

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING and COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 8	PAGE 1
	APPL. NO. 523529	DATE 8/21/2012
	PROCESSED BY TTI	CHECKED BY

Royal Paper Box
 1105 S. Maple Ave.
 Montebello, CA 90640
 ID#: 23487

Mailing Address:
 P.O. Box 458
 Montebello, CA 90640-0458

EQUIPMENT DESCRIPTION:

A/N 523529 – replacement of P/O F47101, A/N 391678 (D18-D20) – P/C to P/O

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions	Conditions
Process 1: PRINTING & DRYING					
System 9:					
PRINTING PRESS, LITHOGRAPHIC, KBA, MODEL RAPIDA 106, 7 COLOR, 42" WIDE SHEET FED, WITH COATER UNIT A/N: 523529	D28			VOC: (9) [RULE 1130, 1171]	B59.1 B59.3 B59.4 E193.1 H23.1 K67.2
OVEN, I.R. CURING, 72.8 KW A/N: 523529	D29			PM (9)[RULE 404]	
OVEN, U.V. CURING, 167.2 KW A/N: 523529	D30			PM (9)[RULE 404]	

CONDITIONS:

F2.1: The operator shall limit emissions from the facility as follows:

CONTAMINANT	EMISSIONS LIMIT
VOC	Less than or equal to 429 LBS IN ANY ONE DAY

B59.1: The operator shall not use the following material(s) in this device:

Fountain solutions greater than 5 percent VOC by volume, as applied, including water and exempt compounds.

B59.3: The operator shall not use the following material(s) in this device:

Blanket wash and roller wash materials with composite vapor pressure exceeding 10 mm Hg at 20 degrees C.

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B59.4: The operator shall not use the following material(s) in this device:

Toxic air contaminants identified in SCAQMD Rule 1401, Table I, with an effective date of September 10, 2010 or earlier, with the exception of:

ethylene glycol butyl ether (CAS# 111-76-2), ethylene glycol (CAS# 107-21-1), isopropanol (CAS# 67-63-0), ammonia (CAS# 7664-41-7), xylene (CAS# 1330-20-7), acrylic acid (CAS# 79-10-7), and styrene (CAS# 100-42-5).

E193.1 ~~The operator shall restrict the operation of this equipment as follows:~~

~~This equipment shall not be operated simultaneously with the lithographic printing system with Device nos. D18-D20 under A/N 391678.~~

H23.1: This equipment is subject to the applicable requirements of the following rules or regulations:

<u>Contaminant</u>	<u>Rule</u>	<u>Rule/Subpart</u>
VOC	District Rule	109

K67.2: The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Usage of inks, varnishes, fountain solution (including water), roller wash, blanket wash and any other materials containing volatile organic compounds (VOC), in gallons per day of each material.

Density of inks, in pounds per gallon and percentage by weight of lithographic oils in inks.

Ink absorption factor as specified by current SCAQMD guidelines.

VOC content of fountain solution, wash materials and any other materials, in pounds per gallon as applied including water and exempt compounds.

The VOC emissions from the UV curable inks and coatings shall be calculated using the appropriate VOC emission factor determined pursuant to the current District approved test method. In case no laboratory tested emission factor is available, then an emission factor of 0.05 pound of VOC per pound of ink/coating shall be used.

These records shall be kept in a manner approved in writing by the Executive Officer.

BACKGROUND:

Royal Paper Box (RPB) submitted application no. 523529 to install a new lithographic printing press with IR and UV curing ovens to replace an existing lithographic printing press with UV/IR (D18-D20 under A/N 391678). The main reason for the new press is to allow RPB to remain competitive in the printing industry by reducing the amount of set-up time that is required by the older press. Set-up time is greatly reduced with the new press. RPB currently operates seven sheet-fed lithographic printing systems under a facility-wide VOC emission cap of 429 lb/month.

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The printing system that was replaced (D18-D20) did not have any individual equipment VOC emission limit. This is a functionally identical replacement with no increase in emissions.

On 8/9/2011, a P/C was issued for the press. The press was installed shortly thereafter and was started on 10/27/2011. After testing was complete, it was placed in full operation on 1/20/2012. The press is operating in compliance with all permit conditions, a P/O will be issued now. The previous press D18-20 was removed from service and will be removed from Section D. Condition E193.1 will be removed from D28.

Royal Paper Box is a Title V facility. The second Title V renewal permit was issued to this facility on October 6, 2009. Royal Paper Box has proposed to revise their Title V renewal permit by issuing a Permit to Operate for the printing press and curing ovens, device nos. D28-30 (moving from Section H to Section D) and removing the replaced press in Section D (D18-20). This permit revision is considered as an “administrative permit revision” to the Title V renewal permit, as described in the Regulation XXX evaluation. Also included with this revision is a new power washer D26 under A/N 501390 and a new litho press (D31-33) under A/N 541584 (see separate evaluations).

The facility was issued an N/C on 7/1/2011 to provide VOC records from 7/2010 to 6/2011 and failure to perform reverification test for gasoline dispensing equipment. They were found in compliance by 8/18/2011.

PROCESS DESCRIPTION:

Royal Paper Box is a commercial lithographic printing facility that produces printed, folded paper boxes primarily for retail and pharmaceutical business sectors. VOC is emitted from the inks, coatings, fountain solution and washes used in the printing process.

Royal Paper Box uses low-VOC inks and fountain solutions, aqueous coatings, UV inks and coatings, and low VOC/vapor pressure washes. Printing operations are normally performed during two 8-hour shifts. Normal operating schedule for this equipment is 12 hours/day, 6 days/week, 50 weeks/year. Maximum operating schedule is 24 hrs/day, 7 days/week, 52 weeks/year.

EMISSIONS CALCULATIONS:

VOC is emitted from the materials used in the press. There are no combustion emissions from the IR/UV ovens since they are electric. There will not be an increase in emissions from the facility since this is a functionally identical replacement and RPB will continue to operate under their existing facility VOC cap of 429 lb/day.

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VOC emissions are calculated based on the average and maximum usages with the IR oven submitted with the application. The emissions when using UV curable materials are considerably less.

Following is a summary of NSR entries for VOC 30-day average. The emissions were updated in NSR so the PTE reflects the facility VOC cap of 429 lb/day.

Litho Press A/N	NSR VOC 30-day ave (lb/day)
191671	0
261409	244
304212	0
523529 (Previous 391678)	65
391680	0
497740	0
513306	120
TOTAL	429

KBA Rapida 106								
523529	<u>maximum</u>	<u>normal</u>				<u>ink/varnish</u>	<u>fountain</u>	<u>wash</u>
<u>hr/dy</u>	24	12			<u>Emission factor</u>	10%	100%	100%
<u>dy/wk</u>	7	6						
<u>wk/yr</u>	52	50			<u>Control efficiency</u>	0%		
	<u>VOC</u>	<u>ave</u>	<u>max</u>		<u>ave VOC</u>	<u>max VOC</u>		
	(lb/gal)	(gal/dy)	(gal/dy)		(lb/dy)	(lb/dy)		
<u>ink</u>	0.3	2.8	22	(200 lb)	0.08	0.66		
<u>w/b varnish</u>	0.43	25	125		10.75	53.75		
_	0	0	0		0.00	0.00		
<u>fs-conc</u>	3	0.375	3.5		1.13	10.50		
<u>water</u>	0	8	75		0.00	0.00		
<u>washes</u>	0.8	4	20		3.20	16.00		
_	0	0	0		0.00	0.00		
	NSR--->>>	<u>max</u>	<u>max</u>	<u>30-day</u>		AEIS--->>>	<u>ave</u>	<u>ave</u>
		(lb/hr)	(lb/dy)	(lb/dy)			(lb/hr)	(lb/yr)
<u>ROG (R1)</u>		3.37	80.91	NA			1.26	NA
<u>ROG (R2)</u>		3.37	80.91	80.91			1.26	4547.70

TOXICS

See attached spreadsheets for toxic emission calculations and screening risk assessment. Emissions were calculated from maximum usages given by applicant using worst case toxic contents and at increased usages at facility VOC cap of 429 lb/day. There are no carcinogenic

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compounds present based on MSDS submitted. HIA and HIC are below 1, even if this press was operated at the facility VOC cap.

RULE ANALYSIS:

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 was not required by this section.

RULE 212(c)(2) & (g) *These sections require a public notice for all new and modified facilities and equipment which have emission increases exceeding any of the daily maximums specified in subdivision (g).*

There is no emission increase from the equipment or facility since this is a functionally identical replacement and they are operating this press under the existing facility VOC cap. Public notice was not required by this section.

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 compounds present in the materials used in this equipment, however there are some acute and chronic TAC present in the graphic arts materials. A screening risk assessment was conducted and shows the HIA and HIC are both below 1. Therefore, public notice was not required.

RULES 401 & 402: AQMD database has no records of visible emissions or nuisance complaints against this facility. Compliance with these requirements is expected with the proper operation of the equipment.

RULE 1130: Compliant inks, coatings and fountain solution are used as summarized below.

<i>Material</i>	<i>Rule 1130 VOC Limit lb/gal –w-es</i>	<i>Actual VOC Content</i>
Litho Ink (conventional & UV)	2.5 lb/gal	0.14- .56 lb/gal
Coatings (UV & w/b)	2.5 lb/gal	0.1 -0.70 lb/gal
Fountain Solution	0.83 lb/gal*	0.14 lb/gal*

*VOC of material, as applied, including water and es.

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Material Fountain Solution (FS)	VOC Content (lb/gal)	Usage	Total VOC lb
F/S concentrate	3.0	6 oz	0.1406
Water	0.00	1 gal	0.000
TOTAL		1.047 gal	0.134 lb/gal

Assume density of VOC in concentrate is 7 lb/gal, VOC vol = 0.1406 lb/7 lb/gal = 0.02 gal VOC

Vol % = 0.02 gal/1.047 gal = 2% << 8% by volume

RULE 1171: Compliant solvents are used for clean-up of this equipment.

<i>Material</i>	<i>Rule 1171 VOC Limit</i>	<i>Actual VOC Content</i>
Blanket & Roller Wash, UV Ink clean-up	0.83 lb/gal	0.74- .80 lb/gal

REG. XIII

1303(a): BACT is met by use of low VOC fountain solutions (< 5% VOC by volume), low VOC and vapor pressure washes (< 100 g/l VOC and ≤ 10 mm Hg VP), and UV inks and coatings. Permit conditions are imposed to limit fountain solution to 5% VOC by volume and VP of blanket and roller washes to ≤ 10 mm Hg.

1303(b)(1): Not applicable, modeling is not required for ROG emissions.

1303(b)(2): Emission offsets are not required since there is not an emission increase from the facility as a result of this application. This is a functionally identical replacement and exempt from offsets under Rule 1304(a) – there is no increase in rating or PTE. The facility will continue to operate under the existing facility VOC cap of 429 lb/day.

1303(b)(4): The facility is expected to be in full compliance with all applicable rules and regulations of the District.

RULE 1401: New Source Review of Toxic air Contaminants

This is a functionally identical replacement with no increase in emissions, therefore exempt from this rule under 1401(g)(1)(C). The previous permit of the press that was replaced was subject to Rule 1401 as amended August 18, 2000, however one of the coatings contains very small quantities of styrene and acrylic acid which are not included in the previous permit's Rule 1401 condition. There are no carcinogenic compounds, only acute and chronic TACs (ethylene glycol

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butyl ether, ethylene glycol, isopropanol, styrene, acrylic acid and ammonia). The screening risk assessment shows the HIA and HIC are both below 1. See attached toxic evaluation. A permit condition was added restricting use of TACs with an effective date of 9-10-2010 or earlier with the exception of the above listed TACs.

REGULATION XXX:

The proposed project is considered as an “administrative permit revision” to the Title V permit issued to this facility. Rule 3000(b)(1) defines an “administrative permit revision” as a revision to issue a final permit to operate for equipment previously issued a Title V permit to construct, with no change in permit terms and conditions except for the removal of permit to construct terms or conditions which are no longer applicable.

	Revision	HAP	VOC	NO_x	PM₁₀	SO_x	CO
1 st	Add Device no. D27 (UV curing oven) – A/N 513306	0	0	0	0	0	0
2 nd	Add Device nos. D28-D30 for a new lithographic printing press with IR and UV ovens (to replace D18-D20 – which will be removed when P/O issued) – A/N 523529	0	0	0	0	0	0
3 rd	Add Device nos. D31-D33 for a new lithographic printing press with IR and UV ovens (to replace D9, D10 & D25 – which will be removed when P/O issued) – A/N 541584	0	0	0	0	0	0
	Admin rev. Convert P/C for D28-D30 for a new lithographic printing press with IR and UV ovens to P/O for litho press (move from Section H to Section D). Remove replaced press D18-D20. -A/N 523529	0	0	0	0	0	0
	Add pressure washer D26 for a new pressure washer, and remove replaced pressure washer D17 -A/N 501390	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Cumulative Emission Total	0	0	0	0	0	0
	Maximum Daily	30	30	40	30	60	220

RECOMMENDATION

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as an “administrative permit revision”, it is exempt from the public participation requirements under Rule 3006 (b) and the EPA 45-day review pursuant to Rule 3003(j). Approval of the proposed draft Title V permit with applicable conditions is recommended with P/Os for Device nos. D28 – D30. Devices are moved from Section H to

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Section D and D18 – D20 are removed from Section D. Issue revised Sections D & H as part of third revision. Also include P/C in Section H for new litho printing system (D31-D33), P/O for new power washer (D26) in Section D and remove old power washer D17 from Section D.

royal paper box – litho press 523529 PC to PO