

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION Large Coating, Printing and Aerospace Operations Team APPLICATION PROCESSING AND CALCULATIONS	PAGE	1 of 12
	APP. NUMBER	see below
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	3/11/08

**PERMIT TO CONSTRUCT/OPERATE EVALUATION
NEW SPRAY BOOTH WITH HEPA FILTERS & OVEN**

Applicant's Name	DUCOMMUN AEROSTRUCTURES
Company I.D.	153931 (140811)
Mailing Address	801 E. ROYAL OAKS DRIVE, MONROVIA, CA 91016
Equipment Address	SAME AS ABOVE

EQUIPMENT DESCRIPTION

APPLICATION NO. 476446 (NEW CONSTRUCTION) PC-PO
SPRAY BOOTH, AUTOMOTIVE DOWN-DRAFT TYPE, SPRAYTECH, MODEL NO. ST91424 HPFD, 14' -0" W. X 45' - 0" L. X 9' - 11" H. (INSIDE DIMENSIONS), WITH ONE 13' – 1.5" X 42' – 8" PRIMARY EXHAUST FILTER, TWENTY 20" X 20" X 15" SECONDARY EXHAUST BAG FILTERS, TWENTY 20" X 20" X 11" HEPA EXHAUST FILTERS, ONE 15 H. P. EXHAUST FAN AND ONE 2,200,000 BTU/HR NATURAL GAS-FIRED HEATER.

APPLICATION NO. 478401 (NEW CONSTRUCTION) PC-PO
OVEN, SPRAY-TECH, MODEL NO. OVEN36108.5, 10' -0" W. X 35' - 0" L. X 8' - 0" H., WITH A 2,700,000 BTU/HR INDIRECT NATURAL GAS-FIRED MAXON CYCLOMAX BURNER, A 5 H. P. EXHAUST FAN, A 10 H.P.RECIRCULATION FAN AND A 2 H.P. COMBUSTION AIR BLOWER.

APPLICATION NO. 477063
TITLE V PERMIT REVISION

HISTORY

The above applications from Ducommun Aerostructures Inc. were submitted to the District to install a new down-draft spray booth and a new curing oven. The facility received a new order to manufacture helicopter blades for a British helicopter. The blades will be coated in this spray booth and cured in the above described oven.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION Large Coating, Printing and Aerospace Operations Team APPLICATION PROCESSING AND CALCULATIONS	PAGE	2 of 12
	APP. NUMBER	see below
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	3/11/08

This is an aerospace component (helicopter blades) manufacturer and has a number of active permits for surface treatment lines, scrubber, dust collector, degreaser, ovens, abrasive blasting system and spray booths under I.D. # 140811. The District had assigned a new I.D. (# 153931) to new spray booth application. Permit services was informed to merge the two I.D. numbers (153931 and 140811).

A facility-wide VOC emission limit of 10,692 (356 lbs/day) pounds per month has been established for this location. In addition, a facility-wide annual hexavalent chromium emission limit of 1.41 pounds is already established for this company. Some of the permitted equipment has individual usage limits too. The applicant has not requested any increases in the facility-wide VOC or Chromium emission limits under this project. Thus, no offsets are required for this project. This equipment is located within 1000 feet of Immaculate Conception School (K-8) therefore public notice will be required per Rule 212 (c)(1).

The spray booth filter system consisting of pre-filter, bag-filters and HEPA filters with more than 99.997% particulate control efficiency; and with a VOC emission limit of less than 667 pounds per month from this new spray booth will provide compliance with the current BACT and T-BACT requirements and comply with the District Rule 1469.1 requirements. The spray booth is expected to emit most of the VOC emissions from the coating operation. Thus, the oven is expected to have less than 20 lbs/day VOC emissions and will comply with the current BACT requirements by using compliant coatings.

The district database shows three notices to comply issued to this company to provide records in the last two years. The database did not show any notices of violation issued to this facility in the last two years. The facility now operates “in compliance” upon follow-up inspections. Also, the database shows no complaint against this facility for nuisance odors or visible emissions.

Ducommun Aerostructures is a Title V facility. An initial Title V permit was issued to to previous operator (Composite Structures, I.D. 111464) on 7/28/2003. The revised Title V facility permit was issued to Ducommun on 11/4/2004 for change of operator. This is the second permit revision to the Title V permit for Ducommun. The proposed permit revision is considered a “de minimis significant permit revision” to the initial Title V permit, as described in the Regulation XXX evaluation.

PROCESS DESCRIPTION

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION Large Coating, Printing and Aerospace Operations Team APPLICATION PROCESSING AND CALCULATIONS	PAGE	3 of 12
	APP. NUMBER	see below
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	3/11/08

The helicopter blades are manufactured from composite materials and different metals, and assembled on site. The blades will be spray coated using liquid coatings in the spray booth, then heat dried and finally cured in the oven. The spray booth will have regular 2” thick particulate arrestor filters, bag filters and HEPA filters. The filter system will be 99.997% efficient in controlling PM/PM10 emissions @ 3 micron particles. The maximum pressure drop recommended for regular 2” thick filters is 0.25 inch of water column and across the HEPA filters 1.6 inch of water.

Coatings are applied using HVLP spray equipment. The recent inspection report indicates that they use HVLP spray guns in their existing booths. The spray guns are cleaned by Rule 1171 compliant (acetone) gun cleaning solvent within an enclosed gun washer. The soiled rags are stored in closed container for later disposal. The new spray booth will be operated in the same manner as the existing booths.

The company proposes to use only Rule 1124 compliant coatings in this equipment. PPG PR-205 primer (350 g/l, 3.0 lbs/gal VOC) and PPG topcoat FE103 (740 g/l, 6.17 lbs/gal VOC). The topcoat complies under the wing coating category with 750 g/l VOC limit per Rule 1124. The primer complies with the Rule 1124 general primer category of 350 g/l. This primer contains formaldehyde and strontium chromate. Formaldehyde is a carcinogenic compound under Rule 1401. Strontium chromate contains hexavalent chromium which is also a carcinogenic compound under Rule 1401. The spray booth will have HEPA filters with 99.997% efficiency to control the chromium emissions and comply with T-BACT.

OPERATING HOURS

Average: 8 hr/day, 7 day/week, 52 weeks/year
Maximum: 24 hr/day, 7 day/week, 52 weeks/year

EMISSION CALCULATIONS

The primer coatings contain strontium chromate. By having a high efficiency (99.997% efficient) filtering system the applicant will greatly reduce chromate emissions. Coatings will be applied using an HVLP spray gun. 65% transfer efficiency is assumed for the PM10 calculations.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION Large Coating, Printing and Aerospace Operations Team APPLICATION PROCESSING AND CALCULATIONS	PAGE	5 of 12
	APP. NUMBER	see below
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	3/11/08

This spray booth is heated with a 2.2 mm BTU/HR burner, however the applicant has requested a 10,000 cu. feet per day natural gas usage limit (equivalent to 435,000 Btu/hr heat input) to keep NOx emissions below 1 lb/day. The following table provides data on the emissions from the natural gas combustions.

Spray Booth Heater

@

	<u>maximum</u>	<u>normal</u>		
<u>hr/dy</u>	24	24	<u>max heat input</u>	4.35E+05 (BTU/hr)
<u>dy/wk</u>	7	7	<u>gross heating value</u>	1050 (BTU/scf)
<u>wk/yr</u>	52	52		
<u>load</u>	100%	100%		

	<u>Emission</u>	<u>MAX</u>	<u>AVE</u>	<u>MAX</u>	<u>30-DAY</u>	<u>MAX</u>	<u>MAX</u>
	<u>Factors</u>	(lb/hr)	(lb/hr)	(lb/dy)	(lb/dy)	(lb/yr)	(ton/yr)
SO ₂ (R1)	0.83	0.000	0.000	0.008	NA	3	0.002
SO ₂ (R2)	0.83	0.000	0.000	0.008	0.008	3	0.002
NO ₂ (R1)	100	0.041	0.041	0.994	NA	362	0.181
NO ₂ (R2)	100	0.041	0.041	0.994	0.994	362	0.181
CO (R1)	35	0.015	0.015	0.348	NA	127	0.063
CO (R2)	35	0.015	0.015	0.348	0.348	127	0.063
N ₂ O (R1)	2.2	0.001	0.001	0.022	NA	8	0.004
N ₂ O (R2)	0.64	0.000	0.000	0.006	0.006	2	0.001
PM, PM ₁₀ (R1=R2)	7.5	0.003	0.003	0.075	0.075	27	0.014
CO ₂ (R1=R2)	0.000012	0.000	0.000	0.000	0.000	0	0.000
TOC(R1=R2)	7	0.003	0.003	0.070	0.070	25	0.013
ethyl benzene	0.0095	3.9E-06	3.9E-06	9.4E-05	NA	3.44E-2	1.72E-5
acetaldehyde	0.0043	1.8E-06	1.8E-06	4.3E-05	NA	1.56E-2	7.78E-6
acrolein	0.0027	1.1E-06	1.1E-06	2.7E-05	NA	9.77E-3	4.89E-6
benzene	0.008	3.3E-06	3.3E-06	8.0E-05	NA	2.90E-2	1.45E-5
formaldehyde	0.017	7.0E-06	7.0E-06	1.7E-04	NA	6.15E-2	3.08E-5
naphthalene	0.0003	1.2E-07	1.2E-07	3.0E-06	NA	1.09E-3	5.43E-7
PAH's	0.0001	4.1E-08	4.1E-08	9.9E-07	NA	3.62E-4	1.81E-7
toluene	0.0366	1.5E-05	1.5E-05	3.6E-04	NA	1.32E-1	6.62E-5
xylenes	0.0272	1.1E-05	1.1E-05	2.7E-04	NA	9.84E-2	4.92E-5

NO₂ @ 3% excess O₂----->>> 77.04 (ppmv)
CO @ 3% excess O₂----->>> 44.29 (ppmv)

SO₂ @ 3% excess O₂----->>> 0.46 (ppmv)
PM @ 12% CO₂----->>> 5.5E-09 (grain/ft³)

Emissions Oven, A/N 478401:

Most of the VOC emissions are expected to be emitted from the spray operation in the booth. Thus, all the VOC emissions will be assigned to the spray booth application.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION Large Coating, Printing and Aerospace Operations Team APPLICATION PROCESSING AND CALCULATIONS	PAGE	6 of 12
	APP. NUMBER	see below
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	3/11/08

This equipment is heated with a 2.7 mm BTU/HR low NOx burner (< 30 ppm @ 3% O₂). The following table provides data on the emissions from the natural gas combustions.

Oven

@

	<u>maximum</u>	<u>normal</u>		
<u>hr/dy</u>	24	24	<u>max heat input</u>	2.70E+06 (BTU/hr)
<u>dy/wk</u>	7	7	<u>gross heating value</u>	1050 (BTU/scf)
<u>wk/yr</u>	52	52		
<u>load</u>	100%	100%		

	<u>Emission</u>	<u>MAX</u>	<u>AVE</u>	<u>MAX</u>	<u>30-DAY</u>	<u>MAX</u>	<u>MAX</u>
	<u>Factors</u>	(lb/hr)	(lb/hr)	(lb/dy)	(lb/dy)	(lb/yr)	(ton/yr)
SO ₂ (R1)	0.83	0.002	0.002	0.051	NA	19	0.009
SO ₂ (R2)	0.83	0.002	0.002	0.051	0.051	19	0.009
NO ₂ (R1)	38.9	0.100	0.100	2.401	NA	874	0.437
NO ₂ (R2)	38.9	0.100	0.100	2.401	2.401	874	0.437
CO (R1)	35	0.090	0.090	2.160	NA	786	0.393
CO (R2)	35	0.090	0.090	2.160	2.160	786	0.393
N ₂ O (R1)	2.2	0.006	0.006	0.136	NA	49	0.025
N ₂ O (R2)	0.64	0.002	0.002	0.039	0.039	14	0.007
PM, PM ₁₀ (R1=R2)	7.5	0.019	0.019	0.463	0.463	168	0.084
CO ₂ (R1=R2)	0.000012	0.000	0.000	0.000	0.000	0	0.000
TOC(R1=R2)	7	0.018	0.018	0.432	0.432	157	0.079
ethyle benzene	0.0095	2.4E-05	2.4E-05	5.9E-04	NA	2.13E-1	1.07E-4
acetaldehyde	0.0043	1.1E-05	1.1E-05	2.7E-04	NA	9.66E-2	4.83E-5
acrolein	0.0027	6.9E-06	6.9E-06	1.7E-04	NA	6.07E-2	3.03E-5
benzene	0.008	2.1E-05	2.1E-05	4.9E-04	NA	1.80E-1	8.99E-5
formaldehyde	0.017	4.4E-05	4.4E-05	1.0E-03	NA	3.82E-1	1.91E-4
naphthalene	0.0003	7.7E-07	7.7E-07	1.9E-05	NA	6.74E-3	3.37E-6
PAH's	0.0001	2.6E-07	2.6E-07	6.2E-06	NA	2.25E-3	1.12E-6
toluene	0.0366	9.4E-05	9.4E-05	2.3E-03	NA	8.22E-1	4.11E-4
xylenes	0.0272	7.0E-05	7.0E-05	1.7E-03	NA	6.11E-1	3.06E-4

NO ₂ @ 3% excess O ₂ ----->>>	29.97	(ppmv)	SO ₂ @ 3% excess O ₂ ----->>>	0.46	(ppmv)
CO @ 3% excess O ₂ ----->>>	44.29	(ppmv)	PM @ 12% CO ₂ ----->>>	5.5E-09	(grain/ft ³)

Ver. 1.3

NSR 30-day Average Summary

Equipment	VOC lb/day	NOx lb/day	CO lb/day	PM ₁₀ lb/day
Spray Booth	22	1	0	0
Oven	0	2	2	0
Total	22*	3	2	0

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION Large Coating, Printing and Aerospace Operations Team APPLICATION PROCESSING AND CALCULATIONS	PAGE	7 of 12
	APP. NUMBER	see below
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	3/11/08

* these emissions will be bubbled into the facility cap, so no VOC emission increase from the facility due to this project

Toxic compound emissions from coatings

Topcoat and primer coatings will be applied in this booth. The coatings contain toxic compounds, such as formaldehyde, methyl alcohol, toluene, methyl ethyl ketone (MEK), xylene, and chromium & chromium compounds.

The formaldehyde content is 0.004% maximum in primer coating.
i.e. 0.004% of 12.7 (density of the coating) = 0.00051 lbs of formaldehyde per gallon of primer.

The toluene content is 10% maximum in topcoat.
i.e. 10% of 12.7 (density of the coating) = 1.27 lbs of toluene per gallon of topcoat.

The MEK content is 10% maximum in a topcoat.
i.e. 10% of 12.7 (density of the coating) = 1.27 lbs of toluene per gallon of topcoat.

The xylene content is 30% maximum in a topcoat.
i.e. 30% of 12.7 (density of the coating) = 3.81 lbs of xylene per gallon of topcoat.

The methyl alcohol (methanol) content is 3% maximum in topcoat.
i.e. 3% of 12.7 (density of the coating) = 0.38 lbs of methanol per gallon of topcoat.

The PM/PM10 control efficiency of the filters is 99.997%.

Maximum chromate content in the product is 30%. The applicant requested 250 gallons annual usage of chromium containing coatings.

The chemical formula for strontium chromate is SrCrO₄. Hence, the portion of hexavalent chromium is calculated as follows.

Molecular weight of Strontium is 88
Molecular weight of Chromium is 52
Molecular weight of Oxygen is 16
% of Hex. Chromium = $[52 / (88 + 52 + 64)] \times 100 = 25.5\%$.
Pounds of chromium per gallon = (12.7 lb/gal) (0.30) (0.255) = 0.972
Annual Chromium sprayed = 0.972 X 250 = 243 pounds

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION Large Coating, Printing and Aerospace Operations Team APPLICATION PROCESSING AND CALCULATIONS	PAGE	8 of 12
	APP. NUMBER	see below
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	3/11/08

The lead content is 10% maximum in a topcoat.
i.e. 10% of 12.7 (density of the coating) = 1.27 lbs of toluene per gallon of topcoat.

Compounds	Content (lbs/gal)	Max. Gallons Sprayed in a year	Filter Efficiency	Transfer Efficiency *	Lbs/year AxBxCxD	No. of Days/yr	Lbs/hr D/365/24	Tons/year E / 2000
	A							
Hex. Chromium	0.972	250	0.00003	0.35	0.00256	365	0.00000029	0.00000128
Formaldehyde	0.00051	250	---	---	0.1275	365	0.0000146	0.000064
Methyl Alcohol	0.38	700	---	---	266	365	0.0304	0.133
MEK	1.27	700	---	---	889	365	0.1015	0.4445
Toluene	1.27	700	---	---	889	365	0.1015	0.4445
Xylene	3.81	700	---	---	2667	365	0.3045	1.3335
Lead	1.27	250	0.00003	0.35	0.00333	365	0.00000038	0.00000166

The calculations for Tier 2 health risk assessment on MICR, HIA and HIC from toxic emissions indicated less than 10 in a million cancer risk and acute and chronic hazard index risks to be below 1 from this equipment. Please see attached calculations. This will comply with the Rule 1401 requirements. Since the spray booth is equipped with HEPA filters it complies with T-BACT requirements. Also, it should be noted here that the facility has a facility-wide chromium emission limit and there will not be any increase in the chromium emissions from the facility due to this project. The spray booth will continue to operate under the facility cap of 1.41 lb/year hexavalent chromium.

There will be increase in the toxic emissions from the natural gas combustion. However, with the natural gas usage limit of <10,000 cu. feet per day, combustion emissions are expected to comply with the Rule 1401 requirements.

RULES/REGULATION EVALUATION

▫ **RULE 212, PUBLIC NOTIFICATION**

√ **SECTION 212(c)(1):**

This section requires a public notice for all new or modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school. This source is located within 1,000 feet from the outer boundary of a school (Immaculate Conception School, K-8). There are emission increases of VOC from the coating operation and from the combustion of natural gas in the spray booth heater and the oven. There are also emissions of some toxic air contaminants from this project. Therefore, public notice will be required by this section.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION Large Coating, Printing and Aerospace Operations Team APPLICATION PROCESSING AND CALCULATIONS	PAGE	9 of 12
	APP. NUMBER	see below
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	3/11/08

▼ **SECTION 212(c)(2):**

This section requires a public notice for all new or modified facilities which have on-site emission increases exceeding any of the daily maximums as specified in subdivision (g). As shown in the following table, the emission increases from this project are below the daily maximum limits specified by Rule 212(g). Therefore, this application will not be subject to this section.

LB/DAY	CO	NOX	PM ₁₀	ROG	Lead	SOX
MAX. LIMIT	220	40	30	30	3	60
INCREASES	2	3	0	0	0	0

▼ **SECTION 212(c)(3):**

Please, see Rule 1401 evaluation section. The MICR from the chromate, formaldehyde and combustion emissions are slightly over 1×10^{-6} . Therefore, public notice is required by this section.

▼ **SECTION 212(g):**

This section requires a public notice for all new or modified sources which undergo construction or modifications resulting in an emissions increase exceeding any of the daily maximum specified in the table below. As shown in the following table, the emission increases from this project are below the daily maximum limits. Therefore, public notice will not be required by this section.

LB/DAY	CO	NOX	PM ₁₀	ROG	Lead	SOX
MAX. LIMIT	220	40	30	30	3	60
INCREASES	2	3	0	22	0	0

▣ **RULES 401 & 402, VISIBLE EMISSIONS & NUISANCE**

With the use of a panel filter, bag filters and HEPA filters for spray booth, compliance with the provisions of these rules is expected. District database has no records of any visible emissions or nuisance complaints against this company.

▣ **RULES 404 & 405, PARTICULATE MATTER CONCENTRATION & WEIGHT**

Compliance with these provisions is expected with proper operation of the equipment.

▣ **RULE 481, SPRAY COATING OPERATIONS**

▼ **SECTION (a)**

The use of HVLP spray equipment will comply with these requirements.

▣ **RULE 1124, AEROSPACE ASSEMBLY AND COMPONENT MANUFACTURING OPERATIONS**

▼ **SECTION (C)(1), VOC CONTENT OF COATINGS**

This paragraph limits the maximum VOC content less water and exempt compounds of coatings. This facility is proposing to use following compliant coatings in this spray booth per data submitted with the application.

Coating	Rule 1124	Rule VOC Limit	VOC as applied	Compliance

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION Large Coating, Printing and Aerospace Operations Team APPLICATION PROCESSING AND CALCULATIONS	PAGE	10 of 12
	APP. NUMBER	see below
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	3/11/08

Used	Category	(gram/liter)	(gram/liter)	
PPG PR-205	General Primer	350	350	Yes
PPG FE103	Wing Coating	750	740	Yes

vSECTION (c)(4), TRANSFER EFFICIENCY

The use of HVLP spray equipment will comply with these requirements.

▫ **RULE 1171, SOLVENT CLEANING OPERATIONS**

The company will comply with these provisions by using a exempt solvent acetone with 0 VOC content.

▫ **RULE 1171, SOLVENT CLEANING METHODS**

The use of an enclosed gun cleaning system will provide compliance with these requirements.

REGULATION XIII

▫ **RULE 1303(a), BEST AVAILABLE CONTROL TECHNOLOGY (BACT)**

(A) VOC EMISSIONS

(1) SPRAY BOOTH

Since the VOC emissions from this spray booth will not exceed 667 lbs/month (22 Lbs/Day), compliance with Reg. XI meets BACT for the spray booth.

(2) OVEN

Most of the VOC emissions from the coating application are expected from the spray booth. Thus, VOC emissions from the oven are expected to be less than 20 lbs/day. Compliance with Reg. XI meets BACT requirements for the oven.

(B) PM10 EMISSIONS – SPRAY BOOTH

The use of panel filter, bag filters and HEPA filters, will satisfy the BACT requirement for PM10.

(C) NOx EMISSIONS

(1) SPRAY BOOTH

The NOx emissions are expected to be less than 1 lb/day with the natural gas usage limit of 10,000 SCF/day, therefore BACT is not triggered. Permit conditions will be imposed to ensure compliance.

(2) OVEN

The oven is equipped with a low NOx burner with <30 ppmv NOx emissions @ 3% O₂. Compliance with current BACT is expected.

▫ **RULE 1303(b)(1), MODELING**

SPRAY BOOTH AND OVEN

Modeling is not required since PM10, NOx and CO emissions are below the Table A-1 allowable emissions.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION Large Coating, Printing and Aerospace Operations Team APPLICATION PROCESSING AND CALCULATIONS	PAGE	11 of 12
	APP. NUMBER	see below
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	3/11/08

NOx (lb/hr)		PM10 (lb/hr)		CO (lb/hr)	
Allowed	Actual	Allowed	Actual	Allowed	Actual
0.31	0.04 (S/B), 0.1 (Oven)	1.9	0.002 (S/B) 0.02(Oven)	17.1	0.02 (S/B) 0.09 (Oven)

□ **RULE 1303 (b)(2), EMISSION OFFSETS**

There are no VOC emission increases under this project, since the facility cap will remain the same. Other emissions are within the R1304 threshold limits. Hence, offsets are not required.

◎ **RULE 1401, NEW SOURCE REVIEW OF CARCINOGENIC AIR CONTAMINANTS**

There are toxic emissions from this equipment. The spray booth will have HEPA filters with 99.997% control efficiency which meets T-BACT for hexavalent chromium. The VOC limit will limit formaldehyde, xylene, toluene and methanol emissions. As described above a Tier 2 Risk Assessment calculation indicated cancer risk to be less than 10 in a million and acute and chronic hazard index risks to be below 1 from this equipment (please see attached spreadsheets). Thus, this project will comply with requirements of this rule.

◎ **RULE 1469.1, SPRAYING OPERATIONS USING COATINGS CONTAINING CHROMIUM**

This rule requires HEPA filters with a minimum 99.97% control efficiency. The use of an approved HEPA filter system with 99.997% control efficiency will provide compliance with these requirements.

REGULATION XXX

The proposed project is considered as a “de minimis significant permit revision” to the Title V permit issued to Ducommun on 11/4/2004. The first revision was issued to Ducommun on 8/3/05. This is the second revision to be issued to Ducommun. 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:

Air Contaminant	Daily Maximum (lbs/day)
HAP	30
VOC	30
NOx	40
PM10	30
SOx	60
CO	220

Rule 3003(j) specifies that a proposed permit for the initial Title V 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

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION Large Coating, Printing and Aerospace Operations Team APPLICATION PROCESSING AND CALCULATIONS	PAGE	12 of 12
	APP. NUMBER	see below
	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	3/11/08

shall be accumulated and compared to the above threshold levels. This is the first permit revision to the Title V Permit. The cumulative emission increases resulting from this proposed permit revision are summarized as follows:

Revision	HAP	VOC	NO _x	PM ₁₀	SO _x	CO
Change of operator from Composite Structures to Ducommun (11/4/04)	0	0	0	0	0	0
1st Permit Revision. Addition of Oven (A/N 430410) and change of permit conditions for spray booths (A/N 437283 and 437284) (8/3/05)	0	0	0	0	0	0
2 ND Permit Revision. Addition of a spray booth (A/N 476446) and oven (A/N 478401).	0	0	3	0	0	2
Cumulative Total	0	0	3	0	0	2
Maximum Daily	30	30	40	30	60	220

CONCLUSIONS/RECOMMENDATIONS

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) in conjunction with the Rule 212 public notice. If EPA does not raise any objections within the review period and upon completion of the Rule 212 public notice period, a revised Title V permit will be issued to this facility.

TIER 2 SCREENING RISK ASSESSMENT

Version 7.0, (June 2005 rule amendment)

A/N: 476446
 Fac: Ducommun

Application deemed complete date: 12/21/07

1. Stack Data

		Units
Hour/Day	24	hr/day
Day/Week	7	day/wk
Week/Year	52	wk/yr
Emission Units (non-combustion only)	lb/hr	
Control Efficiency (other non-combustion only)		fraction range 0-1
Does source have TBACT?	YES	
Point or Volume Source ?	P	p or v
Stack Height	25	feet
Area (For Volume Source Only)		ft ²
Distance-Residential	50	meters
Distance-Commercial	100	meters
Meteorological Station	Azusa	
Source Type:	O - Other	
Screening Mode	NO	
Emission Units	lb/hr	
Source output capacity	n/a	n/a

2. Tier 2 Data

MET Factor	0.64
4 hr	0.78
6 or 7 hrs	0.59

Dispersion Factors

3	3A & 3B For Chronic X/Q
6	For Acute X/Q

Dilution Factors (ug/m3)/(tons/yr)

Receptor	X/Q	X/Qmax
Residential	10.7	548.1
Commercial	5.32	295.2

Adjustment and Intake Factors

	Afann	DBR	EVF
Residential	1	302	0.96
Worker	1	149	0.38

A/N: 476446

Date: 12/21/07

TIER 2 RESULTS

5. MICR

MICR = CP (mg/(kg-day))⁻¹ * Q (ton/yr) * (X/Q) * Afann * Met * DBR * EVF * 1.E-6 * MP

Compound	Residential	Commercial
Ethyl benzene		
Acetaldehyde	1.13E-09	1.09E-10
Acrolein		
Benzene (including benzene from gasoline)	2.08131E-08	2.02E-09
Naphthalene	9.37E-10	9.09E-11
PolyCyclic Aromatic Hydrocarbon (PAHs)	3.02E-07	1.44E-08
Formaldehyde	1.19E-08	1.16E-09
Chromium, hexavalent	1.28E-06	1.25E-07
Toluene (methyl benzene)		
Xylenes (isomers and mixtures)		
Methyl ethyl ketone		
Methanol (methyl alcohol)		
Lead and lead compounds (inorganic, including elemental lead), inorganic	5.80E-09	3.95E-10
Total	1.63E-06	1.43E-07

Pass

Pass

5a. Cancer Burden		yes
X/Q for one-in-a-million:		6.58
Distance (meter)		85.24
Area (km2):		0.02
Population:		160
Cancer Burden:		2.60E-04

6. Hazard Index

HIA = [Q(lb/hr) * (X/Q)max] / Acute REL

HIC = [Q(ton/yr) * (X/Q) * MET * MP] / Chronic REL

Target Organs	Acute	Chronic
Cardiovascular or blood system		4.19E-07
Central or peripheral nervous system		
Gastrointestinal system and liver	8.80E-06	4.19E-07
Immune system	1.51E-03	
Kidney	3.71E-02	1.04E-02
Reproductive system	3.91E-04	4.69E-03
Respiratory system	2.10E-03	1.20E-05
Skin	1.51E-03	
Eye	3.71E-02	4.19E-07
Endocrine system		

A/N: 476446

Date: 12/21/07

6a. Hazard Index Acute

$$HIA = [Q(\text{lb/hr}) * (X/Q)_{\text{max}}] / \text{Acute REL}$$

Compound	HIA - Residential									
	AL	CV	DEV	EYE	HEM	IMM	NS	REP	RESP	SKIN
Ethyl benzene										
Acetaldehyde										
Acrolein				2.34E-02					2.34E-02	
Benzene (including benzene from Naphthalene)			8.80E-06		8.80E-06	8.80E-06		8.80E-06		
PolyCyclic Aromatic Hydrocarbon										
Formaldehyde				3.83E-04		3.83E-04			3.83E-04	
Chromium, hexavalent										
Toluene (methyl benzene)			1.51E-03	1.51E-03			1.51E-03	1.51E-03	1.51E-03	
Xylenes (isomers and mixtures)				7.59E-03					7.59E-03	
Methyl ethyl ketone				4.28E-03					4.28E-03	
Methanol (methyl alcohol)							5.95E-04			
Lead and lead compounds (inorga										
Total			1.51E-03	3.71E-02	8.80E-06	3.91E-04	2.10E-03	1.51E-03	3.71E-02	

HIA - Commercial										
Compound	AL	CV	DEV	EYE	HEM	IMM	NS	REP	RESP	SKIN
Ethyl benzene										
Acetaldehyde										
Acrolein				1.26E-02					1.26E-02	
Benzene (including benzene from Naphthalene)			4.74E-06		4.74E-06	4.74E-06		4.74E-06		
PolyCyclic Aromatic Hydrocarbon										
Formaldehyde				2.06E-04		2.06E-04			2.06E-04	
Chromium, hexavalent										
Toluene (methyl benzene)			8.11E-04	8.11E-04			8.11E-04	8.11E-04	8.11E-04	
Xylenes (isomers and mixtures)				4.09E-03					4.09E-03	
Methyl ethyl ketone				2.30E-03					2.30E-03	
Methanol (methyl alcohol)							3.21E-04			
Lead and lead compounds (inorga										
Total			8.15E-04	2.00E-02	4.74E-06	2.11E-04	1.13E-03	8.15E-04	2.00E-02	

6b. Hazard Index Chronic

$$\text{HIC} = [\text{Q}(\text{ton/yr}) * (\text{X/Q}) * \text{MET} * \text{MP}] / \text{Chronic REL}$$

Compound	HIC - Residential												
	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Ethyl benzene	4.19E-07			4.19E-07	4.19E-07				4.19E-07				
Acetaldehyde						4.04E-03						4.32E-05	
Acrolein												4.04E-03	
Benzene (including benzene from Naphthalene)				1.20E-05			1.20E-05			1.20E-05		2.99E-06	
PolyCyclic Aromatic Hydrocarbon													
Formaldehyde						6.54E-04						6.54E-04	
Chromium, hexavalent												4.34E-05	
Toluene (methyl benzene)				1.01E-02						1.01E-02		1.01E-02	
Xylenes (isomers and mixtures)										1.30E-02		1.30E-02	
Methyl ethyl ketone													
Methanol (methyl alcohol)				2.27E-04									
Lead and lead compounds (inorganic)													
Total	4.19E-07			1.04E-02	4.19E-07	4.69E-03	1.20E-05		4.19E-07	2.32E-02		2.79E-02	

A/N:

Date:

Compound	HIC - Commercial												
	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Ethyl benzene	2.08E-07			2.08E-07	2.08E-07				2.08E-07				
Acetaldehyde												2.15E-05	
Acrolein						2.01E-03						2.01E-03	
Benzene (including benzene from Naphthalene				5.95E-06			5.95E-06			5.95E-06		1.49E-06	
PolyCyclic Aromatic Hydrocarbon													
Formaldehyde						3.25E-04						3.25E-04	
Chromium, hexavalent												2.16E-05	
Toluene (methyl benzene)				5.04E-03						5.04E-03		5.04E-03	
Xylenes (isomers and mixtures)										6.47E-03		6.47E-03	
Methyl ethyl ketone													
Methanol (methyl alcohol)				1.13E-04									
Lead and lead compounds (inorga													
Total	2.08E-07			5.16E-03	2.08E-07	2.33E-03	5.95E-06		2.08E-07	1.15E-02		1.39E-02	