UNDER PUBLIC REVIEW SMAQMD BACT CLEARINGHOUSE

CATEGORY: **COATING-PLASTIC PARTS**

BACT Size: Minor Source **PAINT SPRAY BOOTH**

BACT Determination Number: 188	**BACT Determination Date:**

Equipment Information

Permit Number: 25995
Equipment Description: PAINT SPRAY BOOTH
Unit Size/Rating/Capacity: ≤ 4,700 lb VOC/year -Exc. Plsr. Craft & Bus. Mchn.
Equipment Location: T.M. COBB CO
8490 ROVANA CIR.
SACRAMENTO, CA

BACT Determination Information

ROCs	**Standard:**	
	Technology Description:	Compliance with District Rule 468, except as noted in footnote (A) of the BACT table in the BACT evaluation
	Basis:	Achieved in Practice
NOx	**Standard:**	
	Technology Description:	
	Basis:	
SOx	**Standard:**	
	Technology Description:	
	Basis:	
PM10	**Standard:**	
	Technology Description:	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equiivalent
	Basis:	Achieved in Practice
PM2.5	**Standard:**	
	Technology Description:	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equiivalent
	Basis:	Achieved in Practice
CO	**Standard:**	
	Technology Description:	
	Basis:	
LEAD	**Standard:**	
	Technology Description:	
	Basis:	

Comments: This BACT exlcudes pleasure craft and busniess machine coating operations. VOC: Reference BACT evaluation for footnote (A) requirements.

T-BACT was determined to be compliance with NESHAP HHHHHH or PPPP where applicable.

District Contact: Felix Trujillo, Jr. Phone No.: (916) 874 - 7357 email: ftrujillo@airquality.org

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UNDER PUBLIC REVIEW SMAQMD BACT CLEARINGHOUSE

CATEGORY: **COATING - PLASTIC PARTS**

BACT Size: Minor Source BACT **COATING OPERATION**

BACT Determination Number: 189	**BACT Determination Date:**

Equipment Information

Permit Number: 25995
Equipment Description: COATING OPERATION
Unit Size/Rating/Capacity: > 4,700 lb VOC/year -Exc. Plsr. Craft & Bus. Mchn.
Equipment Location: T.M. COBB CO
8490 ROVANA CIR.
SACRAMENTO, CA

BACT Determination Information

ROCs	**Standard:**	
	Technology Description:	1.Compliance with District Rule 468, except where noted in footnote (A) of the BACT table in the BACT evaluation and VOC control system with ≥ 90% efficiency, or 2.Use of low-VOC materials resulting in an equivalent emission reduction
	Basis:	Achieved in Practice
NOx	**Standard:**	
	Technology Description:	
	Basis:	
SOx	**Standard:**	
	Technology Description:	
	Basis:	
PM10	**Standard:**	
	Technology Description:	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent
	Basis:	Achieved in Practice
PM2.5	**Standard:**	
	Technology Description:	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent
	Basis:	Achieved in Practice
CO	**Standard:**	
	Technology Description:	
	Basis:	
LEAD	**Standard:**	
	Technology Description:	
	Basis:	

Comments: This BACT excludes pleasure craft and business machine coating operations. VOC: Reference BACT evaluation for footnote (A) requirements.

T-BACT was determined to be compliance with NESHAP HHHHHH or PPPP where applicable.

District Contact: Felix Trujillo, Jr. Phone No.: (916) 874-7357 email: ftrujillo@airquality.org

777 12th Street, Third Floor

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Sacramento, CA 95814

BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION

DETERMINATION NO.:	188 & 189
DATE:	December 17, 2018
ENGINEER:	Felix Trujillo, Jr.
Category/General Equip Description:	Plastic Parts Coating Operation – Excluding Pleasure Craft and Business Machine Coating Operations
Equipment Specific Description:	Paint Spray Booth
Equipment Size/Rating:	≤ 4,700 lbs VOC/year, Minor Source (BACT #188) >4,700 lbs VOC/year, Minor Source (BACT #189)
Previous BACT Det. No.:	N/A

This BACT determination will be made for plastic parts coating operations, except those involved in pleasure craft and business machine coating operations. Pleasure craft and business machine coating operations will be covered under a separate BACT.

This BACT was determined under the project for A/C 25995 (T.M. Cobb), which is a fiberglass/wood door coating operation. Since there are no exemptions in the District's plastic parts coating rule (Rule 468) for the coating of fiberglass, this BACT will apply to all plastic parts coating operations that are subject to Rule 468.

BACT/T-BACT ANALYSIS

A. ACHIEVED IN PRACTICE (Rule 202, §205.1a):

The following control technologies are currently employed as BACT/T-BACT for plastic parts coating operations by the following agencies and air pollution control districts:

US EPA

BACT

Source: EPA RACT/BACT/LAER Clearinghouse (See Attachment A)

Plastic Parts & Products Surface Coating (Process Code 41.016)	
VOC	1. For spray booths with an exhaust flow rate greater than or equal 30,000 acfm, use an air pollution control device when it is cost-effective; otherwise, use low VOC materials achieved in practice and high transfer efficiency equipment. [95% overall control, 58.6 lb/hour uncontrolled] 2. For spray booths with an exhaust flow rate less than 30,000 acfm, use low VOC materials achieved in practice and high-transfer efficiency equipment. [4.35 lb/gallon weighted daily average($DAVG_{vw}$)](A)
NOx	No standard
SOx	No standard
PM10	Use of HVLP spray guns, electrostatics spray guns, and electrostatic rotary atomizers for spray coating operations. Good work practices.
PM2.5	No standard
CO	No standard

RBLC ID: IN-0154 & IN-0267

(A) Calculated as follows:

$$DAVGvw = \sum_{i=1}^{n} (Ai \times Bi)/C$$

Where:

A = daily gallons of each coating used (minus water and exempt solvents)
B = lbs. VOC/gal. coating (minus water and exempt solvents)
C = total daily gallon coatings used (minus water and exempt solvents)
N = number of all coatings used

T-BACT

There are no T-BACT standards published in the clearinghouse for this category, but the NESHAP standards (see 40 CFR, Part 63 standards below) represent Maximum Achievable Control Technology (MACT) or Generally Available Control Technology (GACT) for HAPs and can therefore be considered T-BACT.

RULE REQUIREMENTS

Control Techniques Guidelines for Miscellaneous Metal Parts and Plastic Parts Coatings (EPA-453/R- 08-003)

Although not a promulgated rule, this guideline identifies Reasonably Available Control Measures and Reasonably Available Control Technology. These guidelines establish achieved in practice control measures that are used by state and local agencies when developing rules for their State Implementation Plans, and are used by U.S. EPA when approving those rules. District Rule 468 (Adopted 03/22/2018) was adopted to meet these guidelines.

40 CFR 63 Subpart HHHHHH – National Emission Standards for Hazardous Air Pollutants for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources

This subpart applies to spray application of coatings containing compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd), collectively referred to as the target HAP to any part or product made of plastic. This subpart also applies to operations using MeCl for the removal of dried paint.

General Requirements

For paint stripping operations using MeCl:

A. Implement management practice to minimize the evaporative emissions of MeCl. The management practices must address practices in paragraphs 1 through 5, as applicable.
    1. Evaluate each application to ensure there is a need for paint stripping.
    2. Evaluate each application where a paint stripper containing MeCl is used to ensure that there is no alternative paint stripping technology that can be used.
    3. Reduce exposure of all paint strippers containing MeCl to the air.
    4. Optimize application conditions when using paint strippers containing MeCl to reduce MeCl evaporation.
    5. Practice proper storage and disposal of paint strippers containing MeCl.

For coatings that may potentially contain the target HAP compounds of chromium, lead, manganese, nickel, or cadmium:

A. All spray-applied coatings must be performed in a spray booth, preparation station, or mobile enclosures that are fully enclosed with a full roof with four walls or complete side curtains. The enclosure must be ventilated at a negative pressure and equipped with a filter system that can achieve at least 98% capture efficiency.
B. Coatings must be applied with HVLP spray equipment, electrostatic application, airless spray gun, air-assisted airless spray gun, or an equivalent technology for which written approval has been obtained from the U.S. EPA.
C. Spray gun cleaning must be conducted such that an atomized mist or spray of gun cleaning solvent and paint residue is not created outside of a container that collects used cleaning solvent.
D. All new and existing personnel who spray-apply surface coatings must be trained in the proper application of surface coatings.
E. For new affected sources, submit an initial notification to EPA no later than 180 days after initial startup or July 7, 2008, whichever is later. For an existing affected source, submit the initial notification no later than January 11, 2010.

California Air Resources Board (CARB)

BACT
Source: CARB BACT Clearinghouse
There are no applicable BACT determinations posted on CARB's BACT clearinghouse.

T-BACT
There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS
There are no statewide rule requirements for coating of plastic parts.

Sacramento Metropolitan AQMD

BACT
Source: SMAQMD BACT Clearinghouse

All; Doors and Windows Coating Operation	
VOC	VOC Content as applied not to exceed 1.0 lb/gal; high transfer efficiency application equipment.
NOx	No standard
SOx	No standard
PM10	Dry particulate filters
PM2.5	No standard
CO	No standard

*Note: This BACT is expired and applied to vinyl frames for windows and doors.

As noted above, this BACT applied to vinyl frames for windows and doors. The BACT listed a VOC content of 1.0 lb/gal, which was based on SCAQMD Rule 1145 limits for one and two component coatings. This fiberglass door coating operation includes a clear topcoat that is above this limit. Rule 1145 exempts clear coatings from the requirements of the rule. Therefore, the clear coat used in this operation would not be subject to the limit of Rule 1145 and would default to the applicable limit of SMAQMD District Rule 468 for BACT purposes. Thus, the VOC BACT standards of the expired BACT will not be referenced for this new BACT determination.

T-BACT
The above BACT determination did not address T-BACT

RULE REQUIREMENTS
Rule 468 – Surface Coating of Plastic Parts and Products (Adopted 3/22/2018)
SMAQMD Rule 468, SJVAPCD Rule 4603, and SCAQMD Rules related to coating of plastic parts are all based on EPA-453/R-08-003 "*Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings*," US EPA, September 2008, which is the basis for Reasonably Available Control Technologies (RACT). All three rules were adopted to comply with each District's respective portion of the State Implementation Plan (SIP). Since these rules are based on similar guidelines, a rule comparison has been added under Section A.2.

South Coast AQMD

BACT

Source: SCAQMD BACT Guidelines (Part D) for Non-Major Polluting Facilities, pages 54 & 116 (10/20/2000)

Spray Booth – Other Types	
VOC	VOC Emissions < 14,040 lb/year (1,170 lb/month) (A) A. Compliance with SCAMQD Rule 1145 VOC Emissions ≥ 14,040 lb/year (1,170 lb/month) (A) A. Compliance with SCAQMD Rule 1145, and VOC Control System with ≥ 90% Collection Efficiency and ≥ 95% Destruction Efficiency, or B. Use of Super Compliant Materials (< 5% VOC by weight): or C. Use of Low-VOC Materials Resulting in an Equivalent Emission Reduction
NOx	No standard
SOx	No standard
PM10	Dry filters or water wash
PM2.5	No Standard
CO	No standard

(A) Monthly emissions have been annualized to be consistent with District methodology for determining cost effectiveness for add-on control (Cost per ton per year of emissions reduced).

T-BACT

The above BACT determination did not address T-BACT.

RULE REQUIREMENTS

Regulation IX, Rule 1145 – Plastic, Rubber, Leather, and Glass Coatings (Last amended 12/04/2009)

SMAQMD Rule 468, SJVAPCD Rule 4603, and SCAQMD Rules related to coating of plastic parts are all based on EPA-453/R-08-003 "*Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings*," US EPA, September 2008, which is the basis for Reasonably Available Control Technologies (RACT). All three rules were adopted to comply with each District's respective portion of the State Implementation Plan (SIP). Since these rules are based on similar guidelines, a rule comparison has been added under Section A.2.

San Joaquin Valley APCD

BACT
Source: SJVAPCD BACT Guideline 4.5.4 (12/16/1999)

Plastic Parts and Products Coating	
VOC	The use of HVLP spray guns, an enclosed gun cleaner, and low-VOC coatings (2.8 lb VOC/gal, as applied, less water and exempt solvents)
NOx	No standard
SOx	No standard
PM10	Enclosed paint booth with dry filters and use of HVLP spray guns
PM2.5	No standard
CO	No standard

*Note: SJVAPCD Rule 4603 was amended to include the coating of plastic parts on 09/17/2009. The current limit for a general one-component coating is 2.3 lb/gal and for a two-component coating is 3.5 lb/gal. BACT Guideline 4.5.4 did not specify if it applied to a one or two component coating.

T-BACT
The above BACT determination did not address T-BACT

RULE REQUIREMENTS:
Rule 4603 – Surface Coating of Metal Parts and Products, Plastic Parts and Products, And Pleasure Crafts (Last amended 09/17/2009)

SMAQMD Rule 468, SJVAPCD Rule 4603, and SCAQMD Rules related to coating of plastic parts are all based on EPA-453/R-08-003 "*Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings*," US EPA, September 2008, which is the basis for Reasonably Available Control Technologies (RACT). All three rules were adopted to comply with each District's respective portion of the State Implementation Plan (SIP). Since these rules are based on similar guidelines, a rule comparison has been added under Section A.2.

San Diego County APCD

BACT
Source: NSR Requirements for BACT (6/2011)

General Surface Coating < 10 gallons of coating/day	
VOC	Compliance with SDAPCD Rule 66.1 – Miscellaneous Surface Coating Operation and Other Processes Emitting Volatile Organic Compounds
NOx	No standard
SOx	No standard
PM10	Spray booth equipped with overspray filters
PM2.5	No standard

General Surface Coating < 10 gallons of coating/day	
CO	No standard

T-BACT
There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS
Regulation 4, Rule 66.1 – Miscellaneous Surface Coating Operations and Other Processes Emitting Volatile Organic Compounds (Last Amended 05/11/2016)

This rule is applicable to all surface coating, solvent cleaning or other operations or processes that may result in emissions of VOCs and are not subject to or exempt from another District Rule. SDAPCD does not have a plastic parts coating rule.

This rule requires the following for Surface Coating Operations:
1. VOC emissions from the operation must be less than 5 tons per year, or
2. VOC emissions are reduce by air pollution control device that meets a capture and control efficiency of at least 85% by weight, or
3. Coatings that meet the following limits:

Coating	VOC Content less water and exempt compounds grams/liter, (lb/gal)	
	Air-dried	Baked
General	420 (3.5)	360 (3.0)

This rule requires the following for Surface Preparation and Solvent Cleaning Operations:
A. the total VOC vapor pressure of cleaning material is 8 mm Hg at 20°C (68°F) or less, or
B. the VOC content of cleaning material complies with the following limits expressed as either grams of VOC per liter of material (g/L) or pounds of VOC per gallon of material (lb/gal), as used:

Surface Preparation and Cleaning Solvent	VOC Content as applied grams/liter, (lb/gal)
General	50 (0.42)

Bay Area AQMD

BACT

Source: BAAQMD BACT Guideline 84.1.1 (8/30/1991)

Flow Coater, Dip Tank and Roller Coater	
VOC	VOC Emissions < 13,140 lb/year (36 lb/day uncontrolled) (A) Not determined VOC Emissions ≥ 13,140 lb/year (36 lb/day uncontrolled) (A) Coating with Lower VOC Content than Required by Applicable Rules, and Emissions from Coating Area, Flash Off Area, Drying Area, and Oven Vented to Control Device Achieving ≥ 90% Overall Efficiency
NOx	No standard
SOx	No standard
PM10	No standard
PM2.5	No standard
CO	No standard

(A) Daily emissions have been annualized to be consistent with District methodology for determining cost effectiveness for add-on control (Cost per ton per year of emissions reduced).

T-BACT

There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS

Regulation 8, Rule 31 – Surface Coating of Plastic Parts and Products (last amended 10/16/2002)

VOC Content of Coatings for Miscellaneous Plastic Parts and Coatings

Coating Category	VOC Content, less water grams/liter, (lb/gal)
General	340 (2.8)
Flexible Coatings	
Flexible Primer	490 (4.1)
Color Topcoat	450 (3.8)
Base Coat/clear coat (combined system)	540 (4.5)
Specialty Coatings	
Camouflage	420 (3.5)
Conductive	325 (2.7)
Metallic Topcoat	420 (3.5)
Extreme Performance	750 (6.2)

Coating Category	VOC Content, less water grams/liter, (lb/gal)
High Gloss	420 (3.5)
Optical	800 (6.7)

Surface Preparation and Cleaning Solvent	VOC Content as applied grams/liter, (lb/gal)
General	50 (0.42)

A.2: COMPARISON OF DISTRICT RULE REQUIREMENTS FOR MISCELLANEOUS PLASTIC PARTS AND PRODUCTS:

Table 1: VOC Content of Coatings for Miscellaneous Plastic Parts and Coatings

Coating Category	VOC Content less water and exempt compounds, grams/liter		
	SMAQMD Rule 468	SCAQMD Rule 1145	SJVAPCD Rule 4603
General One-Component Coatings	280	120	280
General Multi-Component Coatings	420	120	420
Electric Dissipating Coatings and Shock Free Coatings	800	360	800
Extreme Performance Coatings: One-component Two-component	 280 420	 120 420	 280 420
Metallic Coatings	420	420	420
Military Specification Coatings: One-component Two-component	 340 420	 340 420	 340 420
Mold Seal Coatings	760	750	760
Multi-Colored Coatings	680	680	680
Optical Coatings	800	50	800
Vacuum-Metalizing Coatings	800	800	800
All Other Coatings	280	120	280

Table 2: VOC Content of Coatings for Transportation Plastic Parts

Coating Category	VOC Content less water and exempt compounds, grams/liter			
	SMAQMD Rule 468		SJVAPCD Rule 4603	
Exterior Parts	**Air-Dried**	**Baked**	**Air-Dried**	**Baked**
Flexible Primer	580	540	580	540
Non-Flexible Primer	580	420	580	420
Base Coat	600	520	600	520
Clear Coatings	540	480	540	480
Touch-up and Repair Coatings	620	620	620	620
All Other Coatings	600	520	600	520

COMPARISON OF DISTRICT RULE REQUIREMENTS FOR MISCELLANEOUS PLASTIC PARTS AND PRODUCTS (continued)

Table 2: VOC Content of Coatings for Transportation Plastic Parts

Coating Category	VOC Content less water and exempt compounds, grams/liter			
	SMAQMD Rule 468		SJVAPCD Rule 4603	
Interior Parts	**Air-Dried**	**Baked**	**Air-Dried**	**Baked**
Flexible Primer	600	540	600	540
Non-Flexible Primer	600	420	600	420
Base Coat	600	520	600	520
Clear Coatings	600	480	600	480
Touch-up and Repair Coatings	620	620	620	620
All Other Coatings	600	520	600	520

Exemptions:

The above rules include various exemptions for sources specific to each District. For example:

- SMAQMD exempts facilities that emit less than 2.7 tons per year of VOC.
- SJVAPCD and SMAQMD allows up to 55 gallons per year of non-compliant coatings.
- SJVAPCD exempts facilities that emit less than 2.7 tons per year of VOC from the pleasure craft standards.
- SCAQMD generally exempts coatings operations that emit less than 3 pounds per day or 66 pounds per month of VOC.
- Touch-up and repair, clear/translucent coatings, and performance testing on coatings at paint manufacturing facilities are exempted by SCAQMD and SJVAPCD.

In order to simplify BACT for regulated sources within the District, achieved in practice BACT will be compliance with SMAQMD Rule 468, except that for the coating categories listed in Table 1, Rule 1145 VOC content limits will apply.

The following control technologies have been identified and are ranked based on stringency:

SUMMARY OF ACHIEVED IN PRACTICE CONTROL TECHNOLOGIES	
$VOC_{Controlled}$	1. VOC Emissions ≥ 256.8 tons/year and Booth ≥ 30,000 acfm (A) A. VOC Control System with ≥ 95% Overall Control Efficiency [USEPA] 2. VOC Emissions > 13,140 lb/year A. Coating with Lower VOC Content than Required by Applicable BAAQMD Rules, and Emissions from Coating Area, Flash Off Area, Drying Area, and Oven Vented to Control Device Achieving ≥ 90% Overall Efficiency [BAAQMD] 3. VOC Emissions ≥ 14,040 lb/year A. Compliance with SCAQMD Rule 1145, and VOC Control System with ≥ 90% Collection Efficiency and ≥ 95% Destruction Efficiency, or B. Use of Super Compliant Materials (< 5% VOC by weight): or C. Use of Low-VOC Materials Resulting in an Equivalent Emission Reduction
$VOC_{Uncontrolled}$	1. Compliance with District Rules and Regulations (See above discussion and rule comparison) [SMAQMD, SCAQMD, SJVAPCD] 2. 4.3 lb/gallon daily average [USEPA]
NOx	No standard
SOx	No standard
PM10	1. Enclosed paint booth with dry filters or water wash and use of HVLP spray guns [SJVAPCD, SCAMQD, SDAPCD] 2. Use of HVLP spray guns, electrostatics spray guns, and electrostatic rotary atomizers for spray coating operations. Good work practices. [USEPA]
PM2.5	No standard
CO	No standard
Organic HAP/VHAP & Inorganic HAP (T-BACT)	1. Compliance with NESHAP HHHHHH [USEPA]

(A) Since the scope of this BACT determination is to evaluate BACT for non-major sources, this achieved in practice technology will be moved to the technologically feasible section, since this source would be considered a major source for SMAQMD (≥ 25 tons VOC per year).

USE OF PM10 STANDARD FOR PM2.5

Emissions of PM10 are created during spray application of coatings. Overspray aerosols from these operations are usually controlled by increasing the transfer efficiency of the coating to the substrate and using a spray booth with overspray filters. Since PM2.5 is a subset of PM10, and the technology used to control PM10 also controls PM2.5, the achieved in practice standard for PM10 will also be used for PM2.5.

T-BACT

For plastic parts coatings, toxic emissions may be from either organic HAPs (ethylbenzene, methylene chloride) found in carrier solvents, strippers, and surface prep or clean-up solvents; or from inorganic HAPs found in pigments (cadmium, chromium, lead). Depending on the organic HAP, VOC control technologies, (oxidizer, carbon adsorption), may not be technologically feasible. Additionally, VOC controls are not effective for inorganic metals. The above NESHAPs

address both organic and inorganic HAPs and are therefore considered T-BACT for this source category.

The following control technologies have been identified as the most stringent, achieved in practice control technologies:

BEST CONTROL TECHNOLOGIES ACHIEVED		
Pollutant	**Standard**	**Source**
VOC	<u>For booths emitting > 13,140 lb/year (uncontrolled)</u> 1. Compliance with District Rule 468, except where noted in footnote **and** VOC control system with ≥ 90% overall efficiency, or 2. Use of low-VOC materials resulting in an equivalent emission reduction. <u>For booths emitting ≤ 13,140 lb/year (uncontrolled)</u> 1. Compliance with District Rule 468, except where noted in footnote (A)	BAAQMD, SMAQMD, SCAQMD
NOx	No standard	
SOx	No standard	
PM10	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent	SJVAPCD, SCAMQD, SMAQMD, SDAPCD
PM2.5	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent	SJVAPCD, SCAMQD, SMAQMD, SDAPCD
CO	No standard	
Organic HAP/VHAP & Inorganic HAP (T-BACT)	Compliance with NESHAP HHHHHH where applicable.	USEPA

(A) The following coating categories listed in Rule 468, Table 1, must meet the following standards listed in SCAQMD Rule 1145 (unless they meet an applicable exemption in the rule): General One-Component Coatings – 120 g/L; General Multi-Component Coatings – 120 g/L; Electric Dissipating Coating and Shock Free Coatings – 360 g/L; Extreme Performance Coatings, One Component – 120 g/L; Optical Coatings – 50 g/L; All Other Coatings not specified in Rule 468, Section 301 – 120 g/L.

B. TECHNOLOGICALLY FEASIBLE AND COST EFFECTIVE (RULE 202, §205.1.b.)

Technologically Feasible Alternatives:
Any alternative basic equipment, fuel, process, emission control device or technique, singly or in combination, determined to be technologically feasible by the Air Pollution Control Officer.

The table below shows the technologically feasible alternatives identified as capable of reducing emissions beyond the levels determined to be "Achieved in Practice" as per Rule 202, §205.1.a.

Pollutant	Technologically Feasible Alternatives
VOC	1. Thermal/catalytic oxidation with an enclosed booth (100% capture efficiency). 2. Carbon adsorption with an enclosed booth (100% capture efficiency).
NOx	No other technologically feasible option identified
SOx	No other technologically feasible option identified
PM10	No other technologically feasible option identified
PM2.5	No other technologically feasible option identified
CO	No other technologically feasible option identified

Cost Effective Determination:
After identifying the technologically feasible control options, a cost analysis is performed to take into consideration economic impacts for all technologically feasible controls identified.

Maximum Cost per Ton of Air Pollutants Controlled

A control technology is considered cost-effective if the cost of controlling one ton of that air pollutant is less than the limits specified below:

Pollutant	Maximum Cost ($/ton)
VOC	17,500
NO_X	24,500
PM10	11,400
SO_X	18,300
CO	TBD if BACT triggered

Cost Effectiveness Analysis Summary
The previous cost analysis for this category (BACT Determination #64) used the District's generic threshold of 4,700 pounds of VOC per year (BACT Determination #22 for Automotive Coating Operations) for a single spray booth. This is the same threshold used in the current Automotive Coating Operations BACT #153 and #154. This BACT determination will revisit this limit using new cost data. Facilities that coat miscellaneous metal parts and miscellaneous plastic parts use

TECHNOLOGICALLY FEASIBLE AND COST EFFECTIVE (RULE 202, §205.1.b.) (continued)

generally the same types of equipment to coat their respective substrates (Spray booths, HVLP spray guns). This BACT determination will use updated cost data (sales tax, electricity, natural gas, and labor rates).

The cost analysis was processed in accordance with the EPA OAQPS Air Pollution Control Cost Manual (Sixth Edition, EPA/452/B-02-001). The sales tax rate was based on the District's standard rate of 8.25%. The electricity (13.80 cents/kWh) and natural gas (8.04 dollars/1,000 cubic feet) rates were based on a commercial application as approved by the District. The life of the equipment was based on the EPA cost manual recommendation. The interest rate was based on the previous 6-month average interest rate on United States Treasury Securities (based on the life of the equipment) and addition of two percentage points and rounding up to the next higher integer rate. The labor (Occupation Code 51-9122: Painters, Transportation Equipment and maintenance (Occupation Code 49-9099: Installation, maintenance, and repair workers, all other) rates were based on data from the Bureau of Labor Statistics.

Carbon Adsorber: As shown in Attachment B, the cost effectiveness for the add-on carbon adsorber system to control VOC was calculated to be **$17,515/ton**. The following basic parameters were used in the analysis.

Equipment Life = 10 years

Total Capital Investment = $12,736.85

Direct Annual Cost = $37,513.61 per year

Indirect Annual Cost = $5,637.75 per year

Total Annual Cost = $43,151.36 per year

VOC Removed = 2.5 tons per year

Cost of VOC Removal = $17,514.51 per ton reduced

A detailed calculation of the cost effectiveness for VOC removal with a carbon adsorber is shown in Attachment B. Uncontrolled VOC emissions of 5,475 pounds per year or greater is the cost-effective threshold for control equipment using carbon adsorption control technology.

Thermal Oxidizer: As shown in Attachment B, the cost effectiveness for the add-on thermal oxidizer system to control VOC was calculated to be **$33,009/ton**. The following basic parameters were used in the analysis.

Equipment Life = 10 years

Direct Costs: = $176,248

Direct Annual Cost = $109,119 per year

Indirect Annual Cost = $51,018 per year

TECHNOLOGICALLY FEASIBLE AND COST EFFECTIVE (RULE 202, §205.1.b.) (continued)

Total Annual Cost = $160,137 per year

VOC Removed = 9.15 tons per year

Cost of VOC Removal = $17,501 per ton reduced

A detailed calculation of the cost effectiveness for VOC removal with a carbon adsorber is shown in Attachment B. Uncontrolled VOC emissions of 18,300 pounds per year or greater is the cost-effective threshold for control equipment using thermal oxidation control technology.

Conclusion: In this analysis, different emission operating levels are presented with the corresponding total cost per ton of VOC controlled using either a carbon adsorption control or a thermal oxidizer. Uncontrolled VOC emission level of 5,475 pounds per year or greater must be reached in order for the carbon adsorption control option to be cost effective. Uncontrolled VOC emission level of 18,300 pounds per year or greater must be reached in order for a thermal oxidizer to be cost effective. The emissions levels for the cost effectiveness of controls is based on the District cost effective limit for ROC of $17,500 per ton controlled.

However, the District previously established that the cost effectiveness threshold for add-on control at automotive coating operations is 4,700 pounds per year of VOC (BACT #154). Since the add-on control technology is essentially the same for both a plastic parts coating operation and an automotive coating operation, the same cost-effectiveness threshold will be applied to this BACT determination.

C. SELECTION OF BACT:

Based on the review of SMAQMD, SCAQMD, SDCAPCD, BAAQMD, SJVAPCD, ARB, and EPA BACT Clearinghouses and cost effectiveness determinations, BACT for VOC, PM10, and PM2.5 will be the following:

BACT #188 for Plastic Parts Coating Operation ≤ 4,700 pounds per year		
Pollutant	**Standard**	**Source**
VOC	Compliance with District Rule 468, except where noted in footnote (A)	SMAQMD (BACT #153 & Rule 468) SCAQMD (Rule 1145)
NOx	No standard	
SOx	No standard	
PM10	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent	SJVAPCD (BACT 4.5.4) SCAMQD (BACT) SDAPCD (BACT)
PM2.5	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent	SJVAPCD (BACT 4.5.4) SCAMQD (BACT) SDAPCD (BACT)
CO	No standard	

(A) The following coating categories listed in Rule 468, Table 1, must meet the following standards listed in SCAQMD Rule 1145 (unless they meet an applicable exemption in the rule): General One-Component Coatings – 120 g/L; General Multi-Component Coatings – 120 g/L; Electric Dissipating Coating and Shock Free Coatings – 360 g/L; Extreme Performance Coatings, One Component – 120 g/L; Optical Coatings – 50 g/L; All Other Coatings not specified in Rule 468, Section 301 – 120 g/L.

BACT #189 for Plastic Parts Coating Operation > 4,700 pounds per year		
Pollutant	**Standard**	**Source**
VOC	1. Compliance with District Rule 468, except where noted in footnote (A) **and** VOC control system with ≥ 90% overall efficiency, or 2. Use of low-VOC materials resulting in an equivalent emission reduction.	BAAQMD (BACT 84.1.1); SMAQMD (BACT #154 & Rule 468) SCAQMD (BACT, Rule 1145)
NOx	No standard	
SOx	No standard	
PM10	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent	SJVAPCD (BACT 4.5.4) SCAMQD (BACT) SMAQMD (BACT #64) SDAPCD (BACT)

SELECTION OF BACT: (continued)

BACT #189 for Plastic Parts Coating Operation > 4,700 pounds per year		
Pollutant	**Standard**	**Source**
PM2.5	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent	SJVAPCD (BACT 4.5.4) SCAMQD (BACT) SMAQMD (BACT #64) SDAPCD (BACT)
CO	No standard	

(A) The following coating categories listed in Rule 468, Table 1, must meet the following standards listed in SCAQMD Rule 1145 (unless they meet an applicable exemption in the rule): General One-Component Coatings – 120 g/L; General Multi-Component Coatings – 120 g/L; Electric Dissipating Coating and Shock Free Coatings – 360 g/L; Extreme Performance Coatings, One Component – 120 g/L; Optical Coatings – 50 g/L; All Other Coatings not specified in Rule 468, Section 301 – 120 g/L.

T-BACT for Plastic Parts Coating Operation		
Pollutant	**Standard**	**Source**
Organic HAP/VHAP & Inorganic HAP (T-BACT)	Compliance with NESHAP HHHHHH where applicable.	USEPA

REVIEWED BY: _____ **DATE:** _____

APPROVED BY: _____ **DATE:** _____

Attachment A

Review of BACT Determinations published by EPA

COMPREHENSIVE REPORT
Report Date:05/22/2018

Facility Information

RBLC ID:	IN-0274 (final)	**Date Determination Last Updated:**	11/15/2017
Corporate/Company Name:	CONTINENTAL STRUCTURAL PLASTICS	**Permit Number:**	069-38101-00043
Facility Name:	CONTINENTAL STRUCTURAL PLASTICS	**Permit Date:**	08/21/2017 (actual)
Facility Contact:	VINOD C SHAH 2488235664	**FRS Number:**	Not Found
Facility Description:	STATIONARY PAINTING OF HIGH-PRESSURE FIBERGLASS AND REINFORCED THERMOSET PLASTICS MANUFACTURING SOURCE	**SIC Code:**	3089
Permit Type:	C: Modify process at existing facility	**NAICS Code:**	326199
Permit URL:	HTTP:PERMITS.AIR.IDEM.IN.GOV/38101F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	HUNTINGTON		
Facility State:	IN		
Facility ZIP Code:	46750		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	PERMIT WRITER: BRIAN WILLIAMS 317-234-5375 BWILLIAM@IDEM.IN.GOV SECTION CHIEF: IRYN CALILUNG 317-233-5692 ICALILUN@IDEM.IN.GOV		
Permit Notes:			

Process/Pollutant Information

PROCESS NAME:	FIBERGLASS REINFORCED PLASTIC PART COATING LINE
Process Type:	41.016 (Plastic Parts & Products Surface Coating (except 41.015))

Primary Fuel:

Throughput: 187.50 PARTS PER HOUR

Process Notes: LINE CONSISTS OF THE FOLLOWING: (1) ONE (1) SPRAY BOOTH, IDENTIFIED AS PB 1 (FORMERLY SB-A-S), INSTALLED ON DECEMBER 11, 1987, MODIFIED FOR THE ADDITION OF ONE (1) SPRAY GUN IN 2004, AND MODIFIED PRIOR TO 2010, EQUIPPED WITH ROBOTIC AUTOMATIC CONVENTIONAL AIR ATOMIZATION SPRAY GUNS AND A WATERWASH SYSTEM AS OVERSPRAY CONTROL, EXHAUSTING TO STACKS EP 1 AND EP 2. (2) ONE (1) MANUAL SPRAY BOOTH USED TO APPLY PAINT TO THE BACKS OF PARTS THAT CANNOT BE REACHED BY ROBOTS, IDENTIFIED AS PB 2 (FORMERLY SB-M-S), INSTALLED ON DECEMBER 11, 1987 AND MODIFIED PRIOR TO 2010, EQUIPPED WITH MANUAL CONVENTIONAL AIR ATOMIZATION SPRAY GUNS AND A WATERWASH SYSTEM AS OVERSPRAY CONTROL, EXHAUSTING TO STACK EP 3. (3) ONE (1) SPRAY BOOTH, IDENTIFIED AS PB 3 (FORMERLY SB-A-M), INSTALLED ON DECEMBER 11, 1987, MODIFIED FOR THE ADDITION OF ONE (1) SPRAY GUN IN 2004, EQUIPPED WITH ROBOTIC AUTOMATIC CONVENTIONAL AIR ATOMIZATION SPRAY GUNS AND A WATERWASH SYSTEM AS OVERSPRAY CONTROL, EXHAUSTING TO STACKS EP 4 AND EP 5. (4) ONE (1) SPRAY BOOTH, IDENTIFIED AS PB 4 (SB-M-M), INSTALLED ON DECEMBER 11, 1987 AND MODIFIED PRIOR TO 2010, EQUIPPED WITH ROBOTIC AUTOMATIC CONVENTIONAL AIR ATOMIZATION SPRAY GUNS AND A WATERWASH SYSTEM AS OVERSPRAY CONTROL, EXHAUSTING TO STACK EP 6. (5) ONE (1) AUTOMATIC SPRAY BOOTH, IDENTIFIED AS PB 5 (FORMERLY SB-M-PR), INSTALLED ON DECEMBER 11, 1987 AND MODIFIED PRIOR TO 2010, EQUIPPED WITH ROBOTIC AUTOMATIC CONVENTIONAL AIR ATOMIZATION SPRAY GUNS AND A WATERWASH SYSTEM AS OVERSPRAY CONTROL, EXHAUSTING TO STACK EP 7. (6) ONE (1) AUTOMATIC SPRAY BOOTH, IDENTIFIED AS PB 6 (FORMERLY SB-A-PR), INSTALLED ON DECEMBER 11, 1987 AND MODIFIED PRIOR TO 2010, EQUIPPED WITH ROBOTIC AUTOMATIC CONVENTIONAL AIR ATOMIZATION SPRAY GUNS AND A WATERWASH SYSTEM AS OVERSPRAY CONTROL, EXHAUSTING TO STACKS EP 8 AND EP 9.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 230.0000 TONS OF VOC 12 CONSECUTIVE MONTH

Emission Limit 2: 4.9000 LB/GAL VOC

Standard Emission:

Did factors, other than air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: OTHER CASE-BY-CASE

Other Applicable Requirements:

Control Method: (P) ROBOTIC AUTOMATIC CONVENTIONAL AIR ATOMIZATION SPRAY GUNS AND MANUAL CONVENTIONAL AIR ATOMIZATION SPRAY GUNS OR TECHNOLOGY WITH EQUAL OR GREATER TRANSFER EFFICIENCY GOOD WORK PRACTICES

Est. % Efficiency:

Cost Effectiveness: 14889 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified:	Unknown
Pollutant/Compliance Notes:	(A) THE VOC DELIVERED TO THE APPLICATORS SHALL NOT EXCEED 230.0 TONS PER TWELVE (12) CONSECUTIVE MONTH PERIOD WITH COMPLIANCE DETERMINED AT THE END OF EACH MONTH. (B) THE VOC CONTENT OF THE PRIMERS USED SHALL NOT EXCEED 4.9 POUNDS PER GALLON AS APPLIED. (C) THE USE OF ROBOTIC AUTOMATIC CONVENTIONAL AIR ATOMIZATION SPRAY GUNS OR TECHNOLOGY WITH EQUAL OR GREATER TRANSFER EFFICIENCY SHALL BE USED TO REDUCE VOC EMISSIONS IN PB 1, PB 3, PB 4, PB 5, AND PB 6. (D) THE USE OF MANUAL CONVENTIONAL AIR ATOMIZATION SPRAY GUNS OR TECHNOLOGY WITH EQUAL OR GREATER TRANSFER EFFICIENCY SHALL BE USED TO REDUCE VOC EMISSIONS IN PB 2. (E) GOOD WORK PRACTICES TO MINIMIZE LEAKS, SPILL AND EVAPORATIVE LOSSES. RTO NOT COST EFFECTIVE. STATE BACT

Facility Information

RBLC ID:	IN-0267 (final)	**Date Determination Last Updated:**	11/17/2017
Corporate/Company Name:	CHIYODA USA CORPORATION	**Permit Number:**	133-37625-00019
Facility Name:	CHIYODA USA CORPORATION	**Permit Date:**	05/18/2017 (actual)
Facility Contact:	TODD STEVENS 7656539098	**FRS Number:**	Not Found
Facility Description:	STATIONARY PLASTIC AUTOMOTIVE TRIM MOLDING AND SURFACE COATING FACILITY	**SIC Code:**	3089
Permit Type:	B: Add new process to existing facility	**NAICS Code:**	326199
Permit URL:	HTTP:PERMITS.AIR.IDEM.IN.GOV/37625F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	PUTNAM		
Facility State:	IN		
Facility ZIP Code:	46135		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	PERMIT WRITER: BRANDON MILLER 317-234-5374 BMILLER@IDEM.IN.GOV		

SECTION CHIEF: IRYN CALILUNG
317-233-5692

Permit Notes:

Process/Pollutant Information

PROCESS NAME: ROBOT PAINT SPRAY SYSTEM (PT541)

Process Type: 41.016 (Plastic Parts & Products Surface Coating (except 41.015))

Primary Fuel:

Throughput: 0.01 GALLON/PART

Process Notes: (G) ONE (1) ROBOT PAINT SPRAY SYSTEM, IDENTIFIED AS PT541, CONSTRUCTED IN 2016, AMENDED IN 2016, AND APPROVED IN 2017 FOR MODIFICATION TO INCREASE THE MAXIMUM CAPACITY, COATING PLASTIC AUTOMOTIVE COMPONENTS, AND CONSISTING OF THE FOLLOWING: (1) ONE (1) PRIMER SPRAY BOOTH, IDENTIFIED AS PB-01, CONSTRUCTED IN 2016, AMENDED IN 2016, AND APPROVED IN 2017 FOR MODIFICATION TO INCREASE THE MAXIMUM CAPACITY, USING HIGH VOLUME, LOW PRESSURE (HVLP) SPRAY GUNS TO COAT PLASTIC PARTS, WITH A MAXIMUM APPLICATION RATE OF 0.012 GALLONS OF COATING PER PART AND 3,425 PARTS PER DAY, WITH PARTICULATE EMISSIONS CONTROLLED WITH A WATER WASH SYSTEM, AND EXHAUSTING TO STACK PS-01. (2) ONE (1) BASECOAT SPRAY BOOTH, IDENTIFIED AS BC-01, CONSTRUCTED IN 2016, AMENDED IN 2016, AND APPROVED IN 2017 FOR MODIFICATION TO INCREASE THE MAXIMUM CAPACITY, USING ELECTROSTATIC BELL SPRAY GUNS TO COAT PLASTIC PARTS, WITH A MAXIMUM APPLICATION RATE OF 0.029 GALLONS OF COATING PER PART AND 3,425 PARTS PER DAY, WITH PARTICULATE EMISSIONS CONTROLLED WITH A WATER WASH SYSTEM, AND EXHAUSTING TO STACKS PS-01 AND PS-02. (3) ONE (1) MICA SPRAY BOOTH, IDENTIFIED AS MC-01, CONSTRUCTED IN 2016, AMENDED IN 2016, AND APPROVED IN 2017 FOR MODIFICATION TO INCREASE THE MAXIMUM CAPACITY, USING ELECTROSTATIC BELL SPRAY GUNS TO COAT PLASTIC PARTS, WITH A MAXIMUM APPLICATION RATE OF 0.029 GALLONS OF COATING PER PART AND 3,425 PARTS PER DAY, WITH PARTICULATE EMISSIONS CONTROLLED WITH A WATER WASH SYSTEM, AND EXHAUSTING TO STACK PS-02. (4) ONE (1) CLEAR COAT SPRAY BOOTH, IDENTIFIED AS CC-01, CONSTRUCTED IN 2016, AMENDED IN 2016, AND APPROVED IN 2017 FOR MODIFICATION TO INCREASE THE MAXIMUM CAPACITY, USING ELECTROSTATIC BELL SPRAY GUNS TO COAT PLASTIC PARTS, WITH A MAXIMUM APPLICATION RATE OF 0.021 GALLONS OF COATING PER PART AND 3,425 PARTS PER DAY, WITH PARTICULATE EMISSIONS CONTROLLED WITH A WATER WASH SYSTEM, AND EXHAUSTING TO STACK PS-02.

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified
Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	77.3500 TONS OF VOC 12 CONSECUTIVE MONTH PERIODS
Emission Limit 2:	4.3500 POUNDS OF VOC PER GALLON DAILY VOLUME WEIGHTED AVERAGE
Standard Emission:	

Did factors, other than air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis:	OTHER CASE-BY-CASE
Other Applicable Requirements:	NESHAP
Control Method:	(N)
Est. % Efficiency:	
Cost Effectiveness:	11094 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	EMISSION LIMIT 2: DAILY VOLUME-WEIGHTED AVERAGE VOC CONTENT OF ALL COATINGS USED SHALL NOT EXCEED 4.35 POUNDS OF VOC PER GALLON OF COATING, EXCLUDING WATER. LIMIT 3: SPRAY APPLICATION METHOD SHALL BE DONE WITH HVLP SPRAY APPLICATORS, ELECTROSTATIC SPRAY APPLICATORS, OR ROTARY ELECTROSTATIC SPRAY APPLICATORS LIMIT 4: GOOD MANAGEMENT AND WORK PRACTICES, INCLUDING BUT NOT LIMITED TO (I) MINIMIZATION OF SOLVENTS TO CLEAN SPRAY APPLICATION AREAS; (II) USE OF MASKING TECHNIQUES TO MINIMIZE THE AMOUNT OF SOLVENT CONTAINING VOC TO CLEAN THE SPRAY BOOTH WALLS, FLOORS, AND ASSOCIATED EQUIPMENT; (III) WORKING WITH THE SUPPLIERS TO GENERALLY LOWER THE VOC CONTENT OF COATINGS USED IN THE PAINT SPRAY SYSTEM; AND (IV) EDUCATING PLANT STAFF THAT WORK IN THE PAINT SHOP AND INDIVIDUAL COATING OPERATIONS ON PROPER SPRAY APPLICATION TECHNIQUES, CLEANING PROCEDURES AND MANAGEMENT OF NEW COATING MATERIALS, AS WELL AS USED COATING MATERIALS. STATE BACT COST PROHIBITIVE: THERMAL OXIDIZER (PS-01 STACK ONLY) = $30,545/TON THERMAL OXIDIZER (PS-02 STACK ONLY) = $21,039/TON THERMAL OXIDIZER (BOTH STACKS) = $21,330/TON CONCENTRATOR (BOTH STACKS) = $11,094/TON SUBJECT TO 40 CFR 63, SUBPART PPPP

Facility Information

RBLC ID:	IN-0258 (final)	**Date Determination Last Updated:**	04/28/2017
Corporate/Company Name:	COULTER & SON, INC.	**Permit Number:**	039-37330-00454
Facility Name:	COULTER & SON, INC.	**Permit Date:**	02/01/2017 (actual)
Facility Contact:	MARK BATE 5748257891	**FRS Number:**	Not Found
Facility Description:	PLASTIC PARTS COATING PLANT	**SIC Code:**	3089
Permit Type:	C: Modify process at existing facility	**NAICS Code:**	326199
Permit URL:	HTTP:PERMITS.AIR.IDEM.IN.GOV/37330F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	ELKHART		
Facility State:	IN		
Facility ZIP Code:	46540		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	PERMIT WRITER: BRIAN WILLIAMS 317-234-5375 BWILLIAM@IDEM.IN.GOV SECTION CHIEF: IRYN CALILUNG 317-233-5692 ICALILUN@IDEM.IN.GOV		
Permit Notes:			

Process/Pollutant Information

PROCESS NAME:	SPRAY COATING LINE 1
Process Type:	41.016 (Plastic Parts & Products Surface Coating (except 41.015))
Primary Fuel:	NA
Throughput:	3060.00 PLASTIC SPRAY CAN CAPS OR PARTS PER HOUR
Process Notes:	ONE (1) SPRAY COATING LINE, IDENTIFIED AS LINE 1, CONSTRUCTED IN 1998 AND MODIFIED IN 2012, EQUIPPED WITH NINE (9) HIGH VOLUME, LOW PRESSURE (HVLP) SPRAY APPLICATORS AND DRY FILTERS FOR OVERSPRAY CONTROL,

EXHAUSTING TO STACKS S2A, S2B, AND S2C, CAPACITY: 3,060 PLASTIC SPRAY CAN CAPS OR PLASTIC PARTS PER HOUR. THE MAXIMUM CAPACITY OF LINE 1 IS BASED ON THE COMMON DISTRIBUTION SYSTEM, REGARDLESS OF THE NUMBER OF SPRAY APPLICATORS.

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified
Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	90.0000 TONS TOTAL VOC INPUT 12 CONSECUTIVE MONTHS
Emission Limit 2:	6.8000 LB VOC/GAL COATING DAILY VOLUME-WEIGHTED AVERAGE
Standard Emission:	
Did factors, other than air pollution technology considerations influence the BACT decisions:	N
Case-by-Case Basis:	OTHER CASE-BY-CASE
Other Applicable Requirements:	
Control Method:	(N)
Est. % Efficiency:	
Cost Effectiveness:	6856 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	EMISSION LIMIT 1 INCLUDES COATINGS, THINNERS, AND CLEAN-UP SOLVENTS USED IN SPRAY COATING LINE 1 AND 2. EMISSION LIMIT 2 IS DAILY VOLUME-WEIGHTED AVERAGE AND EXCLUDES WATER. ADDITIONAL LIMITS: (A) THE USE OF AUTOMATED HVLP SPRAY GUNS, ELECTROSTATIC SPRAY GUNS AND/OR ELECTROSTATIC ROTARY ATOMIZERS FOR SPRAY COATING OPERATIONS IN SPRAY COATING LINES 1 AND 2. (2) GOOD WORK PRACTICES TO MINIMIZE LEAKS, SPILL AND EVAPORATIVE LOSSES. STATE BACT

Process/Pollutant Information

PROCESS NAME:	SPRAY COATING LINE 2
Process Type:	41.016 (Plastic Parts & Products Surface Coating (except 41.015))
Primary Fuel:	NA
Throughput:	6120.00 SILVER PLASTIC SPRAY CAN CAPS OR PARTS PER HOUR

Process Notes: ONE (1) SPRAY COATING LINE, IDENTIFIED AS LINE 2, CONSTRUCTED IN 2003, MODIFIED IN 2012, AND APPROVED FOR MODIFICATION IN 2017, EQUIPPED WITH NINE (9) HVLP SPRAY APPLICATORS AND DRY FILTERS FOR OVERSPRAY CONTROL EXHAUSTING TO STACKS S5A,S5B, S5C. THIS LINE OPERATES UNDER TWO (2) DIFFERENT OPERATING SCENARIOS. THE MAXIMUM CAPACITY FOR SCENARIO 1 IS 3,060 PLASTIC SPRAY CAN CAPS PER HOUR. THE MAXIMUM CAPACITY FOR SCENARIO 2 IS 6,120 SILVER PLASTIC SPRAY CAN CAPS OR PLASTIC PARTS PER HOUR. THE MAXIMUM CAPACITY OF LINE 2 IS BASED ON THE COMMON DISTRIBUTION SYSTEM, REGARDLESS OF THE NUMBER OF SPRAY APPLICATORS.

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified
Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	90.0000 TONS TOTAL VOC INPUT 12 CONSECUTIVE MONTHS
Emission Limit 2:	6.8000 LB VOC/GAL COATING DAILY VOLUME-WEIGHTED AVERAGE
Standard Emission:	

Did factors, other than air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis:	OTHER CASE-BY-CASE
Other Applicable Requirements:	
Control Method:	(N)
Est. % Efficiency:	
Cost Effectiveness:	8151 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	EMISSION LIMIT 1 INCLUDES COATINGS, THINNERS, AND CLEAN-UP SOLVENTS USED IN SPRAY COATING LINE 1 AND 2. EMISSION LIMIT 2 IS DAILY VOLUME-WEIGHTED AVERAGE AND EXCLUDES WATER. ADDITIONAL LIMITS: (A) THE USE OF AUTOMATED HVLP SPRAY GUNS, ELECTROSTATIC SPRAY GUNS AND/OR ELECTROSTATIC ROTARY ATOMIZERS FOR SPRAY COATING OPERATIONS IN SPRAY COATING LINES 1 AND 2. (2) GOOD WORK PRACTICES TO MINIMIZE LEAKS, SPILL AND EVAPORATIVE LOSSES. STATE BACT

Facility Information

RBLC ID:	IN-0275 (final)	**Date Determination Last Updated:**	05/11/2018
Corporate/Company Name:	GREENVILLE TECHNOLOGY, INC.	**Permit Number:**	095-37334-00136
Facility Name:	GREENVILLE TECHNOLOGY, INC. - ANDERSON	**Permit Date:**	10/26/2016 (actual)
Facility Contact:	LES SIEGLER 937-548-1471 LES_SIEGLER@GTIOH.COM	**FRS Number:**	Not Found
Facility Description:	stationary plastic automobile parts manufacturing plant	**SIC Code:**	3714
Permit Type:	B: Add new process to existing facility	**NAICS Code:**	336399
Permit URL:	http://permits.air.idem.in.gov/37334f.pdf		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	MADISON		
Facility State:	IN		
Facility ZIP Code:	46013		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	Brian Wright 317-234-6544 Bwright1@idem.in.gov		
Permit Notes:			
Facility-wide Emissions:	**Pollutant Name:** Volatile Organic Compounds (VOC)	**Facility-wide Emissions Increase:** 66.2500 (Tons/Year)	

Process/Pollutant Information

PROCESS NAME:	plastic parts surface coating line (EU08)
Process Type:	41.016 (Plastic Parts & Products Surface Coating (except 41.015))
Primary Fuel:	
Throughput:	0
Process Notes:	

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified

Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	95.0000 % CONTROL EFFICIENCY
Emission Limit 2:	100.0000 PPMV
Standard Emission:	15.1260 LBS/HR

Did factors, other than air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis:	OTHER CASE-BY-CASE
Other Applicable Requirements:	OTHER
Control Method:	(A) regenerative thermal oxidizer
Est. % Efficiency:	95.000
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Yes
Pollutant/Compliance Notes:	

Facility Information

RBLC ID:	IN-0205 (final)	**Date Determination Last Updated:**	06/08/2016
Corporate/Company Name:	FOREST RIVER, INC., PLANT #63	**Permit Number:**	039-34761-00760
Facility Name:	FOREST RIVER, INC., PLANT # 63	**Permit Date:**	10/27/2014 (actual)
Facility Contact:	WILLIAM G. CONWAY 5745346913	**FRS Number:**	Unknown
Facility Description:	RECREATIONAL VEHICLE MANUFACTURING PLANT	**SIC Code:**	3792
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	336214
Permit URL:	HTTP://PERMITS.AIR.IDEM.IN.GOV/34761F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	ELKHART		
Facility State:	IN		
Facility ZIP Code:	46507		

Permit Issued By: INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name)
MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov

Other Agency Contact Info: PERMIT WRITER: KRISTEN WILLOUGHBY
(317)233-3031
KWILLOUG@IDEM.IN.GOV
SECTION CHIEF: JENNY ACKER
(317)234-5285

Permit Notes:

Process/Pollutant Information

PROCESS NAME: ASSEMBLY OPERATIONS

Process Type: 41.016 (Plastic Parts & Products Surface Coating (except 41.015))

Primary Fuel:

Throughput: 1.75 VEH/H

Process Notes: THIS PROCESS INCLUDES THE APPLICATION OF ADHESIVES, SELANTS, CAULKS, TOUCH-UP COATINGS, AND CLEANERS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 96.6100 T/12 MONTHS 3-HOURS

Emission Limit 2: 6.5000 LB/GAL VOC CLEANERS & SOLVENTS

Standard Emission:

Did factors, other than air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: OTHER CASE-BY-CASE

Other Applicable Requirements:

Control Method: (P) HVLP SPRAY APPLICATORS & WORK PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: THIRD LIMIT - WORK PRACTICES STATE BACT

Facility Information

RBLC ID:	IN-0195 (final)	**Date Determination Last Updated:**	05/05/2016
Corporate/Company Name:	SUBARU OF INDIANA AUTOMOTIVE, INC.	**Permit Number:**	157-33759-00050
Facility Name:	SUBARU OF INDIANA AUTOMOTIVE, INC.	**Permit Date:**	05/19/2014 (actual)
Facility Contact:	DENISE COOGAN 7654491111	**FRS Number:**	110000404205
Facility Description:	AUTOMOBILE AND LIGHT DUTY TRUCKS MANUFACTURING PLANT	**SIC Code:**	3711
Permit Type:	D: Both B (Add new process to existing facility) &C (Modify process at existing facility)	**NAICS Code:**	336111
Permit URL:	http://permits.air.idem.in.gov/33759f.pdf		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	TIPPECANOE		
Facility State:	IN		
Facility ZIP Code:	47905		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	AIDA DEGUZMAN - PERMIT WRITER (317) 233-4972 ADEGUZMA@IDEM.IN.GOV CHRYSTAL WAGNER - SECTION CHIEF (317) 234-1203		
Permit Notes:			

Process/Pollutant Information

PROCESS NAME: PLASTIC BUMPER COATING LINE

Process Type: 41.016 (Plastic Parts & Products Surface Coating (except 41.015))

Primary Fuel:

Throughput: 160000.00

Process Notes:

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified
Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	0.7100 LB/GAL DAILY VOLUME WEIGHTED AVERAGE
Emission Limit 2:	1.3800 LB/GAL DAILY VOLUME WEIGHTED AVE
Standard Emission:	4.0900 LB/GAL DAILY VOLUME WEIGHTED AVE
Did factors, other than air pollution technology considerations influence the BACT decisions:	N
Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	NESHAP
Control Method:	(N)
Est. % Efficiency:	
Cost Effectiveness:	13726 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	BACT LIMITATIONS AND GOOD WORK PRACTICES: 0.71 LB/GAL - PRIMER COATING 1.38 LB/GAL - BASECOAT COATING 4.09 LB/GAL - CLEARCOAT COATING GOOD WORK PRACTICES WHICH INCLUDES THE FOLLOWING: (1) THE USE OF ROBOTIC AUTOMATIC SPRAY APPLICATORS TO MINIMIZE PAINT USAGE. (2) THE USE OF WATERBASED COATINGS FOR THE PRIMER, AND BASECOAT APPLICATIONS. (3) ALL PAINT MIXING CONTAINERS, OTHER THAN DAY TANKS EQUIPPED WITH CONTINUOUS AGITATION SYSTEMS, WHICH CONTAIN ORGANIC VOC CONTAINING COATINGS AND OTHER MATERIALS SHALL HAVE A COVER WITH NO VISIBLE GAPS IN PLACE AT ALL TIMES EXCEPT WHEN MATERIAL IS BEING ADDED TO OR REMOVED FROM A CONTAINER, OR WHEN MIXING OR PUMPING EQUIPMENT IS BEING PLACED IN OR REMOVED FROM A CONTAINER. (4) SOLVENT-BORNE PURGE MATERIALS SPRAYED DURING PAINT LINE CLEANING AND COLOR CHANGES SHALL BE DIRECTED INTO SOLVENT COLLECTION CONTAINERS. DOCUMENTATION SHALL BE MAINTAINED ON-SITE TO DEMONSTRATE HOW THESE MATERIALS ARE BEING DIRECTED AND COLLECTED FOR BOTH THE SOLVENT-BORNE AND WATER-BORNE PURGE MATERIALS. (5) SOLVENT COLLECTION CONTAINERS SHALL BE KEPT CLOSED WHEN NOT IN USE. (6) CLEAN-UP RAGS WITH

SOLVENT SHALL BE STORED IN CLOSED CONTAINERS. (7) VOC EMISSIONS SHALL BE MINIMIZED DURING CLEANING OF STORAGE, MIXING, AND CONVEYING EQUIPMENT.

Facility Information

RBLC ID:	IN-0176 (final)	**Date Determination Last Updated:**	05/04/2016
Corporate/Company Name:	ASHLEY INDUSTRIAL MOLDING, INC.	**Permit Number:**	113-34068-00092
Facility Name:	ASHLEY INDUSTRIAL MOLDING, INC.	**Permit Date:**	05/14/2014 (actual)
Facility Contact:	CATHERINE MOWERY 2605879155	**FRS Number:**	110061087318
Facility Description:	STATIONARY PLASTIC PARTS MANUFACTURING AND COATING FACILITY	**SIC Code:**	3089
Permit Type:	B: Add new process to existing facility	**NAICS Code:**	326199
Permit URL:	HTTP://PERMITS.AIR.IDEM.IN.GOV/34068F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	NOBLE		
Facility State:	IN		
Facility ZIP Code:	46755		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	PERMIT WRITER: BRIAN WILLIAMS 317-234-5375 BWILLIAM@IDEM.IN.GOV SECTION CHIEF: IRYN CALILUNG 317-233-5692 ICALILUN@IDEM.IN.GOV		
Permit Notes:			

Process/Pollutant Information

PROCESS NAME: PLASTIC PARTS SURFACE COATING LINE

Process Type: 41.016 (Plastic Parts & Products Surface Coating (except 41.015))

Primary Fuel:

Throughput: 18921600.00 SQFT/YR PLASTIC PARTS

Process Notes: COATING LINE CONSISTS OF TACK WIPE BOOTH, PRIME BOOTH, AND TWO (2) TOPCOAT BOOTHS. TACK WIPE BOOTH USES 159.5 GALLONS OF SOLVEN PER MONTH. PRIME BOOTH AND TOPCOAT BOOTHS HAVE A NOMINAL CONVEYOR LINE SPEED OF 8 FEET PER MINUTE WHEN COATING LARGEST PARTS.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 154.2500 TONS 12 CONSECUTIVE MONTH PERIOD

Emission Limit 2: 4.0000 LB/GAL AS APPLIED

Standard Emission:

Did factors, other than air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: OTHER CASE-BY-CASE

Other Applicable Requirements: NESHAP

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 15663 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: THREE-PASS RTO NOT COST EFFECTIVE. LIMIT 2: VOC CONTENT OF PRIMERS AND TOPCOATS USED IN PRIME AND TOPCOAT BOOTHS SHALL NOT EXCEED 4.0 LBS/GAL AS APPLIED. ADDITIONAL LIMITS: METHOD OF APPLICATION IN TACK WIPE BOOTH SHALL ONLY BE DONE WITH HAND WIPE. METHOD OF APPLICATION IN PRIME AND TOPCOAT BOOTHS SHALL BE DONE WITH HVLP OR ELECTROSTATIC APPLICATORS. MANAGEMENT AND WORK PRACTICES: OPERATOR TRAINING COURSE, SPRAY GUN CLEANING, CLEANUP SOLVENT CONTAINERS USED TO TRANSPORT SOLVENT FROM DRUMS TO WORK STATIONS SHALL BE CLOSED COTAINERS HAVING SOFT GASKETED CLOSURES, APPLICATION EQUIPMENT OPERATORS SHALL BE INSTRUCTED AND TRAINED ON THE METHODS AND PRACTICES UTILITZED TO MINIMIZE SPILLAGE ON THE FLOOR AND OVER APPLICATION, AND STORAGE

CONTAINERS USED TO STORE VOC-CONTAINING MATERIALS SHALL BE KEPT COVERED WHEN NOT IN USE. STATE BACT

Facility Information

RBLC ID:	IN-0159 (final)	**Date Determination Last Updated:**	05/04/2016
Corporate/Company Name:	ASHLEY INDUSTRIAL MOLDING, INC.	**Permit Number:**	033-32469-00017
Facility Name:	ASHLEY INDUSTRIAL MOLDING, INC.	**Permit Date:**	04/23/2013 (actual)
Facility Contact:	CATHERINE MOWERY 2605879155	**FRS Number:**	110041978535
Facility Description:	STATIONARY HIGH PRESSURE FIBERGLASS-REINFORCED PLASTIC PARTS MANUFACTURING AND PAINTING SOURCE.	**SIC Code:**	3089
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	326199
Permit URL:	HTTP://PERMITS.AIR.IDEM.IN.GOV/32469F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	DEKALB		
Facility State:	IN		
Facility ZIP Code:	46705		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	PERMIT WRITER: BRIAN WILLIAMS BWILLIAMS@IDEM.IN.GOV 317-234-5375 SECTION CHIEF: MATT STUCKEY MSTUCKEY@IDEM.IN.GOV 317-233-0203		
Permit Notes:			

Process/Pollutant Information

PROCESS NAME: SURFACE COATING LINE

Process Type: 41.016 (Plastic Parts & Products Surface Coating (except 41.015))

Primary Fuel:

Throughput: 45.40 GAL/H OF COATING

Process Notes: THIS CONSISTS OF ONE (1) PRIME BOOTH WITH ONE (1) FLASH OFF TUNNEL, IDENTIFIED AS SB-1, AND ONE (1) TOP COAT BOOTH WITH ONE (1) FLASH OFF TUNNEL, IDENTIFIED AS SB-2. SB-1 EXHUASTS TO STACK SB-1, AND SB-2 EXHUASTS TO FOUR (4) STACKS (SB-2A - SB-2D).

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 207.0000 TONS 12 CONSECUTIVE MONTH PERIOD

Emission Limit 2: 4.0000 LB/GAL

Standard Emission:

Did factors, other than air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: OTHER CASE-BY-CASE

Other Applicable Requirements:

Control Method: (P) USE OF HIGH VOLUME LOW PRESSURE OR ELECTROSTATIC SPRAY APPLICATORS. GOOD MANAGEMENT AND WORK PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: EL2: AS APPLIED VOC CONTENT OF PRIMERS AND TOP COATS. THE FOLLOWING MANAGEMENT AND WORK PRACTICES SHALL APPLY:OPERATOR TRAINING COURSE, SPRAY GUN CLEANING, CLEANUP SOLVENT CONTAINERS USED TO TRANSPORT SOLVENT FROM DRUMS TO WORK STATIONS SHALL BE CLOSED CONTAINERS HAVING SOFT GASKETED CLOSURES, APPLICATION EQUIPMENT OPERATORS SHALL BE INSTRUCTED AND TRAINED ON THE METHODS AND PRACTICES UTILIZED TO MINIMIZE SPILLAGE ON THE FLOOR AND OVER APPLICATION, AND STORAGE CONTAINERS USED TO STORE VOC-CONTAINING MATERIALS SHALL BE KEPT COVERED WHEN NOT IN USE. STATE BACT

Facility Information

RBLC ID:	IN-0154 (final)	**Date Determination Last Updated:**	05/04/2016
Corporate/Company Name:	GREENVILLE TECHNOLOGY, INC. - ANDERSON	**Permit Number:**	095-32281-00136
Facility Name:	GREENVILLE TECHNOLOGY, INC. - ANDERSON	**Permit Date:**	01/03/2013 (actual)
Facility Contact:	LES SIEGLER 9375481471 LES_SIEGLER@GTIOH.COM	**FRS Number:**	110055148022
Facility Description:	PLASTIC AUTOMOBILE PARTS MANUFACTURING PLANT	**SIC Code:**	3714
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	336322
Permit URL:	HTTP://PERMITS.AIR.IDEM.IN.GOV/32281F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	MADISON		
Facility State:	IN		
Facility ZIP Code:	46013		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	PERMIT WRITER: BRIAN WILLIAMS 317-234-5375 BWILLIAM@IDEM.IN.GOV SECTION CHIEF: IRYN CALILUNG 317-233-5692 ICALILUN@IDEM.IN.GOV		
Permit Notes:			

Process/Pollutant Information

PROCESS NAME:	PLASTIC PARTS SURFACE COATING LINE
Process Type:	41.016 (Plastic Parts & Products Surface Coating (except 41.015))
Primary Fuel:	

Throughput: 8.30 GAL/H OF COATING

Process Notes: SURFACE COATING LINE CONSISTS OF PAINT BOOTH, WHICH IS EQUIPPED WITH TWO (2) ROBOTIC HVLP SPRAY GUNS, FLASH OFF TUNNEL, AND NATURAL GAS-FIRED CURE OVEN RATED AT 0.8 MMBTU/HR. THE PAINT BOOTH, FLASH OFF TUNNEL, AND CURE OVEN ARE CONTAINED WITHIN A PERMANENT TOTAL ENCLOSURE. THE PAINT BOOTH ALSO USES A MAXIMUM OF 1 GALLON OF CLEAN UP SOLVENT PER HOUR.

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified
Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	95.0000 % OVERALL CONTROL EF 3 HOURS
Emission Limit 2:	12.0000 PPMV 3 HOURS
Standard Emission:	

Did factors, other than air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis:	OTHER CASE-BY-CASE
Other Applicable Requirements:	
Control Method:	(A) REGENERATIVE THERMAL OXIDIZER WITH PERMANENT TOTAL ENCLOSURE
Est. % Efficiency:	95.000
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	STATE BACT

Facility Information

RBLC ID:	IN-0160 (final)	**Date Determination Last Updated:**	05/04/2016
Corporate/Company Name:	CREATIVE COATINGS, INC.	**Permit Number:**	113-29007-00018
Facility Name:	CREATIVE COATINGS, INC.	**Permit Date:**	02/22/2010 (actual)
Facility Contact:	STEPHEN GEIST 2603491862	**FRS Number:**	110029239624

Facility Description:	STATIONARY PLASTIC AND METAL PARTS COATING OPERATION	**SIC Code:**	3089
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	326192
Permit URL:	HTTP://PERMITS.AIR.IDEM.IN.GOV/29007F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	NOBLE		
Facility State:	IN		
Facility ZIP Code:	46755		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	PERMIT WRITER: JAMES MACKENZIE 317-233-2641 JMACKENZIE@IDEM.IN.GOV SECTION CHIEF: TRIP SINHA 317-234-4907 TSINHA@IDEM.IN.GOV		
Permit Notes:			

Process/Pollutant Information

PROCESS NAME:	PAINT LINE 2
Process Type:	41.016 (Plastic Parts & Products Surface Coating (except 41.015))
Primary Fuel:	
Throughput:	38.00 PARTS/H - METAL OR PLASTIC
Process Notes:	PAINT LINE 2 CONSISTS OF THE FOLLOWING: ONE (1) ADEHESION PROMOTOR AIR ATOMIZATION SPRAY BOOTH, IDENTIFIED AS APB1, EXHAUSTING TO STACK S5 USING WATER WASH AND BAFFLES TO CONTROL PARTICULATE EMMISIONS; ONE (1) BASECOAT APPLICATION AIR ATOMIZATION SPRAY BOOTH, IDENTIFIED AS BCB2, EXHAUSTING TO STACKS S6 AND S7 USING WATER WASH AND BAFFLES TO CONTROL PARTICULATE EMISSIONS; ONE (1) CLEAR COAT APPLICATION AIR ATOMIZATION SPRAY BOOTH EXHAUSTING TO STACKS S8 AND S9 USING WATER WASH AND BAFFLES TO CONTROL PARTICULATE EMISSIONS; ONE (1) 6-STAGE WASH LINE, IDENTIFIED AS WL2, EXHAUSTING TO STACKS S1, S2, AND S3 WITH A MAXIMUM CAPACITY OF 12,500 GALLONS AND 1.5 MMBTU/HR.; ONE (1) NATURAL GAS FIRED DRY OFF OVER, IDENTIFIED AS DOO2, EXHAUSTING TO STACK S4 WITH A MAXIMUM CAPACITY OF 1.5 MMBTU/HR.; ONE (1) NATURAL GAS FIRED BAKE OVEN, IDENTIFIED AS BO2, EXHAUSTING TO STACK S10 AND S11 WITH A MAXIMUM CAPACITY OF 8.3 MMBTU/HR. ALSO PROCESS TYPE 41.013 - MISCELLANEOUS METAL PARTS AND PRODUCTS SURFACE COATING

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified
Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	249.0000 TONS 12 CONSECUTIVE MONTH PERIOD
Emission Limit 2:	5.9000 LB/GAL
Standard Emission:	

Did factors, other than air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis:	OTHER CASE-BY-CASE
Other Applicable Requirements:	
Control Method:	(P) USE OF HVLP SPRAY GUNS, ELECTROSTATICS SPRAY GUNS, AND ELECTROSTATIC ROTARY ATOMIZERS FOR SPRAY COATING OPERATIONS. GOOD WORK PRACTICES.
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	LIMIT TWO: MAXIMUM ORGANIC SOLVENT CONTENT FOR COATINGS GOOD WORK PRACTICES TO MINIMIZE LEAKS, SPILLS, AND EVAPORATIVE LOSSES. THESE LIMITS ONLY APPLY WHEN COATING PLASTIC PARTS. STATE BACT

Attachment B

Cost Effectiveness Determination for Carbon Adsorption and Thermal Oxidizers

COST EFFECTIVENESS ANALYSIS FOR CARBON ADSORPTION

This cost effectiveness analysis was performed using EPA's OAQPS Control Cost Manual
EPA publication no. 452/B-02-001

VOC Parameters

VOC of concern		Toluene
Cost of pure VOC ($/ton)		100
Molecular weight of VOC (Refer to Control Cost Manual, pg 3-63)		92.13
Emission rate (lbs/hr - inlet)		2.4
Inlet concentration (ppm)		22
k factor (Refer to Control Cost Manual, Chapter 1, Table 1.1)		0.551
m factor (Refer to Control Cost Manual, Chapter 1, Table 1.1)		0.11
Partial pressure (psi)		0.000317514

Gas Parameters

Total gas flow rate (acfm - inlet)		8,000
Total gas pressure (psi - inlet)		14.7

Equipment Parameters

Removal efficiency (%)		90.0%
Adsorption time (hours)		8
Desorption time (hours)		8
Number of adsorbing beds		1
Number of Desorbing beds		1
Equipment life (years)		10

Operating Parameters

Hours per day		8
Days per week		5
Weeks per year		52
Days per year		261

Carbon Requirements

Controlled VOC Emissions with max operation (tons/year)	((2.4 lbs VOC/hr)*(0.9)*(8 hours/day)*(261 days/year)/(2000 lbs/ton)	2.25504
VOC Emissions BACT add on limit (pounds/year)		5475
Controlled VOC Emissions BACT add on limit (tons/year)	(5475 lbs/year)*0.9	2.46375
Carbon working capacity (lb VOC/lb carbon)	EPA Cost Control Manual, Equation 1.15	0.2500
Amount of carbon needed (lbs)	(5475 lbs VOC)/(0.25 lb VOC/lb carbon)	19,710
Carbon cost	($1.5/lb carbon)*(15,509 lbs carbon)	$29,565
Carbon life (years)		5

Direct Costs:

Purchased Equipment Cost

Adsorber and auxiliary equipment (Vessel Cost)	EPA Cost Control Manual, Equation 1.25	$9,749.21
Instrumentation	1% of equipment cost ($9749)*0.1	$974.92
Sales taxes	8.25% of equipment cost ($9749.20698272062)*0.0825	$804.31
Freight	5% of equipment cost ($9749.20698272062)*0.05	$487.46
Purchased Equipment Cost		$12,015.90
Direct installation costs		
Foundations & supports		$ -
Handling & erection		$ -
Electrical		$ -
Piping		$ -
Insulation		$ -
Painting		$ -
Direct installation costs		$ -
Indirect Costs:		
Indirect Costs (installation)		
Engineering		$ -
Construction and field expenses		$ -
Contractor fees		$ -
Start-up	2% of equipment cost ($9204)*0.02	$ 240.32
Performance test	1% of equipment cost ($9204)*0.01	$ 120.16
Contingencies	3% of equipment cost ($9204)*0.03	$ 360.48
Total Indirect Costs		$ 720.95
Total Capital Investment		$12,736.85
Interest Rate	2% plus 6-month average, rounded to next integer	5%
Equipment Life (years)		10
Capital Recovery Factor (CRF)		0.1295
Capital recovery cost	($12736.85*0.1295)	$1,649.48
Direct Annual Costs		
Labor wage ($/hr)	51-9122 Painters, Transporation Equipment (May 2017)	$ 22.30
operator hour (hrs/shift)		0.5
shifts per day (shift/day)		1
days of work per year (days/year)		260
Operator labor		
Operator	($22.3)*(0.5 hours/shift)*(1 shift/day)*(260 days/year)	$2,899.00
Supervisor		$0.00
Material	equal to operator costs	$2,899.00
Replacement labor		$0.00

Utilities		
Electrical Cost		
kW/hp		0.746
hp		10
hours/year		2086
kWh price		0.1382
Electrical	(0.746 kw/hp)*(10 hp)*(2085.72 hours/year)*($0.1382/kwh)	$2,150.61
Total Direct Annual Costs (without carbon costs)		$7,948.61

Indirect Annual Costs		
Overhead	60% of maintenance labor and materials	$3,478.80
Administrative Charges	2% of Total Capital Investment	$ 254.74
Property Tax	1% of Total Capital Investment	$ 127.37
Insurance	1% of Total Capital Investment	$ 127.37
Total Indirect Annual Costs (without Capital Recovery)		$3,988.27

Ton VOC controlled		2.5
Carbon needed		19,710
Cost of Carbon per year	(15,509 lb carbon)*($1.50/lb carbon)	$29,565.00

Total Annual Costs		$43,151.36
Cost of VOC Removal	($43151)/(2.5 tons voc)	$17,514.51

Determination of Maximum Annual VOC Limit Not Requiring Add-on Bact

Annual Direct Operating Cost (without carbon costs)	$7,948.61
Annual Indirect Operating Cost	$5,637.75
Carbon working capacity (lb carbon/lb VOC)	0.2500
Annual lb VOC PTE	5475
Annual tons Controlled VOC	2.46375
Control Efficiency	0.900
Amount of Carbon Needed	19,710
Cost of Carbon	$29,565.00
Total Annual Cost	$43,151.36
Cost per ton VOC Controlled	$17,514.51

COST EFFECTIVENESS ANALYSIS FOR THERMAL INCINERATION

This cost effectiveness analysis was performed using EPA's OAQPS Control Cost Manual
EPA publication no. 450/3-90-006

VOC Parameters

VOC of concern	Toluene
Molecular weight of VOC (see Control Cost Manual, p 2-39)	92.13
Heat of combustion (Btu/lb - see Control Cost Manual, p 2-39)	17,601
Heating value of VOC (Btu/scf)	4,074
Emission rate (lbs/hr - inlet)	2.4
Inlet concentration (ppm)	21

Gas Parameters

Total gas flow rate (scfm - inlet)	8000
Total gas pressure (psi - inlet)	14.7
Inlet gas temperature (deg F)	71

Equipment Parameters

Level of energy recovery (0%, 35%, 50% or 70%)	70%
Control efficiency (%)	90.0%
Equipment life (years)	10

Operating Parameters

Hours per day	8
Days per week	5
Weeks per year	52
Shifts per day	2

Incinerator Parameters

Volumetric heat of combustion of effluent (Btu/scf)	0.09
Heat of combustion per pound of effluent (Btu/lb)	1.15
Temperature Required for incineration (deg F)	1,500.00
Gas temperature at exit of pre-heater (deg F)	1,071.30
Effluent gas temperature (deg F)	499.7

Electricity Usage

Price of electricity ($/kWh)	$0.14
System fan (kWh/yr)	61,651.20
Total Power Used (kWh/yr)	61,651.20

Gas Usage

Price of gas ($/1000 cu.ft.)	$8.04
Auxiliary fuel required (scfm)	87.43

CAPITAL COST

Direct Costs:

Incinerator		$110,000
Auxiliary equipment (if not included above)		$0
	Equipment Cost (A)	**$110,000**
Instrumentation (0.1A if not included above)		$11,000
Sales taxes (0.0825A)		$9,075
Freight (0.05A)		$5,500
	Total Equipment Cost (B)	**$135,575**

Direct Installation Costs:

Foundation & Supports (0.08B)		$10,846
Handling & erection (0.14B)		$18,981
Electrical (0.04B)		$5,423
Piping (0.02B)		$2,712
Insulation for duct work (0.01B)		$1,356
Painting (0.01B)		$1,356
	Direct Installation Cost	**$40,673**
Site preparation		$0
Facilities & buildings		$0
	Total Direct Costs	**$176,248**

Indirect Costs (installation)

Engineering (0.10B)		$13,558
Construction & field expenses (0.05B)		$6,779
Contractor fees (0.10B)		$13,558
Start-up (0.02B)		$2,712
Performance test (0.01B)		$1,356
Contingencies (0.03B)		$4,067
	Total Indirect Costs	**$42,028**

TOTAL CAPITAL INVESTMENT	**$218,276**

ANNUAL COST

Direct Annual Costs

Operating Cost

Operator (@ $22.30/hr & .5 hr per shift)	$5,798.00
Supervisor (15% of operator)	$869.70
Operating materials	$0.00

Maintenance

	Labor (@21.21/hr & .5 hr per shift)	$5,514.60
	Material (same as labor)	$5,514.60
Utilities		
	Price of electricity ($/kWh)	$0.14
	Price of gas ($/1000 cu.ft.)	$8.04
	Electricity ($/yr)	$3,699.07
	Natural Gas ($/yr)	$87,723.25
	Total Direct Costs	**$109,119.22**

Indirect Annual Costs

Overhead	$10,618.14
Administrative charges	$4,365.52
Property taxes	$2,182.76
Insurance	$2,182.76
Interest rate (%)	4%
Equipment life (years)	10
CRF	0.1233
Capital recovery	$26,911.42
Capital Recovery Inflation Adjustment	$31,668.51
Total Indirect Costs	**$51,017.68**

TOTAL ANNUAL COST	**$160,136.90**

Annual Cost ($/yr)	$160,136.90
Annual Emissions Uncontrolled (lbs/year)	21,140
Annual Emissions Reductions (tons/yr)	9.15

(annual emissions based on BACT determination limit for add-on controls)

COST PER TON OF VOCs REDUCED ($/ton)	**$17,501.30**

UNDER PUBLIC REVIEW SMAQMD BACT CLEARINGHOUSE

CATEGORY: **COATING - PLASTIC PARTS**

BACT Size: Minor Source BACT **COATING OPERATION**

BACT Determination Number: 189	**BACT Determination Date:**

Equipment Information

Permit Number: 25995
Equipment Description: COATING OPERATION
Unit Size/Rating/Capacity: > 4,700 lb VOC/year -Exc. Plsr. Craft & Bus. Mchn.
Equipment Location: T.M. COBB CO
8490 ROVANA CIR.
SACRAMENTO, CA

BACT Determination Information

ROCs	**Standard:**	
	Technology Description:	1.Compliance with District Rule 468, except where noted in footnote (A) of the BACT table in the BACT evaluation and VOC control system with ≥ 90% efficiency, or 2.Use of low-VOC materials resulting in an equivalent emission reduction
	Basis:	Achieved in Practice
NOx	**Standard:**	
	Technology Description:	
	Basis:	
SOx	**Standard:**	
	Technology Description:	
	Basis:	
PM10	**Standard:**	
	Technology Description:	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent
	Basis:	Achieved in Practice
PM2.5	**Standard:**	
	Technology Description:	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent
	Basis:	Achieved in Practice
CO	**Standard:**	
	Technology Description:	
	Basis:	
LEAD	**Standard:**	
	Technology Description:	
	Basis:	

Comments: This BACT excludes pleasure craft and business machine coating operations. VOC: Reference BACT evaluation for footnote (A) requirements.

T-BACT was determined to be compliance with NESHAP HHHHHH or PPPP where applicable.

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777 12th Street, Third Floor

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Sacramento, CA 95814

BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION

DETERMINATION NO.:	188 & 189
DATE:	December 17, 2018
ENGINEER:	Felix Trujillo, Jr.
Category/General Equip Description:	Plastic Parts Coating Operation – Excluding Pleasure Craft and Business Machine Coating Operations
Equipment Specific Description:	Paint Spray Booth
Equipment Size/Rating:	≤ 4,700 lbs VOC/year, Minor Source (BACT #188) >4,700 lbs VOC/year, Minor Source (BACT #189)
Previous BACT Det. No.:	N/A

This BACT determination will be made for plastic parts coating operations, except those involved in pleasure craft and business machine coating operations. Pleasure craft and business machine coating operations will be covered under a separate BACT.

This BACT was determined under the project for A/C 25995 (T.M. Cobb), which is a fiberglass/wood door coating operation. Since there are no exemptions in the District's plastic parts coating rule (Rule 468) for the coating of fiberglass, this BACT will apply to all plastic parts coating operations that are subject to Rule 468.

BACT/T-BACT ANALYSIS

A. ACHIEVED IN PRACTICE (Rule 202, §205.1a):

The following control technologies are currently employed as BACT/T-BACT for plastic parts coating operations by the following agencies and air pollution control districts:

US EPA

BACT

Source: EPA RACT/BACT/LAER Clearinghouse (See Attachment A)

Plastic Parts & Products Surface Coating (Process Code 41.016)	
VOC	1. For spray booths with an exhaust flow rate greater than or equal 30,000 acfm, use an air pollution control device when it is cost-effective; otherwise, use low VOC materials achieved in practice and high transfer efficiency equipment. [95% overall control, 58.6 lb/hour uncontrolled] 2. For spray booths with an exhaust flow rate less than 30,000 acfm, use low VOC materials achieved in practice and high-transfer efficiency equipment. [4.35 lb/gallon weighted daily average($DAVG_{vw}$)](A)
NOx	No standard
SOx	No standard
PM10	Use of HVLP spray guns, electrostatics spray guns, and electrostatic rotary atomizers for spray coating operations. Good work practices.
PM2.5	No standard
CO	No standard

RBLC ID: IN-0154 & IN-0267

(A) Calculated as follows:

$$DAVGvw = \sum_{i=1}^{n} (Ai \times Bi)/C$$

Where:

A = daily gallons of each coating used (minus water and exempt solvents)
B = lbs. VOC/gal. coating (minus water and exempt solvents)
C = total daily gallon coatings used (minus water and exempt solvents)
N = number of all coatings used

T-BACT

There are no T-BACT standards published in the clearinghouse for this category, but the NESHAP standards (see 40 CFR, Part 63 standards below) represent Maximum Achievable Control Technology (MACT) or Generally Available Control Technology (GACT) for HAPs and can therefore be considered T-BACT.

RULE REQUIREMENTS

Control Techniques Guidelines for Miscellaneous Metal Parts and Plastic Parts Coatings (EPA-453/R- 08-003)

Although not a promulgated rule, this guideline identifies Reasonably Available Control Measures and Reasonably Available Control Technology. These guidelines establish achieved in practice control measures that are used by state and local agencies when developing rules for their State Implementation Plans, and are used by U.S. EPA when approving those rules. District Rule 468 (Adopted 03/22/2018) was adopted to meet these guidelines.

40 CFR 63 Subpart HHHHHH – National Emission Standards for Hazardous Air Pollutants for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources

This subpart applies to spray application of coatings containing compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd), collectively referred to as the target HAP to any part or product made of plastic. This subpart also applies to operations using MeCl for the removal of dried paint.

General Requirements

For paint stripping operations using MeCl:

A. Implement management practice to minimize the evaporative emissions of MeCl. The management practices must address practices in paragraphs 1 through 5, as applicable.
    1. Evaluate each application to ensure there is a need for paint stripping.
    2. Evaluate each application where a paint stripper containing MeCl is used to ensure that there is no alternative paint stripping technology that can be used.
    3. Reduce exposure of all paint strippers containing MeCl to the air.
    4. Optimize application conditions when using paint strippers containing MeCl to reduce MeCl evaporation.
    5. Practice proper storage and disposal of paint strippers containing MeCl.

For coatings that may potentially contain the target HAP compounds of chromium, lead, manganese, nickel, or cadmium:

A. All spray-applied coatings must be performed in a spray booth, preparation station, or mobile enclosures that are fully enclosed with a full roof with four walls or complete side curtains. The enclosure must be ventilated at a negative pressure and equipped with a filter system that can achieve at least 98% capture efficiency.
B. Coatings must be applied with HVLP spray equipment, electrostatic application, airless spray gun, air-assisted airless spray gun, or an equivalent technology for which written approval has been obtained from the U.S. EPA.
C. Spray gun cleaning must be conducted such that an atomized mist or spray of gun cleaning solvent and paint residue is not created outside of a container that collects used cleaning solvent.
D. All new and existing personnel who spray-apply surface coatings must be trained in the proper application of surface coatings.
E. For new affected sources, submit an initial notification to EPA no later than 180 days after initial startup or July 7, 2008, whichever is later. For an existing affected source, submit the initial notification no later than January 11, 2010.

California Air Resources Board (CARB)

BACT
Source: CARB BACT Clearinghouse
There are no applicable BACT determinations posted on CARB's BACT clearinghouse.

T-BACT
There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS
There are no statewide rule requirements for coating of plastic parts.

Sacramento Metropolitan AQMD

BACT
Source: SMAQMD BACT Clearinghouse

All; Doors and Windows Coating Operation	
VOC	VOC Content as applied not to exceed 1.0 lb/gal; high transfer efficiency application equipment.
NOx	No standard
SOx	No standard
PM10	Dry particulate filters
PM2.5	No standard
CO	No standard

*Note: This BACT is expired and applied to vinyl frames for windows and doors.

As noted above, this BACT applied to vinyl frames for windows and doors. The BACT listed a VOC content of 1.0 lb/gal, which was based on SCAQMD Rule 1145 limits for one and two component coatings. This fiberglass door coating operation includes a clear topcoat that is above this limit. Rule 1145 exempts clear coatings from the requirements of the rule. Therefore, the clear coat used in this operation would not be subject to the limit of Rule 1145 and would default to the applicable limit of SMAQMD District Rule 468 for BACT purposes. Thus, the VOC BACT standards of the expired BACT will not be referenced for this new BACT determination.

T-BACT
The above BACT determination did not address T-BACT

RULE REQUIREMENTS
Rule 468 – Surface Coating of Plastic Parts and Products (Adopted 3/22/2018)
SMAQMD Rule 468, SJVAPCD Rule 4603, and SCAQMD Rules related to coating of plastic parts are all based on EPA-453/R-08-003 "*Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings*," US EPA, September 2008, which is the basis for Reasonably Available Control Technologies (RACT). All three rules were adopted to comply with each District's respective portion of the State Implementation Plan (SIP). Since these rules are based on similar guidelines, a rule comparison has been added under Section A.2.

South Coast AQMD

BACT

Source: SCAQMD BACT Guidelines (Part D) for Non-Major Polluting Facilities, pages 54 & 116 (10/20/2000)

Spray Booth – Other Types	
VOC	VOC Emissions < 14,040 lb/year (1,170 lb/month) (A) A. Compliance with SCAMQD Rule 1145 VOC Emissions ≥ 14,040 lb/year (1,170 lb/month) (A) A. Compliance with SCAQMD Rule 1145, and VOC Control System with ≥ 90% Collection Efficiency and ≥ 95% Destruction Efficiency, or B. Use of Super Compliant Materials (< 5% VOC by weight): or C. Use of Low-VOC Materials Resulting in an Equivalent Emission Reduction
NOx	No standard
SOx	No standard
PM10	Dry filters or water wash
PM2.5	No Standard
CO	No standard

(A) Monthly emissions have been annualized to be consistent with District methodology for determining cost effectiveness for add-on control (Cost per ton per year of emissions reduced).

T-BACT

The above BACT determination did not address T-BACT.

RULE REQUIREMENTS

Regulation IX, Rule 1145 – Plastic, Rubber, Leather, and Glass Coatings (Last amended 12/04/2009)

SMAQMD Rule 468, SJVAPCD Rule 4603, and SCAQMD Rules related to coating of plastic parts are all based on EPA-453/R-08-003 "*Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings*," US EPA, September 2008, which is the basis for Reasonably Available Control Technologies (RACT). All three rules were adopted to comply with each District's respective portion of the State Implementation Plan (SIP). Since these rules are based on similar guidelines, a rule comparison has been added under Section A.2.

San Joaquin Valley APCD

BACT
Source: SJVAPCD BACT Guideline 4.5.4 (12/16/1999)

Plastic Parts and Products Coating	
VOC	The use of HVLP spray guns, an enclosed gun cleaner, and low-VOC coatings (2.8 lb VOC/gal, as applied, less water and exempt solvents)
NOx	No standard
SOx	No standard
PM10	Enclosed paint booth with dry filters and use of HVLP spray guns
PM2.5	No standard
CO	No standard

*Note: SJVAPCD Rule 4603 was amended to include the coating of plastic parts on 09/17/2009. The current limit for a general one-component coating is 2.3 lb/gal and for a two-component coating is 3.5 lb/gal. BACT Guideline 4.5.4 did not specify if it applied to a one or two component coating.

T-BACT
The above BACT determination did not address T-BACT

RULE REQUIREMENTS:
Rule 4603 – Surface Coating of Metal Parts and Products, Plastic Parts and Products, And Pleasure Crafts (Last amended 09/17/2009)

SMAQMD Rule 468, SJVAPCD Rule 4603, and SCAQMD Rules related to coating of plastic parts are all based on EPA-453/R-08-003 "*Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings*," US EPA, September 2008, which is the basis for Reasonably Available Control Technologies (RACT). All three rules were adopted to comply with each District's respective portion of the State Implementation Plan (SIP). Since these rules are based on similar guidelines, a rule comparison has been added under Section A.2.

San Diego County APCD

BACT
Source: NSR Requirements for BACT (6/2011)

General Surface Coating < 10 gallons of coating/day	
VOC	Compliance with SDAPCD Rule 66.1 – Miscellaneous Surface Coating Operation and Other Processes Emitting Volatile Organic Compounds
NOx	No standard
SOx	No standard
PM10	Spray booth equipped with overspray filters
PM2.5	No standard

General Surface Coating < 10 gallons of coating/day	
CO	No standard

T-BACT
There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS
Regulation 4, Rule 66.1 – Miscellaneous Surface Coating Operations and Other Processes Emitting Volatile Organic Compounds (Last Amended 05/11/2016)

This rule is applicable to all surface coating, solvent cleaning or other operations or processes that may result in emissions of VOCs and are not subject to or exempt from another District Rule. SDAPCD does not have a plastic parts coating rule.

This rule requires the following for Surface Coating Operations:
1. VOC emissions from the operation must be less than 5 tons per year, or
2. VOC emissions are reduce by air pollution control device that meets a capture and control efficiency of at least 85% by weight, or
3. Coatings that meet the following limits:

Coating	VOC Content less water and exempt compounds grams/liter, (lb/gal)	
	Air-dried	Baked
General	420 (3.5)	360 (3.0)

This rule requires the following for Surface Preparation and Solvent Cleaning Operations:
A. the total VOC vapor pressure of cleaning material is 8 mm Hg at 20°C (68°F) or less, or
B. the VOC content of cleaning material complies with the following limits expressed as either grams of VOC per liter of material (g/L) or pounds of VOC per gallon of material (lb/gal), as used:

Surface Preparation and Cleaning Solvent	VOC Content as applied grams/liter, (lb/gal)
General	50 (0.42)

Bay Area AQMD

BACT

Source: BAAQMD BACT Guideline 84.1.1 (8/30/1991)

Flow Coater, Dip Tank and Roller Coater	
VOC	VOC Emissions < 13,140 lb/year (36 lb/day uncontrolled) (A) Not determined VOC Emissions ≥ 13,140 lb/year (36 lb/day uncontrolled) (A) Coating with Lower VOC Content than Required by Applicable Rules, and Emissions from Coating Area, Flash Off Area, Drying Area, and Oven Vented to Control Device Achieving ≥ 90% Overall Efficiency
NOx	No standard
SOx	No standard
PM10	No standard
PM2.5	No standard
CO	No standard

(A) Daily emissions have been annualized to be consistent with District methodology for determining cost effectiveness for add-on control (Cost per ton per year of emissions reduced).

T-BACT

There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS

Regulation 8, Rule 31 – Surface Coating of Plastic Parts and Products (last amended 10/16/2002)

VOC Content of Coatings for Miscellaneous Plastic Parts and Coatings

Coating Category	VOC Content, less water grams/liter, (lb/gal)
General	340 (2.8)
Flexible Coatings	
Flexible Primer	490 (4.1)
Color Topcoat	450 (3.8)
Base Coat/clear coat (combined system)	540 (4.5)
Specialty Coatings	
Camouflage	420 (3.5)
Conductive	325 (2.7)
Metallic Topcoat	420 (3.5)
Extreme Performance	750 (6.2)

Coating Category	VOC Content, less water grams/liter, (lb/gal)
High Gloss	420 (3.5)
Optical	800 (6.7)

Surface Preparation and Cleaning Solvent	VOC Content as applied grams/liter, (lb/gal)
General	50 (0.42)

A.2: COMPARISON OF DISTRICT RULE REQUIREMENTS FOR MISCELLANEOUS PLASTIC PARTS AND PRODUCTS:

Table 1: VOC Content of Coatings for Miscellaneous Plastic Parts and Coatings

Coating Category	VOC Content less water and exempt compounds, grams/liter		
	SMAQMD Rule 468	SCAQMD Rule 1145	SJVAPCD Rule 4603
General One-Component Coatings	280	120	280
General Multi-Component Coatings	420	120	420
Electric Dissipating Coatings and Shock Free Coatings	800	360	800
Extreme Performance Coatings: One-component Two-component	 280 420	 120 420	 280 420
Metallic Coatings	420	420	420
Military Specification Coatings: One-component Two-component	 340 420	 340 420	 340 420
Mold Seal Coatings	760	750	760
Multi-Colored Coatings	680	680	680
Optical Coatings	800	50	800
Vacuum-Metalizing Coatings	800	800	800
All Other Coatings	280	120	280

Table 2: VOC Content of Coatings for Transportation Plastic Parts

Coating Category	VOC Content less water and exempt compounds, grams/liter			
	SMAQMD Rule 468		SJVAPCD Rule 4603	
Exterior Parts	**Air-Dried**	**Baked**	**Air-Dried**	**Baked**
Flexible Primer	580	540	580	540
Non-Flexible Primer	580	420	580	420
Base Coat	600	520	600	520
Clear Coatings	540	480	540	480
Touch-up and Repair Coatings	620	620	620	620
All Other Coatings	600	520	600	520

COMPARISON OF DISTRICT RULE REQUIREMENTS FOR MISCELLANEOUS PLASTIC PARTS AND PRODUCTS (continued)

Table 2: VOC Content of Coatings for Transportation Plastic Parts

Coating Category	VOC Content less water and exempt compounds, grams/liter			
	SMAQMD Rule 468		SJVAPCD Rule 4603	
Interior Parts	**Air-Dried**	**Baked**	**Air-Dried**	**Baked**
Flexible Primer	600	540	600	540
Non-Flexible Primer	600	420	600	420
Base Coat	600	520	600	520
Clear Coatings	600	480	600	480
Touch-up and Repair Coatings	620	620	620	620
All Other Coatings	600	520	600	520

Exemptions:

The above rules include various exemptions for sources specific to each District. For example:

- SMAQMD exempts facilities that emit less than 2.7 tons per year of VOC.
- SJVAPCD and SMAQMD allows up to 55 gallons per year of non-compliant coatings.
- SJVAPCD exempts facilities that emit less than 2.7 tons per year of VOC from the pleasure craft standards.
- SCAQMD generally exempts coatings operations that emit less than 3 pounds per day or 66 pounds per month of VOC.
- Touch-up and repair, clear/translucent coatings, and performance testing on coatings at paint manufacturing facilities are exempted by SCAQMD and SJVAPCD.

In order to simplify BACT for regulated sources within the District, achieved in practice BACT will be compliance with SMAQMD Rule 468, except that for the coating categories listed in Table 1, Rule 1145 VOC content limits will apply.

The following control technologies have been identified and are ranked based on stringency:

SUMMARY OF ACHIEVED IN PRACTICE CONTROL TECHNOLOGIES	
$VOC_{Controlled}$	1. VOC Emissions ≥ 256.8 tons/year and Booth ≥ 30,000 acfm (A) A. VOC Control System with ≥ 95% Overall Control Efficiency [USEPA] 2. VOC Emissions > 13,140 lb/year A. Coating with Lower VOC Content than Required by Applicable BAAQMD Rules, and Emissions from Coating Area, Flash Off Area, Drying Area, and Oven Vented to Control Device Achieving ≥ 90% Overall Efficiency [BAAQMD] 3. VOC Emissions ≥ 14,040 lb/year A. Compliance with SCAQMD Rule 1145, and VOC Control System with ≥ 90% Collection Efficiency and ≥ 95% Destruction Efficiency, or B. Use of Super Compliant Materials (< 5% VOC by weight): or C. Use of Low-VOC Materials Resulting in an Equivalent Emission Reduction
$VOC_{Uncontrolled}$	1. Compliance with District Rules and Regulations (See above discussion and rule comparison) [SMAQMD, SCAQMD, SJVAPCD] 2. 4.3 lb/gallon daily average [USEPA]
NOx	No standard
SOx	No standard
PM10	1. Enclosed paint booth with dry filters or water wash and use of HVLP spray guns [SJVAPCD, SCAMQD, SDAPCD] 2. Use of HVLP spray guns, electrostatics spray guns, and electrostatic rotary atomizers for spray coating operations. Good work practices. [USEPA]
PM2.5	No standard
CO	No standard
Organic HAP/VHAP & Inorganic HAP (T-BACT)	1. Compliance with NESHAP HHHHHH [USEPA]

(A) Since the scope of this BACT determination is to evaluate BACT for non-major sources, this achieved in practice technology will be moved to the technologically feasible section, since this source would be considered a major source for SMAQMD (≥ 25 tons VOC per year).

USE OF PM10 STANDARD FOR PM2.5

Emissions of PM10 are created during spray application of coatings. Overspray aerosols from these operations are usually controlled by increasing the transfer efficiency of the coating to the substrate and using a spray booth with overspray filters. Since PM2.5 is a subset of PM10, and the technology used to control PM10 also controls PM2.5, the achieved in practice standard for PM10 will also be used for PM2.5.

T-BACT

For plastic parts coatings, toxic emissions may be from either organic HAPs (ethylbenzene, methylene chloride) found in carrier solvents, strippers, and surface prep or clean-up solvents; or from inorganic HAPs found in pigments (cadmium, chromium, lead). Depending on the organic HAP, VOC control technologies, (oxidizer, carbon adsorption), may not be technologically feasible. Additionally, VOC controls are not effective for inorganic metals. The above NESHAPs

address both organic and inorganic HAPs and are therefore considered T-BACT for this source category.

The following control technologies have been identified as the most stringent, achieved in practice control technologies:

BEST CONTROL TECHNOLOGIES ACHIEVED		
Pollutant	**Standard**	**Source**
VOC	<u>For booths emitting > 13,140 lb/year (uncontrolled)</u> 1. Compliance with District Rule 468, except where noted in footnote **and** VOC control system with ≥ 90% overall efficiency, or 2. Use of low-VOC materials resulting in an equivalent emission reduction. <u>For booths emitting ≤ 13,140 lb/year (uncontrolled)</u> 1. Compliance with District Rule 468, except where noted in footnote (A)	BAAQMD, SMAQMD, SCAQMD
NOx	No standard	
SOx	No standard	
PM10	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent	SJVAPCD, SCAMQD, SMAQMD, SDAPCD
PM2.5	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent	SJVAPCD, SCAMQD, SMAQMD, SDAPCD
CO	No standard	
Organic HAP/VHAP & Inorganic HAP (T-BACT)	Compliance with NESHAP HHHHHH where applicable.	USEPA

(A) The following coating categories listed in Rule 468, Table 1, must meet the following standards listed in SCAQMD Rule 1145 (unless they meet an applicable exemption in the rule): General One-Component Coatings – 120 g/L; General Multi-Component Coatings – 120 g/L; Electric Dissipating Coating and Shock Free Coatings – 360 g/L; Extreme Performance Coatings, One Component – 120 g/L; Optical Coatings – 50 g/L; All Other Coatings not specified in Rule 468, Section 301 – 120 g/L.

B. TECHNOLOGICALLY FEASIBLE AND COST EFFECTIVE (RULE 202, §205.1.b.)

Technologically Feasible Alternatives:
Any alternative basic equipment, fuel, process, emission control device or technique, singly or in combination, determined to be technologically feasible by the Air Pollution Control Officer.

The table below shows the technologically feasible alternatives identified as capable of reducing emissions beyond the levels determined to be "Achieved in Practice" as per Rule 202, §205.1.a.

Pollutant	Technologically Feasible Alternatives
VOC	1. Thermal/catalytic oxidation with an enclosed booth (100% capture efficiency). 2. Carbon adsorption with an enclosed booth (100% capture efficiency).
NOx	No other technologically feasible option identified
SOx	No other technologically feasible option identified
PM10	No other technologically feasible option identified
PM2.5	No other technologically feasible option identified
CO	No other technologically feasible option identified

Cost Effective Determination:
After identifying the technologically feasible control options, a cost analysis is performed to take into consideration economic impacts for all technologically feasible controls identified.

Maximum Cost per Ton of Air Pollutants Controlled

A control technology is considered cost-effective if the cost of controlling one ton of that air pollutant is less than the limits specified below:

Pollutant	Maximum Cost ($/ton)
VOC	17,500
NO_X	24,500
PM10	11,400
SO_X	18,300
CO	TBD if BACT triggered

Cost Effectiveness Analysis Summary
The previous cost analysis for this category (BACT Determination #64) used the District's generic threshold of 4,700 pounds of VOC per year (BACT Determination #22 for Automotive Coating Operations) for a single spray booth. This is the same threshold used in the current Automotive Coating Operations BACT #153 and #154. This BACT determination will revisit this limit using new cost data. Facilities that coat miscellaneous metal parts and miscellaneous plastic parts use

TECHNOLOGICALLY FEASIBLE AND COST EFFECTIVE (RULE 202, §205.1.b.) (continued)

generally the same types of equipment to coat their respective substrates (Spray booths, HVLP spray guns). This BACT determination will use updated cost data (sales tax, electricity, natural gas, and labor rates).

The cost analysis was processed in accordance with the EPA OAQPS Air Pollution Control Cost Manual (Sixth Edition, EPA/452/B-02-001). The sales tax rate was based on the District's standard rate of 8.25%. The electricity (13.80 cents/kWh) and natural gas (8.04 dollars/1,000 cubic feet) rates were based on a commercial application as approved by the District. The life of the equipment was based on the EPA cost manual recommendation. The interest rate was based on the previous 6-month average interest rate on United States Treasury Securities (based on the life of the equipment) and addition of two percentage points and rounding up to the next higher integer rate. The labor (Occupation Code 51-9122: Painters, Transportation Equipment and maintenance (Occupation Code 49-9099: Installation, maintenance, and repair workers, all other) rates were based on data from the Bureau of Labor Statistics.

Carbon Adsorber: As shown in Attachment B, the cost effectiveness for the add-on carbon adsorber system to control VOC was calculated to be **$17,515/ton**. The following basic parameters were used in the analysis.

Equipment Life = 10 years

Total Capital Investment = $12,736.85

Direct Annual Cost = $37,513.61 per year

Indirect Annual Cost = $5,637.75 per year

Total Annual Cost = $43,151.36 per year

VOC Removed = 2.5 tons per year

Cost of VOC Removal = $17,514.51 per ton reduced

A detailed calculation of the cost effectiveness for VOC removal with a carbon adsorber is shown in Attachment B. Uncontrolled VOC emissions of 5,475 pounds per year or greater is the cost-effective threshold for control equipment using carbon adsorption control technology.

Thermal Oxidizer: As shown in Attachment B, the cost effectiveness for the add-on thermal oxidizer system to control VOC was calculated to be **$33,009/ton**. The following basic parameters were used in the analysis.

Equipment Life = 10 years

Direct Costs: = $176,248

Direct Annual Cost = $109,119 per year

Indirect Annual Cost = $51,018 per year

TECHNOLOGICALLY FEASIBLE AND COST EFFECTIVE (RULE 202, §205.1.b.) (continued)

Total Annual Cost = $160,137 per year

VOC Removed = 9.15 tons per year

Cost of VOC Removal = $17,501 per ton reduced

A detailed calculation of the cost effectiveness for VOC removal with a carbon adsorber is shown in Attachment B. Uncontrolled VOC emissions of 18,300 pounds per year or greater is the cost-effective threshold for control equipment using thermal oxidation control technology.

Conclusion: In this analysis, different emission operating levels are presented with the corresponding total cost per ton of VOC controlled using either a carbon adsorption control or a thermal oxidizer. Uncontrolled VOC emission level of 5,475 pounds per year or greater must be reached in order for the carbon adsorption control option to be cost effective. Uncontrolled VOC emission level of 18,300 pounds per year or greater must be reached in order for a thermal oxidizer to be cost effective. The emissions levels for the cost effectiveness of controls is based on the District cost effective limit for ROC of $17,500 per ton controlled.

However, the District previously established that the cost effectiveness threshold for add-on control at automotive coating operations is 4,700 pounds per year of VOC (BACT #154). Since the add-on control technology is essentially the same for both a plastic parts coating operation and an automotive coating operation, the same cost-effectiveness threshold will be applied to this BACT determination.

C. SELECTION OF BACT:

Based on the review of SMAQMD, SCAQMD, SDCAPCD, BAAQMD, SJVAPCD, ARB, and EPA BACT Clearinghouses and cost effectiveness determinations, BACT for VOC, PM10, and PM2.5 will be the following:

BACT #188 for Plastic Parts Coating Operation ≤ 4,700 pounds per year		
Pollutant	**Standard**	**Source**
VOC	Compliance with District Rule 468, except where noted in footnote (A)	SMAQMD (BACT #153 & Rule 468) SCAQMD (Rule 1145)
NOx	No standard	
SOx	No standard	
PM10	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent	SJVAPCD (BACT 4.5.4) SCAMQD (BACT) SDAPCD (BACT)
PM2.5	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent	SJVAPCD (BACT 4.5.4) SCAMQD (BACT) SDAPCD (BACT)
CO	No standard	

(A) The following coating categories listed in Rule 468, Table 1, must meet the following standards listed in SCAQMD Rule 1145 (unless they meet an applicable exemption in the rule): General One-Component Coatings – 120 g/L; General Multi-Component Coatings – 120 g/L; Electric Dissipating Coating and Shock Free Coatings – 360 g/L; Extreme Performance Coatings, One Component – 120 g/L; Optical Coatings – 50 g/L; All Other Coatings not specified in Rule 468, Section 301 – 120 g/L.

BACT #189 for Plastic Parts Coating Operation > 4,700 pounds per year		
Pollutant	**Standard**	**Source**
VOC	1. Compliance with District Rule 468, except where noted in footnote (A) **and** VOC control system with ≥ 90% overall efficiency, or 2. Use of low-VOC materials resulting in an equivalent emission reduction.	BAAQMD (BACT 84.1.1); SMAQMD (BACT #154 & Rule 468) SCAQMD (BACT, Rule 1145)
NOx	No standard	
SOx	No standard	
PM10	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent	SJVAPCD (BACT 4.5.4) SCAMQD (BACT) SMAQMD (BACT #64) SDAPCD (BACT)

SELECTION OF BACT: (continued)

BACT #189 for Plastic Parts Coating Operation > 4,700 pounds per year		
Pollutant	**Standard**	**Source**
PM2.5	Enclosed paint booth with dry filters or water wash and use of HVLP spray guns or equivalent	SJVAPCD (BACT 4.5.4) SCAMQD (BACT) SMAQMD (BACT #64) SDAPCD (BACT)
CO	No standard	

(A) The following coating categories listed in Rule 468, Table 1, must meet the following standards listed in SCAQMD Rule 1145 (unless they meet an applicable exemption in the rule): General One-Component Coatings – 120 g/L; General Multi-Component Coatings – 120 g/L; Electric Dissipating Coating and Shock Free Coatings – 360 g/L; Extreme Performance Coatings, One Component – 120 g/L; Optical Coatings – 50 g/L; All Other Coatings not specified in Rule 468, Section 301 – 120 g/L.

T-BACT for Plastic Parts Coating Operation		
Pollutant	**Standard**	**Source**
Organic HAP/VHAP & Inorganic HAP (T-BACT)	Compliance with NESHAP HHHHHH where applicable.	USEPA

REVIEWED BY: _____ **DATE:** _____

APPROVED BY: _____ **DATE:** _____

Attachment A

Review of BACT Determinations published by EPA

COMPREHENSIVE REPORT
Report Date:05/22/2018

Facility Information

RBLC ID:	IN-0274 (final)	**Date Determination Last Updated:**	11/15/2017
Corporate/Company Name:	CONTINENTAL STRUCTURAL PLASTICS	**Permit Number:**	069-38101-00043
Facility Name:	CONTINENTAL STRUCTURAL PLASTICS	**Permit Date:**	08/21/2017 (actual)
Facility Contact:	VINOD C SHAH 2488235664	**FRS Number:**	Not Found
Facility Description:	STATIONARY PAINTING OF HIGH-PRESSURE FIBERGLASS AND REINFORCED THERMOSET PLASTICS MANUFACTURING SOURCE	**SIC Code:**	3089
Permit Type:	C: Modify process at existing facility	**NAICS Code:**	326199
Permit URL:	HTTP:PERMITS.AIR.IDEM.IN.GOV/38101F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	HUNTINGTON		
Facility State:	IN		
Facility ZIP Code:	46750		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	PERMIT WRITER: BRIAN WILLIAMS 317-234-5375 BWILLIAM@IDEM.IN.GOV SECTION CHIEF: IRYN CALILUNG 317-233-5692 ICALILUN@IDEM.IN.GOV		
Permit Notes:			

Process/Pollutant Information

PROCESS NAME:	FIBERGLASS REINFORCED PLASTIC PART COATING LINE
Process Type:	41.016 (Plastic Parts & Products Surface Coating (except 41.015))

Primary Fuel:

Throughput: 187.50 PARTS PER HOUR

Process Notes: LINE CONSISTS OF THE FOLLOWING: (1) ONE (1) SPRAY BOOTH, IDENTIFIED AS PB 1 (FORMERLY SB-A-S), INSTALLED ON DECEMBER 11, 1987, MODIFIED FOR THE ADDITION OF ONE (1) SPRAY GUN IN 2004, AND MODIFIED PRIOR TO 2010, EQUIPPED WITH ROBOTIC AUTOMATIC CONVENTIONAL AIR ATOMIZATION SPRAY GUNS AND A WATERWASH SYSTEM AS OVERSPRAY CONTROL, EXHAUSTING TO STACKS EP 1 AND EP 2. (2) ONE (1) MANUAL SPRAY BOOTH USED TO APPLY PAINT TO THE BACKS OF PARTS THAT CANNOT BE REACHED BY ROBOTS, IDENTIFIED AS PB 2 (FORMERLY SB-M-S), INSTALLED ON DECEMBER 11, 1987 AND MODIFIED PRIOR TO 2010, EQUIPPED WITH MANUAL CONVENTIONAL AIR ATOMIZATION SPRAY GUNS AND A WATERWASH SYSTEM AS OVERSPRAY CONTROL, EXHAUSTING TO STACK EP 3. (3) ONE (1) SPRAY BOOTH, IDENTIFIED AS PB 3 (FORMERLY SB-A-M), INSTALLED ON DECEMBER 11, 1987, MODIFIED FOR THE ADDITION OF ONE (1) SPRAY GUN IN 2004, EQUIPPED WITH ROBOTIC AUTOMATIC CONVENTIONAL AIR ATOMIZATION SPRAY GUNS AND A WATERWASH SYSTEM AS OVERSPRAY CONTROL, EXHAUSTING TO STACKS EP 4 AND EP 5. (4) ONE (1) SPRAY BOOTH, IDENTIFIED AS PB 4 (SB-M-M), INSTALLED ON DECEMBER 11, 1987 AND MODIFIED PRIOR TO 2010, EQUIPPED WITH ROBOTIC AUTOMATIC CONVENTIONAL AIR ATOMIZATION SPRAY GUNS AND A WATERWASH SYSTEM AS OVERSPRAY CONTROL, EXHAUSTING TO STACK EP 6. (5) ONE (1) AUTOMATIC SPRAY BOOTH, IDENTIFIED AS PB 5 (FORMERLY SB-M-PR), INSTALLED ON DECEMBER 11, 1987 AND MODIFIED PRIOR TO 2010, EQUIPPED WITH ROBOTIC AUTOMATIC CONVENTIONAL AIR ATOMIZATION SPRAY GUNS AND A WATERWASH SYSTEM AS OVERSPRAY CONTROL, EXHAUSTING TO STACK EP 7. (6) ONE (1) AUTOMATIC SPRAY BOOTH, IDENTIFIED AS PB 6 (FORMERLY SB-A-PR), INSTALLED ON DECEMBER 11, 1987 AND MODIFIED PRIOR TO 2010, EQUIPPED WITH ROBOTIC AUTOMATIC CONVENTIONAL AIR ATOMIZATION SPRAY GUNS AND A WATERWASH SYSTEM AS OVERSPRAY CONTROL, EXHAUSTING TO STACKS EP 8 AND EP 9.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 230.0000 TONS OF VOC 12 CONSECUTIVE MONTH

Emission Limit 2: 4.9000 LB/GAL VOC

Standard Emission:

Did factors, other than air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: OTHER CASE-BY-CASE

Other Applicable Requirements:

Control Method: (P) ROBOTIC AUTOMATIC CONVENTIONAL AIR ATOMIZATION SPRAY GUNS AND MANUAL CONVENTIONAL AIR ATOMIZATION SPRAY GUNS OR TECHNOLOGY WITH EQUAL OR GREATER TRANSFER EFFICIENCY GOOD WORK PRACTICES

Est. % Efficiency:

Cost Effectiveness: 14889 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified:	Unknown
Pollutant/Compliance Notes:	(A) THE VOC DELIVERED TO THE APPLICATORS SHALL NOT EXCEED 230.0 TONS PER TWELVE (12) CONSECUTIVE MONTH PERIOD WITH COMPLIANCE DETERMINED AT THE END OF EACH MONTH. (B) THE VOC CONTENT OF THE PRIMERS USED SHALL NOT EXCEED 4.9 POUNDS PER GALLON AS APPLIED. (C) THE USE OF ROBOTIC AUTOMATIC CONVENTIONAL AIR ATOMIZATION SPRAY GUNS OR TECHNOLOGY WITH EQUAL OR GREATER TRANSFER EFFICIENCY SHALL BE USED TO REDUCE VOC EMISSIONS IN PB 1, PB 3, PB 4, PB 5, AND PB 6. (D) THE USE OF MANUAL CONVENTIONAL AIR ATOMIZATION SPRAY GUNS OR TECHNOLOGY WITH EQUAL OR GREATER TRANSFER EFFICIENCY SHALL BE USED TO REDUCE VOC EMISSIONS IN PB 2. (E) GOOD WORK PRACTICES TO MINIMIZE LEAKS, SPILL AND EVAPORATIVE LOSSES. RTO NOT COST EFFECTIVE. STATE BACT

Facility Information

RBLC ID:	IN-0267 (final)	**Date Determination Last Updated:**	11/17/2017
Corporate/Company Name:	CHIYODA USA CORPORATION	**Permit Number:**	133-37625-00019
Facility Name:	CHIYODA USA CORPORATION	**Permit Date:**	05/18/2017 (actual)
Facility Contact:	TODD STEVENS 7656539098	**FRS Number:**	Not Found
Facility Description:	STATIONARY PLASTIC AUTOMOTIVE TRIM MOLDING AND SURFACE COATING FACILITY	**SIC Code:**	3089
Permit Type:	B: Add new process to existing facility	**NAICS Code:**	326199
Permit URL:	HTTP:PERMITS.AIR.IDEM.IN.GOV/37625F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	PUTNAM		
Facility State:	IN		
Facility ZIP Code:	46135		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	PERMIT WRITER: BRANDON MILLER 317-234-5374 BMILLER@IDEM.IN.GOV		

SECTION CHIEF: IRYN CALILUNG
317-233-5692

Permit Notes:

Process/Pollutant Information

PROCESS NAME: ROBOT PAINT SPRAY SYSTEM (PT541)

Process Type: 41.016 (Plastic Parts & Products Surface Coating (except 41.015))

Primary Fuel:

Throughput: 0.01 GALLON/PART

Process Notes: (G) ONE (1) ROBOT PAINT SPRAY SYSTEM, IDENTIFIED AS PT541, CONSTRUCTED IN 2016, AMENDED IN 2016, AND APPROVED IN 2017 FOR MODIFICATION TO INCREASE THE MAXIMUM CAPACITY, COATING PLASTIC AUTOMOTIVE COMPONENTS, AND CONSISTING OF THE FOLLOWING: (1) ONE (1) PRIMER SPRAY BOOTH, IDENTIFIED AS PB-01, CONSTRUCTED IN 2016, AMENDED IN 2016, AND APPROVED IN 2017 FOR MODIFICATION TO INCREASE THE MAXIMUM CAPACITY, USING HIGH VOLUME, LOW PRESSURE (HVLP) SPRAY GUNS TO COAT PLASTIC PARTS, WITH A MAXIMUM APPLICATION RATE OF 0.012 GALLONS OF COATING PER PART AND 3,425 PARTS PER DAY, WITH PARTICULATE EMISSIONS CONTROLLED WITH A WATER WASH SYSTEM, AND EXHAUSTING TO STACK PS-01. (2) ONE (1) BASECOAT SPRAY BOOTH, IDENTIFIED AS BC-01, CONSTRUCTED IN 2016, AMENDED IN 2016, AND APPROVED IN 2017 FOR MODIFICATION TO INCREASE THE MAXIMUM CAPACITY, USING ELECTROSTATIC BELL SPRAY GUNS TO COAT PLASTIC PARTS, WITH A MAXIMUM APPLICATION RATE OF 0.029 GALLONS OF COATING PER PART AND 3,425 PARTS PER DAY, WITH PARTICULATE EMISSIONS CONTROLLED WITH A WATER WASH SYSTEM, AND EXHAUSTING TO STACKS PS-01 AND PS-02. (3) ONE (1) MICA SPRAY BOOTH, IDENTIFIED AS MC-01, CONSTRUCTED IN 2016, AMENDED IN 2016, AND APPROVED IN 2017 FOR MODIFICATION TO INCREASE THE MAXIMUM CAPACITY, USING ELECTROSTATIC BELL SPRAY GUNS TO COAT PLASTIC PARTS, WITH A MAXIMUM APPLICATION RATE OF 0.029 GALLONS OF COATING PER PART AND 3,425 PARTS PER DAY, WITH PARTICULATE EMISSIONS CONTROLLED WITH A WATER WASH SYSTEM, AND EXHAUSTING TO STACK PS-02. (4) ONE (1) CLEAR COAT SPRAY BOOTH, IDENTIFIED AS CC-01, CONSTRUCTED IN 2016, AMENDED IN 2016, AND APPROVED IN 2017 FOR MODIFICATION TO INCREASE THE MAXIMUM CAPACITY, USING ELECTROSTATIC BELL SPRAY GUNS TO COAT PLASTIC PARTS, WITH A MAXIMUM APPLICATION RATE OF 0.021 GALLONS OF COATING PER PART AND 3,425 PARTS PER DAY, WITH PARTICULATE EMISSIONS CONTROLLED WITH A WATER WASH SYSTEM, AND EXHAUSTING TO STACK PS-02.

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified
Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	77.3500 TONS OF VOC 12 CONSECUTIVE MONTH PERIODS
Emission Limit 2:	4.3500 POUNDS OF VOC PER GALLON DAILY VOLUME WEIGHTED AVERAGE
Standard Emission:	

Did factors, other than air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis:	OTHER CASE-BY-CASE
Other Applicable Requirements:	NESHAP
Control Method:	(N)
Est. % Efficiency:	
Cost Effectiveness:	11094 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	EMISSION LIMIT 2: DAILY VOLUME-WEIGHTED AVERAGE VOC CONTENT OF ALL COATINGS USED SHALL NOT EXCEED 4.35 POUNDS OF VOC PER GALLON OF COATING, EXCLUDING WATER. LIMIT 3: SPRAY APPLICATION METHOD SHALL BE DONE WITH HVLP SPRAY APPLICATORS, ELECTROSTATIC SPRAY APPLICATORS, OR ROTARY ELECTROSTATIC SPRAY APPLICATORS LIMIT 4: GOOD MANAGEMENT AND WORK PRACTICES, INCLUDING BUT NOT LIMITED TO (I) MINIMIZATION OF SOLVENTS TO CLEAN SPRAY APPLICATION AREAS; (II) USE OF MASKING TECHNIQUES TO MINIMIZE THE AMOUNT OF SOLVENT CONTAINING VOC TO CLEAN THE SPRAY BOOTH WALLS, FLOORS, AND ASSOCIATED EQUIPMENT; (III) WORKING WITH THE SUPPLIERS TO GENERALLY LOWER THE VOC CONTENT OF COATINGS USED IN THE PAINT SPRAY SYSTEM; AND (IV) EDUCATING PLANT STAFF THAT WORK IN THE PAINT SHOP AND INDIVIDUAL COATING OPERATIONS ON PROPER SPRAY APPLICATION TECHNIQUES, CLEANING PROCEDURES AND MANAGEMENT OF NEW COATING MATERIALS, AS WELL AS USED COATING MATERIALS. STATE BACT COST PROHIBITIVE: THERMAL OXIDIZER (PS-01 STACK ONLY) = $30,545/TON THERMAL OXIDIZER (PS-02 STACK ONLY) = $21,039/TON THERMAL OXIDIZER (BOTH STACKS) = $21,330/TON CONCENTRATOR (BOTH STACKS) = $11,094/TON SUBJECT TO 40 CFR 63, SUBPART PPPP

Facility Information

RBLC ID:	IN-0258 (final)	**Date Determination Last Updated:**	04/28/2017
Corporate/Company Name:	COULTER & SON, INC.	**Permit Number:**	039-37330-00454
Facility Name:	COULTER & SON, INC.	**Permit Date:**	02/01/2017 (actual)
Facility Contact:	MARK BATE 5748257891	**FRS Number:**	Not Found
Facility Description:	PLASTIC PARTS COATING PLANT	**SIC Code:**	3089
Permit Type:	C: Modify process at existing facility	**NAICS Code:**	326199
Permit URL:	HTTP:PERMITS.AIR.IDEM.IN.GOV/37330F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	ELKHART		
Facility State:	IN		
Facility ZIP Code:	46540		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	PERMIT WRITER: BRIAN WILLIAMS 317-234-5375 BWILLIAM@IDEM.IN.GOV SECTION CHIEF: IRYN CALILUNG 317-233-5692 ICALILUN@IDEM.IN.GOV		
Permit Notes:			

Process/Pollutant Information

PROCESS NAME:	SPRAY COATING LINE 1
Process Type:	41.016 (Plastic Parts & Products Surface Coating (except 41.015))
Primary Fuel:	NA
Throughput:	3060.00 PLASTIC SPRAY CAN CAPS OR PARTS PER HOUR
Process Notes:	ONE (1) SPRAY COATING LINE, IDENTIFIED AS LINE 1, CONSTRUCTED IN 1998 AND MODIFIED IN 2012, EQUIPPED WITH NINE (9) HIGH VOLUME, LOW PRESSURE (HVLP) SPRAY APPLICATORS AND DRY FILTERS FOR OVERSPRAY CONTROL,

EXHAUSTING TO STACKS S2A, S2B, AND S2C, CAPACITY: 3,060 PLASTIC SPRAY CAN CAPS OR PLASTIC PARTS PER HOUR. THE MAXIMUM CAPACITY OF LINE 1 IS BASED ON THE COMMON DISTRIBUTION SYSTEM, REGARDLESS OF THE NUMBER OF SPRAY APPLICATORS.

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified
Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	90.0000 TONS TOTAL VOC INPUT 12 CONSECUTIVE MONTHS
Emission Limit 2:	6.8000 LB VOC/GAL COATING DAILY VOLUME-WEIGHTED AVERAGE
Standard Emission:	
Did factors, other than air pollution technology considerations influence the BACT decisions:	N
Case-by-Case Basis:	OTHER CASE-BY-CASE
Other Applicable Requirements:	
Control Method:	(N)
Est. % Efficiency:	
Cost Effectiveness:	6856 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	EMISSION LIMIT 1 INCLUDES COATINGS, THINNERS, AND CLEAN-UP SOLVENTS USED IN SPRAY COATING LINE 1 AND 2. EMISSION LIMIT 2 IS DAILY VOLUME-WEIGHTED AVERAGE AND EXCLUDES WATER. ADDITIONAL LIMITS: (A) THE USE OF AUTOMATED HVLP SPRAY GUNS, ELECTROSTATIC SPRAY GUNS AND/OR ELECTROSTATIC ROTARY ATOMIZERS FOR SPRAY COATING OPERATIONS IN SPRAY COATING LINES 1 AND 2. (2) GOOD WORK PRACTICES TO MINIMIZE LEAKS, SPILL AND EVAPORATIVE LOSSES. STATE BACT

Process/Pollutant Information

PROCESS NAME:	SPRAY COATING LINE 2
Process Type:	41.016 (Plastic Parts & Products Surface Coating (except 41.015))
Primary Fuel:	NA
Throughput:	6120.00 SILVER PLASTIC SPRAY CAN CAPS OR PARTS PER HOUR

Process Notes: ONE (1) SPRAY COATING LINE, IDENTIFIED AS LINE 2, CONSTRUCTED IN 2003, MODIFIED IN 2012, AND APPROVED FOR MODIFICATION IN 2017, EQUIPPED WITH NINE (9) HVLP SPRAY APPLICATORS AND DRY FILTERS FOR OVERSPRAY CONTROL EXHAUSTING TO STACKS S5A,S5B, S5C. THIS LINE OPERATES UNDER TWO (2) DIFFERENT OPERATING SCENARIOS. THE MAXIMUM CAPACITY FOR SCENARIO 1 IS 3,060 PLASTIC SPRAY CAN CAPS PER HOUR. THE MAXIMUM CAPACITY FOR SCENARIO 2 IS 6,120 SILVER PLASTIC SPRAY CAN CAPS OR PLASTIC PARTS PER HOUR. THE MAXIMUM CAPACITY OF LINE 2 IS BASED ON THE COMMON DISTRIBUTION SYSTEM, REGARDLESS OF THE NUMBER OF SPRAY APPLICATORS.

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified
Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	90.0000 TONS TOTAL VOC INPUT 12 CONSECUTIVE MONTHS
Emission Limit 2:	6.8000 LB VOC/GAL COATING DAILY VOLUME-WEIGHTED AVERAGE
Standard Emission:	

Did factors, other than air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis:	OTHER CASE-BY-CASE
Other Applicable Requirements:	
Control Method:	(N)
Est. % Efficiency:	
Cost Effectiveness:	8151 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	EMISSION LIMIT 1 INCLUDES COATINGS, THINNERS, AND CLEAN-UP SOLVENTS USED IN SPRAY COATING LINE 1 AND 2. EMISSION LIMIT 2 IS DAILY VOLUME-WEIGHTED AVERAGE AND EXCLUDES WATER. ADDITIONAL LIMITS: (A) THE USE OF AUTOMATED HVLP SPRAY GUNS, ELECTROSTATIC SPRAY GUNS AND/OR ELECTROSTATIC ROTARY ATOMIZERS FOR SPRAY COATING OPERATIONS IN SPRAY COATING LINES 1 AND 2. (2) GOOD WORK PRACTICES TO MINIMIZE LEAKS, SPILL AND EVAPORATIVE LOSSES. STATE BACT

Facility Information

RBLC ID:	IN-0275 (final)	**Date Determination Last Updated:**	05/11/2018
Corporate/Company Name:	GREENVILLE TECHNOLOGY, INC.	**Permit Number:**	095-37334-00136
Facility Name:	GREENVILLE TECHNOLOGY, INC. - ANDERSON	**Permit Date:**	10/26/2016 (actual)
Facility Contact:	LES SIEGLER 937-548-1471 LES_SIEGLER@GTIOH.COM	**FRS Number:**	Not Found
Facility Description:	stationary plastic automobile parts manufacturing plant	**SIC Code:**	3714
Permit Type:	B: Add new process to existing facility	**NAICS Code:**	336399
Permit URL:	http://permits.air.idem.in.gov/37334f.pdf		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	MADISON		
Facility State:	IN		
Facility ZIP Code:	46013		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	Brian Wright 317-234-6544 Bwright1@idem.in.gov		
Permit Notes:			
Facility-wide Emissions:	**Pollutant Name:** Volatile Organic Compounds (VOC)	**Facility-wide Emissions Increase:** 66.2500 (Tons/Year)	

Process/Pollutant Information

PROCESS NAME:	plastic parts surface coating line (EU08)
Process Type:	41.016 (Plastic Parts & Products Surface Coating (except 41.015))
Primary Fuel:	
Throughput:	0
Process Notes:	

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified

Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	95.0000 % CONTROL EFFICIENCY
Emission Limit 2:	100.0000 PPMV
Standard Emission:	15.1260 LBS/HR

Did factors, other than air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis:	OTHER CASE-BY-CASE
Other Applicable Requirements:	OTHER
Control Method:	(A) regenerative thermal oxidizer
Est. % Efficiency:	95.000
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Yes
Pollutant/Compliance Notes:	

Facility Information

RBLC ID:	IN-0205 (final)	**Date Determination Last Updated:**	06/08/2016
Corporate/Company Name:	FOREST RIVER, INC., PLANT #63	**Permit Number:**	039-34761-00760
Facility Name:	FOREST RIVER, INC., PLANT # 63	**Permit Date:**	10/27/2014 (actual)
Facility Contact:	WILLIAM G. CONWAY 5745346913	**FRS Number:**	Unknown
Facility Description:	RECREATIONAL VEHICLE MANUFACTURING PLANT	**SIC Code:**	3792
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	336214
Permit URL:	HTTP://PERMITS.AIR.IDEM.IN.GOV/34761F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	ELKHART		
Facility State:	IN		
Facility ZIP Code:	46507		

Permit Issued By: INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name)
MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov

Other Agency Contact Info: PERMIT WRITER: KRISTEN WILLOUGHBY
(317)233-3031
KWILLOUG@IDEM.IN.GOV
SECTION CHIEF: JENNY ACKER
(317)234-5285

Permit Notes:

Process/Pollutant Information

PROCESS NAME: ASSEMBLY OPERATIONS

Process Type: 41.016 (Plastic Parts & Products Surface Coating (except 41.015))

Primary Fuel:

Throughput: 1.75 VEH/H

Process Notes: THIS PROCESS INCLUDES THE APPLICATION OF ADHESIVES, SELANTS, CAULKS, TOUCH-UP COATINGS, AND CLEANERS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 96.6100 T/12 MONTHS 3-HOURS

Emission Limit 2: 6.5000 LB/GAL VOC CLEANERS & SOLVENTS

Standard Emission:

Did factors, other than air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: OTHER CASE-BY-CASE

Other Applicable Requirements:

Control Method: (P) HVLP SPRAY APPLICATORS & WORK PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: THIRD LIMIT - WORK PRACTICES STATE BACT

Facility Information

RBLC ID:	IN-0195 (final)	**Date Determination Last Updated:**	05/05/2016
Corporate/Company Name:	SUBARU OF INDIANA AUTOMOTIVE, INC.	**Permit Number:**	157-33759-00050
Facility Name:	SUBARU OF INDIANA AUTOMOTIVE, INC.	**Permit Date:**	05/19/2014 (actual)
Facility Contact:	DENISE COOGAN 7654491111	**FRS Number:**	110000404205
Facility Description:	AUTOMOBILE AND LIGHT DUTY TRUCKS MANUFACTURING PLANT	**SIC Code:**	3711
Permit Type:	D: Both B (Add new process to existing facility) &C (Modify process at existing facility)	**NAICS Code:**	336111
Permit URL:	http://permits.air.idem.in.gov/33759f.pdf		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	TIPPECANOE		
Facility State:	IN		
Facility ZIP Code:	47905		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	AIDA DEGUZMAN - PERMIT WRITER (317) 233-4972 ADEGUZMA@IDEM.IN.GOV CHRYSTAL WAGNER - SECTION CHIEF (317) 234-1203		
Permit Notes:			

Process/Pollutant Information

PROCESS NAME: PLASTIC BUMPER COATING LINE

Process Type: 41.016 (Plastic Parts & Products Surface Coating (except 41.015))

Primary Fuel:

Throughput: 160000.00

Process Notes:

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified
Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	0.7100 LB/GAL DAILY VOLUME WEIGHTED AVERAGE
Emission Limit 2:	1.3800 LB/GAL DAILY VOLUME WEIGHTED AVE
Standard Emission:	4.0900 LB/GAL DAILY VOLUME WEIGHTED AVE
Did factors, other than air pollution technology considerations influence the BACT decisions:	N
Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	NESHAP
Control Method:	(N)
Est. % Efficiency:	
Cost Effectiveness:	13726 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	BACT LIMITATIONS AND GOOD WORK PRACTICES: 0.71 LB/GAL - PRIMER COATING 1.38 LB/GAL - BASECOAT COATING 4.09 LB/GAL - CLEARCOAT COATING GOOD WORK PRACTICES WHICH INCLUDES THE FOLLOWING: (1) THE USE OF ROBOTIC AUTOMATIC SPRAY APPLICATORS TO MINIMIZE PAINT USAGE. (2) THE USE OF WATERBASED COATINGS FOR THE PRIMER, AND BASECOAT APPLICATIONS. (3) ALL PAINT MIXING CONTAINERS, OTHER THAN DAY TANKS EQUIPPED WITH CONTINUOUS AGITATION SYSTEMS, WHICH CONTAIN ORGANIC VOC CONTAINING COATINGS AND OTHER MATERIALS SHALL HAVE A COVER WITH NO VISIBLE GAPS IN PLACE AT ALL TIMES EXCEPT WHEN MATERIAL IS BEING ADDED TO OR REMOVED FROM A CONTAINER, OR WHEN MIXING OR PUMPING EQUIPMENT IS BEING PLACED IN OR REMOVED FROM A CONTAINER. (4) SOLVENT-BORNE PURGE MATERIALS SPRAYED DURING PAINT LINE CLEANING AND COLOR CHANGES SHALL BE DIRECTED INTO SOLVENT COLLECTION CONTAINERS. DOCUMENTATION SHALL BE MAINTAINED ON-SITE TO DEMONSTRATE HOW THESE MATERIALS ARE BEING DIRECTED AND COLLECTED FOR BOTH THE SOLVENT-BORNE AND WATER-BORNE PURGE MATERIALS. (5) SOLVENT COLLECTION CONTAINERS SHALL BE KEPT CLOSED WHEN NOT IN USE. (6) CLEAN-UP RAGS WITH

SOLVENT SHALL BE STORED IN CLOSED CONTAINERS. (7) VOC EMISSIONS SHALL BE MINIMIZED DURING CLEANING OF STORAGE, MIXING, AND CONVEYING EQUIPMENT.

Facility Information

RBLC ID:	IN-0176 (final)	**Date Determination Last Updated:**	05/04/2016
Corporate/Company Name:	ASHLEY INDUSTRIAL MOLDING, INC.	**Permit Number:**	113-34068-00092
Facility Name:	ASHLEY INDUSTRIAL MOLDING, INC.	**Permit Date:**	05/14/2014 (actual)
Facility Contact:	CATHERINE MOWERY 2605879155	**FRS Number:**	110061087318
Facility Description:	STATIONARY PLASTIC PARTS MANUFACTURING AND COATING FACILITY	**SIC Code:**	3089
Permit Type:	B: Add new process to existing facility	**NAICS Code:**	326199
Permit URL:	HTTP://PERMITS.AIR.IDEM.IN.GOV/34068F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	NOBLE		
Facility State:	IN		
Facility ZIP Code:	46755		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	PERMIT WRITER: BRIAN WILLIAMS 317-234-5375 BWILLIAM@IDEM.IN.GOV SECTION CHIEF: IRYN CALILUNG 317-233-5692 ICALILUN@IDEM.IN.GOV		
Permit Notes:			

Process/Pollutant Information

PROCESS NAME: PLASTIC PARTS SURFACE COATING LINE

Process Type: 41.016 (Plastic Parts & Products Surface Coating (except 41.015))

Primary Fuel:

Throughput: 18921600.00 SQFT/YR PLASTIC PARTS

Process Notes: COATING LINE CONSISTS OF TACK WIPE BOOTH, PRIME BOOTH, AND TWO (2) TOPCOAT BOOTHS. TACK WIPE BOOTH USES 159.5 GALLONS OF SOLVEN PER MONTH. PRIME BOOTH AND TOPCOAT BOOTHS HAVE A NOMINAL CONVEYOR LINE SPEED OF 8 FEET PER MINUTE WHEN COATING LARGEST PARTS.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 154.2500 TONS 12 CONSECUTIVE MONTH PERIOD

Emission Limit 2: 4.0000 LB/GAL AS APPLIED

Standard Emission:

Did factors, other than air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: OTHER CASE-BY-CASE

Other Applicable Requirements: NESHAP

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 15663 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: THREE-PASS RTO NOT COST EFFECTIVE. LIMIT 2: VOC CONTENT OF PRIMERS AND TOPCOATS USED IN PRIME AND TOPCOAT BOOTHS SHALL NOT EXCEED 4.0 LBS/GAL AS APPLIED. ADDITIONAL LIMITS: METHOD OF APPLICATION IN TACK WIPE BOOTH SHALL ONLY BE DONE WITH HAND WIPE. METHOD OF APPLICATION IN PRIME AND TOPCOAT BOOTHS SHALL BE DONE WITH HVLP OR ELECTROSTATIC APPLICATORS. MANAGEMENT AND WORK PRACTICES: OPERATOR TRAINING COURSE, SPRAY GUN CLEANING, CLEANUP SOLVENT CONTAINERS USED TO TRANSPORT SOLVENT FROM DRUMS TO WORK STATIONS SHALL BE CLOSED COTAINERS HAVING SOFT GASKETED CLOSURES, APPLICATION EQUIPMENT OPERATORS SHALL BE INSTRUCTED AND TRAINED ON THE METHODS AND PRACTICES UTILITZED TO MINIMIZE SPILLAGE ON THE FLOOR AND OVER APPLICATION, AND STORAGE

CONTAINERS USED TO STORE VOC-CONTAINING MATERIALS SHALL BE KEPT COVERED WHEN NOT IN USE. STATE BACT

Facility Information

RBLC ID:	IN-0159 (final)	**Date Determination Last Updated:**	05/04/2016
Corporate/Company Name:	ASHLEY INDUSTRIAL MOLDING, INC.	**Permit Number:**	033-32469-00017
Facility Name:	ASHLEY INDUSTRIAL MOLDING, INC.	**Permit Date:**	04/23/2013 (actual)
Facility Contact:	CATHERINE MOWERY 2605879155	**FRS Number:**	110041978535
Facility Description:	STATIONARY HIGH PRESSURE FIBERGLASS-REINFORCED PLASTIC PARTS MANUFACTURING AND PAINTING SOURCE.	**SIC Code:**	3089
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	326199
Permit URL:	HTTP://PERMITS.AIR.IDEM.IN.GOV/32469F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	DEKALB		
Facility State:	IN		
Facility ZIP Code:	46705		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	PERMIT WRITER: BRIAN WILLIAMS BWILLIAMS@IDEM.IN.GOV 317-234-5375 SECTION CHIEF: MATT STUCKEY MSTUCKEY@IDEM.IN.GOV 317-233-0203		
Permit Notes:			

Process/Pollutant Information

PROCESS NAME: SURFACE COATING LINE

Process Type: 41.016 (Plastic Parts & Products Surface Coating (except 41.015))

Primary Fuel:

Throughput: 45.40 GAL/H OF COATING

Process Notes: THIS CONSISTS OF ONE (1) PRIME BOOTH WITH ONE (1) FLASH OFF TUNNEL, IDENTIFIED AS SB-1, AND ONE (1) TOP COAT BOOTH WITH ONE (1) FLASH OFF TUNNEL, IDENTIFIED AS SB-2. SB-1 EXHUASTS TO STACK SB-1, AND SB-2 EXHUASTS TO FOUR (4) STACKS (SB-2A - SB-2D).

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 207.0000 TONS 12 CONSECUTIVE MONTH PERIOD

Emission Limit 2: 4.0000 LB/GAL

Standard Emission:

Did factors, other than air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: OTHER CASE-BY-CASE

Other Applicable Requirements:

Control Method: (P) USE OF HIGH VOLUME LOW PRESSURE OR ELECTROSTATIC SPRAY APPLICATORS. GOOD MANAGEMENT AND WORK PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: EL2: AS APPLIED VOC CONTENT OF PRIMERS AND TOP COATS. THE FOLLOWING MANAGEMENT AND WORK PRACTICES SHALL APPLY:OPERATOR TRAINING COURSE, SPRAY GUN CLEANING, CLEANUP SOLVENT CONTAINERS USED TO TRANSPORT SOLVENT FROM DRUMS TO WORK STATIONS SHALL BE CLOSED CONTAINERS HAVING SOFT GASKETED CLOSURES, APPLICATION EQUIPMENT OPERATORS SHALL BE INSTRUCTED AND TRAINED ON THE METHODS AND PRACTICES UTILIZED TO MINIMIZE SPILLAGE ON THE FLOOR AND OVER APPLICATION, AND STORAGE CONTAINERS USED TO STORE VOC-CONTAINING MATERIALS SHALL BE KEPT COVERED WHEN NOT IN USE. STATE BACT

Facility Information

RBLC ID:	IN-0154 (final)	**Date Determination Last Updated:**	05/04/2016
Corporate/Company Name:	GREENVILLE TECHNOLOGY, INC. - ANDERSON	**Permit Number:**	095-32281-00136
Facility Name:	GREENVILLE TECHNOLOGY, INC. - ANDERSON	**Permit Date:**	01/03/2013 (actual)
Facility Contact:	LES SIEGLER 9375481471 LES_SIEGLER@GTIOH.COM	**FRS Number:**	110055148022
Facility Description:	PLASTIC AUTOMOBILE PARTS MANUFACTURING PLANT	**SIC Code:**	3714
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	336322
Permit URL:	HTTP://PERMITS.AIR.IDEM.IN.GOV/32281F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	MADISON		
Facility State:	IN		
Facility ZIP Code:	46013		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	PERMIT WRITER: BRIAN WILLIAMS 317-234-5375 BWILLIAM@IDEM.IN.GOV SECTION CHIEF: IRYN CALILUNG 317-233-5692 ICALILUN@IDEM.IN.GOV		
Permit Notes:			

Process/Pollutant Information

PROCESS NAME:	PLASTIC PARTS SURFACE COATING LINE
Process Type:	41.016 (Plastic Parts & Products Surface Coating (except 41.015))
Primary Fuel:	

Throughput: 8.30 GAL/H OF COATING

Process Notes: SURFACE COATING LINE CONSISTS OF PAINT BOOTH, WHICH IS EQUIPPED WITH TWO (2) ROBOTIC HVLP SPRAY GUNS, FLASH OFF TUNNEL, AND NATURAL GAS-FIRED CURE OVEN RATED AT 0.8 MMBTU/HR. THE PAINT BOOTH, FLASH OFF TUNNEL, AND CURE OVEN ARE CONTAINED WITHIN A PERMANENT TOTAL ENCLOSURE. THE PAINT BOOTH ALSO USES A MAXIMUM OF 1 GALLON OF CLEAN UP SOLVENT PER HOUR.

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified
Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	95.0000 % OVERALL CONTROL EF 3 HOURS
Emission Limit 2:	12.0000 PPMV 3 HOURS
Standard Emission:	

Did factors, other than air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis:	OTHER CASE-BY-CASE
Other Applicable Requirements:	
Control Method:	(A) REGENERATIVE THERMAL OXIDIZER WITH PERMANENT TOTAL ENCLOSURE
Est. % Efficiency:	95.000
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	STATE BACT

Facility Information

RBLC ID:	IN-0160 (final)	**Date Determination Last Updated:**	05/04/2016
Corporate/Company Name:	CREATIVE COATINGS, INC.	**Permit Number:**	113-29007-00018
Facility Name:	CREATIVE COATINGS, INC.	**Permit Date:**	02/22/2010 (actual)
Facility Contact:	STEPHEN GEIST 2603491862	**FRS Number:**	110029239624

Facility Description:	STATIONARY PLASTIC AND METAL PARTS COATING OPERATION	**SIC Code:**	3089
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	326192
Permit URL:	HTTP://PERMITS.AIR.IDEM.IN.GOV/29007F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	NOBLE		
Facility State:	IN		
Facility ZIP Code:	46755		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	PERMIT WRITER: JAMES MACKENZIE 317-233-2641 JMACKENZIE@IDEM.IN.GOV SECTION CHIEF: TRIP SINHA 317-234-4907 TSINHA@IDEM.IN.GOV		
Permit Notes:			

Process/Pollutant Information

PROCESS NAME:	PAINT LINE 2
Process Type:	41.016 (Plastic Parts & Products Surface Coating (except 41.015))
Primary Fuel:	
Throughput:	38.00 PARTS/H - METAL OR PLASTIC
Process Notes:	PAINT LINE 2 CONSISTS OF THE FOLLOWING: ONE (1) ADEHESION PROMOTOR AIR ATOMIZATION SPRAY BOOTH, IDENTIFIED AS APB1, EXHAUSTING TO STACK S5 USING WATER WASH AND BAFFLES TO CONTROL PARTICULATE EMMISIONS; ONE (1) BASECOAT APPLICATION AIR ATOMIZATION SPRAY BOOTH, IDENTIFIED AS BCB2, EXHAUSTING TO STACKS S6 AND S7 USING WATER WASH AND BAFFLES TO CONTROL PARTICULATE EMISSIONS; ONE (1) CLEAR COAT APPLICATION AIR ATOMIZATION SPRAY BOOTH EXHAUSTING TO STACKS S8 AND S9 USING WATER WASH AND BAFFLES TO CONTROL PARTICULATE EMISSIONS; ONE (1) 6-STAGE WASH LINE, IDENTIFIED AS WL2, EXHAUSTING TO STACKS S1, S2, AND S3 WITH A MAXIMUM CAPACITY OF 12,500 GALLONS AND 1.5 MMBTU/HR.; ONE (1) NATURAL GAS FIRED DRY OFF OVER, IDENTIFIED AS DOO2, EXHAUSTING TO STACK S4 WITH A MAXIMUM CAPACITY OF 1.5 MMBTU/HR.; ONE (1) NATURAL GAS FIRED BAKE OVEN, IDENTIFIED AS BO2, EXHAUSTING TO STACK S10 AND S11 WITH A MAXIMUM CAPACITY OF 8.3 MMBTU/HR. ALSO PROCESS TYPE 41.013 - MISCELLANEOUS METAL PARTS AND PRODUCTS SURFACE COATING

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified
Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	249.0000 TONS 12 CONSECUTIVE MONTH PERIOD
Emission Limit 2:	5.9000 LB/GAL
Standard Emission:	

Did factors, other than air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis:	OTHER CASE-BY-CASE
Other Applicable Requirements:	
Control Method:	(P) USE OF HVLP SPRAY GUNS, ELECTROSTATICS SPRAY GUNS, AND ELECTROSTATIC ROTARY ATOMIZERS FOR SPRAY COATING OPERATIONS. GOOD WORK PRACTICES.
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	LIMIT TWO: MAXIMUM ORGANIC SOLVENT CONTENT FOR COATINGS GOOD WORK PRACTICES TO MINIMIZE LEAKS, SPILLS, AND EVAPORATIVE LOSSES. THESE LIMITS ONLY APPLY WHEN COATING PLASTIC PARTS. STATE BACT

Attachment B

Cost Effectiveness Determination for Carbon Adsorption and Thermal Oxidizers

COST EFFECTIVENESS ANALYSIS FOR CARBON ADSORPTION

This cost effectiveness analysis was performed using EPA's OAQPS Control Cost Manual
EPA publication no. 452/B-02-001

VOC Parameters

VOC of concern		Toluene
Cost of pure VOC ($/ton)		100
Molecular weight of VOC (Refer to Control Cost Manual, pg 3-63)		92.13
Emission rate (lbs/hr - inlet)		2.4
Inlet concentration (ppm)		22
k factor (Refer to Control Cost Manual, Chapter 1, Table 1.1)		0.551
m factor (Refer to Control Cost Manual, Chapter 1, Table 1.1)		0.11
Partial pressure (psi)		0.000317514

Gas Parameters

Total gas flow rate (acfm - inlet)		8,000
Total gas pressure (psi - inlet)		14.7

Equipment Parameters

Removal efficiency (%)		90.0%
Adsorption time (hours)		8
Desorption time (hours)		8
Number of adsorbing beds		1
Number of Desorbing beds		1
Equipment life (years)		10

Operating Parameters

Hours per day		8
Days per week		5
Weeks per year		52
Days per year		261

Carbon Requirements

Controlled VOC Emissions with max operation (tons/year)	((2.4 lbs VOC/hr)*(0.9)*(8 hours/day)*(261 days/year)/(2000 lbs/ton)	2.25504
VOC Emissions BACT add on limit (pounds/year)		5475
Controlled VOC Emissions BACT add on limit (tons/year)	(5475 lbs/year)*0.9	2.46375
Carbon working capacity (lb VOC/lb carbon)	EPA Cost Control Manual, Equation 1.15	0.2500
Amount of carbon needed (lbs)	(5475 lbs VOC)/(0.25 lb VOC/lb carbon)	19,710
Carbon cost	($1.5/lb carbon)*(15,509 lbs carbon)	$29,565
Carbon life (years)		5

Direct Costs:

Purchased Equipment Cost

Adsorber and auxiliary equipment (Vessel Cost)	EPA Cost Control Manual, Equation 1.25	$9,749.21
Instrumentation	1% of equipment cost ($9749)*0.1	$974.92
Sales taxes	8.25% of equipment cost ($9749.20698272062)*0.0825	$804.31
Freight	5% of equipment cost ($9749.20698272062)*0.05	$487.46
Purchased Equipment Cost		$12,015.90
Direct installation costs		
Foundations & supports		$ -
Handling & erection		$ -
Electrical		$ -
Piping		$ -
Insulation		$ -
Painting		$ -
Direct installation costs		$ -
Indirect Costs:		
Indirect Costs (installation)		
Engineering		$ -
Construction and field expenses		$ -
Contractor fees		$ -
Start-up	2% of equipment cost ($9204)*0.02	$ 240.32
Performance test	1% of equipment cost ($9204)*0.01	$ 120.16
Contingencies	3% of equipment cost ($9204)*0.03	$ 360.48
Total Indirect Costs		$ 720.95
Total Capital Investment		$12,736.85
Interest Rate	2% plus 6-month average, rounded to next integer	5%
Equipment Life (years)		10
Capital Recovery Factor (CRF)		0.1295
Capital recovery cost	($12736.85*0.1295)	$1,649.48
Direct Annual Costs		
Labor wage ($/hr)	51-9122 Painters, Transporation Equipment (May 2017)	$ 22.30
operator hour (hrs/shift)		0.5
shifts per day (shift/day)		1
days of work per year (days/year)		260
Operator labor		
Operator	($22.3)*(0.5 hours/shift)*(1 shift/day)*(260 days/year)	$2,899.00
Supervisor		$0.00
Material	equal to operator costs	$2,899.00
Replacement labor		$0.00

Utilities		
Electrical Cost		
kW/hp		0.746
hp		10
hours/year		2086
kWh price		0.1382
Electrical	(0.746 kw/hp)*(10 hp)*(2085.72 hours/year)*($0.1382/kwh)	$2,150.61
Total Direct Annual Costs (without carbon costs)		$7,948.61

Indirect Annual Costs		
Overhead	60% of maintenance labor and materials	$3,478.80
Administrative Charges	2% of Total Capital Investment	$ 254.74
Property Tax	1% of Total Capital Investment	$ 127.37
Insurance	1% of Total Capital Investment	$ 127.37
Total Indirect Annual Costs (without Capital Recovery)		$3,988.27

Ton VOC controlled		2.5
Carbon needed		19,710
Cost of Carbon per year	(15,509 lb carbon)*($1.50/lb carbon)	$29,565.00

Total Annual Costs		$43,151.36
Cost of VOC Removal	($43151)/(2.5 tons voc)	$17,514.51

Determination of Maximum Annual VOC Limit Not Requiring Add-on Bact

Annual Direct Operating Cost (without carbon costs)	$7,948.61
Annual Indirect Operating Cost	$5,637.75
Carbon working capacity (lb carbon/lb VOC)	0.2500
Annual lb VOC PTE	5475
Annual tons Controlled VOC	2.46375
Control Efficiency	0.900
Amount of Carbon Needed	19,710
Cost of Carbon	$29,565.00
Total Annual Cost	$43,151.36
Cost per ton VOC Controlled	$17,514.51

COST EFFECTIVENESS ANALYSIS FOR THERMAL INCINERATION

This cost effectiveness analysis was performed using EPA's OAQPS Control Cost Manual
EPA publication no. 450/3-90-006

VOC Parameters

VOC of concern	Toluene
Molecular weight of VOC (see Control Cost Manual, p 2-39)	92.13
Heat of combustion (Btu/lb - see Control Cost Manual, p 2-39)	17,601
Heating value of VOC (Btu/scf)	4,074
Emission rate (lbs/hr - inlet)	2.4
Inlet concentration (ppm)	21

Gas Parameters

Total gas flow rate (scfm - inlet)	8000
Total gas pressure (psi - inlet)	14.7
Inlet gas temperature (deg F)	71

Equipment Parameters

Level of energy recovery (0%, 35%, 50% or 70%)	70%
Control efficiency (%)	90.0%
Equipment life (years)	10

Operating Parameters

Hours per day	8
Days per week	5
Weeks per year	52
Shifts per day	2

Incinerator Parameters

Volumetric heat of combustion of effluent (Btu/scf)	0.09
Heat of combustion per pound of effluent (Btu/lb)	1.15
Temperature Required for incineration (deg F)	1,500.00
Gas temperature at exit of pre-heater (deg F)	1,071.30
Effluent gas temperature (deg F)	499.7

Electricity Usage

Price of electricity ($/kWh)	$0.14
System fan (kWh/yr)	61,651.20
Total Power Used (kWh/yr)	61,651.20

Gas Usage

Price of gas ($/1000 cu.ft.)	$8.04
Auxiliary fuel required (scfm)	87.43

CAPITAL COST

Direct Costs:

Incinerator		$110,000
Auxiliary equipment (if not included above)		$0
	Equipment Cost (A)	**$110,000**
Instrumentation (0.1A if not included above)		$11,000
Sales taxes (0.0825A)		$9,075
Freight (0.05A)		$5,500
	Total Equipment Cost (B)	**$135,575**

Direct Installation Costs:

Foundation & Supports (0.08B)		$10,846
Handling & erection (0.14B)		$18,981
Electrical (0.04B)		$5,423
Piping (0.02B)		$2,712
Insulation for duct work (0.01B)		$1,356
Painting (0.01B)		$1,356
	Direct Installation Cost	**$40,673**
Site preparation		$0
Facilities & buildings		$0
	Total Direct Costs	**$176,248**

Indirect Costs (installation)

Engineering (0.10B)		$13,558
Construction & field expenses (0.05B)		$6,779
Contractor fees (0.10B)		$13,558
Start-up (0.02B)		$2,712
Performance test (0.01B)		$1,356
Contingencies (0.03B)		$4,067
	Total Indirect Costs	**$42,028**

TOTAL CAPITAL INVESTMENT	**$218,276**

ANNUAL COST

Direct Annual Costs

Operating Cost

Operator (@ $22.30/hr & .5 hr per shift)	$5,798.00
Supervisor (15% of operator)	$869.70
Operating materials	$0.00

Maintenance

	Labor (@21.21/hr & .5 hr per shift)	$5,514.60
	Material (same as labor)	$5,514.60
Utilities		
	Price of electricity ($/kWh)	$0.14
	Price of gas ($/1000 cu.ft.)	$8.04
	Electricity ($/yr)	$3,699.07
	Natural Gas ($/yr)	$87,723.25
	Total Direct Costs	**$109,119.22**

Indirect Annual Costs

Overhead	$10,618.14
Administrative charges	$4,365.52
Property taxes	$2,182.76
Insurance	$2,182.76
Interest rate (%)	4%
Equipment life (years)	10
CRF	0.1233
Capital recovery	$26,911.42
Capital Recovery Inflation Adjustment	$31,668.51
Total Indirect Costs	**$51,017.68**

TOTAL ANNUAL COST	**$160,136.90**

Annual Cost ($/yr)	$160,136.90
Annual Emissions Uncontrolled (lbs/year)	21,140
Annual Emissions Reductions (tons/yr)	9.15

(annual emissions based on BACT determination limit for add-on controls)

COST PER TON OF VOCs REDUCED ($/ton)	**$17,501.30**