

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <i>ENGINEERING and COMPLIANCE</i>  <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGES 6	PAGE 1
	APPL. NO. 555610-511	DATE 10/10/2013
	PROCESSED BY T. Iwata	CHECKED BY

**PERMIT TO CONSTRUCT, NEW CONSTRUCTION**

NASA/JPL  
 4800 Oak Grove Dr.  
 Pasadena, CA 91109  
 ID no.: 11887

**EQUIPMENT DESCRIPTION:**

**SECTION H:**

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions	Conditions
<b>Process 4: DEGREASING/CLEANING EQUIPMENT</b>					
<b>System 3: BUILDING 103</b>					
AIRTIGHT DEGREASER, DEFLUXING, TRIDENT MODEL LD, 65 GALLON WASH CHAMBER, SOLVENT TANK, DI WATER RINSE TANK, 11KW ELECTRIC DRYER  A/N 555610	D169				A63.4 B27.6 H23.4

A/N 555611: RECLAIM Amendment/Title V Permit Revision – Deminimis Significant

**BACKGROUND:**

NASA/JPL submitted application no. 555610 to permit a new airtight degreaser. The degreaser will be used for non-production bench scale research and development. It will be specially used to deflux electronic circuit boards.

The facility was last inspected on June 11, 2013. The inspection results are still pending. On December 11, 2012, a NC (no. D28694) was issued to the facility to ensure that elapsed time meters only display total engine run time. The facility resolved the NC and was found to be operating in compliance with the NC.

NASA/JPL is a RECLAIM/Title V facility. A Title V renewal permit was issued to this facility on October 18, 2011. NASA/JPL has proposed to revise their Title V renewal permit by issuing a Permit to Construct for an airtight degreaser, device no. D169. This permit revision is considered as a “de minimis significant permit revision” to the Title V renewal permit, as

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described in the Regulation XXX evaluation. Also included in this revision is the issuance of a P/O to an IC engine, device no. D168, that was issued a P/C in 2012 (administrative revision – see separate evaluation under A/N 540642).

## **PROCESS DESCRIPTION**

NASA will use the degreaser to deflux circuit boards which are sized from 3” x 3” x 0.25” to 20” x 20” x 3”. They will use a non-halogenated water-based solvent, Vigon A250 concentrate mixed with de-ionized water (1:4 ratio). The resultant VOC content is 168 g/l. NASA estimates that they will add one gallon of concentrate monthly. The unit will adjust water and concentrate ratios automatically. Every 6 to 9 months, they will completely drain the storage tank and refill with fresh concentrate and water.

The cleaning process begins as parts are loaded on a rack inside of the cleaning chamber. The cleaning solution is heated to 50 degrees Centigrade and is dispensed from its internal storage tank. After de-fluxing, the solution is allowed to drain back to its storage tank for re-use in subsequent cleaning cycles. De-ionized water from its own separate storage tank is heated to the same temperature and is used for rinsing. Multiple rinse cycles may be required based on the ionic contamination of the rinse water. The system automatically tests the rinse water for the ionic concentration. After rinsing is complete, the rinse water is filtered and then discharged to the drain. The rinse water will be analyzed/tested and pre-approved for water discharge. After rinsing, air-duct heaters and the chamber heater will energize as necessary during the drying cycle. At the end of each process cycle, the degreaser door remains closed for several minutes to allow draining and sufficient cooling before the chamber is opened for parts removal. Operating schedule is anticipated to be 1 to 8 run cycles per day.

## **EMISSION ESTIMATES**

To comply with BACT, monthly VOC emissions are limited to  $4.3 \times V^{0.6}$ , where V is the cleaning chamber volume in cubic feet.

$$\text{Volume} = 8.6 \text{ ft}^3$$

$$\text{BACT allowable monthly VOC emission limit} = 4.3 \times 8.6^{0.6} = 15.6 \text{ lb/mon}$$

To prevent acquiring emission offsets, the monthly VOC limit will be 12.5 lb/mon

$$\text{Daily VOC emissions} = 12.5 \text{ lb/mon} \div 30 \text{ day/mon} = 0.417 \text{ lb/day}$$

$$\text{Hourly VOC emissions} = 0.417 \text{ lb/day} \div 8 \text{ hr/day} = 0.052 \text{ lb/hr}$$

The company requested a monthly VOC cap of 12.5 lb/month so offsets are not required. NASA estimates that they will use approximately one gallon of concentrate per month which equates to 7 lb of VOC per month and 0.35 lb/day (based on 20 days/mon).

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## **RULE ANALYSIS**

Rule 212 (c)(1): This section requires a public notice for all new or modified permit units that emit air contaminants located within 1,000 feet from the outer boundary of a school. The facility is not located within 1,000 feet of the outer boundary of a school. The closest school is located over 1,700 feet from the facility. Public notice not required by this section.

Rule 212 (c)(2): This section requires a public notice for all new or modified facilities that have on-site emission increases exceeding any of the daily maximums as specified by Rule 212(g). The degreaser will be limited to 12.5 lb/mon but emissions are expected to be less. Public notice not required by this section.

Rule 212(c)(3): This section requires a public notice for any new or modified permit unit with an increase in emissions of toxic air contaminants listed in Table I of Rule 1401 resulting in an MICR greater than 1E-6 per permit unit or greater than 10E-6 per facility. The Vignon A250 does not contain any toxic air contaminants. A public notice is not required for this project since there will not be a cancer risk.

Rule 212(g): This section requires a public notice for all new or modified sources that result in emission increases exceeding any of the daily maximums specified by Rule 212(g). The degreaser will be limited to 12.5 lb/mon (0.417 lb/day) but emissions are expected to be less. Public notice not required by this section.

	Maximum Daily Emissions (lb/day)					
	<b>ROG</b>	<b>NO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>SO<sub>2</sub></b>	<b>CO</b>	<b>Pb</b>
Emission increase	0.42	0	0	0	0	0
MAX Limit	<b>30</b>	<b>40</b>	<b>30</b>	<b>60</b>	<b>220</b>	<b>3</b>
Compliance Status	Yes	Yes	Yes	Yes	Yes	Yes

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 1122: NASA will operate the degreaser in compliance with 1122(f).

RULE 1303 (a): An airtight degreaser with VOC emissions not exceeding  $(4.3 \times V^{0.6})$  lb/mon is BACT for degreasing operations. The degreaser will be limited to  $\leq 12.5$  pounds/month

RULE 1303 (b)(1): Modeling is not required for VOC emissions.

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RULE 1303 (b)(2): The increase in VOC from the degreaser is no more than 0.42 lb/day (0.42 lb/day x 1.2 offset factor is <1 lb/day offset requirement). Offsets are not required.

RULE 1303 (b)(4)/(b)(5): The facility is expected to be in full compliance with all applicable rules and regulations of the District.

RULE 1401: The solvent does not contain any toxic air contaminants. A permit condition will be added to not allow the use of materials containing R1401 toxic air contaminants.

40 CFR Part 63, Subpart T – Halogenated solvent will not be used in this degreaser, therefore this rule is not applicable.

### **REGULATION XXX:**

The proposed project is considered as a “de minimis significant permit revision” to the Title V renewal permit issued to 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 (HAP) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

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

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 issuance of the Title V renewal permit shall be accumulated and compared to the above threshold levels. This proposed project is the 2<sup>nd</sup> permit revision to the Title V renewal permit issued to this facility on October 18, 2011. The following table summarizes the cumulative emission increases resulting from all permit revisions since the Title V renewal permit was issued:

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Revision	HAP	VOC	NO <sub>x</sub> *	PM <sub>10</sub>	SO <sub>x</sub>	CO
1 <sup>st</sup> : Convert P/Cs to P/Os for two ICEs (Device nos. D165 & D166), move from Section H to Section D (administrative); and add ICE (Device no. D168) to Section H (significant revision).	0	0	7.6	0	0	0.75
2 <sup>nd</sup> : Convert P/C to P/O for ICE (Device no. D168), move from Section H to Section D & remove ICE (Device no. D15) from Section D (administrative); and add airtight degreaser (Device no. D169) (de minimis significant revision).	0	0.42	0	0	0	0
Cumulative Total	0	0.42	7.6	0	0	0.75
Maximum Daily	30	30	40*	30	60	220

\* RECLAIM pollutant, not subject to emission accumulation requirements

## **CONDITIONS:**

### **A63.4:**

THE OPERATOR SHALL LIMIT EMISSIONS FROM THIS EQUIPMENT AS FOLLOWS:

CONTAMINANT	EMISSIONS LIMIT
VOC	LESS THAN OR EQUAL TO 12.5 LBS IN ANY ONE MONTH

To ensure compliance with the monthly Volatile Organic Compound (VOC) emission limit(s) of this condition, the operator shall comply with the following recordkeeping requirements:

- (1) The operator shall comply with Rule 109 (Recordkeeping for Volatile Organic Compound Emissions).
- (2) Within 14 calendar days after the end of each month, the operator shall total and record VOC emissions for the month from all equipment and operations covered by the monthly emission limit(s). The record shall include any procedures used to account for control device efficiencies and/or waste disposal. It shall be signed and certified for accuracy by the highest ranking individual responsible for compliance with District rules.
- (3) The operator shall maintain a single list which includes only the name and address of each person from whom the facility acquired VOC-containing material regulated by the District that was used or stored at the facility during the preceding 12 months.
- (4) The operator shall retain all purchase invoices for all VOC-containing material used or stored at the facility, and all waste manifests for all waste VOC-containing material removed from the facility, for five years.

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**B27.6:**

THE OPERATOR SHALL NOT USE MATERIALS CONTAINING ANY TOXIC AIR CONTAMINANTS (TACS) IDENTIFIED IN THE SCAQMD RULE 1401, AS AMENDED 09/10/2010.

**H23.4:**

THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES OR REGULATIONS:

CONTAMINANT	RULE	RULE/SUBPART
ROG	DISTRICT RULE	1122

**RECOMMENDATION**

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as an “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 have any objections within the review period, a revised Title V/RECLAIM permit will be issued to this facility.