

DEPARTMENT OF ENVIRONMENTAL QUALITY
 AIR QUALITY DIVISION
 ACTIVITY REPORT: Scheduled Inspection

B165933511

FACILITY: LEFERE FORGE & MACHINE CO		SRN / ID: B1659
LOCATION: 665 HUPP AVE, JACKSON		DISTRICT: Jackson
CITY: JACKSON		COUNTY: JACKSON
CONTACT: Peter Lefere , President		ACTIVITY DATE: 02/29/2016
STAFF: Michael Gabor	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Full Compliance Evaluation (FCE) and Inspection (PCE) of Lefere Forge & Machine Co.'s Synthetic Minor / Opt-Out Source.		
RESOLVED COMPLAINTS:		

Synthetic Minor / Opt-Out Source. Full Compliance Evaluation (FCE) and Inspection (PCE) of Lefere Forge, located at 665 Hupp Avenue, Jackson, Michigan 49203.

State Registration Number (SRN): B1659

Facility Contacts

Peter Lefere (PL), President, 517-784-7109, pete.lefere@lefereforge.com

Terry Lefere (TL), Production Control, 517-784-7109, terry.lefere@lefereforge.com

Beth Perez (BP), Controller / Environmental Contact, 517-784-7109, beth.perez@lefereforge.com

Randy Gamble, Facility Consultant, (517) 789-2633, RandyLGamble@Eaton.com

Purpose

On February 29, 2016, I conducted a scheduled, unannounced inspection of the Lefere Forge (LF) facility located in Jackson, Michigan (Jackson County) at 665 Hupp Avenue. The purpose of the inspection was to determine the facility's compliance status with applicable federal and state air pollution regulations, particularly with the Michigan Natural Resources and Environmental Protection Act 451 of 1994, Part 55, Air Pollution Control and the administrative rules, and the conditions of LF's Permit to Install (PTI) number 388-96B, issued May 2, 2013. This facility was last inspected on September 19, 2012.

Facility Location

The facility is located within the city limits of Jackson. It is immediately surrounded by other commercial / industrial sources. Residential areas begin approximately 1,500 feet northeast and southwest of the facility.

B1659 - SAR - 20160229

Arrival & Facility Contacts

Visible emissions or odors were not observed upon my approach to the facility via Hupp Avenue. I arrived at approximately 11:12 am, proceeded to the facility office to request access for an inspection, provided my identification to TL, and asked if he or someone else was available to meet with me, etc. TL escorted me to PL's office and a pre-inspection conference was held with both individuals. I provided a copy of the Michigan Department of Environmental Quality (MDEQ) brochures entitled *Rights and Responsibilities Environmental Regulatory Inspections and Boiler NESHAP Navigation Tool*, and invited LF to complete the customer service survey upon receipt of my inspection report. I informed TL and PL of my intent to conduct a facility inspection and to review the various records required by their permit. Both extended their full cooperation during the inspection and PL accompanied me during the site tour portion of the inspection.

Regulatory Applicability

The facility is a Synthetic Minor / Opt-Out Source for NO_x, SO₂, and PM emissions. LF accepted NO_x, SO₂, and PM emission limits in order to remain below major source emission thresholds. The facility is regulated by PTI 388-96B and reports its emissions to the Michigan Air Emissions Reporting System (MAERS). In addition, two fuel oil forging furnaces were recently replaced with natural gas furnaces and operate under the PTI exemption found under Michigan Air Pollution Control Rule R 336.1282(a)(i) (Rule 282(a)(i)). On March 4, 2016, BP indicated via email that the natural gas furnaces are each rated at 3 million Btu per hour (attached). Hence, both natural gas furnaces are below the maximum total heat input rate required by Rule 282(a).

Emission Unit (EU) / Flexible Group (FG) Details

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID
EUBOILER	Kewanee Gas Boiler. Natural gas fired boiler. Nominal heat input rating of 4.2 MMBtu/hr. Facility heating.	FGFACILITY
EUFURNACES	Batch Forging Furnaces. 11 batch furnaces. No. 6 Fuel Oil, maximum	FGFACILITY

	rated capacity is 45 gallons per hour, each furnace. Each furnace has a 48 sq ft hearth. Standard forging heating capacity is 100 lb/hr per square foot of hearth for an estimated maximum annual forging rate of 231,260 tons of metal per year.	
EUSHOTBLAST	Pangborn Shotblast. Rotary shot blast machine for abrasive blasting (cleaning) of forged parts. Fabric filter control. Vented in-plant.	FGFACILITY
Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.		

Facility Background

LF has been in business since 1929 and mainly forges various steel parts / components related to the gas / energy, heavy vehicle, and caster industries. No casting is done onsite, just forging and subsequent abrasive blasting (cleaning) of forged parts.

LF currently employs about 70 persons and operates Monday through Friday with most production occurring during the main shift, and a second shift reserved for peak production periods.

The overall process may be broken into the following main steps: (1) steel parts are cut to proper length via saw or shear cutting, (2) individual parts are heated in one of the eight (previously eleven) fuel oil forge furnaces (EUFURNACES) or in one of the two natural gas furnaces (exempt), (3) parts are forged using a compressed air hammer controlled by an operator’s foot pedal, (4) parts are transferred to a conveyer system and are cleaned via abrasive blasting (EUSHOTBLAST), (5) parts are packaged by hand in wooden crates for shipping. EUBOILER provides heating for the facility.

LF reported the following emissions for Reporting Year 2015 using the MAERS:

- 0.51 tons NOx for EUBOILER using MAERS emission factors (EFs) (emission limit: 1.9 tons per year (tpy)),
- 392 pounds PM for EUFURNACES using an “other” EF (emission limit: 7.0 tpy),

- 7.07 tons NO_x for EUFURNACES using MAERS EFs (emission limit: 20.63 tpy)
- 20.4 tons SO₂ for EUFURNACES using permit-specified EFs (emission limit: 88.9 tpy).
- 392 pounds PM₁₀ for EUFURNACES using MAERS EFs (emission limit: 8.1 tpy)

Pre-Inspection Meeting

The pre-inspection began with a background summary of LF, which was provided by PL. The summary included various operational characteristics, product line descriptions, etc. as summarized above.

I asked whether LF experienced any recent issues or changes facility wide or with any of their air pollution control equipment. PL replied that no immediate issues were noted. He did share that the facility no longer has eleven fuel oil furnaces forge furnaces (EUFURNACES) and now operates eight fuel oil furnaces. Two natural gas fired furnaces were installed, with two additional natural gas furnace installations planned for 2016. The facility plans to gradually remove all of the fuel oil furnaces from the site and to replace them with natural gas furnaces. The currently installed natural gas furnaces are exempt from obtaining a PTI, as indicated above.

Onsite Inspection Narrative

PL then provided a site tour and overview of the facility's operations. The tour followed the process from beginning to end. I first observed the area where the steel parts are cut to proper length via saw or shear cutting. Then I observed the cut parts taken to a natural gas or fuel oil furnace (EUFURNACES), where they were heated. Once heated (but the parts were not in a completely molten state), the parts were forged using a compressed air hammer controlled by an operator's foot pedal. None of the oil or gas furnaces vented via a stack, but directly into the in-plant environment. I did not notice any visible emissions from any of the furnaces during the inspection.

The parts were then transferred to a conveyer system, which allowed the parts to cool (but remained warm) as they were transported to the abrasive blasting equipment (EUSHOTBLAST) for cleaning. I then observed the exterior fabric filter / baghouse required by permit special condition (SC) IV.1 for the continued operation of EUSHOTBLAST. The baghouse exhibited rust on its exterior but appeared to be operating sufficiently, as I did not observe any visible emissions (just hot exhaust condensing upon contact with the cold, exterior air) from its exhaust port. The parts were still warm as they exited EUSHOTBLAST.

Next, I observed the parts as they were packaged by hand in wooden crates for shipping. Before concluding the site tour, I observed EUBOILER and its natural gas meter used to monitor usage.

Post-Inspection Meeting

We returned to PL's office and held a brief post-inspection meeting. I informed him that I did not have any

immediate concerns at that time. He asked me to contact BP to obtain facility records, as she tracks and maintains them. She was not in the office on the day of the inspection. I thanked PL for his excellent cooperation and assistance, and departed the facility at approximately 12:40 pm.

Recordkeeping Review

Below is a summary of the requested and reviewed records, as specified by the following permit SCs or records requested to demonstrate compliance with a specific SC for the period of February 2015 through January 2016. On March 2, 2016, I sent, via email (attached), a summary of my records request and requested the total input rate, in Btu per hour, for both natural gas furnaces to confirm their exemption status by COB March 9, 2016. On March 4, 2016, BP provided some of the requested records (attached) and I followed up by email on March 4, 2016, (attached) with a summary of pending items and additional questions. BP responded and indicated that she would be out of the office until March 15, 2016, and that she would be able to respond then. On March 24, 2016, BP provided some of the requested items (attached) and on March 25, 2016, I emailed their consultant, Randy Gamble, with a list of pending records to be submitted and questions (attached). On April 14, 2016, Randy Gamble provided most of the items requested by my last email and I followed up with a request for the remaining items, attached. On April 20, 2016, BP provided HHV testing data for the No. 6 fuel oil used onsite, attached.

EU or FG Designation	Record Request per Permit SC(s) for February 2015 through January 2016	Comments (if applicable)	Substantial Compliance (Yes or No) / Comments
EUBOILER	VI.1	Requested records to also demonstrate compliance with SC II.1, 37 million cubic feet natural gas material usage limit per 12-month rolling time period.	Yes / 12.18 million cubic feet, highest 12-month rolling natural gas usage reported for January 2016.
		Requested records to also demonstrate	Yes / 0.61 tons, highest 12-month rolling

	VI.2	compliance with SC I.1, 1.9 tpy NOx emission limit per 12-month rolling time period.	NOx emissions reported for January 2016. Facility provided details on how emissions were calculated and are attached to this report.
	VI.1.a	Requested records to also demonstrate compliance with SC II.1, 750,000 gallons no. 6 fuel oil material usage limit per 12-month rolling time period.	Yes / 425,500 gallons, highest 12-month rolling fuel oil usage reported for March 2015.
	VI.1.b	Requested records to also demonstrate compliance with SC II.2, 1.5% sulfur content material limit for no. 6 fuel oil per 12-month rolling average.	Yes / Average monthly fuel sulfur content indicated in the facility's monthly emissions record. The 2015 rolling average sulfur content was 0.8092%. / Facility provided no. 6 fuel oil supplier data for 2015 deliveries. Records are attached and indicate the fuel's sulfur content (percent by weight), specific gravity,

EUFURNACES			flash point, and higher heating value (Btu/lb).
	VI.1.c		<p style="text-align: center;">Yes / Monthly emission calculations attached.</p>
	VI.1.d	<p>Requested records to also demonstrate compliance with SC 1.4 (88.9 tpy SO2 emission limit) and SCs 1.5 and 1.6 (1.6 pounds per million Btu heat input SO2 emission limit).</p>	<p style="text-align: center;">No / Partial Compliance / 33.74 tons, highest 12-month rolling SO2 emissions reported for March 2015. / Facility provided details on how emissions were calculated to determine compliance with the annual 88.9 tpy SO2 emission limit and are attached to this report. However, records demonstrating compliance with the 1.6 pounds per million Btu heat input SO2 emission limit were not provided.</p>

	<p>VI.1.e</p>	<p>Requested records to also demonstrate compliance with SC I.2 (7.0 tpy PM emission limit), SC I.3 (20.63 tpy NOx emission limit), SC I.4 (88.9 tpy SO2 emission limit), and SC I.5 (1.6 pounds per million Btu heat input SO2 emission limit).</p>	<p>Yes / 0.23 tons, highest 12-month rolling PM emissions reported for February 2015. / 11.70 tons, highest 12-month rolling emissions reported for March 2015. / 33.74 tons, highest 12-month rolling SOx emissions reported for March 2015. / Facility provided details on how emissions were calculated and are attached to this report.</p>
<p>EUSHOTBLAST</p>	<p>I.2</p>	<p>Requested records to demonstrate compliance with SC I.2, 8.1 tpy PM emission limit per 12-month rolling time period.</p>	<p>Yes / 9 pounds, highest 12-month rolling PM emissions reported for April 2015. / Facility provided details on how emissions were calculated and are attached to this report.</p>
		<p>Requested records to</p>	

	VI.1	also demonstrate compliance with SC III.1, 2,880 hours process / operational limit per 12-month rolling time period.	Yes / 1,120, highest hours reported in February 2015.
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Compliance Summary

Based upon the visual observations and the review of the records, LF appears to be in substantial compliance with the requirements of their PTI, except for one recordkeeping item indicated above. Specifically, LF did not provide records, required by SC VI.1.d, to demonstrate compliance with SC I.5, 1.6 pounds per million Btu heat input SO2 emission limit, determined per a 24-hour period. I spoke with my supervisor, Scott Miller, and we agreed that I would follow up with a Compliance Concern letter to indicate this deficiency and request that LF take immediate steps to comply with SC VI.1.d and to demonstrate compliance with SC I.5. In addition, compliance with SC 1.5 may be re-evaluated during a future inspection.

In addition, several communications were necessary to obtain and establish the recordkeeping items required by their permit. Particularly, I recommended that LF better coordinate with their fuel oil no. 6 supplier to consistently and efficiently obtain and maintain the permit-required monthly fuel data, per SC VI.1.b.

I advised the facility to determine whether it is subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP): Nine Metal Fabrication and Finishing Source Categories at Area Sources, 40 CFR 63, Subpart XXXXXX applies. On April 14, 2016, Randy Gamble indicated via email that they would evaluate and determine applicability to this NESHAP and submit an initial notification, if required.

Finally, I advised the facility that the natural gas forging furnaces recently installed onsite are exempt from obtaining a PTI by Rule 282(a)(i). Eventually, the facility plans to replace all oil furnaces with natural gas furnaces. At that point, the permit will need to be reevaluated to determine whether it will be modified, etc.

NAME Michael M. Miller DATE 4/20/16 SUPERVISOR [Signature]