PERMIT TO CONSTRUCT EVALUATION

Applicant's Name	MADISON-GRAHAM COLORGRAPHICS, INC.
Company ID	1379
Mailing Address	150 N. MYERS STREET, LOS ANGELES, CA 90033
Equipment Address	SAME AS ABOVE

EQUIPMENT DESCRIPTION:

A/N 498414

TITLE V PERMIT REVISION, DE MINIMIS SIGNIFICANT

A/N 511011: (New Construction, Permit to Construct, equipment previously permitted under PO #F72166, A/N 432788):

LITHOGRAPHIC PRINTING SYSTEM, CONSISTING OF:

1. LITHOGRAPHIC PRINTING PRESS, KOMORI 3, MODEL LS840/C SERIES 4045, SERIAL NO. 106, 8-COLOR PLUS COATER, 40-INCH WIDE, SHEET FED.
2. INFRARED DRYER, WITH 63 IR LAMPS, 63 KW TOTAL.

A/N 512895: (New Construction, Permit to Construct):

LITHOGRAPHIC PRINTING SYSTEM, CONSISTING OF:

1. LITHOGRAPHIC PRINTING PRESS, MAN-ROLAND, MODEL NO. ROTOMAN H, EIGHT-COLOR, 38-INCH WEB.
2. DRYING OVEN, MEG/TEC PHASER III, MODEL NO. DUAL DRY III-135, 8’-6” W. X 44’-4” L. X 6’-4” H., ONE 7,400,000 BTU/HR, INDIRECT NATURAL GAS-FIRED LOW-NOX BURNER, MAXON, MODEL NO. CYCLOMAX EB5MRV, WITH ONE 7.5-HP. EXHAUST FAN.
3. UV COATING AND CURING SYSTEM, WITH ONE COATER, FAUSTEL EXCEL, MODEL NO. 1238, AND ONE UV-CURING STATION, AETEK INTERNATIONAL, WITH 5 UV LAMPS, 332 KW TOTAL.

A/N 513651 (To be cancelled, applications to be grouped with A/N 498414 instead):

TITLE V PERMIT REVISION, DE MINIMIS SIGNIFICANT

BACKGROUND:

Madison-Graham ColorGraphics, Inc. filed A/N 511011 in May 2010 for the installation of a Komori, IR-dry lithographic printing press. This press was previously permitted under A/N 432788 (PO #F72166), currently inactive. The press was removed from the facilty in June 2009 and put in storage. The company has now decided to resume using it. This press will not be vented to an air pollution control system. A permit to construct will be issued.

Note: The printing press under A/N 498415 (under separate evaluation) was a replacement to the Komori lithographic printing press under A/N 432788 (PO #F72166). A/N 498415 is now being evaluated for a permit to operate under a separate evaluation. Since the press under A/N 498415 was considered as a replacement for this Komori press under A/N 432788, this press under A/N 511011 will be considered as new construction.

Madison-Graham also filed A/N 512895 in July 2010 for the construction of one new Man-Roland, heat-set lithographic printing press. This press will be vented to an existing regenerative thermal oxidizer (RTO) under P/C under A/N 444084. According to the applicant, the printing press under A/N 512895 will be a functionally identical replacement of the Heidelberg lithographic printing press which was operated under PO #F63742 (A/N 406976). However, that permit has not been active since before 2008. Also, this equipment was previously permitted to Cenveo Anderson (ID #37601) under PO #F83764 (A/N 448136). The company incorrectly identified the previous permit as PO #F83765 (A/N 448146). The facility will be required to conduct a source test on the natural gas-fired oven to demonstrate compliance with Rule 1147. A permit to construct will be issued for this equipment, considered as new construction.

This facility is in the Title V program. Both printing presses will be added to the Title V facility permit without increasing the existing facility-wide limit of 10,890 pounds of VOC per calendar month on the facility permit. The facility will satisfy Rule 212(g) public notice requirements prior to the issuance of the permits since the potential VOC emissions from this project is greater than 30 lb/day. The gas usage in the heatset oven will also be included under the existing natural gas facility usage limit of 12,411,428 ft^3/mo. so there will be no increase in combustion emission from the facility as a result of this project.

A/N 511014 was filed for Title V permit revision (de minimis significant). However, this application was rejected during prescreening since A/N 511011 will be grouped with A/N 498414, which was previously filed for a Title V de minimis significant permit revision (under separate evaluation). See the summary table on the following page.

This is a de minimis significant permit revision to the Title V facility permit. The latest Title V renewal was issued on March 26, 2006. This application is part of the 2nd Title V permit revision since the renewal. In addition, Madison-Graham submitted A/Ns 498415-498417 for the installation of three air-dried lithographic printing presses (P/O no P/C evaluation done separately). These are not vented to air pollution control equipment. A/N 459677 was later filed for the operation of a natural gas-fired emergency IC engine (under separate evaluation). A/N 461287 was filed for a Title V de minimis significant permit revision. However, A/N 459677 will be grouped with A/N 498414, which was submitted for a de minimis significant permit revision. Therefore, A/N 461287 will be cancelled, and the facility will receive a partial refund. This application (A/N 511011) and all other applications associated with this 2nd permit revision will be grouped under A/N 498414 for the Title V de mimimis significant permit revision.

A/N	Previous permit (A/N)	Description
498414	-	Title V permit revision, de minimis significant.
511011	-	Heidelberg lithographic printing press, IR dry; new construction
511014	-	Title V permit revision (rejected).
512895	-	Man-Roland, lithographic printing press, heat set; to be vented to RTO under A/N 444084, new construction
513651	-	Title V permit revision (to be cancelled, A/N 512895 to be linked to A/N 498414).
498415	F72166 (432788)	Heidelberg, lithographic printing press, UV/IR dry; functionally identical replacement (under separate evaluation).
498416	n/a	Heidelberg, lithographic printing press, UV/IR dry; new construction (under separate evaluation).
498417	F57126 (402452)	Heidelberg, lithographic printing press, UV/IR dry; functionally identical replacement (under separate evaluation).

Note: A/N 498414 is Title V permit revision application that is also being used for A/Ns 498415-498417, which are under a separate evaluation.

In addition, as part of administrative permit revisions, A/N 444084 will be issued a permit to operate from a permit to construct for the modification to the regenerative thermal oxidizer (under separate evaluation). Likewise, A/N 465235 will be issued the permit to operate from a permit to construct for the lithographic printing press that replaced the one under A/N 443118. As a result, A/N 443118 will be cancelled (both under separate evaluation).

A review of the Compliance database shows that the facility was most recently inspected in March 2010. The facility was operating in compliance at that time. In addition, there were two public complaints in the past two years, but the facility was found to be in compliance each time and no further compliance action was taken. Also, no Notices of Violation or Notices to Comply have been issued to this facility in the last two years.

PROCESS DESCRIPTION:

The applicant operates a typical commercial lithographic printing operation at this site. The equipment is used to print such items as brochures, annual reports, and advertising.

In lithographic printing, the image and non-image areas are on the same plane (planographic). The image area is made to be oil receptive and water repellent, while the non-image area is made to be water receptive and oil repellent. The fountain solution (normally comprised of water, alcohol or alcohol substitute, and etch) wets the non-image area, while the ink adheres to the image area. The term offset refers to the fact that the ink is offset from the plate to a rubber blanket, and then from the blanket to the paper.

The lithographic printing press under A/N 511011 is a sheet-fed, 8-color, IR-dry press. The sheet comes directly from the printing press, then through the coaters and IR lamps, where the inks are cured. The lithographic printing press under A/N 512895 is a web-fed, 8-color, heat set press with a dryer oven that has a 7.4 mmBTU/hr natural gas-fired low-NO_x burner. It will be vented to the existing RTO (A/N 444084).

The addition of the new heat-set press (A/N 512895) will increase the flowrate to the RTO by approximately 3600 standard cubic feet per minute (scfm). In addition, the Harris M600 press (PO #F93205, A/N 474112) was removed from the facility on 7/16/2010. The total resulting exhaust flow rate is 10,800 cfm. Information provided by the applicant, as well as by MegTec (the manufacturer of the RTO), showed that the RTO is capable of this additional load. MegTec certifies that this RTO has a capacity of 12,000 scfm. The applicant currently has three heat-set presses vented to the RTO as follows:

Press	Permit/Appl. No.	Exhaust flow (scfm)
~~Harris M300~~	~~F63738/402451~~[(a)]	~~1855~~
Man-Roland	F93208/474114	3600
~~Harris M600~~	~~F93205/474112~~[(b)]	~~2340~~
~~Heidelberg 6-color~~	~~443118~~[(c)]	~~1300~~
Man-Roland, Rotoman	465235	3600
Man-Roland, Rotoman H	512895	3600
	TOTAL	**10800**

Note: (a) A/N 402451 was superseded by A/N 474113. However, that press has since been removed from operation. See letter from company, dated April 8, 2009. It was in operation during the S/T in September 2006. And, will be replaced by new Man-Roland press under A/N 512895.

(b) Harris M600, A/N 474112, was removed from operation July 2010 per facility. See 7/16/2010 inactivation request. Permit was inactivated 12/16/2010.

(c) Heidelberg press, A/N 443118, was removed and replaced by the Man-Roland, Rotoman, A/N 465235. See separate evaluation for A/N 443118.

A source test was conducted to demonstrate compliance with BACT requirements (minimum destruction efficiency of 95%) on September 20, 2006, and the overall destruction efficiency was shown to be 98.3%. The inlet flow rate to the RTO was 10,300 acfm during the test. Three presses were vented to the RTO during each test run, with the RTO temperature at 1570 – 1609 degrees F (complies with the 1400 degree F minimum temperature requirement on the P/C).

EMISSIONS AND ANALYSIS:

ROG and TOG:

The use of graphic arts materials in both printing presses generates ROG and TOG emissions. This facility currently has a facility-wide limit of 10,890 pounds per calendar month. The applicant will install and operate both printing presses with no increase to this facility limit.

The applicant estimated average VOC emissions for the IR-dry lithographic press (A/N 511011) of up 16 lbs/day (0.67 lb/hr @ 24 hr/day). The applicant estimated average VOC emissions from the heat-set lithopress (A/N 512895) of up to 7 pounds per day. Though both presses are not expected to exceed these amounts during peak production times, there will be no equipment specific VOC limits for either press. *See Rule 212(g) evaluation in the Rules section.*

Toxic Air Contaminants:

Lithographic printing press, IR-dry (A/N 511011)

The use of graphic arts materials is a source of toxic air contaminant emissions. According to the MSDS sheets submitted by the applicant, the graphic arts materials used in this printing press

include ammonia (CAS no. 7664-41-7), ethylbenzene (CAS no. 106-41-4), ethylene glycol butyl ether (EGBE, CAS no. 111-76-2), isopropyl alcohol (CAS no. 67-63-0), and xylene (CAS no. 1330-20-7).

Compound	Product	Concentration (lbs/gal)	Usage (gal/yr)	Uncontrolled Emissions	Total uncontrolled Emissions
Ammonia (7664-41-7)	Kelstar Starkote AQ370	(17/35)(0.02)(8.65) = 0.084	3000	0.0288 lb/hr 0.69 lb/day 252 lb/yr	0.0288 lb/hr 0.69 lb/day 252 lb/yr
Ethylbenzene (100-41-4)	Prisco MRC85	(0.025)(8.70) = 0.22	225	0.0057 lb/hr 0.136 lb/day 49.5 lb/yr	0.0057 lb/hr 0.136 lb/day 49.5 lb/yr
EGBE (111-76-2)	Ecolowash 100	(0.10)(7.34) = 0.73	1800	0.15 lb/hr 3.6 lb/day 1314 lb/yr	0.15 lb/hr 3.6 lb/day 1314 lb/yr
Isopropyl Alcohol (67-63-0)	Kelstar Starkote AQ370	(0.02)(8.65) = 0.17	3000	0.058 lb/hr 1.4 lb/day 510 lb/yr	0.126 lb/hr 3.03 lb/day 1104 lb/yr
	Prisco MRC85	(0.05)(8.7) = 0.44	225	0.011 lb/hr 0.27 lb/day 99 lb/yr	
	IPA R0501	(1.0)(6.6) = 6.6	75	0.057 lb/hr 1.36 lb/day 495 lb/yr	
Xylene (1330-20-7)	Prisco MRC85	(0.05)(8.7) = 0.44	225	0.011 lb/hr 0.27 lb/day 99 lb/yr	0.011 lb/hr 0.27 lb/day 99 lb/yr

Note: 1. Above assumes 24 hrs/day and 365 days/yr.
2. Ammonia (CAS no. 7664-41-7) in ammonium hydroxide (CAS no. 1336-21-6) = 17/35 = 0.48 by wt.

As shown on the attached Rule 1401 Tier 1/Tier 2 Screening Risk Assessment spreadsheet, the health risk impact of the above emissions will not result in an exceedance of the MICR ($\leq 1 \times 10^{-6}$) or the HIA/HIC (≤ 1.0) thresholds. Therefore, no further analysis is required.

Lithographic printing press, heat-set (A/N 512895)

There are two sources of toxic air contaminants from this press: from the use of graphic arts materials, and from the combustion of natural gas in the dryer oven. According to the MSDS sheets submitted by the applicant, the graphic arts materials used in this equipment include ethylene glycol

(CAS no. 107-21-1), ethylene glycol butyl ether (EGBE, CAS no. 111-76-2) and isopropyl alcohol (CAS no. 67-63-0). See the table below:

Compound	Product	Concentration (lbs/gal)	Usage (gal/yr)	Uncontrolled Emissions
Ethylene glycol (107-21-1)	Kelstar WP937	(0.13)(8.8) = 1.14	1800	0.71 lb/hr 2059 lbs/yr
EGBE (111-76-2)	Kelstar WP937	(0.10)(8.8) = 0.88	1800	0.54 lb/hr 1584 lbs/yr
Isopropyl Alcohol (67-63-0)	IPA R0501	(1.0)(6.6) = 6.6	100	0.23 lb/hr 660 lbs/yr

Note: Above assumes 24 hrs/day and 365 days/yr (worse case).

As shown on the attached Rule 1401 Tier 1/Tier 2 Screening Risk Assessment spreadsheet, the health risk impact of the above emissions, controlled by at least 95%, will not result in an exceedance of the MICR ($\leq 1 \times 10^{-6}$) or the HIA/HIC (≤ 1.0) thresholds. No further analysis is required.

Combustion Contaminants:

The combustion of natural gas in the dryer oven (A/N 512895) will result in contaminants from incomplete combustion, such as oxides of nitrogen (NOx), carbon monoxide (CO), volatile organic compounds (VOC), particulates (PM), and oxides of sulfur (SOx). See the attached spreadsheet, Natural Gas Combustion. Combustion emissions will not be considered as an increase since the natural gas used by this equipment will be included under the existing facility-wide natural gas usage limit (12,411,428 cf/mo). In addition, the combustion of natural gas causes the emission of several toxic compounds such as acetaldehyde, ammonia, acrolein, benzene, formaldehyde, hexane, naphthalene, PAH's, propylene, toluene, and xylene.

The worst-case combustion emissions were based on the maximum burner rating of 7.4 mm Btu/hr, and a maximum operating schedule of 24 hours per day, 365 days per year. The average values were calculated based upon 16 hours per day, 260 days per year, at 40% of maximum burner rating. The calculations are shown on the spreadsheet that follows the evaluation report for the permit to construct, and are summarized below:

Appl. No.	Equipment	CO		NOX		PM10		VOC		SOX	
		Avg Lb/hr	Max Lb/hr	Avg Lb/hr	Max Lb/hr	Avg Lb/hr	Max Lb/hr	Avg Lb/hr	Max Lb/hr	Avg Lb/hr	Max Lb/hr
512895	Litho oven	0.247	0.247 *5.9**	0.271	0.271 *6.5**	0.053	0.053 *1.27**	0.049	0.049 *1.18**	0.006	0.006 *0.14**

Note: (a) The values in italics and denoted by an asterisk are maximum daily values.
(b) Combustion emissions will be included under existing facility NG usage limit of 12,411,428 cf/mo.

RULES:

RULE 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 facility is not located within 1,000 feet from the outer boundary of a school. Therefore, public notice will not be required by this section.

RULE 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 subparagraph (g). There are no emission increases from this facility as a result of this project since the VOC emissions will be included under the existing facility VOC cap of 10,890 lb/month. In addition, there is no increase in combustion emissions since the gas usage in the press oven under A/N 512895 will be included under the existing facility natural gas usage cap of 12,411,428 cubic feet/month. Therefore, public notice will not be required by this section.

RULE 212(c)(3) See Rule 1401 evaluation section. The toxic emissions from this equipment does not result in an MICR of more than one-in-a-million or HIA.HIC above 1, therefore public notice will not be required by this section.

RULE 212(g) This section requires a public notice for all new or modified permit units which undergo construction or modifications resulting in an emissions increase exceeding any of the daily maximums as specified in subparagraph (g). The maximum potential VOC emissions from this equipment are greater than 30 lb/day, therefore, public notice will be required by this section.

RULE 401 Visible emissions are not expected with proper operation of this equipment.

RULE 402 Operation of equipment is not expected to create a nuisance.

RULE 1130 The inks to be used in this equipment have a VOC content of 160-300 g/l, which complies with the rule limit of 300 g/l in (c)(1). The fountain solution mixture used in this press will be <25 g/l, which is below the requirement of 80 g/l.

RULE 1147 The burner in the dryer oven (A/N 512895) is a low-NOx burner which is expected to meet the NOx limit of 30 ppm @3%O_2. A permit condition will be imposed to source test the dryer exhaust to demonstrate that the burner can meet the NOx requirement of 30 ppm, per Rule 1147(c)(1).

RULE 1171 The clean-up materials used for this equipment comply with the VOC limits in subparagraph (c)(1)(C). The blanket/roller washes contain less than the allowed 100 g of VOC/l (actual is 96 g/l for Day Ecolowash 100, and 84 g/l for Prisco MRC85 metering roller cleaner). Compliance is expected.

REG. XIII 1303(a): BACT requirements are met by using fountain solution that is less than 8% VOC by volume (actual 2.9%), and by the use of low VOC content

clean-up materials (< 100 g/l) with the lowest possible vapor pressure (<5 mmHg @ 20°C). Each of these conditions is satisfied.

1303(b)(1): The modeling requirements do not apply to ROG emissions at this time. See table below for combustion emissions from the heat-set press which are all below the Table A-1 allowable emissions for 5-10 mm Btu/hr combustion sources:

Burner Rating (MMBtu/hr)	NO_x Emissions		CO Emissions		PM_{10} Emissions	
	Calculated (lb/hr)	Allowed (lb/hr)	Calculated (lb/hr)	Allowed (lb/hr)	Calculated (lb/hr)	Allowed (lb/hr)
7.4 (A/N 512895)	0.271	0.47	0.247	25.9	0.053	2.8

1303(b)(2): NOx/CO/PM_{10}: There will be no combustion emissions increase from the facility from the gas-fired dryer oven under A/N 512895 since the natural gas used in this equipment will be included under the existing facility-wide natural gas usage limit of 12,411,428 cf/mo. Offsets are not required.

ROG: There is no VOC emission increase from this facility since the VOC emissions from the presses will be included under the existing facility VOC emissions cap of 10,890 lb/month.

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

RULE 1401 Both presses are subject to the June 5, 2009 version of this rule. The graphic arts materials used in Komori press (A/N 511011) include ammonia (CAS no. 7664-41-7), ethylbenzene (CAS no. 100-41-4), ethylene glycol butyl ether (EGBE, CAS no. 111-76-2), isopropyl alcohol (CAS no. 67-63-0), and xylene (CAS no. 1330-20-7). The graphic arts materials used in the Man-Roland press (A/N 512895) include ethylene glycol (CAS no. 107-21-1), ethylene glycol butyl ether (EGBE, CAS no. 111-76-2), and isopropyl alcohol (CAS no. 67-63-0), and there are some toxics from the combustion of natural gas in the oven. It was determined in both cases that neither press emissions would result in health risk impact levels above their thresholds (MICR < 1 x 10 -6, and HIA/HIC < 1.0). See attached spreadsheets with screening risk analysis. Therefore, compliance is expected.

Regulation 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 for this facility.

Rule 3000(b)(6) defines a "de minimis significant permit revision" as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (HAPs) from these permit revisions during the term of the permit are not greater than any of the emission threshold levels on the following page:

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

To determine if a project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants or HAPs, emission increases for non-RECLAIM pollutants or HAPs resulting from all permit revisions that are made after the issuance of the Title V renewal permit shall be accumulated and compared to the above threshold levels. This proposed project is the 2nd permit revision to the Title V renewal permit issued to this facility on March 26, 2006. The following table summarizes the cumulative emission increases resulting from all permit revisions since the Title V renewal permit was issued. This revision also includes P/O no P/Cs for three lithographic presses and one emergency engine, and P/C-to-P/O for a lithographic press and regenerative thermal oxidizer.

Title V Permit Revisions Summary

	Revision	HAP	VOC	NO_x	PM_{10}	SO_x	CO
1st	1st Permit Revision: Installation of a heat-set lithographic printing press (A/N 465235)	0	0	0	0	0	0
2nd	P/C to P/O upgrade (administrative) for lithographic printing press (A/N 459677) and regenerative thermal oxidizer (A/N 444084)	0	0	0	0	0	0
	P/O no P/C, Installation of three air-dry lithographic printing presses (A/Ns 498415, 498416 and 498417)	0	0	0	0	0	0
	Remove two presses under A/N 432788 (PO #F72166) and A/N 402452 (PO #F57166) replaced by A/Ns 498415 and 498417.	0	0	0	0	0	0
	P/O no P/C, Addition of one emergency IC engine (A/N 459677)	0	0	0	0	0	0
	P/C, Installation of one IR-dry & one heat-set litho printing press (A/Ns 511011 and 512895)	0	0	0	0	0	0
	Remove Heidelberg M300 press under A/N 474113 (PO #F93206)	0	0	0	0	0	0
Cumulative Total		0	0	0	0	0	0
Maximum Daily		30	30	40	30	60	220

Since the cumulative emission increases resulting from all permit revisions are not greater than any of the emission threshold levels, this proposed project is considered as a "de minimis significant permit revision".

CONCLUSION:

The proposed project is expected to comply with all applicable District Rules and Regulations, upon completion of the 30-day public notice requirements of Rule 212(c)(2). Also, 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 facility permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not have any objections within the review period, a revised Title V permit will be issued to this facility.