

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE</b>  Coating, Printing, Plating, Military and Entertainment Operations Team  <b>PERMIT APPLICATION EVALUATION</b>	Page	1 of 6
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	Processed by	JPV
	Reviewed by	SMKE
	Date	9/5/13

**PERMIT TO OPERATE EVALUATION**  
**(2) Metallic Powder Screening and Grinding Systems,**  
**Change of Conditions**

**Applicant's Name:** Micrometals, Inc.  
**Company ID No.:** 104004  
**Mailing Address:** 5615 E. La Palma Ave., Anaheim, CA 92807  
**Equipment Address:** 5615 E. La Palma Ave., Anaheim, CA 92807

**EQUIPMENT DESCRIPTION:**

**Application no. 545475 (Change of Conditions to PO #D88645, A/N 300355):**

METALLIC POWDER SCREENING AND GRINDING SYSTEM CONSISTING OF:

1. FEEDER, SMC, VIBRATING TYPE, MODEL F-010, 1/3 KVA.
2. ENCLOSED SCREEN, S2, UNIVERSAL, VIBRATING TYPE, ¼ HP.
3. ENCLOSED MILL, FITZ PATRICK, MODEL D, 3 HP.

**Application no. 545477 (Change of Conditions to PO #F16050, A/N 329735):**

METALLIC POWDER SCREENING AND GRINDING SYSTEM CONSISTING OF:

1. FEEDER, SMC, VIBRATING TYPE M, MODEL F-010, 1/3 KVA.
2. ENCLOSED SCREEN, S5, UNIVERSAL, VIBRATING TYPE, ¼ HP.
3. ENCLOSED MILL, FITZ PATRICK, MODEL D, 3 HP.

**Application no. 545478:**

TITLE V PERMIT REVISION, DE MINIMIS SIGNIFICANT

**HISTORY:**

These applications were submitted by Micrometals, Inc. on December 7, 2012 for the change of conditions on material throughput of two existing metallic powder screening and grinding systems. They would like to increase maximum material processed from 3200 lbs/day to 6000 lbs/day for the system operating under PO #D88645 (A/N 300355), and from 6000 lbs/day to 9000 lbs/day for the system under PO #F16050 (A/N 329735).

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A/N	Previous		Equipment
	PO	A/N	
545475	D88645	300355	Change of conditions to increase material throughput from 3200 lb/day to 6000 lbs/day
545477	F16050	329735	Change of conditions to increase material throughput from 6000 lb/day to 9000 lbs/day
545478	-	-	Title V permit revision, de minimis significant

According to the compliance database, a Notice to Comply (NC #E17076) was issued on 7/31/12 to provide records of material throughput for three metallic powder screening and grinding system, including those under A/N 300355 and A/N 329735 for which the above applications were filed, and a third system under PO #D88646 (A/N 300356). After those records were provided, it showed that three systems had exceeded their throughput limits. The District then issued a Notice of Violation (NOV #P56091) on 9/11/12 for exceeding daily powder throughput limits on all three of the permitted screening and grinding systems. The facility reached compliance with the NOV for the first two systems by filing these applications for change of conditions. For the third, the facility agreed to restrict material throughput under the currently maximums allowed by its permit condition. No complaints have been filed against this facility in the past two years. This is the first revision since the Title V renewal issued on July 28, 2013.

**PROCESS DESCRIPTION:**

Metal powder is stored in individual storage bins. When processing, the same storage bin acts as a hopper when it is placed onto the feeder and connected with a flexible chute. The feeder is connected to the vibrating sifter and the sifter to the mill. Powder is sifted and separated by sizes by three separate screens. The coarse powder is directed to a mill for grinding, and the fine powder to a final storage bin. The mill grinds the coarse powder to a certain size and then is dropped to another storage bin. The coarse powder in this storage bin is loaded onto the feeder to process the material again (repeat until all coarse material is sized to fine powder). The entry and exit points for the screens and mill for both systems under A/Ns 545475 and 545477 are enclosed using shrouds and/or lids. Also, this system includes a sealed chute to the final storage bin. The typical operating schedule is 16 hours per day, 5 days per week and 50 weeks per year.

**EMISSION CALCULATIONS:**

**A/N 545475, Metallic powder screening and grinding system:**

Particulate matter (PM) emissions will be calculated using emission factors for secondary screening of aggregate & crushed stone, and 70% control factor for enclosure at entry and exit points using shrouds and lids:

PM emission factor	0.3 lb PM/ton material (see file for ref.: aggregate, secondary screening)
Operating hours	16 hrs/day; 5 days/wk; 50 wks/yr
Maximum thruput	6000 lbs/day
Previous max. thruput	3200 lbs/day (A/N 300355)
Fugitive control factor	0.70 (for enclosure at entry and exit points of hopper, feeder, screens, mill and storage bin, RACM for Fugitive Dust Sources, Ohio EPA, 1980)

R1=R2

PM<sub>10</sub> = 50% PM

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Uncontrolled PM/PM<sub>10</sub>:

$$\text{For NSR, PM}_{\max} = 6000 \text{ lb/day} \cdot \frac{0.3 \text{ lb PM}}{\text{ton mat}^1} \cdot \frac{\text{ton mat}^1}{2000 \text{ lbs}} \cdot (1 - 0.70) = 0.27 \frac{\text{lb PM}}{\text{day}} \xrightarrow{\text{@ } 16 \frac{\text{hr}}{\text{day}}} 0.017 \frac{\text{lb PM}}{\text{hr}}$$

$$\text{PM}_{10} = \frac{1}{2} \text{ PM} = \frac{1}{2} 0.27 \frac{\text{lb PM}}{\text{day}} = 0.135 \frac{\text{lb PM}_{10}}{\text{day}} \xrightarrow{\text{@ } 16 \frac{\text{hr}}{\text{day}}} 0.0084 \frac{\text{lb PM}_{10}}{\text{hr}}$$

For AEIS,  $R_{\text{avg}} = 0.75 R_{\text{max}}$

$$\text{PM}_{10,\text{avg}} = 0.75 \text{ PM}_{10,\text{max}} = 0.0063 \frac{\text{lb PM}_{10}}{\text{hr}} \xrightarrow{\text{@ } 5 \frac{\text{days}}{\text{wk}}; 50 \frac{\text{wks}}{\text{yr}}} 25.3 \frac{\text{lb PM}_{10}}{\text{yr}}$$

Particulate matter (PM) emissions under the previous evaluation for A/N 300355 (and A/N 126168) did not consider the 0.70 factor for enclosures. PM/PM<sub>10</sub> emissions will be recalculated and updated to reflect more appropriate emissions:

$$\text{For NSR, PM}_{\max} = 3200 \text{ lb/day} \cdot \frac{0.3 \text{ lb PM}}{\text{ton mat}^1} \cdot \frac{\text{ton mat}^1}{2000 \text{ lbs}} \cdot (1 - 0.70) = 0.144 \frac{\text{lb PM}}{\text{day}} \xrightarrow{\text{@ } 16 \frac{\text{hr}}{\text{day}}} 0.009 \frac{\text{lb PM}}{\text{hr}}$$

$$\text{PM}_{10} = \frac{1}{2} \text{ PM} = 0.072 \frac{\text{lb PM}_{10}}{\text{day}} \xrightarrow{\text{@ } 16 \frac{\text{hr}}{\text{day}}} 0.0045 \frac{\text{lb PM}_{10}}{\text{hr}}$$

For AEIS,  $R_{\text{avg}} = 0.75 R_{\text{max}}$

$$\text{PM}_{10,\text{avg}} = 0.75 \text{ PM}_{10,\text{max}} = 0.0034 \frac{\text{lb PM}_{10}}{\text{hr}} \xrightarrow{\text{@ } 5 \frac{\text{days}}{\text{wk}}; 50 \frac{\text{wks}}{\text{yr}}} 13.5 \frac{\text{lb PM}_{10}}{\text{yr}}$$

**A/N 545477, Metallic powder screening and grinding system:**

PM emissions are also calculated using the same emission factors for secondary screening of aggregate):

PM Emission factor	0.3 lb PM/ton of material (see refer. in file for cement screening)
Operating hours	16 hrs/day; 5 days/wk; 50 wks/yr
Maximum throughput	9000 lbs/day
Previous max. thruput	6000 lbs/day
Fugitive control factor	0.70 (for enclosure at entry and exit points of hopper, feeder, screens, mill and storage bin, RACM for Fugitive Dust Sources, Ohio EPA, 1980)

$R_1 = R_2$

Uncontrolled PM/PM<sub>10</sub>:

$$\text{For NSR, PM}_{\max} = 9000 \text{ lb/day} \cdot \frac{0.3 \text{ lb PM}}{\text{ton mat}^1} \cdot \frac{\text{ton mat}^1}{2000 \text{ lbs}} \cdot (1 - 0.70) = 0.405 \frac{\text{lb PM}}{\text{day}} \xrightarrow{\text{@ } 16 \frac{\text{hr}}{\text{day}}} 0.025 \frac{\text{lb PM}}{\text{hr}}$$

$$\text{PM}_{10,\text{max},r1} = \frac{1}{2} \text{ PM} = \frac{1}{2} 0.405 \frac{\text{lb PM}}{\text{day}} = 0.203 \frac{\text{lb PM}_{10}}{\text{day}} \xrightarrow{\text{@ } 16 \frac{\text{hr}}{\text{day}}} 0.0127 \frac{\text{lb PM}_{10}}{\text{hr}}$$

For AEIS,  $R_{\text{avg}} = 0.75 R_{\text{max}}$

$$\text{PM}_{10,\text{avg},r1} = 0.75 \text{ PM}_{10,\text{max}} = 0.0095 \frac{\text{lb PM}_{10}}{\text{hr}} \xrightarrow{\text{@ } 5 \frac{\text{days}}{\text{wk}}; 50 \frac{\text{wks}}{\text{yr}}} 38.0 \frac{\text{lb PM}_{10}}{\text{yr}}$$

For consistency, particulate matter (PM) emissions under the previous permit for A/N 329375 will be recalculated using these same emission factors (0.3 lb PM/ton versus 1.5 lb PM/ton mat<sup>1</sup>, and 70% vs. 90% for control for enclosure (shrouds and lids):

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$$\text{For NSR, } PM_{\max} = 6000 \text{ lb/day} \cdot \frac{0.3 \text{ lb PM}}{\text{ton mat}^1} \cdot \frac{\text{ton mat}^1}{2000 \text{ lbs}} \cdot (1 - 0.70) = 0.27 \frac{\text{lb PM}}{\text{day}} \xrightarrow{\text{@ } 16 \frac{\text{hr}}{\text{day}}} 0.017 \frac{\text{lb PM}}{\text{hr}}$$

$$PM_{10} = \frac{1}{2} PM = 0.135 \frac{\text{lb PM}_{10}}{\text{day}} \xrightarrow{\text{@ } 16 \frac{\text{hr}}{\text{day}}} 0.0084 \frac{\text{lb PM}_{10}}{\text{hr}}$$

$$\text{For AEIS, } R_{\text{avg}} = 0.75 R_{\max}$$

$$PM_{10,\text{avg}} = 0.75 PM_{10,\text{max}} = 0.0063 \frac{\text{lb PM}_{10}}{\text{hr}} \xrightarrow{\text{@ } 5 \frac{\text{days}}{\text{wk}}; 50 \frac{\text{wks}}{\text{yr}}} 25.3 \frac{\text{lb PM}_{10}}{\text{yr}}$$

### Summary of PM/PM<sub>10</sub> Emission Increases/Decreases

A/N	PM Emissions		PM <sub>10</sub> Emissions	
	(lb/hr)	(lb/day)	(lb/hr)	(lb/day)
545475 <sup>(a)</sup>	0.017	0.270	0.008	0.135
Prev. permit A/N 300355	0.009	0.144	0.005	0.072
Difference	+0.008	+0.126	+0.003	+0.063
545477 <sup>(b)</sup>	0.025	0.41	0.013	0.203
Prev. permit A/N 329735	0.017	0.27	0.008	0.135
Difference	+0.008	+0.14	+0.005	+0.068
<b>Total Increase</b>	<b>+0.016</b>	<b>+0.266</b>	<b>+0.008</b>	<b>+0.131</b>

Notes: (a) R1 = R2, and based on 6000 lbs/day material throughput.

(b) R1 = R2, and based on 9000 lbs/day material throughput.

## **RULES AND REGULATIONS:**

### **RULE 212: SIGNIFICANT PROJECT PUBLIC NOTIFICATION**

A public notice is not required for this project since the equipment is not within 1000 feet of a school, there will be no significant increase in emissions [below Rule 212(g) thresholds], and there will be no increase in health risk impact (MICR/HIA/HIC) due to the requested increase in material throughput.

### **RULE 401: VISIBLE EMISSIONS**

Visible emissions from the operation of this equipment are not expected. No complaints, N/C or NOV have been issued in the previous two years for visible emissions.

### **RULE 402: NUISANCE**

The requested increase in material throughput is expected to comply with this rule. No complaints, N/C or NOV have been issued in the past two years for nuisance.

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**REGULATION XIII:**

**BACT:** There will be no increase in PM<sub>10</sub> emissions greater than 1 lb/day as a result of the increased material throughput. Therefore, BACT is not triggered. Compliance is expected.

**Offsets:** Since there will be no increase in PM<sub>10</sub> emissions over 1 lb/day (total increase is 0.131 lb PM<sub>10</sub>/day), no emission offsets will be required.

**Modeling:** The maximum PM<sub>10</sub> emission increases will be much below the maximum allowable PM<sub>10</sub> emissions for non-combustion sources of 0.41 lb/hr (Table A-1). There are no CO or NO<sub>x</sub> emissions from these sources. See the summary table below. Therefore, no further modeling is required.

**Summary of Maximum Emission Increases for Project Modeling Analysis**

Source type (Non-combustion)	PM <sub>10</sub> Emissions	
	Calculated (lb/hr)	Allowed (lb/hr)
545475	+0.003	0.41
545477	+0.005	

**RULE 1401: MAXIMUM INDIVIDUAL CANCER RISK ASSESSMENT**

There are no toxic compounds in the metallic powder, therefore no increase in health risk as a result of the increased material throughput. Compliance with this rule is expected.

**REG 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 following emission threshold levels:

**Criteria Pollutant Emission Thresholds**

Air Contaminant	Daily Maximum (lbs/day)
HAP	30
VOC	30
NO <sub>x</sub>	40
PM <sub>10</sub>	30
SO <sub>x</sub>	60
CO	220

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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 first permit revision to the Title V renewal permit issued to this facility on July 28, 2013. The following table summarizes the cumulative emission increases resulting from this permit revision, the first since the Title V renewal permit was issued:

**Title V Permit Revisions Summary**

<b>1<sup>st</sup> Revision</b>	<b>HAP</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>SO<sub>x</sub></b>	<b>CO</b>
Change of conditions to increase daily throughput (A/N 545475)	0	0	0	0.06	0	0
Change of conditions to increase daily throughput (A/N 545477)	0	0	0	0.07	0	0
Cumulative Total	0	0	0	0.13	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”.

**CONCLUSIONS/RECOMMENDATIONS:**

The proposed project is expected to comply with all applicable District Rules and Regulations. 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 permit incorporating these permit revisions 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 the facility (Section D).