

DRAFT Permit Evaluation Report

San Francisco Municipal Railway
2301 San Jose Ave
San Francisco, CA 94112

Application Number: 24854
Plant Number: 6072

Background:

San Francisco Municipal Railway (MUNI) is seeking for an increase in coating and solvent use at the maintenance facility as part of an overall transit plan to consolidate/reorganize their operations. No other changes are sought. According to [Regulation 2-1-234](#), this Change of Conditions will count as a modification.

The existing permitted sources affected by this application are:

- S-1 Spray Booth Operation - JBI Manufacturers, bay 1
- S-2 Spray Booth Operation - JBI Manufacturers, bay 2
- S-3 Spray Booth Operation – Binks booth

The existing permit conditions for S-1 and S2 is #5346. Condition #5346 allows 260 gallons of coating and 195 gallons of clean-up solvent for S-1 and S-2 (this is means 130 gallons of coating and 97.5 gallons clean-up solvent per source).

The existing permit condition for S-3 is #11158. Condition #11158 allows 580 gallons of coating and 125 gallons of clean-up solvent for S-3.

For S1 and S2, MUNI is seeking an increase to 553 gallons of coating and 191 gallons of clean-up solvent per source.

For S-3, MUNI is seeking 457 gallon of coating and 206 gallons of clean-up solvent.

These three sources will be reviewed under [Regulation 8, Rule 45](#).

Emissions:

Emissions for these three sources (and for plant cumulative total) have previously been reviewed.

Under Application Number (A/N) 5940 in the year 1991, for sources S-1 and S-2, POC emissions were calculated at 6.0 lb/gal for the coating and 6.5 lb/gal for the clean-up solvent for a total potential to emit of 1.405 ton/yr year or 7.7 lb/d.

Under A/N 12912 in the year 1994, for the source S-3, POC emissions were calculated at an average of 3.18 lb/gal for the coating and 7.62 lb/gal for the clean-up solvent for a total potential to emit of 1.39 ton/yr per year or 7.66 lb/d. The application declared this source a Loss of Exemption and the emission were not charged towards the cumulative increase.

Existing permitted POC emissions for all three sources is 2.8 tons per year or 15.36 pounds per day. According to the most recent Annual Renewal, these three sources were responsible for .599 ton/yr or 3.28 lb/d.

At the time of these prior evaluations, the sources were reviewed under Regulation 8, [Rule 4](#), [Rule 19](#), and [Rule 32](#). All these rules have different VOC limits in addition to other regulatory requirements. The reason why the sources were reviewed under different rules is because Regulation 8-45 did not include language that included rail transportation descriptors. The current version of Regulation 8-45 now includes this class of vehicles within its scope of authority ([Reg. 8-45-220](#)).

For this evaluation, as the site is using revised coating formulas, all emissions will be recalculated using the new VOC standards ([Reg. 8-45-301.3](#)). This calculated emission value will be subtracted by previous emission totals to accurately reflect changes over time.

Total coatings amounts will be rounded up to give SF MUNI an operating cushion by approximately 20%.

The POC emission summary for these sources (S-1, S-2, and S-3) is in the following table:

Coating Usage and Precursor Organic Compounds (POC) Emissions

Coating Description	Usage (Gal/y)	VOC Content (lb/gal)	POC Emission Lb/year	POC emission (tpy)
Primer Sealer/Surfacer	1215	2.1	2552	1.28
Color Coating	360	3.5	1260	0.63
Clear Coat	300	2.1	630	0.32
Cleanup Solvent	700	.21	147	0.07
Total	2575	-----	4589	2.30

This site use natural gas fired drying units rated at less than 10.0 MM btu/hr, are thus declared exempt under [Regulation 2, Rule 1, Section 114.1.2](#). Exempt equipment will not have emissions counted towards the plant's cumulative total.

Revised Maximum Daily Average Emissions:

$$\text{POC} = (4,589 \text{ lb/yr}) / (365 \text{ d/yr}) = 12.57 \text{ lb/d or } 2.3 \text{ ton/yr}$$

Plant Cumulative Increase:

$$\text{POC} = 2.3 \text{ tpy (new/revised)} - 1.405 \text{ tpy (existing)} = 0.895 \text{ tpy}$$

It is interesting to note that under this application, the permitted maximum emissions are decreasing for these three sources even though there is an increase in the plant's cumulative average.

Toxics and NESHAPs Emissions

The primary Toxic Air Contaminants (TACs) emitted from this coating operation consist of toluene, xylene, and ethyl benzene. Also included are the target Hazardous Air Pollutants (HAPs) per National Emission Standards for Hazardous Air Pollutants (NESHAPs), subpart HHHHHH (compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), and cadmium (Cd). A Health Risk Screen Assessment (HRSA) is carried out when the emissions of these TACs (and target HAPs) exceeds the trigger levels outlined in Regulation 2, Rule 5, Table 1. Below is a table showing the trigger levels of the TAC and target HAPs, as well as the expected emission of each compound under the proposed permit condition.

Please note, none of these TAC and HAPs emissions exceed the trigger level assuming worst-case scenarios (all coatings used are at the high end of TAC and HAP formulation). Thus a HRSA is not required. Also note that per California State ATCM, cadmium and hexavalent chromium are not allowed in any coating.

TAC and target HAP	Trigger, #/yr	Trigger, #/hourly	Max. emissions #/yr	Max. emissions, #/hr
Toluene (basecoat)	12,000 #/yr	82.0#/hr	<95 #/yr	<0.05 #/hr
Xylene (all coatings)	27,000 #/yr	49.0#/hr	<265 #/yr	<0.2 #/hr
Ethyl benzene (clearcoat)	43.0 #/yr	n/a	<25 #/yr	<0.01 #/hr.
Lead	3.2 #.yr	n/a	0.0 #/yr	n/a
Chrome	.00077 #/yr	n/a	0.0 #/yr	n/a
Cadmium	15.0 #/yr	n/a	0.0 #/yr	n/a
Nickel	.43 #/yr	n/a	0.0 #/yr	n/a
Manganese	3.5 #/yr	n/a	0.0 #/yr	n/a

Statement of compliance:BAAQMD and NESHAPs:

The sources (S-1 Spray Booth, S-2 Spray Booth, and S-3 Spray Booth) is subject to and in compliance with District [Regulation 8, Rule 45](#), and Section 301 and 302 for VOC Limits, Section 303 for Transfer Efficiency, Section 308 for Surface Prep and Solvent Loss Minimization, and Section 316 for Particulate Filtration.

This project is considered to be ministerial under the District's CEQA regulation 2-1-311 and therefore is not subject to CEQA review (PHBK Chapter 5). The engineering review for this project requires only the application of standard permit conditions and standard emissions factors and therefore is not discretionary as defined by CEQA.

At this time, BAAQMD is not the delegated authority for the requirements of compliance with the [Federal NESHAP for Paint Stripping and Miscellaneous Surface Coating Operation, Subpart HHHHHH](#) (which includes auto body refinishing, painting and repair).

However, per interpretation of the California Health and Safety Code, Chapter 3.5, section 39658, b1, BAAQMD will verify that the site is in compliance with the NESHAP standards and will forward any materials related to the NESHAP subpart HHHHHH requirements to the EPA Region 9 office as they arrive at BAAQMD. Also BAAQMD will also notify the affected plant of the NESHAP subpart HHHHHH requirements as part of their operating conditions.

Per included application documentation and Initial Notification sent to the EPA Region 9 office, this site certifies they are in compliances with the following [NESHAPs standards](#):

- A: Train/certify all painters on spray gun equipment, techniques, maintenance and environmental compliance,
- B: Install filters on booth that achieve 98% capture efficiency,
- C: Spray booths/stations used to refinish complete vehicles will be ventilated at negative pressure or up to 0.05 inches water gauge positive pressure for booths that have seals on doors and other openings and an automatic pressure balancing system,
- D: Spray booths/stations used to coat miscellaneous parts or products or vehicle subassemblies must have a full roof, at least three complete walls or side curtains, and is ventilated so that air is drawn into the booth,
- E: Spray-applied coatings must be applied with a HVLP spray gun or other spray equipment with equivalent technology/transfer efficiencies,
- F: Spray gun cleaning must be done so that atomized mist or spray of the cleaning solvent is not created outside a container that collects the spent solvent,
- G: Train/certify all personnel who spray apply coatings no later than 180 days after hiring or by July 7, 2008 (new sources) or by January 10, 2011 (existing sources).

New Source Review:

These sources do have the potential to emit more than 10 pounds of POC per day; therefore it does trigger [Best Available Control Technology](#) (BACT) requirements.

Since emissions for this source are less than 40 lb/day, an add-on control system is not required because it is not economically feasible per BACT guideline 161.3.1 of the BACT Handbook, dated December 16, 1991.

However, as this site is expected to be in compliance with Regulation 8-45, this site will achieve BACT compliance in practice. BACT is the use of VOC compliant paints, high transfer efficiency spray-guns, proper air filtration media, and a spray-gun cleaning unit. This level of control is also considered Toxic Best Available Control Technology (TBACT) for this amount of emissions.

POC Offsets are not applicable since the facility wide emissions are less than 10 tons per year.

Public Notification:

According to [Regulation 2-1-316](#), this request for a Change of Conditions will increase the emission of at least one TAC. In this case, it is ethyl benzene. Although the HRSA trigger-level for this chemical is not met, there is an overall increase; it is still subject to the public notification requirements of [Regulation 2-1-412](#) if there are any K-12 grade schools located within 1000 ft of the facility being reviewed.

Lick-Wilmerding High School, James Denman Middle School, and Civic Center Secondary School are located within 1000 feet from this facility. Under these circumstances, when there is a K-12 school located within 1000 ft of a, the allowable field of inclusion is expanded to a ¼ mile. Once the field is expanded, Balboa High School becomes eligible to be included in the Public Notice

A public notice will be sent to all parents of students of the above-mentioned schools and all residents within 1000 feet of the facility. There will be a 30-day public comment period.

Conditions for S-1, S-2, and S-3:

Condition Number: 25431

Per California State Air Toxic Control Measure (ATCM), this site shall not use coatings that contain hexavalent chrome or cadmium.

1. Net coating usage at this facility as applied (coating + reducers + catalyst) shall not exceed 1875 gallons in any consecutive twelve month period. [Basis: Cumulative Increase]
2. Net surface preparation and cleanup solvent usage (amount purchased minus amount hauled away) at this facility shall not exceed 700 gallons in any consecutive twelve month period. The surface preparation and cleanup solvent(s) shall not contain any amount of ethyl benzene. [Basis: Cumulative Increase and New Source Review]
3. Catalysts, hardeners, reducers, thinning solvents and other components shall only be added to coatings in proportions not exceeding the manufacturer's recommendations for coatings complying with Regulation 8, Rule 45. [Basis: Regulation 8 Rule 45]
4. To demonstrate compliance with the above conditions, the owner/operator shall maintain the following daily records:
 - a. Product identification number, and specialty coating category if applicable, of all coatings, catalysts, and reducers used.
 - b. Component mix ratio.
 - c. Volatile organic compound (VOC) content of coating as applied.

d. Quantity of coating applied.

The owner/operator shall maintain monthly records of quantity and type of all solvent used for surface prep and cleanup.

All records shall be retained on-site for two years, from the date of entry, and be 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]

Condition Number: 24064

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements, subpart HHHHHH, for the controlling of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd) ('target Hazardous Air Pollutants') from Paint Stripping and Miscellaneous Surface Coating Operations (including motor vehicle/mobile equipment/miscellaneous surface coating operations):

1. A new site must perform Initial Notification to the delegated authority upon startup after January 9, 2008. Existing sites must perform a notification by January 10, 2011 to the delegated authority. At this time, BAAQMD is NOT the delegated authority; therefore the site must send notification to the EPA Region 9, Director of Air and Toxics Division, 75 Hawthorne St, San Francisco, CA 94105.
2. The notification will certify that they are in compliance with the following provisions of the applicable NESHAP:
 - a. Train/certify all painters on spray gun equipment selection, spray techniques, maintenance, and environmental compliance (consult 73 FR 1738, pg.1762, section 63.11173(f)(2)(i)-(iv)).
 - b. Install/operate filter technology on all spray booths/stations/enclosures to achieve at least 98% capture efficiency.
 - c. Spray booths/stations used to refinish complete motor vehicles or mobile equipment must be fully enclosed and ventilated at negative pressure or up to 0.05 inches water gauge positive pressure for booths that have seals on all doors and other openings and an automatic pressure balancing system.
 - d. Spray booths/stations used to coat miscellaneous parts or products or vehicle subassemblies must have a full roof, at least three complete walls or side curtains, and is ventilated so that air is drawn into the booth.
 - e. Spray-applied coatings must be applied with a high volume, low-pressure (HVLV) spray gun, electrostatic application, airless or air-assisted airless spray gun, or an equivalent technology.
 - f. Paint spray gun cleaning must be done so that an atomized mist or spray of the cleaning solvent is not created outside a container that collects used gun cleaning solvent.
 - g. Train and certify all personnel who spray apply surface coatings no later than 180 days after hiring or by July 7, 2008 (new sources) or by January 10, 2011 (existing sources).

3. Maintain the following records for five year in a form suitable and readily available for expeditious review

- a. Records to include copies of Notifications submitted to EPA.
- b. Painter training certifications.
- c. Spray booth filter efficiency documentation.
- d. Spray gun transfer efficiency.
- e. Target HAP content information in coatings, such as MSDS.
- f. Annual usage of MeCl for paint stripping, and written MeCl minimization plan if annual usage > 1 ton per year.
- g. Deviation and corrective action documentation.

4. Site may petition the Administrator for an exemption from this subpart if it can demonstrate to the satisfaction of the Administrator that the site applies no coatings that contain compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd).

Exemption:

None

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 issuance of a Change of Conditions for the following sources:

- S-1 Spray Booth Operation - JBI Manufacturers, bay 1**
- S-2 Spray Booth Operation - JBI Manufacturers, bay 2**
- S-3 Spray Booth Operation – Binks booth**

By:

Duncan Campbell, Senior Air Quality Technician II
December 13, 2012