § 129.99(e) assures compliance with the provisions in subsections (a)—(c) and (e)—(h), except for sources subject to § 129.112(c)(11) or (i)—(k).

Sources Subject to Case-By-Case RACT Analysis

The VOC emitting sources at ASC subject to the case-by-case RACT analysis according to subsection 25 Pa. Code 29.114(i) are listed in the table below:

List of each air contamination source included in the RACT Analysis

Affected Source	Source Description	PTE VOC Emissions (tons/yr)
199	Annealing	4.16
200	Shell Core	31.19
201	Coremaking	41.0
203	Coldbox Coremaking	7.5
501	Pouring Casting/ Cooling	57.49
601	Pouring Casting/ Cooling	27.38
503	Shakeout	16.37

Affected Source	Source Description	PTE VOC Emissions (tons/yr)
603	Shakeout	7.80

CLAUSE A

No New Available Technology Determination [25 Pa. Code 29.114(i)(1)(i)(A)]

In order to determine that there is no new pollutant specific air cleaning device, air pollution control technology or technique available for the foundry operations, the following sources of information were reviewed to evaluate the technically feasible options for controlling VOC emissions from the foundry operations:

(a) USEPA's RACT/BACT/LAER Clearinghouse (RBLC) under process code 81.400 (Iron Foundry Processes) and electronic versions of permits available at the websites of various permitting agencies. The review identified the following permits with VOC BACT evaluation for iron foundry processes.

Facility Name	Year Issued	RBLC ID/ Permit No.	Process Description	Control Equipment Selected
Grede-Reedsburg LLC	2019	18-RAB-012	Cold Box Coremaking	Wet Scrubber
Harrison Steel Castings Company	Pending	IN - SSM 045-42512-00002	North Shakeout	Regenerative Thermal Oxidizer
East Jordan Foundry LLC	2019	MI-0429/PTI 185-16A	EU Shakeout	Regenerative Thermal Oxidizer

(b) In addition to the individual source determinations listed above, further evaluation including information contained in the EPA Air Pollution Control Cost Manual, Sixth Edition, November 2017 and online search of various VOC abatement equipment vendors using the links below:

https://www.genano.com/infobase/technology-options-for-voc-abatement

https://www.munters.com/en-us/solutions/pollution-control-and-voc-abatement/

(c) The findings indicate that there are no new pollutant specific air cleaning devices, air pollution control technologies or techniques available for foundry operations.

CLAUSE B

List of Technically Feasible Technology Identified [25 Pa. Code 29.114(i)(1)(i)(B)]

A list of the technically feasible air cleaning devices, air pollution control technologies or techniques previously identified and evaluated under § 129.92(b)(1)—(3) included in the written RACT proposal submitted under § 129.99(d) and approved by the Department or appropriate approved local air pollution control agency under § 129.99(e) are shown in Table 2 below.

TABLE 2
Technical Feasibility Analysis of VOC Control Options for Foundry Operations

Technology	Discussion of Technical Feasibility	Technically Feasible?
Recuperative Thermal Oxidation	Recuperative thermal oxidation units are generally used for low to moderate exhaust rates and medium to heavy solvent vapor concentrations. Based on a review of the RBLC, this type of control has been used for controlling VOC emissions from iron foundry cupolas but has not been typically used for other foundry processes. This would not be an appropriate control method for the high exhaust rate and low VOC exhaust streams.	No
Regenerative Thermal Oxidization	Regenerative thermal oxidizers offer control for high air flow rates with low VOC concentrations. A review of the RBLC indicates that this type of control has been used for controlling VOCs at a variety of facilities, including an asphalt shingle and coatings materials manufacturing facility, at dry mill fuel-grade ethanol manufacturing facilities, at oriented strand board manufacturing facilities, at a graphic arts and coating operation, at a tire retread manufacturing facility, at a refinery, for coating lines, at an animal feed supplement production facility, and at a municipal waste combustor plant, and at wood products production facility. RTOs have not typically been used for VOC control at foundries. This control is considered to be technically feasible for the foundry operations, however, and will be evaluated further in this analysis.	Yes

Technology	Discussion of Technical Feasibility	Technically Feasible?
Catalytic Oxidation	A review of the RBLC indicates that catalytic oxidation has generally been used to control VOCs for combustion turbines, engines, paint booths, and printing presses. This type of control has not been typically used in the foundry industry. While catalytic oxidation may be capable of handling higher air flow rates and lower VOC concentration exhaust streams, it is believed that the loading of other pollutants in the exhaust stream could foul the catalyst; therefore, this type of control is not considered technically feasible for this application.	No
Flares	Flares are typically used for exhaust streams with high VOC concentrations to sustain combustion. This type of control is used at such facilities as ethanol plants, petroleum refineries, and other chemical manufacturing plants. A review of the RBLC does not indicate that this type of control is typically used at foundries and it would not be a technically feasible option for the foundry operations based on the low VOC concentration of the exhaust stream.	No
Combustion Units	If available, existing combustion facilities at sources have been used to treat VOC-laden exhaust streams. Due to the low concentration of VOC in the exhaust stream of the foundry operations, this option is not considered technically feasible.	No
Adsorption	Adsorption processes can be used to capture VOCs in low concentration exhaust; however, it is typically only used for exhaust that is not loaded with other pollutants which can plug the bed. Based on a review of the RBLC, this type of control has been used in the printing and petroleum refinery industries. This type of control is not typically used in the foundry industry and based on the pollutant loading of the exhaust stream, adsorption is not considered technically feasible for the foundry operations as plugging of the adsorption media would likely occur.	No
Absorption (Wet Scrubber)	Absorption processes are typically used to recover products or purify gas streams with high concentrations of organic compounds such as in the ethanol production and soybean oil refinery industries. In the foundry industry, (packed bed scrubbers) wet scrubbers are sometimes used to control amine emissions from coldbox core making processes; however, it is not considered a technically feasible application for VOC control of emissions from the other coremaking or foundry operations due to the low concentration of VOC in the exhaust.	Yes – for coldbox coremaking amine processes. Not feasible for other foundry operations.

Technology	Discussion of Technical Feasibility	Technically Feasible?
Condensers	Condensers may be used to control VOC emissions with high VOC concentrations (usually greater than 5,000 ppmv). The RBLC shows that this type of control has been used for botanical extraction processes and petroleum refineries. Condensers are not typically used in the foundry industry for VOC control and are not considered technically feasible for the application of controlling VOC emissions from the foundry operations due to the low concentration of VOC in the exhaust.	No
Combined Adsorption and Thermal Incineration	Based on the above examination of the adsorption process alone, the combined control approach of adsorption and thermal incineration is not considered to be technically feasible for the foundry operations.	No
Advanced Oxidation	Advanced oxidation has been determined to be RACT for the foundry processes at some foundries in Indiana. This innovative technology has only been shown to be applicable to foundries that use greensand systems. ASC uses chemically bonded mold lines. Therefore, advanced oxidation is not considered to be technically feasible for the foundry operations	No
Innovative Technologies	There is not adequate documentation or application of other innovative technologies to make a determination of technical feasibility; therefore, no other innovative technologies have been further considered.	No
Low VOC Materials	The resins used in the foundry operations are chosen to meet product specifications. Since resin choices have a direct impact on the quality of the final product, the variability of resin VOC contents were not evaluated for technical feasibility.	No

CLAUSE C

Summary of Economically Feasible Control Technology

[25 Pa. Code 29.114(i)(1)(i)(C)]

A summary of the economic feasibility analysis performed for each technically feasible air cleaning device, air pollution control technology or technique listed in clause (B) and the cost effectiveness of each technically feasible air cleaning device, air pollution control technology or technique as submitted previously under § 129.99(d) are in Table 3 below:

TABLE 3
Control Option Cost Effectiveness for Foundry Operations

Control Technology	Control Efficiency
Regenerative Thermal Oxidizer	98%
Absorption - Wet Scrubber	98%

The regenerative thermal oxidizer was the only control technology that was considered to be technically feasible for controlling VOC emissions from all the foundry operations at ASC. A scrubber is considered to be technically feasible for controlling VOC emissions from the coldbox coremaking operations.

(a) Economic analyses were performed and submitted previously under § 129.99(d) in order to estimate the cost of the regenerative thermal oxidizer for each foundry operation (pouring casting ID501, pouring casting ID 601, annealing ID 199, shakeout ID 503, shakeout ID 603, coremaking ID 201 and shell core ID 200).

(b) As previously submitted under § 129.99(d), ASC has an existing wet acid gas scrubber which controls VOC emissions from the coldbox core machines (ID 203). The wet acid gas scrubber will achieve the same level of control (98%) as a regenerative thermal oxidizer and based on the RACT/BACT/LAER Clearinghouse data is the top ranked technology for controlling VOC emissions from the coremaking operations. Therefore, further evaluation of the coldbox coremaking operation is not required.

(c) A summary of the cost figures determined in the analysis is provided below:

Affected Source	Source Description	PTE VOC Emissions (tons/yr)	VOC Emissions Removed (tons/yr)	Annualized Cost ($/yr)	Cost Effectiveness ($/ton)
199	Annealing	4.16	4.08	$265,370.6	$65,092.9
200	Shell Core	31.19	30.56	$919,771.1	$40,125.8
201	Coremaking	41.0	40.18	$519,237.3	$13,043.7

Affected Source	Source Description	PTE VOC Emissions (tons/yr)	VOC Emissions Removed (tons/yr)	Annualized Cost ($/yr)	Cost Effectiveness ($/ton)
501	Pouring Casting/ Cooling	57.49	56.34	$1,963,448.4	$34,849.9
601	Pouring Casting/ Cooling	27.38	26.83	$1,024,021.1	$38,163.6
503	Shakeout	16.37	16.04	$905,292.3	$56,430.5
603	Shakeout	7.80	7.64	$531,831.5	$69,575.0

CLAUSE D

Summary [25 Pa. Code 29.114(i)(1)(i)(D)]

The cost effectiveness analyses show that the RTO would cost from $13,043 to $69,575 per ton of VOC removed for the pouring casting ID501, pouring casting ID 601, annealing ID 199, shakeout ID 503, shakeout ID 603, coremaking ID 201 and shell core ID 200. An evaluation of the economic feasibility analysis summarized for the regenerative thermal oxidizer in clause (C) demonstrates that the cost effectiveness remains equal to or greater than $12,000 per ton of VOC emissions reduced.

If you have any questions or require additional information, please do not hesitate to contact us at 717.684.4400.

Sincerely,

Greg Wise
EHS Manager

PM 12/30/22

RECEIVED

DEC 28 2022

DEP SOUTHCENTRAL REGION
AIR QUALITY

August Mack
ENVIRONMENTAL

717.399.9587 • www.augustmack.com
941 Wheatland Avenue, Suite 202 • Lancaster, Pennsylvania 17603

December 16, 2022

Pennsylvania Department of Environmental Protection
South-Central Regional Office
Engineering Services Chief
909 Elmerton Avenue
Harrisburg, Pennsylvania 17110-8200

Re: RACT III Notification and Proposal for VOCs
ASC Engineered Solutions
Columbia, Pennsylvania
August Mack Project Number: JW3305.253

To Whom It May Concern:

ASC Engineered Solutions (ASC) is submitting the enclosed Reasonably Available Control technology (RACT III) evaluation, exemption notification and proposal for volatile organic compound (VOC) emissions. The purpose of this review was to determine if ASC was a major source for volatile organic compounds (VOC) and/or nitrogen dioxide (NOx) with thresholds of 50 and 100 tons per year, respectively, and to determine RACT III compliance requirements for the facility. ASC is a major source for VOC emissions. Each individual emission unit was evaluated for their potential VOC and NOx emissions.

The RACT III report provides information on all the sources at the facility, including sources that are exempt from RACT III requirements, operations that are limited by the presumptive RACT III provisions, as provided in 25 Pa. Code 112, and sources that are subject to a requirement or emission limitation, or both, as established in § § 129.51, 129.52(a) – (k) and Table I categories 1 – 11, 129.52a – 129.52e, 129.54 – 129.63a, 129.64 – 129.69, 129.71 – 129.73, 129.75, 129.77 and 129.101 – 129.107.

The package consists of:

- RACT III Evaluation and Exemption Notification (Attachment A)
- Supporting Emissions Calculations (Attachment B)
- RACT III Proposal (Attachment C)

If you have any questions regarding this RACT III Proposal package, please feel free to contact August Mack Environmental, Inc. at 717.399.9587.

Sincerely,

Greg Wise

Greg Wise
EHS Manager

Attachment

pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

CHAPTER 129. STANDARDS FOR SOURCES ADDITIONAL RACT REQUIREMENTS FOR MAJOR SOURCES OF NOx AND VOCs FOR THE 2015 OZONE NAAQS

Written notification, 25 Pa. Code §§129.111 and 129.115(a)

25 Pa. Code Sections 129.111 and129.115(a) require that the owner and operator of an air contamination source subject to the final-form RACT III regulations submit a notification describing how you intend to comply with the final-form RACT III requirements, and other information spelled out in subsection 129.115(a). The owner or operator may use this template to notify DEP. Notification must be submitted in writing or electronically to the appropriate Regional Manager located at the appropriate DEP regional office. In addition to the notification required by §§ 129.111 and 129.115(a), you also need to submit an applicable analysis or RACT determination as per § 129.114(a) or (i).

Is the facility major for NOx?	**Yes ☐ No ☒**
Is the facility major for VOC?	**Yes ☒ No ☐**

FACILITY INFORMATION							
Facility Name	ASC Engineered Solutions						
Permit Number	36-05019	**PF ID if known**					
Address Line1	1411 Lancaster Avenue						
Address Line2							
City	**Columbia**	**State**	**PA**	**Zip**	**17512**		
Municipality		**County**	Lancaster				

OWNER INFORMATION					
Owner	ASC Engineered Solutions (Anvil International, Inc.)				
Address Line1	1411 Lancaster Avenue				
Address Line2					
City	**Columbia**	**State**	**PA**	**Zip**	17512
Email	hsowrey@asc-es.com	Phone	717.684.4400		

CONTACT INFORMATION					
Permit Contact Name	Greg Wise				
Permit Contact Title	EHS Manager				
Address Line	1411 Lancaster Avenue				
City	**Columbia**	**State**	**PA**	**Zip**	17512
Email	**gwise@asc-es.com**	Phone	717.342.0209		

Complete Table 1, including all air contamination sources that commenced operation on or before August 3rd, 2018. Air contamination sources determined to be exempt from permitting requirements also must be included. You may find this information in section A and H of your operating permit.

Table 1 - Source Information

Source ID	Source Name	Make	Model	Physical location of a source (i.e., building#, plant#, etc.)	Was this source subject to RACT II?
033	York-Shipley Boiler	Superior Boiler Works	4-5-304	Machine Shop	No
036A	Johnston Boiler	Johnston Boiler Company	PFTA-600-4G-15S	Courtyard	No
034	General Heating	Grinnel	60	Plantwide	No
130	Hot Dip Galvanizing #4 Kettle	CIC Pittsburgh	C221012	Galvanizing	No
131	Hot Dip Galvanizing #5 Kettle	CIC Pittsburgh	C201048	Galvanizing	No
190	Burn off Furnace	Pollution Control Products Co.	PRC1775795	Machine Shop	No
191	Surface Coating Dip Line	None	None	Machine Shop	Yes
196	Product Parts Washer	Jensen Fabricating Engineers, Inc.	11960	Machine Shop	No
197	Maintenance Parts Washer	Safety-Kleen Systems	81150 MDL 81	Maintenance	Yes
199	Annealing	Swindell Dressler	1435	North Foundry	Yes
200	Shell Core	Shalco	U-180	North Foundry	Yes
201	Coremaking	Demmler MFG Co.	315 HB Series	South Foundry	Yes
203	Coldbox Coremaking	Shalco	4-101 D/E	North Foundry	Yes
501, 601	All Foundry Pouring/Casting	501 – Disamatic 601 - Savelli	GFD DISA 230-B & 48213	South Foundry	Yes

Source ID	Source Name	Make	Model	Physical location of a source (i.e., building#, plant#, etc.)	Was this source subject to RACT II?
502, 602	All Foundry Casting Cooling	501 – Disamatic 601 - Savelli	GFD DISA 230-B & 48213	South Foundry	No
503, 603	All Foundry Shakeout	Various Shaker Conveyors	None	South Foundry	Yes

Complete Table 2 or 3 if the facility is a major NOx or VOC emitting facility. For the column with the title "How do you intend to comply", compliance options are:

- Presumptive RACT requirement under §129.112 (**PRES**),
- Facility-wide averaging (**FAC**) §129.113,
- System-wide averaging (**SYS**) §129.113, or
- Case by case determination §129.114 (**CbC**).

Please provide the applicable subsection if source will comply with the presumptive requirement under §129.112.

Table 2 – Method of RACT III Compliance, NOx

Source ID	Source Name	NOx PTE TPY	Exempt from RACT III (yes or no)	How do you intend to comply? (PRES, CbC, FAC or SYS)	Specific citation of rule if presumptive option is chosen
N/A					

Please complete Table 3 if the facility is a major VOC emitting facility. Please provide the applicable section if a source is complying with any RACT regulation listed in 25 Pa Code §§ 129.51, 129.52(a)—(k) and Table I categories 1—11, 129.52a—129.52e, 129.54—129.63a, 129.64—129.69, 129.71—129.73, 129.75 129.71—129.75, 129.77 and 129.101—129.107.

Table 3 – Method of RACT III Compliance, VOC

Source ID	Source Name	VOC PTE TPY	Exempt from RACT III (yes or no)	How do you intend to comply?	Specify citation of rule or subject to 25 Pa Code RACT regulation, (list the applicable sections)
191	Surface Coating Dip Line	16.69	No	CbC	25 Pa 129.52d
197	Maintenance Parts Washer	5.0	No	CbC	25 Pa 129.63
199	Annealing	4.16	No	CbC	25 Pa 129.99
200	Shell Core	31.19	No		
201	Coremaking	41.0	No		
203	Coldbox Coremaking	7.5	No		
501, 601	All Foundry Pouring/Casting	91.98	No		
503, 603	All Foundry Shakeout	25.75	No		

ATTACHMENT B

Supporting Emissions Calculations

ASC Engineered Solutions
COLUMBIA, Pennsylvania

RACT III Applicability and Proposed Limits (tons/yr)

Unit ID	Description	Max. Capacity	Units	PTE NOx	PTE VOC	NOX RACT III Applicability	VOC RACT III Applicability	RACT II Regulated?
033	Superior Mohawk Boiler	2.9	MCF/hr	1.27	0.07	Not Major for NOx (see PTE calculations). RACT III does not apply.	Each has PTE < 1 ton/yr. RACT III does not apply	No
36A	Johnston Boiler	25.1	MCF/hr	10.99	0.60			
034	General Heating (Various)	54.32	MCF/hr	23.79	1.31			
130	Hot Dip Galvanizing #4 Kettle	1.3	ton/hr	-	-			
131	Hot Dip Galvanizing #5 Kettle	1.9	ton/hr	-	-			
196	Parts Washer	1976	gal/yr	-	0.89			
188	Melting Operations	44	tons/hr	-	-			
189	Preheat/Charge Handling	40	tons/hr	-	-			
190	Burn Off Furnace	10	MCF/hr	1.19	0.76			
191	Surface Coating Dip Line	35000	gal/yr	-	16.69		Subject to requirements in 25 Pa. Code, Section 129	
197	Maintenance Parts Cleaners	10000	gals/yr	-	5.00			Yes
199	Annealing	9.5	tons/hr	41.61	4.16		See RACT III Proposal	
200	Shell Core	2.67	tons/hr	5.85	31.22			
201	Coremaking	3	tons/hr	6.57	40.62			
305	N/F Cleaning	25	tons/hr	-	-			
601	Savelli Pouring/Casting	10	tons/hr	0.44	27.38			
602	Savelli Casting/Cooling	10	tons/hr	-	-			
603	Savelli Shakeout	10	tons/hr	-	7.80			
501	Disa Pouring/Casting	21	tons/hr	0.92	57.49			Yes
502	Disa Casting Cooling	21	tons/hr	-	-			
503	Disa Casting Shakeout	21	tons/hr	-	16.37			Yes
504	Disa Sand System	200	tons/hr	-	-			No
505	Grinding	26	tons/hr	-	-			
506	Disa Casting Cleaning	21	tons/hr	-	-			
187	Sprue Crusher	16	tons/hr	-	-			
203	Coldbox Coremaking			0	8.44			Yes
				92.63	218.80			

PTE FOR GENERATORS, BOILERS, HEATERS
ANVIL INTERNATIONAL, LLC
AUGUST MACK PROJECT NO.: JQ0845.253

ASC Engineered Solutions
COLUMBIA, Pennsylvania

Emission Factors

Unit ID	Description	SCC Code	Unit	NOx	VOC
033	Superior Mohawk Boiler	10200603	lb/MCF	0.1	0.0055
36A	Johnston Boiler	10200602	lb/MCF	0.1	0.0055
034	General Heating	10200602	lb/MCF	0.1	0.0055
130	Hot Dip Galvanizing #4 Kettle	30400805	lb/ton	0	0
131	Hot Dip Galvanizing #5 Kettle	30400805	lb/ton	0	0
188	Melting Operations	30400303	lb/ton metal	0	0
189	Preheat/Charge Handling	30400315	lb/ton metal	0	0
190	Burn Off Furnace	39000699	lb/MCF	0.0271	0.0174
191	Surface Coating Dip Line	Mass Balance	lb/gal	0	0.95
196	Rust Inhibitor Parts Washer	Mass Balance	lb/gal	0	0.90
	Quaker Clean Parts Washer	Mass Balance	lb/gal	0	0.90
197	Maintenance Parts Cleaners	Mass Balance	-	0	1
199	Annealing	30400305	lb/ton metal	1	0.1
200	Shell Core	30400370	lb/ton sand	0.5	2.67
201	Coremaking	30400371	lb/ton sand	0.5	**1.39**
305	N/F Cleaning	30400340	lb/ton metal	0	0
601	Savelli Pouring/Casting	30400320	lb/ton metal	0.01	**0.625**
602	Savelli Casting/Cooling	30400325	lb/ton metal	0	0
603	Savelli Shakeout	30400331	lb/ton metal	0	**0.178**
501	Disa Pouring/Casting	30400320	lb/ton metal	0.01	**0.625**
502	Disa Casting Cooling	30400325	lb/ton metal	0	0
503	Disa Casting Shakeout	30400331	lb/ton metal	0	**0.178**
504	Disa Sand System	30400350	lb/ton sand	0	0
505	Grinding	30400340	lb/ton metal	0	0
506	Disa Casting Cleaning	30400340	lb/ton metal	0	0
187	Sprue Crusher	30400315	lb/ton metal	0	0
203	Coldbox Coremaking	Stack Test	lb/lb resin	0	**0.082**

Notes on non AP-42 Emission Factors:

(1) Shell core VOC emissions factor (of 2.67 lb VOC/ton resin coated sand used) developed based on stack test, 8/7/99

(2) Coremaking VOC emission factor developed based on stack test, 11/5/04. Given 0.0615 lb/lb resin x 1.13 % resin in sand x 2000 lb/ton = 1.39 lb VOC/ton sand

(3) Coldbox coremaking emission factor (of 0.082 lb VOC/lb resin used) developed based on stack test, 9/14/00

(4) Units 601, 603, 501 and 503 emission factors for PM and VOC are based on stack test.

PTE FOR GENERATORS, BOILERS, HEATERS
ANVIL INTERNATIONAL, LLC
AUGUST MACK PROJECT NO.: JQ0845.253

ASC Engineered Solutions
COLUMBIA, Pennsylvania

Uncontrolled Potential Emissions (tons/yr)

Unit ID	Description	Throughput Rate	Units	NOx	VOC
033	Superior Mohawk Boiler	2.9	MCF/hr	1.27	0.07
36A	Johnston Boiler	25.1	MCF/hr	10.99	0.60
034	General Heating (Various)	54.3	MCF/hr	23.78	1.31
130	Hot Dip Galvanizing #4 Kettle	1.3	ton/hr	-	-
131	Hot Dip Galvanizing #5 Kettle	1.9	ton/hr	-	-
188	Melting Operations	44	tons/hr	-	-
189	Preheat/Charge Handling	40	tons/hr	-	-
190	Burn Off Furnace	10	MCF/hr	1.19	0.76
191	Surface Coating Dip Line	35000	gal/yr	-	16.69
196	Rust Inhibitor Parts Washer	1705	gal/yr	-	0.77
	Quaker Clean Parts Washer	271	gal/yr	-	0.12
197	Maintenance Parts Cleaners	10000	gals/yr	-	5.00
199	Annealing	9.5	tons/hr	41.61	4.16
200	Shell Core	2.67	tons/hr	5.85	31.20
201	Coremaking	3	tons/hr	6.57	18.26
305	N/F Cleaning	25	tons/hr	-	-
601	Savelli Pouring/Casting	10	tons/hr	0.44	27.38
602	Savelli Casting/Cooling	10	tons/hr	-	-
603	Savelli Shakeout	10	tons/hr	-	7.80
501	Disa Pouring/Casting	21	tons/hr	0.92	57.49
502	Disa Casting Cooling	21	tons/hr	-	-
503	Disa Casting Shakeout	21	tons/hr	-	16.37
504	Disa Sand System	200	tons/hr	-	-
505	Grinding	26	tons/hr	-	-
506	Disa Casting Cleaning	21	tons/hr	-	-
187	Sprue Crusher	16	tons/hr	-	-
203	Coldbox Coremaking			0	8.44
Potential Emissions (tons/yr)				**92.62**	**196.42**

Coating Name and Number

Surface Coating Dip Line (Source 191) VOC Accounting

	Manu.	Product Code	Lbs of VOC per gallon coating solids	Desity of coating (D_C)	Weight percent total volatiles (W_V)	Weight percent solids (W_S)	Weight percent water (W_W)	Weight percent of exempt solvents (W_{EX})	Weight percent of VOC (W_O)	Volume percent of solids (V_N)	Surface Coating Process (as listed in Table 1 of Section 129.52)
058-033-000	Bradley	49544 Green	2.39	9.49	54.71%	45.29%	45.50%	0.00%	9.21%	36.57%	
058-033-003	Bradley	49732 Black	2.32	9.18	59.00%	41.00%	50.43%	0.00%	8.57%	33.99%	
058-034-001	Bradley	49543 Copper	2.11	10.2505	47.39%	52.61%	39.05%	0.00%	8.34%	40.58%	
058-033-001	Bradley	52274 Orange	2.65	9.2409	60.12%	39.88%	50.88%	0.00%	9.24%	32.23%	
058-033-002	Bradley	49755 Red	2.32	9.2184	56.32%	43.68%	47.11%	0.00%	9.21%	36.56%	
058-033-005 **	Bradley	54043 White	2.63	10.3092	50.72%	49.28%	41.45%	0.00%	9.27%	36.27%	

**Worst case surface coating used to determine source 191 emission factor

Shell Core (Source ID 200) Emission Factor Data

U180 Stack Test Emission Calculations

POTENTIAL EMISSIONS

four machines, as methane

	Run 1	Run 2	Run 3	Average	
THC's	5.96	6.06	6.19	6.07	lb/hr
Total CH4	4.36	4.62	5.34	4.77	lb/hr
Total non CH4	1.59	1.42	0.85	**1.28**	lb/hr
Total Sand	1023.51	920.39	934.50	959.47	lb/hr
Total Resin	27.23	24.48	24.86	25.52	lb/hr
THC's	26.10	26.56	27.13	26.59	tpy
Total CH4	19.11	20.25	23.39	20.89	tpy
Total non CH4	6.94	6.20	3.74	**5.63**	tpy
Total Sand	4,482.97	4,031.31	4,093.11	4,202.47	tpy
Total Resin	119.25	107.23	108.88	111.79	tpy

per machine, as methane

	Run 1	Run 2	Run 3	Average	
THC's	1.49	1.52	1.55	1.52	lb/hr
Total CH4	1.09	1.16	1.34	1.19	lb/hr
Total non CH4	0.40	0.35	0.21	**0.32**	lb/hr
Total Sand	255.88	230.10	233.63	239.87	lb/hr
Total Resin	6.81	6.12	6.21	6.38	lb/hr
THC's	6.53	6.64	6.78	6.65	tpy
Total CH4	4.78	5.06	5.85	5.22	tpy
Total non CH4	1.74	1.55	0.94	**1.41**	tpy
Total Sand	1,120.74	1,007.83	1,023.28	1,050.62	tpy
Total Resin	29.81	26.81	27.22	27.95	tpy

Emission Factor = 2.68 lb/ton
(lbs TNMHC/ton sand)
with 20% safety factor = 0.39 lb/hr
with 20% safety factor = 3.21 lb/ton

Emission Factor = 101 lb/ton
(lbs TNMHC/ton resin)

5% of resin volatilizes into NMHC
19% of resin becomes methane

Shell Core (Source ID 200) Maximum Annual Rate Derivation

	Max. Hourly Production (tons/hour)	Max. Annual Production (tons/year)	Estimated Annual Potential VOC Emissions* (ton/yr)	Notes
1991 Baseline (6 U180's)	2.0	17,520	23.4	Production rate as reported in Title V Permit
Nov. 1999 add 2 U180's (total 8 U180'	2.67	23,390	31.2	Added as an exempt VOC increase
Proposed addition of 2 U150's (total 8 U180's, 2 U150's)	3.07	**23,390**	31.2	Request limit on annual pre-coated resin sand consumption in order to cap annual production to 23,390 tpy

Net increase over 1991 baseline = 7.84

Net increase as a result of this project = **0.0**

* emission factor of 2.67 lb VOC/ton sand based on stack test performed 8/7/99, and reported in 15 day notice letter dated 10/29/99

VOC Emissions from Demmler Coremachines - Title V Source 201

Existing

Estimated Actual Annual VOC Emissions from Current Hot Box Resin System

	2007	2008	2009	Average
Annual hot box core resin* used (lbs) =	79,200	86,899	49,487	71,862
Calculated TNMHC Emission Factor (lbs VOC/lbs resin*) =	0.0805	0.0805	0.0805	0.0805
Average Annual Resin Concentration (lbs resin*/lb sand) =	1.88%	1.68%	1.67%	1.74%
Estimated annual VOC emissions** (as reported in AIMS reports) (tons) =	3.19	3.50	1.99	2.89

* includes resin and catalyst
**Estimated annual VOC emissionsfor hot box resin is calculated as follows:
(Avg. Annual Hot Box Resin Used) / 2000 lbs/ton x (Calculated TNMHC Emission Factor) = Estimated Annual VOC emissions from Hot Box
(71,862 lbs resin) / 2000 lbs/ton x (0.0805 lbs VOC/lbs resin) = 2.89 tons of VOC/year

Proposed

Estimated Actual Annual VOC Emissions from Proposed Warm Box Resin System

Proposed Warm Box Resin Concentration (lb resin*/lb sand) =	1.13%
Proposed Equivalent Quantity of Warm Box Resin Required** (lb resin) =	46,374
As-Tested Warm Box Resin Emission Factor (lbs VOC/lbs resin*) =	0.0615
Proposed Warm Box Annual Actual Emissions =	1.43

* includes resin and catalyst
** Proposed equivalent quantity of warm box resin is calculated as follows:
(Avg. Annual Hot Box Resin Used) / (Avg. Hot Box Resin Conc.) x (Proposed Warm Box Resin Conc.) = Proposed Avg. Annual Quantity of WB Resin
(71,862 lbs HB resin/year) / (1.74% HB Conc.) x (1.13% WB Conc.) = 46,374 lbs WB resin/year

Estimated Annual VOC Emissions from Existing Hot Box =	2.89	tons/year
- Estimated Annual VOC Emissions from Proposed Warm Box =	1.43	tons/year
Net Estimated Actual VOC Reduction as a Result of the Change from a Hot Box Resin System to a Warm Box Resin System =	1.47	**tons/year**

Coldbox Coremaking (Source ID 203) Emission Factor Data

COMPANY:	Supply Sales Co.	**W.O. #: 13328**
ADDRESS:	Columbia, PA	
DATE:	9/14/2000	
OBJECTIVE:	Complete an OCMA VOC study on customer sand mix	
SAND:	Whibco P50	
BALANCE:	C67591	
% RESIN / RATIO:	1.3% BOS, 55/45	
ROOM TEMP / ROOM HUMIDITY:	Mixing: 22°C - 50% RH In CT Room: 26°C / 46%	

Part 1 Lot # Part 2 Lot #	Isocure X-408 9287A Isocure X-808 Lab Made		
	Weight	**Incremental Wt. Loss**	**Total Wt. Loss**
Before Mix	4340.9	0.0	0.0
After Mix	4340.5	0.4	0.4
At 30 Min	4340.4	0.1	0.5
At 1 Hour	4340.3	0.1	0.6
At 2 Hour	4340.1	0.2	0.8
At 3 Hour	4340.0	0.1	0.9
At 4 Hour	4340.0	0.0	0.9
At 5 Hour	4339.9	0.1	1.0
At 6 Hour	4339.8	0.1	1.1
At 7 Hour	4339.8	0.0	1.1
At 8 Hour	4339.8	0.0	1.1
At 9 Hour	4339.7	0.1	1.2
At 10 Hour	4339.7	0.0	1.2
At 11 Hour	4339.6	0.1	1.3
At 12 Hour	4339.6	0.0	1.3
At 24 Hour	4339.3	0.3	1.6
At 48 Hour	4338.7	0.6	2.2
At 72 Hour	4338.4	0.3	2.5
At 168 Hour	4337.7	0.7	3.2
24 HR Wt. Loss (g.) due to VOC	1.6		
24 HR Pound VOC/Ton Sand	1.07		
24 HR Pound VOC/Pound Binder	0.041		
48 HR Wt. Loss (g.) due to VOC	2.2		
48 HR Pound VOC/Ton Sand	1.47		
48 HR Pound VOC/Pound Binder	0.056		
72 HR Wt. Loss (g.) due to VOC	2.5		
72 HR Pound VOC/Ton Sand	1.67		
72 HR Pound VOC/Pound Binder	0.064		
168 HR Wt. Loss (g.) due to VOC	3.2		
168 HR Pound VOC/Ton Sand	2.13		
168 HR Pound VOC/Pound Binder	0.082		

This Emissions Factor is used for emission calculations for VOC emissions off coldbox

Coldbox Coremaking Precontrol VOC Emissions Estimate Calculation

Proposed Resin Limit Increase		
SCC =	30400399	
Proposed annual resin limit =	91.5	tons/year
Existing annual resin limit =	61	tons/year
Proposed **INCREASE** in annual resin limit =	30.5	tons/year
Proposed maximum core production based on resin limit and 1.0% total resin concentration =	9,150	tons/year
Existing maximum core production based on resin limit and 1.0% total resin concentration =	6,100	tons/year
Proposed **INCREASE** in maximum core production based on resin limit and 1.0% total resin concentration =	3,050	tons/year

VOC Emissions due to Proposed Resin Limit Increase		
VOC emission factor established by OCMA test conducted 9/14/2000* =	0.082	lb VOC/lb resin
Estimated annual VOC emissions increase as a result of resin (proposed resin limit increase x VOC emission factor) =	**2.50**	tons/year

VOC Emissions Due to Triethylamine		
Estimated annual TEA consumption for one (1) Shalco SC-101 machine (lb/hr x 8760 hr/year)** =	**39.42**	tons/year

Total Estimated Pre-control VOC Emission Estimates for this Project		
Sum of VOC emssions from resin increase and TEA consumption =	**41.92**	tons/year

* see Attachment 4, Pages 41-43 for OCMA Study results.

** see Attachment 3, pages 11-12 for TEA consumption rate estimate.

Sources 501, 601, 503, 603 (DC440&430) Stack Test Emission Factor Calculations

Date: 11/11/1998

Run #	Disa #	Time	Product Run	Pounds Poured/Mold	Core Weight	Mold Count	Metal Poured		NMHC 430 (lb/hr)	NMHC 440 (lb/hr)	NMHC (lb/ton poured)
1	1	7:50	4-7000	33.762	N/A	468					
1	2	7:50	2-1/2 7050 90 ELL.	21.726	4.418	513					
1	1	8:50	4-7000	33.762	N/A	744					
1	2	8:50	2-1/2 7050 90 ELL.	21.726	4.418	779					
			4-7000	***33.762***		***276***	4.659156	tons			
			2-1/2 7050 90 ELL.	***21.726***		***266***	2.889558	tons			
						Total =	**7.548714**	tons	1.31	5.34	0.88
2	1	8:59	4-7000	33.762	N/A	796					
2	2	8:59	2-1/2 7050 90 ELL.	21.726	4.418	829					
2	2		2-1/2 7050 90 ELL.	21.726	4.418	1005					
2	2		4-7050 90 ELL.	36.822	9.81	0					
2	2	9:59	4-7050 90 ELL.	36.822	9.81	117					
2	1	9:59	4-7000	33.762	N/A	1133					
			4-7000	***33.762***		***337***	5.688897	tons			
			2-1/2 7050 90 ELL.	***21.726***		***176***	1.911888	tons			
			4-7050 90 ELL.	***36.822***		***117***	2.154087	tons			
						Total =	**9.754872**	tons	1.51	5.64	0.73
3	1	10:08	4-7000	33.762	N/A	1173					
3	2	10:08	4-7050 90 ELL.	36.822	9.81	164					
3	1	11:08	4-7000	33.762	N/A	1464					
3	2	11:08	4-7050 90 ELL.	36.822	9.81	442					
			4-7000	***33.762***		***291***	4.912371	tons			
			4-7050 90 ELL.	***36.822***		***278***	5.118258	tons			
						Total =	**10.03063**	tons	1.29	6.55	0.78

	430	440	NMHC (lb/ton poured)
Average (all in lb/ton)=	0.15	0.64	0.79
with 20% safety factor =	0.18	0.77	0.95
AP42 numbers =	1.2	0.14	
Average of both stack tests (10/20 and 11/11) =	**0.178**	**0.625**	
with 20% safety factor =	0.21	0.75	0.96

CLIENT	**ASC Engineered Solutions**
CITY	**Columbia, Pennsylvania**
SOURCE	**OTHER NATURAL GAS EMISSION UNITS**
	CRITERIA POLLUTANT EMISSIONS

	Pollutant	
	NOx	VOC
Natural Gas Emission Factor (lb/MMBtu)	0.10	0.0054

RATING (Btu)	LOCATION	PTE NOx TPY	VOC TPY
1,500,000	South Coreroom	0.64	0.04
3,000,000	South Coreroom	1.29	0.07
3,000,000	South Coreroom	1.29	0.07
1,500,000	Savelli Oper.	0.64	0.04
1,500	#2,3,4 DISAS	1.29	0.07
3,800,000	17A	0.64	0.04
1,500,000	S/F WALKWAY	0.00	0.00
3,000,000	SNAG GRIND/KO 5GO1	1.63	0.09
1,500,000	24 BELT	0.64	0.04
4000000	SF Mens Room	1.29	0.07
4800000	Coreroom	0.64	0.04
1,500,000	Grinders, 25 Belt	0.64	0.04
3,800,000	Disa #4 Desprue	1.63	0.09
3,000,000	Disa #3 Desprue	1.29	0.07
1,500,000	Disa #2 Desprue	0.64	0.04
1,000,000	Didion #1	0.43	0.02
1,000,000	Didion #2	0.43	0.02
1,000,000	Didion #3	0.43	0.02
100,000	Maintenance Shop	0.04	0.00
100,000	Maintenance Shop	0.04	0.00
100,000	Maintenance Shop	0.04	0.00
100,000	Maintenance Shop	0.04	0.00
60,000	N / F Maintenance Shop	0.03	0.00
60,000	N / F Maintenance Shop	0.03	0.00
75,000	Mens Locker Room Cartoning	0.03	0.00
1,000	Galvanizing	0.00	0.00
1,000	Galvanizing	0.00	0.00
40,000	Storeroom	0.02	0.00
60,000	Receiving	0.03	0.00
60,000	Receiving	0.03	0.00
40,000	Treatment Plant Building	0.02	0.00
125,000	Pot Repair Building	0.05	0.00
200,000	Mens Tapping Rest Room	0.09	0.00
3,240,000	Coreroom	1.39	0.08
3,240,000		1.39	0.08
320,000	Shipping	0.14	0.01
320,000	Shipping	0.14	0.01
320,000	Shipping	0.14	0.01
320,000	Shipping	0.14	0.01
320,000	Shipping	0.14	0.01
320,000	Shipping	0.14	0.01

ATTACHMENT C

RACT III Proposal

RACT III EXEMPTION NOTIFICATION

A RACT III requirement cut-off threshold was established generally for all facilities based on DEP's existing small source exemption rule 25 Pa. Code 129.111(c). This rule exempts sources of pollution with potential emissions less than 1 ton per year from RACT III permitting requirements. Therefore, emission units with potential emissions which fall below this threshold could be exempted from evaluation under this general establishment. See Attachment B for potential emissions calculations.

The plant consists of the following listed exempt emission units:

<table>
<tr><th>Source ID</th><th>Source Description</th><th>PTE NOx</th><th>PTE VOC</th><th>NOx RACT III Applicability</th><th>VOC RACT III Applicability</th></tr>
<tr><td>101A</td><td>Natural Gas Unit</td><td>0.83</td><td>0.05</td><td rowspan="12">Not Major for NOx. RACT III does not apply.</td><td rowspan="12">PTE < 1 ton/yr. RACT III does not apply.</td></tr>
<tr><td>101B</td><td>Natural Gas Unit</td><td>0.83</td><td>0.05</td></tr>
<tr><td>101C</td><td>Natural Gas Unit</td><td>0.85</td><td>0.05</td></tr>
<tr><td rowspan="2">101D</td><td>Adhesive Primer Booth</td><td>-</td><td>0.00</td></tr>
<tr><td>Natural Gas Unit</td><td>0.64</td><td>0.04</td></tr>
<tr><td>101F</td><td>Natural Gas Unit</td><td>2.14</td><td>0.12</td></tr>
<tr><td>101G</td><td>Adhesive Spray Booth</td><td>-</td><td>0.00</td></tr>
<tr><td>105</td><td>Natural Gas Unit</td><td>0.18</td><td>0.01</td></tr>
<tr><td>107</td><td>Space Heaters</td><td>10.18</td><td>0.56</td></tr>
<tr><td>Misc</td><td>Natural Gas-Fired Units</td><td>9.23</td><td>0.51</td></tr>
<tr><td>109</td><td>Natural Gas-Fired Emergency Engine</td><td>0.18</td><td>0.01</td></tr>
<tr><td>Boilers</td><td>Boilers</td><td>2.98</td><td>0.16</td></tr>
</table>

Source ID	Source Description	PTE NOx	PTE VOC	NOx RACT III Applicability	VOC RACT III Applicability
113	Parts Washer	-	0.39		

RACT III PROPOSAL

ASC is proposing the following RACT III provisions. There will be no changes to the permit as a result of this RACT III proposal.

Surface Coating Dip Line (ID 191)
The spray booths will comply with the RACT III requirements by meeting the following requirements under 25 Pa. Code, Section 129.52d:

Emission Limit

The coatings, as applied, shall not exceed the limits, as per 25 Pa. Code, Section 129.52d, Table 1, Catergory 10.

Coating Methods

Apply coatings using one or more of the following coating application methods:

1. Electrostatic coating.
2. Flow coating.
3. Dip coating, including electrodeposition.
4. Roll coating.
5. High volume-low pressure (HVLP) spray coating.
6. Airless spray coating.
7. Air-assisted airless spray coating.
8. Other coating application method if approved in writing by the Department prior to use.
9. The coating application method must be capable of achieving a transfer efficiency equivalent to or better than that achieved by HVLP spray coating.

Work Practice Requirements - The Permittee shall:

1. Store all VOC-containing coatings, thinners or coating-related waste materials, cleaning materials and used shop towels in closed containers.
2. Ensure that mixing and storage containers used for VOC-containing coatings, thinners or coating-related waste materials, cleaning materials are kept closed at all times, except when depositing or removing these materials.
3. Minimize spills of VOC-containing coatings, thinners or coating-related waste materials, cleaning materials and clean up spills immediately.

4. Convey VOC-containing coatings, thinners or coating-related waste materials, cleaning materials from one location to another in closed containers or pipes.
5. Minimize VOC emissions from storage, mixing and conveying equipment.

Implementation Schedule - The permittee shall complete implementation of the RACT III requirements within ninety (90) days of the issuance of the operating permit revision.

Compliance Testing and Monitoring - The permittee shall demonstrate the VOC content of each coating, as applied, by maintaining VOC data sheets from the manufacturer. For mixed coatings, the permittee may use calculated VOC content values and mixed ratio documentation from the manufacturer to demonstrate compliance.

Recordkeeping - The permittee shall maintain monthly records for each coating, thinner and other components to demonstrate compliance:

1. The coating, thinner or component name and identification number.
2. The volume used.
3. The mix ratio.
4. The density.
5. The weight percent of total volatiles, water, solids and exempt solvents.
6. The volume percent of total volatiles, water and exempt solvents.
7. The volume percent of solids.
8. The VOC content of each coating, thinner and other components, and cleaning solvent, as supplied.
9. The VOC content of each coating, thinner and other components, as applied.
10. The calculations performed for each applicable requirement.

Reporting - The permittee shall submit reports within thirty (30) days upon request by the Department.

Parts Cleaners (ID 197)

Solvents will comply with the RACT III requirements by meeting the following requirements under 25 Pa. Code, Section 129.63:

1. The freeboard ratio of the parts cleaners shall be 0.50 or greater.
2. The Permittee shall not use any solvent with a vapor pressure of 1.0 millimeter of mercury (mm Hg) or greater and containing greater than 5% VOC by weight, measured at 20^0C (68^0F).

Work Practice Requirements - The permittee shall operate the cold cleaning machines in accordance with the following procedures:

1. Waste solvents shall be collected and stored in closed containers. The closed container may have a device which allows pressure relief, but does not allow liquid solvent to drain from the container.
2. Flushing of parts using a flexible hose or other flushing device shall be performed only within the cold cleaning machine. The solvent spray shall be a solid fluid stream, not an atomized or shower spray.
3. Sponges, fabrics, wood, leather, paper products and other absorbent materials may not be cleaned in the cold cleaning machine.
4. Air agitated solvent baths may not be used.
5. Spills of materials containing VOCs shall be cleaned up immediately.
6. Equip the degreaser with a cover that shall be closed at all times except during the cleaning of parts or the addition or removal of solvent.
7. Provide a permanent, conspicuous label summarizing the operating requirements and the following:

   (a) Cleaned parts shall be drained at least 15 seconds or until dripping ceases. Parts having cavities or holes shall be tipped or rotated while the part is draining. During draining, tipping or rotating, the parts shall be positioned so that solvents drain directly back to the cold cleaning machine.
   (b) Work fans should be located and positioned so that they do not blow across the opening of the degreasing unit.

Recordkeeping - The permittee shall maintain monthly records for each cleaning solvent to demonstrate compliance:

1. The name and address of the supplier.
2. The type of solvent including the product or vendor identification number.
3. The vapor pressure of the solvent measured in mm Hg at 20^0C (68^0F).

Annealing (ID 199), Shell Core (ID 200), Coremaking (ID201), Coldbox Coremaking (ID 203), Disa Pouring/Cooling, Disa Casting/Shakeout, Savelli Pouring/Cooling, and Savelli Casting/Shakeout

The annealing, shell core, coremaking, coldbox coremaking, pouring/cooling, and casting/shakeout will comply with the RACT III requirements by meeting the following requirements under 25 Pa. Code, Section 129.99:

1. The facility shall operate and maintain the pouring casting/cooling, annealing, shell core machines, coremaking, cold box coremaking, and shakeout operations in a manner consistent with good operating and maintenance practices. Good work practices, such as storing VOC-containing materials in closed tanks or

containers, cleaning up spills, and minimizing cleaning with VOC compounds, will be implemented to control VOC emissions.

2. The permittee shall demonstrate the VOC content of each binder and chemical used in the foundry operation by maintaining VOC data sheets from the manufacturer.

3. The permittee shall maintain monthly records of the following. These records shall be maintainted on file for 5 years and shall be made available to the Department upon request:

   (a) The monthly amount of material processed in IDs 199, 200, 201, 203, 501, 503, 601 and 603, in tons, separately;

   (b) The monthly emissions of VOC emissions, in tons, for IDs 199, 200, 201, 203, 501, 503, 601 and 603, separately and combined, calculated by the following equations:

VOC emissions, ID199 = (0.1 lb VOC/ton metal)x(the actual monthly amount of material processed in tons)/(2,000 lbs/ton)

VOC emissions, ID200 = (2.67 lb VOC/ton sand)x(the actual monthly amount of material processed in tons)/(2,000 lbs/ton)

VOC emissions, ID201 = (3.09 lb VOC/ton sand)x(the actual monthly amount of material processed in tons)/(2,000 lbs/ton)

VOC emissions, ID203 = ((monthly resin usage x 0.082 lb VOC/lb resin) + (monthly catalyst (TEA) usage x scrubber reduction efficiency))/(2,000 lbs/ton). Scrubber efficiency is 98%.

VOC emissions, ID501, 601 = (0.625 lb VOC/ton metal)x(the actual monthly amount of material processed in tons)/(2,000 lbs/ton)

VOC emissions, ID503, 603 = (0.178 lb VOC/ton metal)x(the actual monthly amount of material processed in tons)/(2,000 lbs/ton)

4. The permittee shall submit reports to the Department no later than March 1 of each year. Each report shall include the VOC emissions for the previous operating year (January 1 to December 31).

5. The resin coated sand consumption from the shell core operation shall not exceed 1,950 tons per 1 month period.

6. The resin coated sand consumption from coremaking shall not exceed 1,500 tons per 1 month period.

7. The throughput to the foundry operations IDs 501, 503, 601 and 603 shall not exceed 20,500 tons of metal per 1 month period.

8. The metal throughput to the annealing operation shall not exceed 7,000 tons per 1 month period.

9. The resin consumption from the coldbox coremaking operation shall not exceed 7.6 tons per 1 month period and shall meet the following requirements:

   (a) Utilizing the existing wet acid scrubber for controlling VOC emissions.
   (b) The scrubber shall be in operation at all times when one or more of the coldbox coremaking machines are in operation.
   (c) The permittee shall continuously measure and display the pressure drop across the scrubber, the scrubbing pH and the scrubber solution recirculation flow rate.
   (d) Maintain records of the monthly usage of resin in the coldbox coremaking machines.
   (e) Maintain records of all maintenance performed on the scrubber.
   (f) Record the following parameters once per week while the coldbox coremaking machine(s) are in operation: the pressure drop across the scrubber, the scrubbing pH and the scrubber solution recirculation flow rate.
   (g) Maintain records onsite for a period of 5 years and make them available to the Department upon request.