

Louisville Metro Air Pollution Control District
850 Barret Ave., Louisville, Kentucky 40204
12 16 2015

Federally Enforceable District Origin Operating Permit
Statement of Basis

Company: NHK Spring Precision of America, Inc.

Plant Location: 10600 Freeport Drive, Louisville, Kentucky 40258

Date Application Received: 09/29/2008

Date of Public Notice: 02/19/2015; 12/16/2015

District Engineer: Shannon Hosey

Permit No: O-1568-15-F

Plant ID: 1568

SIC Code: 3493

NAICS: 332613

AFS: 1568

Introduction:

This permit will be issued pursuant to District Regulation 2.17- *Federally Enforceable District Origin Operating Permits*. Its purpose is to limit the plant wide potential emission rates from this source to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO₂), carbon monoxide (CO), 1 hr and 8 hr ozone (O₃), and particulate matter less than 10 microns (PM₁₀); is a non-attainment area for the 1997 standard for particulate matter less than 2.5 microns (PM_{2.5}) and is a unclassifiable area for the 2012 standard for particulate matter less than 2.5 microns (PM_{2.5}); and partial non-attainment area for sulfur dioxide (SO₂).

Application Type/Permit Activity:

Initial Issuance

Permit Revision

Administrative

Minor

Significant

Permit Renewal

Compliance Summary:

Compliance certification signed

Compliance schedule included

Source is out of compliance

Source is operating in compliance

I. Source Information

1. **Product Description:** NHK Spring Precision manufactures steel valve springs and steel transmission springs from purchased steel wire that arrives at the plant in large bundles/spools.
2. **Process Description:** Spring Manufacturing
3. **Site Determination:** There are no other facilities that are contiguous or adjacent to this facility

Emission Unit Summary:

Emission Unit	Equipment Description
U1	Edge Grinder (A-4), Daisho Seiki Co, model GMV4-915 Edge Grinder (A-8), Asahi Seiki, model AG12N Edge Grinder (A-9), Asahi Seiki, model AG12N Edge Grinder (B-4), Daisho Seiki Co, model GMV4-915 Chamfering Machine Custom (B-5A) Chamfering Machine Custom (B-5B) Edge Grinder (D-4), Daisho Seiki Co, model GMV4-915 Edge Grinder (D-5), Daisho Seiki Co, model GMV4-915 Continuous Shot Peening Machine (D-6), Itoh Kikoh, model IMD 27 Shot Blaster (Dry Horning) (SB-1), Sinto Kogio, model SJA11D Cooling Tower (OS-1), Marley, model 496 Edge Grinder (C14), Asahi-Seiki, model AG12N Edge Grinder (C-15), Asahi-Seiki, model AG12N Edge Grinder (C-16), Asahi-Seiki, model AG12N Chamfering machine (A-5A), make Asahi Seiki, model AA Chamfering machine (A-5B), make Asahi Seiki, model AA Gardner grinder (E-4), make Gardner, model 4V36T Chamfering machine (E-5A), make Asahi Seiki, model AA Chamfering machine (E-5B), make Asahi Seiki, model AA Edge grinder (F-4), make Daisho Seiki, model GMV4-915 Edge grinder (G-4), make Dorn, model DR660-2VE Chamfering machine (G-5), make NHK INA Edge grinder (H-4), make Dorn, model DR660-2VE
U2	Shot Peening Machine (A-10), Sinto Kogio, model SNB-50W with Internal Baghouse Shot Peening Machine (A-12), Sinto Kogio, model SNB-30 with Internal Baghouse Shot Peening Machine (B-6), Sinto-Kogio, model SNB-50W with Internal Baghouse Shot Peening Machine (B-8), Sinto Kogio, model SNB-30 with Internal Baghouse Shot Peening Machine (SB-3), Sinto-Kogio, model SNB-30 with Internal

Emission Unit	Equipment Description
	Baghouse Pre-shot Peening Machine (GCN-5), Sinto Kogio, model SNB-30Y with Internal Baghouse Shot-Peening Machine (E-6), Sinto-Kogio, model SNB-30W with Internal Baghouse Shot-Peening Machine (E-8), Sinto-Kogio, model SNB-50W with Internal Baghouse Shot-Peening Machine (F-6), Sinto-Kogio, model SNB-30W with Internal Baghouse Shot-Peening Machine (F-8), Sinto-Kogio, model SNB-50W with Internal Baghouse
U3	Inspection Machine (A-17) Inspection Machine (B-13) Inspection Machine (E-13) Inspection Machine (AS-2) Inspection Machine (F-13) Inspection Machine (G-13) Inspection Machine (H-13) Inspection Machine (D-8)
IA-1	Parts Washer with no secondary reservoir
IA-2	GCN-1 - GCN-4 (Direct – fired Furnaces), One (1) Ammonia Storage Tank

4. **Fugitive Sources:** There are no fugitive source emissions at this facility.

5. **Permit Revisions:**

Revision No.	Issue Date	Public Notice Date	Type	Attachment No./Page No.	Description
Initial	xx/xxx/2015	02/19/2015; 12/16/2015	Initial	Entire Permit	Initial Issuance

6. **Construction Permit History:**

Permit No.	Issue Date	Description

Permit No.	Issue Date	Description
C-1568-1008-15-F	10/30/2015	Edge Grinders (B-4, D-4 and D-5), make Daisho Seiki Co, model GMV4-915, capacity 7200 valve springs/hr for B-4, and capacity 1500 transmission springs/hr each for D-4 and D-5; Two (2) Small Edge Grinders (A-8 and A-9), make Asahi Seiki, model AGI2N, capacity 3600 valve springs/hr each; and Chamfering Machines (B-5A and B-5B), make custom, model custom, capacity 3600 valve spring/hr each Shot Peening Machines (SB-3 and B-8), make Sinto-Kogio, model SNB-30, capacity 12,000 valve springs/hr (959 lb shot/hr) each; Shot Peening Machine (B-6), make Sinto-Kogio, model SNB-50, capacity 12,000 valve springs/hr (959 lb shot/hr); one (1) Continuous Shot Peening Maching (D-6), make Itoh Kikoh, model IMD 27, capacity 6000 transmission springs/hr (959 lb shot/hr); one (1) Pre-shot Peening Machine (GCN-5), make Sinto Kogio, model SNB-30Y, capacity 12,000 valve springs/hr (959 lb shot/hr)
C-1568-1007-15-F	10/30/2015	Grinders; chamfering machines; shot peening machines; and inspection machines that will be used by four new production lines E, F, G, and H and the existing production line A.
35474-12-C(R1)	09/10/2013	Installation of one (1) new Asahi-Seiki model AGI2N small edge grinder, E29 (C-14), controlled by an existing baghouse (OS-6)
35941-12-C(R1)	09/10/2013	Installation of two (2) new Asahi-Seiki model AGI2N small edge grinder, E30 and E31 (C15 and C-16), and one (1) new custom made chamfering machine, E32 (C-17), controlled by an existing baghouse (OS-6)
37302-13-C	09/10/2013	Installation of two (2) new Asahi-Seiki model AGI2N small edge grinders, E33 (C-18) and E34 (C-19, controlled by an existing baghouse (OS-6)
333-06-C	11/30/2007	Edge Grinders (B-4, D-4 and D-5), make Daisho Seiki Co, model GMV4-915, capacity 7200 valve springs/hr for B-4, and capacity 1500 transmission springs/hr each for D-4 and D-5; Two (2) Small Edge Grinders (A-8 and A-9), make Asahi Seiki, model AGI2N, capacity 3600 valve springs/hr each; and Chamfering Machines (B-5A and B-5B), make custom, model custom, capacity 3600 valve spring/hr each
334-06-C	11/30/2007	Two (2) New Baghouses (OS-5 and OS-7), make Donaldson, model DFT-4-48 with an additional filer on each exit vent

Permit No.	Issue Date	Description
335-06-C	11/30/2007	Shot Peening Machines (SB-3 and B-8), make Sinto-Kogio, model SNB-30, capacity 12,000 valve springs/hr (959 lb shot/hr) each; Shot Peening Machine (B-6), make Sinto-Kogio, model SNB-50, capacity 12,000 valve springs/hr (959 lb shot/hr); one (1) Continuous Shot Peening Maching (D-6), make Itoh Kikoh, model IMD 27, capacity 6000 transmission springs/hr (959 lb shot/hr); one (1) Pre-shot Peening Machine (GCN-5), make Sinto Kogio, model SNB-30Y, capacity 12,000 valve springs/hr (959 lb shot/hr)
336-06-C	11/30/2007	Baghouse (B-7, B-9 and GCN-6) each equipped with a HEPA filter

7. Emission Summary:

Pollutant	Company Actual Emissions (tn/yr) 2008 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	0.11	No
NO _x	0.141	No
SO ₂	0.001	No
PM ₁₀	11.047	Yes
VOC	1.867	No
GHG – CO _{2e}	0	No
Single HAPs	0	No
Total HAP	0.355	No

8. Applicable Requirements:

PSD 40 CFR 60 SIP 40 CFR 63
 NSR 40 CFR 61 District-Origin Other

9. **MACT Requirements:** The source has no future MACT requirements.

10. **Referenced Federal Regulations in Permit:** None

II. Regulatory Analysis

1. **Acid Rain Requirements:** NHK Spring Precision is not subject to the Acid Rain Program.

2. **Stratospheric Ozone Protection Requirements:** Title VI of the CAAA

regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. NHK Spring Precision does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.

3. **Prevention of Accidental Releases 112(r):** NHK Spring Precision does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, *Chemical Accident Prevention Provisions*, in a quantity in excess of the corresponding specified threshold amount.
4. **40 CFR Part 64 Applicability Determination:** NHK Spring Precision is not subject to 40 CFR Part 64 - *Compliance Assurance Monitoring for Major Stationary Sources*.
5. **Basis of Regulation Applicability**

- a. **Plant-wide**

NHK Spring Precision is a potential major source for the pollutant PM₁₀. Regulation 2.17 – *Federally Enforceable District Origin Operating Permits* establishes requirements to limit the plant wide potential emission rates to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements. Per Regulation 2.17, section 5.1, plant-wide PM₁₀ emissions are limited to 100 tons during any consecutive 12-month period.

Regulation 2.17, section 5.2, requires monitoring and record keeping to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the district upon request.

Regulation 2.17, section 7.2, requires stationary sources for which a FEDOOP is issued shall submit an Annual Compliance Certification by April 15, of the following calendar year. In addition, as required by Regulation 2.17, section 5.2, the source shall submit an Annual Compliance Report to show compliance with the permit, by March 1 of the following calendar year. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.17, section 3.5.

- b. **STAR Program**

Regulations 5.00, 5.01, 5.20, 5.21, 5.22 and 5.23 (STAR Program) establish

requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards.

- i. The source submitted the original and updated plant-wide STAR Environmental Acceptability Demonstration (EA Demo) on September 26, 2008, August 20, 2012, May 01, 2013, September 19, 2015, October 09, 2015, and October 29, 2015. The source also included a STAR EA Demo for each construction application. SCREEN3 air dispersion modeling air dispersion modeling was performed for each emission unit that has non-de minimis TAC emissions. As shown in the following tables, all the cumulative and individual carcinogen risk and non-carcinogen risk values are in compliance with Goals:

Plant-wide Sum	Risk	EAG
Industrial Total R _C	15.60	< 38
Non-Ind. Total R _C	2.81	< 3.8
Industrial Total R _{NC} (max)	2.40	< 3.0
Non-Ind. Total R _{NC} (max)	0.60	< 1.0

Unit	E Point	Description	Ni R _C (Indus.)	Ni R _C (Res.)	Ni R _{NC} (Indus.)	Ni R _{NC} (Res.)	Mn R _{NC} (Indus.)	Mn R _{NC} (Res.)	EBZ R _C (Indus.)	EBZ R _C (Res.)	EBZ R _{NC} (Indus.)	EBZ R _{NC} (Res.)	
U1	A-4	Edge Grinder	0.53	0.13	0.14	0.04							
	A-8	Edge Grinder	0.70	0.18	0.19	0.05	0.13	0.03					
	A-9	Edge Grinder	0.70	0.18	0.19	0.05	0.13	0.03					
	B-4	Edge Grinder	0.53	0.13	0.14	0.04							
	B-5A	Chamfering	0.15	0.04	0.04	0.01							
	B-5B	Chamfering	0.15	0.04	0.04	0.01							
	D-4	Edge Grinder	0.62	0.16	0.17	0.04	0.12	0.03					
	D-5	Edge Grinder	0.62	0.16	0.17	0.04	0.12	0.03					
	D-6	Shot Preening	0.12	0.03	0.03	0.01							
	SB-1	Shot Blaster	0.33	0.05	0.09	0.01							
	C-14	Edge Grinder	0.70	0.18	0.19	0.05	0.13	0.03					
	C-15	Edge Grinder	0.70	0.18	0.19	0.05	0.13	0.03					
	C-16	Edge Grinder	0.70	0.18	0.19	0.05	0.13	0.03					
	A-5A	Chamfering	0.15	0.04	0.04	0.01							
	A-5B	Chamfering	0.15	0.04	0.04	0.01							
	E-4	Grinder	0.42	0.11	0.11	0.03							
	F-4	Grinder	0.59	0.15	0.16	0.04	0.11	0.03					
	G-4	Grinder	0.49	0.12	0.13	0.03							
H-4	Edge Grinder	0.49	0.12	0.13	0.03								
U3	A-17	Ins. Machine							0.84	0.07	0.0003	0.00003	
	B-13	Ins. Machine							0.84	0.07	0.0003	0.00003	
	AS-2	Ins. Machine							0.84	0.07	0.0003	0.00003	
	E-13	Ins. Machine							0.84	0.07	0.0003	0.00003	
	D-8	Ins. Machine							0.84	0.07	0.0003	0.00003	

Unit	E Point	Description	Ni R _C (Indus.)	Ni R _C (Res.)	Ni R _{NC} (Indus.)	Ni R _{NC} (Res.)	Mn R _{NC} (Indus.)	Mn R _{NC} (Res.)	EBZ R _C (Indus.)	EBZ R _C (Res.)	EBZ R _{NC} (Indus.)	EBZ R _{NC} (Res.)
	F-13	Ins. Machine							0.84	0.07	0.0003	0.00003
	G-13	Ins. Machine							0.84	0.07	0.0003	0.00003
	H-13	Ins. Machine							0.84	0.07	0.0003	0.00003
Industrial Total R _C			8.85						6.75			
Non-Ind. Total R _C				2.22						0.59		
Industrial Total R _{NC}					2.40		1.02				0.002	
Non-Ind. Total R _{NC}						0.60		0.26				0.0002

- ii. The TAC emission limits determined by de minimis values shall be updated each time when the District revises the BAC/de minimis values for these TACs. The current de minimis values per TAC list revised on 10/14/2013 are as the following:

TAC Name	CAS #	De minimis values	
		(lb/hr)	(lb/12 consecutive month period)
Chromium III	16065-83-1	0.10	109.5
Copper	7440-50-8	0.04	43.8
Nickel	7440-02-0	0.0021	1.82
Manganese compounds	7439-96-5	0.03	24.0
Toluene	108-88-3	2,700	2,400,000
Xylene	1330-20-78	54.00	48,000
Ethyl Benzene	100-41-4	0.22	192

Note 1: Manganese was de minimis for the hourly standard controlled.

Note 2: Modeling for Manganese was performed at a controlled potential of 27.758 lb/yr (D-4 and D-5), 31.670 lb/yr (A-8, A-9, C-14, C-15, and C-16), and 26.39 lb/yr (F-4).

Note 3: Nickel was de minimis for the hourly standard controlled.

Note 4: Modeling for Nickel was performed at a controlled potential of 9.501 lb/yr (A-4 and B-4), 11.103 lb/yr (D-4 and D-5), 12.668 lb/yr (A-8, A-9, C-14, C-15, and C-16), 2.733 lb/yr (B-5A, B-5B, AS-A, and AS-B), 2.178 lb/yr (D-6), 2.723 lb/yr (SB-1), 7.42 lb/yr (E-4), 10.56 lb/yr (F-4) and 8.8 lb/yr (G-4 and H-4).

c. **Emission Unit U1 – Grinders, Chamfering, Shot Peening and Shot Blaster**

i. **Equipment:**

Emission Point	Description Make/Model	Install Date	Applicable Regulation	Basis for Applicability
A-4	Edge Grinder, Daisho Seiki Co, model GMV4-915	2006	7.08	Regulation 7.08 establishes the requirements for PM emission from new
A-8	Edge Grinder, Asahi Seiki, model AGI2N	2006		

Emission Point	Description Make/Model	Install Date	Applicable Regulation	Basis for Applicability
A-9	Edge Grinder, Asahi Seiki, model AG12N	2008		processes that commences construction after September 1, 1976
B-4	Edge Grinder, Daisho Seiki Co, model GMV4-915	2007		
B-5A	Chamfering Machine Custom	2007		
B-5B	Chamfering Machine Custom	2007		
D-4	Edge Grinder, Daisho Seiki Co, model GMV4-915	2006		
D-5	Edge Grinder, Daisho Seiki Co, model GMV4-915	2007		
D-6	Continuous Shot Peening Machine, Itoh Kikoh, model IMD 27	2006		
SB-1	Shot Blaster (Dry Horning), Sinto Kogio, SJA11D	2006		
OS-1	Cooling Tower, Marley, model 496 (This equipment is an insignificant activity)	2008		
C-14	Edge Grinder, Asahi-Seiki, model AG12N	2012		
C-15	Edge Grinder, Asahi-Seiki, model AG12N	2012		
C-16	Edge Grinder, Asahi-Seiki, model AG12N	2012		
A-5A	Chamfering machine, make Asahi Seiki, model AA	2012		
A-5B	Chamfering machine, make Asahi Seiki, model AA	2012		
E-4	Gardner grinder, make Gardner, model 4V36T	2013		
E-5A	Chamfering machine, make Asahi Seiki, model AA	2014		
E-5B	Chamfering machine, make Asahi Seiki, model AA	2014		

Emission Point	Description Make/Model	Install Date	Applicable Regulation	Basis for Applicability
F-4	Edge grinder, make Daisho Seiki, model GMV4-915	2014		
G-4	Edge grinder, make Dorn, model DR660-2VE	2015		
G-5	Chamfering machine, make NHK INA	2015		
H-4	Edge grinder, make Dorn, model DR660-2VE	2015		

ii. **Standards/Operating Limits**

1) **PM/PM₁₀**

- i. For equipment subject to Regulation 7.08 for PM, the PM emission standards are calculated per section 3.1.2. The equation to calculate the hourly PM emission limit is $E = 3.59 * P^{0.62}$, where E is the allowable lb/hr PM emission limit and P is the process weight rate expressed in tons/hr.
- ii. Construction Permit 342-05-C limits A-4 to 2.34 lb/hr.
- iii. Construction Permit 344-05-C limits SB-1 to 2.34 lb/hr.
- iv. Construction Permit C-1568-1008-15-F limits B-4, D-4 and D-5, A-8, A-9, B-5A, and B-5B each to 2.34 lb/hr per Regulation 7.08.
- v. Construction Permit 335-06-C limits D-6 to 3.12 lb/hr per Regulation 7.08.
- vi. Construction Permit 35474-12-C(R1) limits C-14 to 2.34 lb/hr per Regulation 7.08.
- vii. Construction Permit 35941-12-C(R1) limits C-15 and C-16 each to 2.34 lb/hr per Regulation 7.08.
- viii. Construction Permit C-1568-1007-15-F limits A-5A, A-5B, E-4, E-5A, E-5B, F-4, G-4, G-5 and H-4 each to 2.34 lb/hr per Regulation 7.08.

ix. For Emission Points A-4, B-4, D-4, D-5, A-8, A-9, B-5A, B-5B, SB-1, C-14, C-15, C-16, A-5A, A-5B, E-4, E-5A, E-5B, F-4, G-4, G-5 and H-4: The owner or operator shall operate and maintain the control device at all times an associated emission point is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice for minimizing emissions per Regulation 2.17.

2) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

3) **TAC**

Per Regulations 5.00 and 5.21, TAC emissions must not exceed environmentally acceptable levels.

d. **Emission Unit U2 – Shot Peening Equipment**

Emission Point	Description Make/Model	Install Date	Applicable Regulation	Basis for Applicability
A-10	Shot Peening Machine, Sinto Kogio, model SNB-50W with Internal Baghouse	2006	7.08	Regulation 7.08 establishes the requirements for PM emission from new processes that commences construction after September 1, 1976
A-12	Shot Peening Machine, Sinto Kogio, model SNB-30 with Internal Baghouse	2006		
B-6	Shot Peening Machine, Sinto-Kogio, model SNB-50W with Internal Baghouse	2007		
B-8	Shot Peening Machine, Sinto-Kogio, model SNB-30 with Internal Baghouse	2007		
SB-3	Shot Peening, Sinto Kogio SNB-30	2006		
GCN-5	Pre-shot Peening Machine, Sinto Kogio, model SNB-30Y with Internal Baghouse	2006		

Emission Point	Description Make/Model	Install Date	Applicable Regulation	Basis for Applicability
E-6	Shot peening machine, make Sinto Kogio, model SNB 30W, capacity 3,000 piece/batch	2013		
E-8	Shot peening machine, make Sinto Kogio, model SNB 50W, capacity 3,000 piece/batch	2013		
F-6	Shot peening machine, make Sinto Kogio, model SNB 30W, capacity 3,000 piece/batch	2015		
F-8	Shot peening machine, make Sinto Kogio, model SNB 50W, capacity 3,000 piece/batch	2015		

i. Standards/Operating Limits

1) PM/PM₁₀

- i. For equipment subject to Regulation 7.08 for PM, the PM emission standards are calculated per section 3.1.2. The equation to calculate the hourly PM emission limit is $E = 3.59 * P^{0.62}$, where E is the allowable lb/hr PM emission limit and P is the process weight rate expressed in tons/hr.
- ii. Construction Permit 346-05-C limits A-10 and A-12 each to 2.34 lb/hr.
- iii. Construction Permit 335-06-C limits GCN-5 to 4.80 lb/hr per Regulation 7.08.
- iv. Construction Permit C-1568-1007-15-F limits E-6, E-8, F-6, and F-8 each to 2.34 lb/hr per Regulation 7.08.
- v. Construction Permit C-1568-1008-15-F limits B-6, B-8, and SB-3 each to 2.34 lb/hr per Regulation 7.08.
- vi. For Emission Points B-6, B-8, SB-3, A-10, A-12, E-6, E-8, F-6 and F-8: The owner or operator shall operate and maintain the control device at all times an associated emission point is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air

pollution control practice for minimizing emissions per Regulation 2.17.

2) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

3) **TAC**

Per Regulations 5.00 and 5.21, TAC emissions must not exceed environmentally acceptable levels.

e. **Emission Unit U3 – Inspection Machines**

i. **Equipment:**

Emission Point	Description Make/Model	Applicable Regulation	Basis for Applicability
A-17	Inspection Machine	7.08 and 7.59	Regulation 7.08 establishes the requirements for PM emission from new processes that commences construction after September 1, 1976 Regulation 7.59 establishes the requirements for VOC emissions from new processes that commence construction after May 20, 1981.
B-13	Inspection Machine		
E-13	Inspection Machine		
AS-2	Inspection Machine		
F-13	Inspection Machine		
G-13	Inspection Machine		
H-13	Inspection Machine		
D-8	Inspection Machine		

ii. **Standards/Operating Limits**

1) **VOC**

i. Regulation 7.59, section 3.1 specifies VOC content limits for all coatings used in the inspection machines when compliant coatings are used.

- ii. Construction Permit 347-05-C limits VOC emissions to less than 5 tons per year when non-compliant coatings are used in the inspection machines.

2) **PM/PM₁₀**

- i. For equipment subject to Regulation 7.08 for PM, the PM emission standards are calculated per section 3.1.2. The equation to calculate the hourly PM emission limit is $E = 3.59 * P^{0.62}$, where E is the allowable lb/hr PM emission limit and P is the process weight rate expressed in tons/hr.

3) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

4) **TAC**

Per Regulations 5.00 and 5.21, TAC emissions must not exceed environmentally acceptable levels.

III. Other Requirements

1. **Temporary Sources:** The source did not request to operate any temporary facilities.
2. **Short Term Activities:** The source did not report any short term activities.
3. **Emissions Trading:** N/A
4. **Operational Flexibility:** The source did not request any operation flexibility.
5. **Compliance History:**

Incid. #	Date	Regulation Violated	Result
05050	11/05/2007	Reg. 2.03, section 5, Failure to Comply with District Permit	Agreement with fine

6. **Calculation Methodology or Other Approved Method:**

The PM/PM₁₀ emissions from the Grinders, Chamfering Machines, Shot Blaster, Continuous Shot Peening Machines, Shot Peening Machines, Pre-Shot Peening Machines, Inspection Machines, and Cooling Towers must be calculated according to the following methodology or other method approved in writing by the District:

For the Edge Grinders:

$$PM_{E-lineVSGrinder} = \left(\frac{\# \text{ springs}}{\text{month}} \right) \left(\frac{\text{lb}}{\text{spring}} \right) (0.0695)(1 - CE_{Baghouse})(1 - CE_{Filter})$$

$$PM_{SmallVSGrinder} = \left(\frac{\# \text{ springs}}{\text{month}} \right) \left(\frac{\text{lb}}{\text{spring}} \right) (0.0849)(1 - CE_{Baghouse})(1 - CE_{Filter})$$

$$PM_{LargeVSGrinder} = \left(\frac{\# \text{ springs}}{\text{month}} \right) \left(\frac{\text{lb}}{\text{spring}} \right) (0.0735)(1 - CE_{Baghouse})(1 - CE_{Filter})$$

$$PM_{LargeTSGrinder} = \left(\frac{\# \text{ springs}}{\text{month}} \right) \left(\frac{\text{lb}}{\text{spring}} \right) (0.1166)(1 - CE_{Baghouse})(1 - CE_{Filter})$$

For the Chamfering Machines:

$$PM_{Chamfering} = \left(\frac{\# \text{ springs}}{\text{month}} \right) \left(\frac{\text{lb}}{\text{spring}} \right) (0.015)(1 - CE_{Baghouse})(1 - CE_{Filter})$$

Where,

springs/month = The sum of the daily number of each type of springs processed for each piece of equipment for the month.

lb/spring = The average weight of each type of spring (0.0644 lb/spring for valve spring, VS, for grinding operations and 0.060 lb/spring for valve spring, VS, for chamfering operations).

EF (0.0695) = Emission factor for the E-Line valve spring grinders representing pounds of PM generated per pound of springs processed (lb PM/lb springs).

EF (0.0735) = Emission factor the large valve spring grinders representing pounds of PM generated per pound of springs processed (lb PM/lb springs).

EF (0.0849) = Emission factor for the small valve spring grinders representing pounds of PM generated per pound of springs processed (lb PM/lb springs).

EF (0.1166) = Emission factor for the large transmission spring grinders representing pounds of PM generated per pound of springs processed (lb PM/lb springs).

EF (0.015) = Emission factor for the chamfering machine

representing pounds of PM generated per pound of springs processed (lb PM/lb springs).

CE_{Baghouse} = 0.95 for baghouses, unless stack testing indicated a different value.

CE_{Filter} = 0.90 for other filters, unless stack testing indicates a different value.

For Cooling Tower:

$$PM_{10CT} = \left(\text{Flow Rate} \frac{\text{Gal}}{\text{hr}} \right) \left(\text{TDS} \frac{\text{lbPM}}{\text{gal}} \right) (\text{Total Liquid Drift}(AP - 42) (\%))$$

Where,

Flow Rate = Flow Rate of the cooling tower

TDS = Total Dissolved Solids obtained from Louisville MSD Report

Total Liquid Drift (AP-42) = AP-42 emission factor for PM

For Continuous Shot Peening (D-6):

$$PM_{SP} = \left(\text{Shot Capacity} \frac{\text{lb}}{\text{hr}} \right) \left(\frac{27\text{lbPM}}{1000\text{lb}} \right) (0.10) \left(\frac{\text{OperatingHours}}{\text{Month}} \right) (1 - CE_{\text{Baghouse}})(1 - CE_{\text{Filter}})$$

$$PM_{10SP} = \left(\text{Shot Capacity} \frac{\text{lb}}{\text{hr}} \right) \left(\frac{13\text{lbPM}}{1000\text{lb}} \right) (0.10) \left(\frac{\text{OperatingHours}}{\text{Month}} \right) (1 - CE_{\text{Baghouse}})(1 - CE_{\text{Filter}})$$

For Shot Blast Equipment (SB-1):

$$PM_{SB} = \left(\text{Shot Capacity} \frac{\text{lb}}{\text{hr}} \right) \left(\frac{27\text{lbPM}}{1000\text{lb}} \right) \left(\frac{\text{OperatingHours}}{\text{Month}} \right) (0.10) (1 - CE_{\text{Baghouse}})$$

$$PM_{10SB} = \left(\text{Shot Capacity} \frac{\text{lb}}{\text{hr}} \right) \left(\frac{13\text{lbPM}}{1000\text{lb}} \right) (0.10) \left(\frac{\text{OperatingHours}}{\text{Month}} \right) (1 - CE_{\text{Baghouse}})$$

Where,

Shot Capacity = Shot capacity based on nozzle size and air pressure (i.e. <http://www.marco.us/docs/library/technical/other/air-abrasive-consumption-chart---1091029.pdf?sfvrsn=6>)

CE_{Baghouse} = 0.95 for baghouses, unless stack testing indicated a different value.

CE_{Filter}	=	0.90 for other filters, unless stack testing indicates a different value.
$CE_{HEPA Filter}$	=	0.99 for HEPA filters, unless stack testing indicates a different value.
OperatingHours/Month	=	The sum of the daily operating hours for each piece of equipment
$(27lbPM/1000 lb)(0.10)$	=	AP-42, section 13.2.6 Abrasive Blasting using steel shot emission factor for PM
$(13lbPM/1000 lb)(0.10)$	=	AP-42, section 13.2.6 Abrasive Blasting using steel shot emission factor for PM_{10}

For the Shot Peening (SP):

$$PM_{SP} = \left(Shot Capacity \frac{lb}{hr} \right) \left(\frac{27lbPM}{1000lb} \right) (0.10) \left(\frac{OperatingHours}{Month} \right) \left(1 - CE_{\frac{Baghouse}{(cartridge)filter}} \right) (1 - CE_{Filter\ or\ HEPA\ Filter})$$

$$PM_{10SP} = \left(Shot Capacity \frac{lb}{hr} \right) \left(\frac{13lbPM}{1000lb} \right) (0.10) \left(\frac{OperatingHours}{Month} \right) \left(1 - CE_{\frac{Baghouse}{(cartridge)filter}} \right) (1 - CE_{Filter\ or\ Hepa\ Filter})$$

Where,

Shot Capacity	=	Shot capacity based on nozzle size and air pressure (i.e. http://www.marco.us/docs/library/technical/other/air-abrasive-consumption-chart---1091029.pdf?sfvrsn=6)
$CE_{Bagouse}$	=	0.95 for baghouses, unless stack testing indicated a different value.
CE_{Filter}	=	0.90 for other filters, unless stack testing indicates a different value.
$CE_{HEPA Filter}$	=	0.99 for HEPA filters, unless stack testing indicates a different value.
OperatingHours/Month	=	The sum of the daily operating hours for each piece of equipment
$(27lbPM/1000 lb)(0.10)$	=	AP-42, section 13.2.6 Abrasive Blasting using

$$(13\text{lbPM}/1000\text{ lb})(0.10) = \text{steel shot emission factor for PM AP-42, section 13.2.6 Abrasive Blasting using steel shot emission factor for PM}_{10}$$

For the Inspection Machines:

$$PM_{\text{inspection machine}} = \left(\frac{\text{Throughput}}{\text{month}}\right) (\text{Density})(0.05)(1 - CE_{\text{Filter}})$$

Where,

- Throughput/month = Gallons of coating used each month in each inspection machine.
- Density = Density of the coating in lb/gallon.
- EF (0.05) = Emission factor for the inspection machines representing percent solids of PM contained in the coating.
- CE_{Filter} = 0.90 for other filters, unless stack testing indicates a different value.

For the GCN-Furnaces (natural gas combustion):

$$PM_{\text{GCN Furnaces}} = \left(\frac{\text{Throughput}}{\text{month}}\right) (7.6)$$

Where,

- Throughput/month = million cubic feet of natural gas used (can be obtained from Gas/Electric Bill) each month in GCN Furnaces combined.
- EF (7.6) = Emission factor for the natural gas combustion from AP-42 for PM₁₀ in lb/mmcf

FEDOOP Fee Comment

The initial issuance and STAR De Minimis fee for a FEDOOP is \$2,847.50 in accordance with the *Schedule of Fees* table in Regulation 2.08. This fee shall be paid to the District prior to the issuance of the permit.

Fee Type	Amount
Permit Actions: Significant Permit Revision	\$2,542.40

(includes initial issuance)	
STAR Program: De Minimis Determination Only (Per TAC)	\$305.10

7. Insignificant Activities

Equipment	Quantity	PTE (tpy)	Basis for Exemption
Parts Washer (IA-1)	1	0.002 VOC	Regulation 1.02, Appendix A
GCN-1 through GCN- 4 (Direct-fired Furnaces) (IA-2)	4	< 0.003 NOx; 0.00003 PM10	Regulation 1.02, Appendix A, section 1.38.1.1

- 1) Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements.
- 2) Insignificant activities identified in District Regulation 1.02, Appendix A, shall comply with generally applicable requirements.
- 3) Activities identified in Regulation 1.02, Appendix A, may not require a permit and by insignificant with regard to application disclosure requirement but may still have generally applicable requirements that continue to apply to the source and must be included in the permit.
- 4) Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.
- 5) In lieu of recording annual throughputs and calculating actual annual emissions, the owner or operator may elect to report the pollutant Potential To Emit (PTE) quantity listed in the Insignificant Activities table, as the annual emission for each piece of equipment.
- 6) The owner or operator shall annually submit an updated list of insignificant activities, including an identification of the additions and removals of insignificant activities that occurred during the preceding year, with the compliance certification due April 15th.

a. Emission Unit IA-1 – Cold Solvent Wash with no secondary reservoir

i. Equipment

Emission Process	Description	Applicable Regulations	Basis for Applicability
IA-1	Cold Solvent Parts Washer	6.18	Applies to each cold cleaners, open top vapor degreasers, and conveyorized degreasers that use volatile organic compounds

			(VOCs) to remove soluble impurities from metal surfaces.
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ii. **Standards/Operating Limits**

1) **VOC**

Per Regulation 6.18, the owner or operator shall observe specific operating requirements, and shall not operate a cold cleaner using a solvent with a vapor pressure that exceeds 1.0 mm Hg (0.019 psi) measured at 20°C (68°F).

b. **Emission Unit IA-2 – Equipment Subject to STAR only**

i. **Equipment**

Emission Process	Description	Applicable Regulations	Basis for Applicability
TNK-1	TNK-1, 1000 gallon Ammonia Tank, make Mississippi Tank Co.	STAR	Regulations 5.00, 5.01, 5.20, 5.21, 5.22 and 5.23 (STAR Program) establish requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards. impurities from metal surfaces.
GCN-1; GCN-2; GCN-3; & GCN-4	GCN-1 through GCN- 4 (direct fired Furnaces)		

ii. **Standards/Operating Limits**

1) **TAC**

Per Regulations 5.00 and 5.21, TAC emissions must not exceed environmentally acceptable levels.