



**SOUTH COAST AIR QUALITY
MANAGEMENT DISTRICT
ENGINEERING AND COMPLIANCE DIVISION**

Coating, Printing, Aerospace & Metal Finishing Team

PERMIT APPLICATION EVALUATION

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A/Ns 518877-78
Processed by SMKE
Reviewed by EMM
Date 2/19/11

PERMIT TO CONSTRUCT

TWO NEW SPRAY BOOTHS (replacements)

Applicant's Name: AMF Anaheim LLC
Facility ID: 149235
Mailing Address: 2100 E. Orangewood Ave, Anaheim, CA 92806
Equipment Address: 2100 E. Orangewood Ave, Anaheim, CA 92806

EQUIPMENT DESCRIPTION

A/N 518877- P/C, replacement for A/N 470386 (F92074)

SPRAY BOOTH L-13, CONVEYORIZED, INDUSTRIAL PROCESS EQUIPMENT, 20'-8" W. x 15'-5" D. x 10'-0" H., WITH TWENTY-FIVE 20" x 20" EXHAUST FILTERS AND TWO 3 HP EXHAUST FANS.

A/N 518878 - P/C, replacement for A/N 470387 (F92075)

SPRAY BOOTH L-15, CONVEYORIZED, INDUSTRIAL PROCESS EQUIPMENT, 20'-8" W. x 15'-5" D. x 10'-0" H., WITH TWENTY-FIVE 20" x 20" FILTERS AND TWO 3 HP EXHAUST FANS.

A/N 518879)

Title V Revision Plan, De minimis Significant

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN COMPLIANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. THIS SPRAY BOOTH SHALL NOT BE OPERATED UNLESS ALL EXHAUST AIR PASSES THROUGH FILTER MEDIA AT LEAST 2 INCHES THICK.
[RULE 1303(a)(1)-BACT]
4. A GAUGE SHALL BE INSTALLED TO INDICATE, IN INCHES OF WATER, THE STATIC PRESSURE DIFFERENTIAL ACROSS THE EXHAUST FILTERS. IN



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OPERATION, THE PRESSURE DIFFERENTIAL SHALL NOT EXCEED 0.25 INCHES OF WATER ACROSS THE EXHAUST FILTERS.

[RULE 1303(a)(1)-BACT]

5. THIS EQUIPMENT SHALL BE OPERATED IN COMPLIANCE WITH RULES 1107 AND 1171.
6. THE TOTAL QUANTITY OF VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS FROM THE TWO SPRAY BOOTHS UNDER A/N 518877 & 518878 COMBINED SHALL NOT EXCEED 850 POUNDS IN ANY CALENDAR MONTH.
[RULE 1303(a)(1)-BACT]
7. THE TOTAL QUANTITY OF VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS DISCHARGED TO THE ATMOSPHERE FROM THIS FACILITY SHALL NOT EXCEED 372 POUNDS IN ANY ONE DAY. (FACILITY CONDITION)
[RULE 1303(b)(2)-OFFSET]
8. IN ADDITION TO THE RECORDKEEPING REQUIREMENTS IN RULE 109, THE OPERATOR SHALL KEEP ADEQUATE RECORDS FOR THIS EQUIPMENT TO VERIFY THE DAILY AND CALENDAR MONTHLY VOC EMISSIONS IN POUNDS AND THE VOC CONTENT OF EACH COATING IN POUNDS PER GALLON OF MATERIAL AS APPLIED, INCLUDING WATER AND EXEMPT COMPOUNDS.
[RULE 109, 1303(b)(2)-OFFSET]
9. MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC AIR CONTAMINANTS IDENTIFIED IN RULE 1401, TABLE I, WITH AN EFFECTIVE DATE OF DECEMBER 7, 1990 OR EARLIER.
[RULE 1401]
10. MATERIAL SAFETY DATA SHEETS FOR ALL MATERIALS USED AT THIS FACILITY AND SUBJECT TO DISTRICT RULES SHALL BE KEPT CURRENT AND BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST. (FACILITY CONDITION)
[RULE 109, 1303(a)(1)-BACT, 1303(b)(2)-OFFSET]
11. THE OPERATOR SHALL DETERMINE AND RECORD THE PRESSURE DROP ACROSS THE FILTER ONCE EVERY WEEK.
[RULE 3004 (a)(4)]



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12. THE OPERATOR SHALL PERFORM A WEEKLY INSPECTION OF THE EQUIPMENT AND FILTER MEDIA FOR LEAKS, BROKEN OR TORN FILTER MEDIA AND IMPROPERLY INSTALLED FILTER MEDIA. THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETER(S) OR ITEM(S):
- A. THE NAME OF THE PERSON PERFORMING THE INSPECTION AND/OR MAINTENANCE OF THE FILTER MEDIA;
 - B. THE DATE, TIME AND RESULTS OF THE INSPECTION; AND
 - C. THE DATE, TIME AND DESCRIPTION OF ANY MAINTENANCE OR REPAIRS RESULTING FROM THE INSPECTION.
- [RULE 3004 (a)(4)]

BACKGROUND

AMF Anaheim LLC manufactures sheet metal chassis and panels. Operations include shaping and forming, cleaning, finishing, and assembly. The company submitted the above applications on 2/11/2011 to install two new spray booths in the conveyor line to replace two existing spray booths under A/N 470386 (P/O F92074) and A/N 470387 (P/O F92075). The new booths will be larger than the old booths to allow two operators to paint both sides of the part at the same time. The painted parts will be cured in an existing permitted oven under P/O G7353. Minor changes to the oven description and recordkeeping condition will be included with this revision to ensure accurate recordkeeping.

The booths to be replaced each have a 48 lb/day VOC equipment cap. The new booths will be operated under an 850 lb/month combined VOC cap to comply with BACT and so no Rule 212 public notice will be required.

AMF is a Title V facility. The proposed project is considered as a “de minimis significant permit revision” to the first Title V permit issued on 9/4/2007 for this ID, as described in the Regulation XXX evaluation (the first Title V permit issued on 9/4/2007 was an administrative revision due to change of operator, the TV permit expires on 7/8/2011). This is the 5th revision since the change of operator.

The District data base shows no complaints against this facility in the last two years. A notice of violation was issued in May 2010 for exceeding the VOC limit on two other spray booths on one day in 2009.

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PROCESS DESCRIPTION

AMF utilizes metal forming equipment, including precision laser cutters and robotic welders in shaping and forming operations. In addition to metal forming and shaping, AMF also performs metal finishing operations, including liquid and powder coating and drying. This facility typically operates 24 hr/day, 7 days/week, 52 weeks/year.

EMISSION CALCULATIONS

The facility is operating under an emission cap of 372 lbs/day of VOC. There will be no VOC emission increase from the facility since the facility cap will remain the same. The two booths will be limited to 850 lb/month VOC.

VOC

Max lb/day = 850 lb/month ÷ 30 days/month = 28 lb/day ÷ 24 hr/day = 1.2 lb/hr
NSR 30-day average will be entered as zero since this will be part of an existing facility cap.

PM & PM₁₀ Emissions:

Base on max VOC allowable of 850 lb/mo and Cardinal 8100 coating with the following:

VOC Content = 0.73 lb/gal material
Density = 10.5 lb/gal
Max wt % solids = 50%

Assume
65% spray gun transfer efficiency
90% minimum filter efficiency
PM₁₀ = 50% PM

Max gal sprayed = 850 lb VOC/mo ÷ 0.73 lb VOC/gal = 1164 gal/mo

Max solids sprayed = 1164 gal/mo x 10.5 lb/gal x 0.50 lb solids/lb x (1-0.65) = 2139 lb/mo
PM R1 = 2139 lb/mo ÷ 30 days/mo = 71.3 lb/day ÷ 24 hr/day = 3 lb/hr
PM R2 = 71.3 lb/day (1-0.90) = 7.13 lb/day ÷ 24 hr/day = 0.3 lb/hr

PM₁₀ R1 = 71.3 lb/day x 0.5 = 35.7 lb/day ÷ 24 hr/day = 1.5 lb/hr
PM₁₀ R2 = 7.13 lb/day x 0.5 = 3.57 lb/day ÷ 24 hr/day = 0.15 lb/hr



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$$\begin{aligned} \text{Particulate Matter Conc (grains/dscf)} &= R2 \times 7000 \text{ grains/lb}/(30,700 \text{ CFM} \times 60 \text{ min/hr}) \\ &= 0.3 \text{ lb/hr} \times 7000/(30,700 \times 60) \\ &= 0.0011 \text{ grains/dscf} \end{aligned}$$

(complies with Rule 404 limit of 0.0522 gr/dscf interpolated for 30,700 cfm)

TOXICS

There are no carcinogenic compounds present in the coatings to be used in this equipment. There are small quantities of some acute and chronic compounds in two of the coatings.

Coating	VOC content (lb/gal)	Density (lb/gal)	TAC	CAS #	Max Wt%	
Cardinal 8100	0.73	10.5	IPA	67-63-0	5%	Acute & chronic
Sherwin Williams Kem Aqua 1700	0.84	9.12	2-butoxyethanol (EGBE)	111-76-2	7%	Acute

For worst case analysis, assume one coating contains both TACs used at maximum of 1164 gal/mo.x 12 mo/year = 13,968 gal/year

TAC	CAS #	Density (lb/gal)	Max Wt%	Lb/year	Lb/hr
IPA	67-63-0	10.5	5%	7,333	0.84
2-butoxyethanol (EGBE)	111-76-2		7%	10,266	1.17

RULE EVALUATION

RULE 212(c)(1) This section requires a public notice for all new and modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school.

Since there are no schools within 1,000 feet of the facility, a public notice will not be required by this section.

RULE 212(c)(2) This section requires a public notice for all new and modified facilities which have on-site emission increases exceeding any of the daily maximums specified in subdivision (g).

There will be no emission increase from the facility since these are replacements and they will operate these booths under the existing facility VOC cap. Public notice will not be required by this section.



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RULE 212(c)(3) *This section requires a public notice for all new or modified permit units with increases in emissions of toxic air contaminants listed in Table I of Rule 1401 resulted in MICR greater than $1E^{-6}$ per permit unit or greater than $10E^{-6}$ per facility.*

There are no carcinogenic coatings present in the coatings to be used in this equipment, however there are some acute and chronic TAC present in the coatings. A screening risk assessment was conducted and shows the HIA and HIC are both below 1. Therefore, public notice is not required.

RULE 212(g) *This section requires a public notice for all new and modified sources that have equipment emission increases exceeding any of the daily maximum as specified by Rule 212 (g).*

The VOC emission increase from this equipment will be 850 lb/month or 28 lb/day which does not exceed maximum limit of 30 lb/day. PM_{10} emissions are < 4 lb/day which does not exceed the maximum limit of 30 lb/day. Public notice is not required by this section.

RULE 401 Visible Emissions

Visible emissions are not expected with proper maintenance and operation of this equipment. The system shows no visible emissions complaints at this location.

RULE 402 Nuisance

Operation of this equipment is not expected to create complaints or nuisance with proper maintenance and operation. The system shows no nuisance complaints at this location.

RULE 404 Particulate Matter – Concentration

The particulate matter concentration discharged from these spray booths is below the concentration at standard conditions shown in Table 404(a). See PM calculations above. Compliance is expected.

RULE 1107 Metal Coating Operations

The coatings will be applied with HVLP spray guns. Water reducible coatings will be applied subject to the general coating category limit of



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275 g/l. All coatings based on MSDS submitted have VOC less than 275 g/l. Compliance is expected.

<i>Coating</i>	<i>Rule 1107 VOC Limit</i>	<i>Actual VOC Content</i>
General	275 g/l	219 – 275 g/l

RULE 1171 Solvent Cleaning Operations

Acetone and water will be used to clean the spray guns. Compliance is expected.

REG XIII Rule 1303(a), Best Available Control Technology (BACT)

The spray booths will be limited to 850 lbs VOC/month therefore compliance with Reg XI satisfies BACT for VOC. The spray booths will be equipped with two inch thick exhaust filters to comply with BACT for particulates.

Rule 1303 (b)(1), Modeling

PM₁₀ emissions are 0.15 lb/hr, well under the allowable of 0.41 lb/hr (Table A-1) for non-combustion sources, therefore modeling is not required. Modeling is not required for VOC.

Rule 1303 (b)(2), Offsets

Offsets for VOC or PM₁₀ are not required since these booths are functionally identical replacements and exempt from offsets under 1304(a)(1). Also these booths will be operated under the existing facility VOC cap so there will be no increase in emissions from the facility as a result of this project.

RULE 1401 New Source Review of Toxic air Contaminants

This is a functionally identical replacement with a decrease in emissions, therefore exempt from this rule under 1401(g). The previous permits of spray booths to be replaced were subject to Rule 1401 as amended December 7, 1990. There are no carcinogenic compounds, only acute and chronic TACs (IPA & EGBE). The screening risk assessment shows the HIA and HIC are both below 1. See attached toxic evaluation.



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REG XXX

This facility is not in the RECLAIM program. The proposed project is considered as a “de minimis significant permit revision” to the Title V permit issued on September 4, 2007 (admin revision for change of operator). Rule 3000(b)(6) defines a “de minimis significant permit revision” as any Title V permit revision where the cumulative emission increases on non-RECLAIM pollutants or hazardous air pollutants (HAP) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

<i>Air Contaminant</i>	<i>Daily Maximum (lbs/day)</i>
HAP	30
VOC	30
NO _x	40
PM ₁₀	30
SO _x	60
CO	220

Rule 3003(j) specifies that a proposed permit for the initial Title V renewal permit shall be submitted to EPA for review. To determine if a project qualifies for a “de minimis significant permit revision”, emission increases resulting from all permit revisions that are made after the submittal of proposed permit to EPA shall be accumulated and compared to the above threshold levels. The proposed project is the fifth permit revision requested by the facility since the change of operator. This permit revision includes the addition of two conveyORIZED spray booths (liquid coating) to replace two existing booths. The permit for the oven (A/N 500477, P/O G7353) that will be used to cure the parts coated in these spray booths will be updated slightly to accurately reflect the operation. The oven is currently described as a “POWDER COATING CURING OVEN” however there are no conditions limiting its use to only powder coatings and the equipment description in the permit evaluation describes it as “OVEN, CURING”. In order to accurately describe the oven since it will also be used to cure liquid coated parts, the description in the permit will read as “CURING OVEN”. Also, to ensure proper records are kept, condition no. 6 will be updated to include keeping records of the VOC content of coatings as applied, including water and exempt compounds to read as follows:

- IN ADDITION TO THE RECORDKEEPING REQUIREMENTS IN RULE 109, THE OPERATOR SHALL KEEP ADEQUATE RECORDS FOR THIS EQUIPMENT TO VERIFY THE DAILY POWDER COATING USAGE IN POUNDS, THE VOC CONTENT OF LIQUID COATINGS IN POUNDS OF VOC PER GALLON OF MATERIAL AS APPLIED, INCLUDING WATER AND EXEMPT COMPOUNDS, AND THE DAILY VOC EMISSIONS IN POUNDS. THE VOC EMISSIONS FROM THE USE OF POWDER COATINGS SHALL BE CALCULATED ...



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The cumulative emission increases resulting from this proposed permit revision are summarized as follows:

<i>Revision</i>	<i>HAP</i>	<i>VOC</i>	<i>NOx</i>	<i>PM₁₀</i>	<i>SOx</i>	<i>CO</i>
Revision 0 (administrative): change of operator from APW (ID# 110175) to AMF Anaheim (ID# 149235) issued 9/4/07 (Revision 0).	0	0	0	0	0	0
1 st Revision: Change permit condition to increase throughput on two powder spray booths, A/N 473461 and 473462	0	0	0	5	0	0
2 nd Revision: Add new Aerosol Can Recycling System, A/N 492529.	0	0	0	0	0	0
3 rd Revision*: Add new laser cutters and dust collectors, A/N 501204, 501206, 501208, 501210, 501212 and 501214.	0	0	0	0	0	0
4 th Revision*: Add new powder spray booths (A/Ns 500473 and 500474), add new washer, A/N 500475, add new ovens (A/Ns 500476 and 500477) and administrative change to correct equipment description on two ovens (A/Ns 503451 and 503452).	0	0	8	11	0	6
5 th Revision: Add two new spray booths to replace two existing spray booths (A/Ns 518877 & 518878 to replace A/Ns 470386 (P/O F92074) and A/N 470387 (P/O F92075), update oven description and one condition under A/N 500477, P/O G7353.	0	0	0	0	0	0
Cumulative Total	0	0	8	16	0	6
Maximum Daily Limit	30	30	40	30	60	220

*3rd and 4th revisions were done together

RECOMMENDATION

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a “de minimis significant permit revision”, it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not raise any objections within the review period, a revised Title V permit will be issued to this facility with Permits to Construct for these two booths in Section D. The two booths to be replaced will be removed from Section D when final Permits to Operate are issued for the replacement booths.