DRAFT
ENGINEERING EVALUATION
Space Systems/Loral, LLC Plant: 6061
3825 Fabian Way, M/S D07, Palo Alto, CA 94303
Application: 26881

Background

Space Systems/Loral has applied for a change in Permit Condition #25698 to increase the usage of coating/solvent at S-314:

S-314 Strip Station (Bldg 3), solvent cleaning

At S-314, circuit boards are dipped in a beaker filled with isopropyl alcohol, acetone, or DuPont EKC 922 stripper. The beaker is covered by a glass dish and left alone for a set period of time inside a ventilated fume hood. The cleaned circuit boards are drained by holding the parts above the beaker until dripping ceases.

The applicant is proposing to increase usage limit as follows:

Chemical/category	Current 12-month permit condition usage limit (gallons)	Proposed requested 12-month permit condition usage limit (gallons)	Proposed Maximum Daily usage (gal/day)	Proposed Maximum Hourly usage (gal/hr)
solvent (combined total)	36	100	2	2
EKC 922	N/A	16	N/A	N/A

The applicant was unable to provide a maximum hourly usage rate. Therefore, the maximum hourly usage rate is assumed to be equal to the maximum daily usage rate. Isopropyl alcohol, acetone, and DuPont EKC 922 photoresist remover are used at S-314. The table above also shows the maximum requested annual usage of EKC 922. EKC 922 will have a separate usage limit because it contains naphthalene, a TAC with a low threshold (of 3.2 lb/yr) in Table 2-5-1 of Regulation 2-5. Also, the applicant stated that the maximum usage of EKC 922 will be 16 gal/yr, as it is not feasible to use EKC 922 alone in this process.

Name of Material	Composition	Density (lb/gal)	VOC Content (lb/gal)
Isopropyl Alcohol	Isopropyl Alcohol (100%)	6.55	6.55
Acetone	Acetone	6.59	0
DuPont EKC 922	Naphthalene (6%)	7.99	7.6

Emissions Calculations

The emissions calculations are as follows:

Source	Maximum POC Density (lb/gal)	Maximum Hourly Usage (gal/hr)	Maximum Daily Usage (gal/day)	Maximum Annual Usage (gal/yr)	Maximum Hourly POC Emissions (lb/hr)	Maximum Daily POC Emissions (lb/day)	Maximum Annual POC Emissions (lb/yr)
S-314	7.6	2	2	100	15.2	15.2	760

The actual post-project emission increase is the difference between the post-project emissions and the pre-project baseline emissions. Per Regulation 2-2-605, the baseline emission level is the annual average POC emissions based on the previous 36 months of operation of S-89. The baseline POC emissions were provided by the facility and are as follows.

Pre-project POC emissions (lb/yr) = 63.91 lb/yr
Post-project POC emissions (lb/yr) = 760 lb/yr
Post-project POC emission increase = 760 – 63.91 = 696.09 lb/yr = 0.348 TPY

BACT Review and Determination

In accordance with Regulation 2, Rule 2, Section 301, BACT is triggered for any new or modified source with the potential to emit 10 pounds or more per highest day of POC, NPOC, NOx, CO, SO_2 or PM_{10}.

The emission calculations above show that maximum daily POC emissions exceed 10 pounds per highest day. However, the facility has agreed to accept an enforceable permit condition to limit the maximum daily POC and NPOC emissions to less than 9.5 pounds per highest day and maintain records to demonstrate compliance with this limit. Therefore, BACT is not triggered.

Plant Cumulative Increase and Offsets

The table below summarizes the cumulative increase in criteria pollutant emissions that will result at Plant 6061 from the operation of S-314.

Plant Cumulative Emissions Increase

Pollutant	Existing Emissions, Post 4/5/91 (TPY)	New Increase with Application 26491 (TPY)	Cumulative Emissions (TPY)
NOx	0.433	0.000	0.433
POC	0.410	0.348	0.758
CO	0.125	0.000	0.125
PM_{10}	0.027	0.000	0.027
SO_2	0.002	0.000	0.002
NPOC*	5.712	0.348	6.060

* NPOC emissions equivalent to the post-project POC emissions increase have been added to the plant emissions, to provide flexibility to this facility to use alternate materials that may contain NPOC. The permit condition reflects this allowance.

The table below summarizes the total PTE for this facility.

Facility PTE for POC

	Emissions (TPY)
Total Facility PTE (calculated under Application 26491)	19.538
New Increase with Application 26881	0.348
Total Facility PTE	19.886

BAAQMD Regulation 2-2-302 was amended on December 21, 2004, so that facilities with a potential to emit of 35 tons or more of POC or NOx could not use offsets from the Small Facilities Bank. Facilities with a potential to emit between 10 and 35 tons of POC or NOx can use offsets from the Small Facilities Bank. Therefore, 0.348 tons POC per year will be charged to the Small Facilities Bank for this application.

Statement of Compliance

Toxics NSR/TBACT

A Health Risk Screening Analysis is required because TAC emissions will exceed the TAC thresholds in Table 2-5-1 of Regulation 2-5, as shown in the table below.

TACs	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (lb/yr)	Regulation 2-5 trigger (lb/hr)	Regulation 2-5 trigger (lb/yr)	HRSA triggered? (Y/N)
Isopropyl Alcohol*	9.5	655.0	7.1	270000	Y
Naphthalene**		7.67		3.2	Y

*Isopropyl alcohol emissions at S-314 (lb/yr) = (100 gal/yr)(6.55 lb/gal) = 655.0 lb/yr
Isopropyl alcohol emissions at S-314 (lb/hr) = 9.5 lb/hr (since applicant has agreed to accept enforceable permit condition to limit maximum daily POC emissions to less than 9.5 lb/highest day)
**Naphthalene emissions at S-314 (lb/yr) = (16 gal/yr)(7.99 lb/gal)(6%) = 7.67 lb/yr

Per the attached 9/15/2015 memo from Jane Lundquist, results from the health risk screening analysis indicate that the project cancer risk to the maximally exposed receptor is 0.3 in a million and the chronic hazard index is 0.0006 and the acute hazard index is 0.7. In accordance with Regulation 2-5, this is an acceptable risk level.

District Rules

Per Regulation 8-16-115, S-314 is exempt from the requirements of Regulation 8-16 (Solvent Cleaning Operations), except for 8-16-303.1, 303.3.1, and 303.3.2, because S-314 uses unheated solvent and contains 0.37 gallons of solvent:

> **8-16-115 Limited Exemption, Small, Unheated Solvent Cleaning Equipment:** Except for the requirements in subsections 8-16-303.1, 303.3.1, and 303.3.2, the requirements of this Rule shall not apply to equipment or operations that use unheated solvent and that contain less than 3.785 liters (1 gal) of solvent, including volume in any remote reservoir, or have an evaporative area of less than 929 cm^2 (144 in^2 or 1 ft^2).

S-314 is expected to continue to comply with the general operating requirements of 8-16-303.1. S-314 is also expected to continue to comply with the equipment requirements in Regulation 8-16-303.3.1 and 8-16-303.3.2 in that it has a container for the solvent and for the articles being cleaned and has a cover.

Federal Rules

PSD, NSPS, and NESHAPS are not triggered for this project.

CEQA

This application is considered to be ministerial under the District's Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 6.1.

Public Notices

This facility is located within 1000 feet from the nearest school and therefore is subject to the public notification requirements of Regulation 2-1-412.

Permit Conditions

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COND#  25698   -------------------------------------

     Space Systems/Loral, Plant: 6061
     Application 25539

     1. The owner/operator of S-3, S-308, S-314, and S-315 shall
     not exceed the following coating and/or solvent usage limits
     during any consecutive twelve-month period:
     S-3:   243 gallons
     S-308: 90 Gallons
     S-314: 16 Gallons of EKC 922 and 36100 Gallons of all solvents combined
                                                    (including EKC 922)
     S-315: 16 Gallons
     (Basis: Cumulative Increase, Small Facilities Bank)
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2. ~~The owner/operator may use an alternate coating(s) or solvent(s) other than the materials specified in Part 1 and/or usages in excess of those specified in Part 1, provided that the owner/operator can demonstrate that all of the following are satisfied:~~ For each source specified in Part 1 with source-specific usage and/or material limits, the owner/operator may use an alternate coating(s) or solvent(s) other than the materials specified in Part 1 and/or usages in excess of those specified in Part 1, provided that the owner/operator can demonstrate that all of the following limits pertaining to the affected source(s) are satisfied. An affected source in Part 2 is defined as a source using alternate coating(s) or solvent(s) other than the materials specified in Part 1 and/or usages in excess of those specified in Part 1. (Example: Use of a photoresist remover at S-314 other than EKC 922 does not require a demonstration of compliance with Parts 2a, 2b, and 2d, provided that no changes are made to S-3, S-308, and S-315.)

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a. Total POC and/or NPOC emissions from S-3 do not exceed 1629 pounds in any consecutive twelve month period;

b. Total POC and/or NPOC emissions from S-308 do not exceed 584 pounds in any consecutive twelve month period;

c. Total POC and/or NPOC emissions from S-314 do not exceed ~~234~~760 pounds in any consecutive twelve month period;

d. Total POC and/or NPOC emissions from S-315 do not exceed 98 pounds in any consecutive twelve month period; ~~and~~

e. Total POC and/or NPOC emissions from S-314 do not exceed 9.5 pounds in any single day; and

~~e~~f. The use of these materials does not increase toxic emissions above any risk screening trigger level of Table 2-5-1 in Regulation 2-5.

(Basis: Cumulative Increase; Small Facilities Bank)

3. To determine compliance with the above parts, the owner/operator shall maintain the following records and provide all of the data necessary to evaluate compliance with the above parts, including the following information:

a. Quantities of each type of coating and solvent used at S-3, S-308, S-314, and S-315 on a monthly basis.

b. Quantities of each type of solvent used at S-314 on a daily basis and mass emission calculations to demonstrate compliance with Part 2e.

~~b~~c. If a material other than those specified in Part 1 is used, POC/NPOC and toxic component contents of each material used; and mass emission calculations to demonstrate compliance with Part 2, on a monthly basis;

~~c~~d. Monthly usage and/or emission calculations shall be totaled for each consecutive twelve-month period.

All records shall be retained on-site for two years, from

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the date of entry, and made available for inspection by
District staff upon request. These recordkeeping
requirements shall not replace the recordkeeping
requirements contained in any applicable District
Regulations.
(Basis: Cumulative Increase; Toxics)
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Recommendation

The District has reviewed the material contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state, and federal air quality-related regulations. The preliminary recommendation is to issue a Change of Conditions for the equipment listed below. However, the proposed source will be located within 1000 feet of a school, which triggers the public notification requirements of District Regulation 2-1-412.6. After the comments are received and reviewed, the District will make a final determination on the permit.

I recommend that the District initiate a public notice and consider any comments received prior to taking any final action on the issuance of a Change of Conditions for the following source:

S-314 Strip Station (Bldg 3), solvent cleaning

Prepared by: _____ **Date:** _____

Jimmy Cheng, Air Quality Engineer