DEPARTMENT OF ENVIRONMENTAL QUALITY FY2017 INSP
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection ROP SM CMS

B885141116

FACILITY: SUN STEEL TREATING INC		SRN / ID: B8851
LOCATION: 550 N Mill St., SOUTH LYON		DISTRICT: Southeast Michigan
CITY: SOUTH LYON		COUNTY: OAKLAND
CONTACT: Dennis Palmiter , President		ACTIVITY DATE: 08/01/2017
STAFF: Iranna Konanahalli	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: ROP SM CMS FY 2017 inspection of Sun Steel Treating, Inc. ("Sun" or "the company")		
RESOLVED COMPLAINTS:		

B8851 _ SAR _ 2017 08 01

Sun Steel Treating, Inc. (B8851)
550 North Mill Street
P.O. Box 759
South Lyon, Michigan 48178-0759

Phone: (877) 471-0840-ext. 225
Fax: (248) 437-3140
E-mail: dPalmiter@SunSteelTreating.com

Web: www.SunSteelTreating.com

NAICS Code: 332811

VNs: Violations Notices (11/01/2006, 02/14/2011, 03/10/2014) for plugged baghouse serving 8 molten salt baths. In addition, AQD issued July 20, 2016, VN for failure to operate baghouse (due to maintenance) while molten salt baths were operating. MIOSHA also wrote March 10, 2015, letter due to Complaint No. 966039 regarding in-plant dust.

PTI voids: PTI No. 847-88 (voided on 09/09/1989 – B8851)

Duplicate SRN: B8698, which was neither in MAPR nor MAERS - voided.

Permit-to-Install Nos.: 811-89 (B8851) for molten salt baths and grit blasting, 546-94 (B8851, ROP opt-out) for two emergency generators (SC 17 limit: 2,098 operating hours based upon non-resettable hours meter per year for both units)

ROP opt-out PTI No. 546-94 (B8851) dated October 31, 1995, for two identical 930 kW Diesel fired Caterpillar Electric Generators is a ROP opt-out permit (limits: SC 13: NOx =39.4 tpy < 100 tpy and 37.5 pph; SC 14: 0.05% S; SC 17: 2,098 hours per generator; SC: 80 gallons per hour for both units).

Duplicate SRN (i.e. B8698) and duplicate permits (i.e. PTI Nos. 478-81 & 477-81) voided on December 13, 2006, based upon FY2007 inspection.

Generators (2) are subject to: Area source NESHAP / MACT ZZZZ / RICE MACT 4Z, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines and National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines / Final rule (Page 3568, Federal Register / Vol. 73, No. 13 / Friday, January 18, 2008 / Rules and Regulations / Final rule; Page 51570 Federal

Register / Vol. 75, No. 161 / Friday, August 20, 2010 / Rules and Regulations / Final rule;Page 12863 Federal Register /Vol. 76, No. 46 /Wednesday, March 9, 2011 /Rules and Regulations / Direct final rule; amendments for August 20, 2010, final rule; Page 6674 Federal Register / Vol. 78, No. 20 / Wednesday, January 30, 2013 / Rules and Regulations / Final rule. Page 48072 Federal Register / Vol. 79, No. 158 / Friday, August 15, 2014 / Rules and Regulations / Notice of final decision on reconsideration, etc.). AQD has no delegation of these standards and therefore no attempt has been made evaluate Sun's compliance with NESHAP / MACT 4Z.

Sun's emergency generators (2) are NOT subject to: NSPS IIII or 4I, New Source Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion (IC) Engines, 39154 Federal Register / Vol. 71, No. 132 / Tuesday, July 11, 2006 / Rules and Regulations / Final Rule. Two generators are not subject to NSPS 4I based upon manufacture date (installed September 1979 and September 1981, manufactured well before April 1, 2006).

MAERS: As a Synthetic Minor source for ROP (NOx = 39.4 < 100 tpy), Sun Steel started submitting MAERS effective MAERS-2011.

On March 09 and August 01, 2017, I conducted a level-2 annual **ROP SM CMS FY 2017** inspection of Sun Steel Treating, Inc. ("Sun" or "the company"), a commercial heat-treating and hardening company, located at 550 North Mill Street, South Lyon, Michigan 48178-0759. The inspection was conducted to determine compliance with the Federal Clean Air Act (CAA); Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 (PA 451); Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) administrative rules; and permits.

During the inspection, Mr. Dennis C. Palmiter (Phone: 877- 471-0840-ext. 254; Fax: 248-437-3140; E-mail: dPalmiter@SunSteelTreating.com), President and Owner, assisted me. Mr. Bob Wright, Owner, passed away in CY2005 and Mr. Palmiter bought the company for very low price; he now is a owner of the company with a partner, Mr. Jim McGuirk, Jr. (Phone: 877-471-0840-ext. NA; Cell: 810-210-7310 Fax: 248-437-3140; E-mail: jMcGuirk @SunSteelTreating.com).

Mr. Jim Miller (Phone: 877-471-0840-ext. 225), Safety, Environmental and Purchasing Manager, separated due to retirement in December 2011.

Since 1958, Sun Steel Treating, Inc., has specialized in providing its customers precision and specialty Salt Bath Heat Treatments. Sun provides heat-treat services to harden alloys, carbon steels, tool steels or high speed specialty tools applying Sun's precise metallurgical processes to the steels.

In 1981, Sun pioneered the use of Ion Plasma Nitriding (surface treatment of steel in a controlled environment in presence of nitrogen [N2]), as a viable surface hardening treatment in United States, developing new equipment, technology, and processes to meet the diverse application needs of modern manufacturing. In addition to these processes, Sun performs Steam Treating services for many applications and has developed IonWear, a registered trademark process designed to combine the benefits of Iron-nitriding and steam treating for special components.

Sun offers complete metallurgical services to meet the demanding requirements of the customers. Sun carries out its heat-treating operations in 36,000-square-feet facility located in South Lyon.

Iron-nitriding processes, consisting of ten (10) electric furnaces using nitrogen (N2) and hydrogen (H2), are present. As nitriding processes involve electrically heated furnaces, there are no air emissions. Steel is heated to 1,000 degrees Fahrenheit in presence of nitrogen and hydrogen to accomplish hardening of steel. The electrically heated furnaces are exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1282(2)(a).

Sun provides hardening services for tools manufacturers, automotive and aerospace industries. Hardening involves immersing the steel parts in molten salt bath (400-2, 200 degrees Fahrenheit). The parts are quenched in oil (polymer), or water, or salt bath depending on the material. The parts are tempered at 400-1,200 degrees Fahrenheit; 2-3 steps of tempering are involved.

PTI No. 478-81 (SRN: B8698) dated October 27, 1982 (voided on Dec 13, 2006)

The permit was issued for abrasive cleaning process with a fabric filter. The process was permitted again under PTI No. 811-89 dated November 13, 1989. Per the recommendation pursuant to the FY2007 inspection, duplicate PTI No. 478-81 dated October 27, 1982, was voided on December 13, 2006.

PTI No. 477-81 (SRN: B8698) dated October 27, 1982 (voided on December 13, 2006)

The permit was issued for barium, potassium, calcium, sodium chloride quenches with a fabric filter. The process was permitted again under PTI No. 811-89 dated November 13, 1989. Per the recommendation pursuant to the FY2007 inspection, duplicate PTI No. 477-81 dated October 27, 1982, was voided on December 13, 2006.

Per Mr. Beth Minich's e-mail dated December 5, 2006, duplicate SRN B8698 was neither in MAPR nor MAERS.

PTI No. 811-89 dated November 13, 1989

This permit regulates both grit blasting and molten salt bath heat treating processes. The electric tempering furnaces are not part of this permit.

Molten salt bath process

As permitted, there were two filter systems operating in parallel (one fabric with shaker mechanism, which was replaced about March 2016 by Donaldson Torit system, and one cartridge with pulse-jet air) for eight (8) molten salt baths; one of eight baths is removed. Filtered air from all filters exhaust to outside ambient air; air is not recycled into the plant. Emissions from the capture device for 8 molten salt baths and ceiling capture device are combined and split into two streams: one stream goes to a cartridge filter and other stream goes to a baghouse (a separate cartridge filter system that replaced the baghouse in December 2011 exists for grit blasting). The salt bath baghouse equipped with a shaker mechanism was removed and replaced by new March 2016 Donaldson baghouse.

Brand new (March 2016) baghouse

Based upon FY 2016 (Dec 2015) inspection, Sun installed a brand new Donaldson (Donaldson Company, Inc., 1400 West 94th Street, Bloomington, MN 55431) Torit filter system outside the building. This was hooked up about March 2016. When the new Donaldson baghouse was connected to the exhaust system for the salt baths, the shaker baghouse, where annual bag replacement was cumbersome, was removed although shaker mechanism baghouse mechanical housing still exists (housing will be removed when the space is required). However, existing salt bath cartridge filters will continue to augment the capacity.

Donaldson Torit Model DLMC 4/8/15 Collector, equipped with 320 Donaldson Torit PTEF Tetratex filter bags, offers net filtration area of 5,168 sq. ft. Based upon air flow of 30,000 cfm, the bags provide net air-to-cloth ratio of 5.8:1. The manufacturer (Donaldson) guarantee of performance is based upon maximum particulate loading of 0.002 grains per dry standard cubic feet. Average pressure drop across the bags is expected to be 6 inches of water gauge. Mr. Jeff Maccora, Regional Sales Director, is a contact person.

The bags use reverse-air mechanism rather than pulse-jet air to clean the bags; the previously existing salt bath baghouse used shaker mechanism. Four (4) 55-gallon drums are present as hopper to store the baghouse dust. The mechanical housing for the shaker baghouse will be removed when the space is required. I asked Sun Steel to empty the hoppers promptly.

The Donaldson filter system was purchased (Dec 2015) at the cost of $260,000.00 (total including installation and testing) to replace the existing shaker mechanism salt bath baghouse. Donaldson recommended the filter system installed based upon exhaust and particulate matter characteristics.

Salt bath baghouse shaker mechanism - March 2011 VE

On March 9, 2011, I observed thick haze of visible emissions during the bags shaking. I heard shaker mechanism working. Upon finishing bag shaking to remove salt cake on the bags, salt bath emissions capture system started working properly. Bag shaking occurs once every four hours. During the bags shaking, capture system and air passing the bags is shut off. Bag shaking is a mechanism to clean dirt cake on the bag's filtration surface so that pressure drop for air flow is reduced. The bags are shaken for 5-10 minutes. The hoppers are emptied once per week.

Salt bath cartridges and bags and VNs

Salt bath cartridges were replaced about April 1, 2012. Salt bath bags were replaced about April 27, 2012, March 2013, and March 15, 2014. Most replacements are due to violation notices.

Concerning salt bath, while bags are replaced once per year and cartridge filters are replaced once every three months.

As stated above, about February 2016, Donaldson Torit system replaced the shaker baghouse.

2015 MIOSHA letter

An employee complained to MIOSHA regarding indoor dust due to baghouse plugging. AQD has written several violation notices regarding failure of capture devices due to baghouse plugging. AQD periodically monitors the baghouse conditions. Due to a complaint (Complaint No. 966039), MIOSHA (Robin L. Spalding, MIOSHA Safety and Health Manager, Phone: 517-322-1831) wrote a letter dated March 10, 2015. This letter was required to be posted for employees to read. Due to the letter, Sun replaced the bags for molten salt baths on March 21, 2015.

Salt bath dust collectors (both cartridges and bags) are highly susceptible to frequent plugging resulting in inadequate capture and visible emissions. Salt bath bags replacement (once per year) costs about $15,000.00. As a result of salt damage to the bags / filters, AQD periodically inspects the capture systems via salt baths' visible emissions capture. If inadequate visible emissions capture is observed, the bags are bad or plugged. During the FY 2017 inspection (Aug 01, 2017), I observed the capture systems performing as expected; i.e., capturing particulate emissions.

Salt bath

Salt bath uses Barium Chloride for high temperature (T ≈ 2,100 °F) process because sodium chloride breaks down at high temperatures (T > 1,500 °F). Nitrates are used for low temperature (T ≈ 1,000 °F) baths.

Grit blasting dust collector upgrade - 2011

Steel grit (aluminum oxide) is used in the grit blast machine.

As permitted, grit blasting had its own dedicated baghouse, known as grit blast baghouse, that exhausted air via Stack No. 3. Unlike salt bath shaker bags, grit blast bags were replaced once in couple of years; no regular schedule. The grit blast bags were equipped with pule-jet air cleaning system.

On September 23, 2011, AQD received the letter dated Sept 21, 2011, regarding grit blast dust collector upgrade. The letter stated that existing Aeropulse Model 720-10 (20 hp blower @ 7,500 cfm with tubular bags@ 1,296 sq.ft. surface area) would be upgraded to Donaldson Torit Dust Collector (Cartridge) Model DFO 3-24 (two 20-hp fans blower @ 11,600 cfm with cartridge collection system @ 4,560 sq.ft. surface area)

In Dec 2011 grit blast bag system was replaced with cartridge filters. The system is equipped with twelve (12) cartridges with two (2) 55-gallon drums (hoppers) to store collected dust. Pulse-jet air is used for cleaning dust cake on the filters. Pulse-jet is based upon pressure drop (ΔP). The 55-gallon drums are emptied when full and the dust is disposed of according RCRA regulations.

One dust collector (baghouse upgraded in Dec 2011 to cartridge system) is dedicated for grit blasting. Unlike salt bath bags and cartridges, there is no replacement schedule for grit blast cartridges.

There are three (3) stacks: Molten salt baghouse stack, Salt bath cartridge filter stack and Grit blast cartridge (upgraded to cartridge from baghouse in Dec 2011) filter stack.

11 electrically heated salt bath tempering furnaces are present. All are electrically heated and are totally enclosed, resulting in no air emissions. These furnaces are used for tempering at

400-1200° F. The parts are heated at a critical temperature so as to temper to bring hardness to working range (e.g., 66 to 63 based upon Rockwell Hardness Unit). The electrically heated tempering furnaces are exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1282(a).

Violation Notices

2006 Violation Notice

AQD issued a letter of violation (LOV) dated November 1, 2006, because 8 molten salt bath capture systems were not operating properly resulting in visible emissions. The improper operation is a violation of Special Condition (SC) No. 15 (PTI No. 811-89), which requires no visible emissions, and Rule 336.1910, which requires that air-cleaning devices, including an emissions capture system, shall be installed, maintained, and operated in a satisfactory manner and in accordance with the administrative rules and existing law. One of 8 molten salt bath capture systems was not capturing fumes at all based upon FY2007 inspection because the ventilation slots and bags were plugged. See the November 1, 2006 letter of violation (LOV) for additional details.

After the 2006 LOV, capture system was improved mechanically to achieve desired capture of salt fumes. Although December 21, 2007, inspection revealed ongoing visible emissions problem, proper working of capture system was confirmed on February 9, 2007, and the LOV was resolved. The bags were replaced in January 2007 and again in March 2008. December 2, 2008, inspection revealed that the bags were plugged again as indicated by lack of capture and consequent visible emissions. Mr. Miller stated that, by January 2009, bags would be replaced. After the LOV, capture device vents are cleaned once every week. Repeat inspection in CY2009 confirmed that the bags were replaced and visible emissions were captured.

2011 Violation Notice

AQD issued Violation Notice dated February 14, 2011, because salt bath emissions capture system and baghouse were not operated properly (plugged bags) as indicated by visible emissions of February 4, 2011 (PTI No. 811-89, SC 15:no VE & 17: filter sys must operate properly) and an air pollution control device was not operated properly (Rule 336.1910). AQD received VN response letter dated Feb 21, 2011, that stated that bags were replaced on Feb 19, 2011. On March 9, 2011, Mr. Palmiter stated that Sun would replace bags twice a year instead of once a year. Please refer to February 14, 2011, VN for additional details.

2014 Violation Notice

AQD issued Violation Notice dated March 10, 2014, because salt bath emissions capture system and baghouse were not operated properly (plugged bags) as indicated by visible emissions of March 07, 2014 (PTI No. 811-89, SC 15:no VE & 17: filter sys must operate properly) and an air pollution control device was not operated properly (Rule 336.1910). AQD received VN response letter dated March 20, 2014, that stated that bags were replaced on March 15, 2014. Please refer to March 10, 2014, VN for additional details.

2016 Violation Notice

AQD issued Violation Notice dated July 20, 2016, because salt bath emissions capture system and Donaldson Torit baghouse were not operated properly (taken out of service for

maintenance) as indicated by visible emissions of July 01, 2016 (PTI No. 811-89, SC 15:no VE & 17: filter sys must operate properly) and an air pollution control device was not operated properly (Rule 336.1910).

AQD received the letter dated July 08, 2016, that stated that the Donaldson Torit unit was taken out service for a routine maintenance. The July 08 letter admits that there was deterioration of air quality. In addition, AQD received the VN response letter dated July 25, 2016. Please refer to July 20, 2016, VN for additional details.

ROP opt-out PTI No. 546-94 dated October 31, 1995 – two emergency generators

The generators provide standby power to prevent the salt baths from freezing but not sufficient power for production.

This permit for two identical Caterpillar D-399TA, 16 Cylinder, stand-by electric generators (reciprocating, diesel oil, internal combustion, 930 kW (≈ 0.9 MW) based upon the plate (PTI capacity of 75 kW is not correct) each, 80 (40 each) gallons of diesel per hour) was issued to opt-out of Renewable Operation Program (Rule 336.1210). Generators were installed in 1979 & 1981. The limiting factor is hours of operation per year; PTI No. 546-94, SC 17 limit is 2,098 hours per year for both units. The electricity generating logs are kept. In CY2016, the generators operated 8.5 hours and used 340 gallons of Diesel (PTI No. 546-94, SC13 limit: 37.5 lbs. / hr. NOx & 39.4 tons / yr. NOx &, SC17 limit: 2098 hrs. per year per two units). Each engine uses 40 gallons of Diesel per hour.

40 gallons per hour per engine / generator mentioned in the permit is not correct per the information below. About 67 gallons per engine per hour seems to be correct fuel usage.

Per MSDS, 15 ppm off-road Ultra-Low Sulfur Diesel (ULSD Diesel) with 15 ppm S, BP=400-640° F, density ρ = 7.2 pounds per gallon, MW = 180, was used (PTI No. 546-94, SC14 limit: 0.05% S). Sun has 5000-gallon storage tank for the diesel.

PTI Exemption - CI RICE Engines

Fuel usage for Caterpillar Generators is as follows:

1500 kW → 105 gallons per hour diesel (DMC)
1050 kW → 74 gallons per hour diesel
750 kW → 55 gallons per hour diesel
600 kW → 46 gallons per hour diesel
300 kW → 28 gallons per hour diesel

Based upon the above information, assuming 1 MW generator consumes 75 gallons of diesel per hour, knowing 138,000 BTU per gallon of diesel, heat input of 1 MW generator is 10.4 million BTU per hour. Hence, a diesel generator up to 1 MW is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(g). It may be noted that some engines convert heat to work more efficiently than others. Recent engine designs have efficiencies up to 40% for heat to shaft work conversion. Converting mechanical work to electricity is up to 95% efficient.

The existing generators (installed in Sep 1979 and Sep 1981 << August 16, 2004) located in a non-major source (area) are subject to Area Source RICE NESHAP / MACT ZZZZ, 40 CFR,

Part 63, Subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE).

Generators (2) are subject to: Area source NESHAP / MACT ZZZZ / RICE MACT, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines and National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines / Final rule (Page 3568, Federal Register / Vol. 73, No. 13 / Friday, January 18, 2008 / Rules and Regulations / Final rule; Page 51570 Federal Register / Vol. 75, No. 161 / Friday, August 20, 2010 / Rules and Regulations / Final rule;Page 12863 Federal Register /Vol. 76, No. 46 /Wednesday, March 9, 2011 /Rules and Regulations / Direct final rule; amendments for August 20, 2010, final rule; Page 6674 Federal Register / Vol. 78, No. 20 / Wednesday, January 30, 2013 / Rules and Regulations / Final rule. Page 48072 Federal Register / Vol. 79, No. 158 / Friday, August 15, 2014 / Rules and Regulations / Notice of final decision on reconsideration. etc.). AQD has decided not to take delegation of these standards and therefore no attempt has been made evaluate Sun's compliance with NESHAP / MACT 4Z.

Design capacity of RICE is 40 gallons of fuel per hour per unit; total 80 gallons per hour for both units (PTI No. 546-94, SC18: 40 gallons per hour per unit, 80 gallons per hour for both units). Generators are two 900 kW (each) Caterpillar D-399, 16 Cylinder Reciprocating Diesel emergency (standby) generators.

The generators, upon DTE electric supply interruption, can keep molten salt baths in liquid state but will not allow production. If salt freezes in salt bath, the equipment will be damaged permanently.

MAERS-2011

Beginning in May 2012, Sun started submitting MAERS (MAERS-2011). Clean Assistance Program's Jim Ostrawski helped Sun complete MAERS.

New adjacent building

About September 2012, Sun Steel built a new building adjacent to the existing heat-treating building.

In the new building, two electrically heated pressure (2 bars / atm., 6 bars / atm.) hardening vessels are installed. Nitrogen (N2) is used as atmosphere. About 2013, one more 12 bar / atm. pressure vessel (electrically heated as well) was moved from other building. 3 AFC Holcroft, 1 Grieve, 1 Surface Combustion tempering furnaces (electrically heated) are installed; 5 electrically heated furnaces in all.

The new building furnaces (6) do not need Permit-to-Install (Rule 201) because they are electrically heated.

Conclusion

Frequent plugging of the bags is ongoing issue. Repeat inspection will be conducted to confirm compliance. The generators are subject to Area Source RICE NESHAP / MACT ZZZZ .

FYI: March 10, 2014 February 14, 2011, and November 1, 2006, VNs

March 10, 2014

Mr. Dennis C. Palmiter
Sun Steel Treating, Inc.
550 Mill Street
South Lyon, Michigan 48178-0759

SRN: B8851, Oakland (63) County

Dear Palmiter:

VIOLATION NOTICE

On March 03, 2014, the Department of Environmental Quality (DEQ), Air Quality Division (AQD), conducted an inspection of Sun Steel Treating, Inc. ("Sun") located at 550 Mill Street, South Lyon, Michigan. The purpose of this inspection was to determine Sun's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the administrative rules and; the conditions of Permit to Install (PTI) number 811-89.

During the March 07, 2014 inspection, staff observed the following:

Process Description	Rule/Permit Condition Violated	Comments
Heat treating process including molten salt baths	Permit to Install No. 811-89, Special Condition Nos.15 & 17	The molten salt bath capture system was not operating properly resulting in visible emissions due to inadequate capture of particulate emissions from the molten salt bath (Bath # 13).
Heat treating process including molten salt baths	Rule 336.1910	Plugged bags.

On March 07, 2014, AQD staff observed operation of the heat treating process including the molten salt baths while the baghouse (the cartridge filters were replaced in January 2014) system was malfunctioning as a result of bag plugging. The baghouse and cartridge filter systems operate in parallel. The capture system was malfunctioning due to insufficient air flow through the plugged bags (baghouse).

This constitutes a violation of Act 451, Rule 336.1910, which requires that an air-cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the administrative rules and existing law.

A push-pull ventilation system works well for a molten salt bath. Pursuant to the American Conference of Governmental Industrial Hygienists, for proper operation of push-pull systems, pull flow should be approximately two times the push flow. In addition, the flows should produce adequate capture velocities and no other fan or air draft should be interfering with the push-pull ventilation system.

Please initiate actions necessary to correct the cited and **submit a written response to this Violation Notice by March 31, 2014** (which coincides with 21 calendar days from the date of this letter). The written response should include: the dates the occurred; an explanation of the causes and duration of the ; whether the ongoing; a summary of the actions that have been taken and are proposed to be taken to correct the and the dates by which these actions will take place; and what steps are being taken to prevent a reoccurrence.

If Sun believes the above observations or statements are inaccurate or do not constitute violations of the applicable legal requirements cited, please provide appropriate factual information to explain your position.

Thank you for your attention to resolving the cited above and for the cooperation that was extended to me during my inspection of Sun Steel Treating, Inc.. If you have any questions regarding the or the actions necessary to bring this facility into compliance, please contact me at the number listed below.

Sincerely,

Iranna Konanahalli

Air Quality Division
586-753-3741 or konanahallii@michigan.gov

ISK/DAC
cc/via email: Ms. Lynn Fiedler, DEQ
Ms. Teresa Seidel, DEQ
Mr. Thomas Hess, DEQ
Mr. Christopher Ethridge, DEQ

February 14, 2011

Mr. Dennis C. Palmiter, PresidentSun Steel Treating, Inc.
550 Mill Street
South Lyon, Michigan 48178-0759 SRN: B8851, Oakland (63) County

Dear Palmiter:

VIOLATION NOTICE

On February 4, 2011, the Department of Natural Resources and Environment (DNRE), Air Quality Division (AQD), conducted an inspection of Sun Steel Treating, Inc. ("Sun") located at 550 Mill Street, South Lyon, Michigan. The purpose of this inspection was to determine Sun's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the administrative rules and the conditions of Permit to Install (PTI) number 811-89.

During the February 4, 2011, inspection, staff observed the following:

Process Description	Rule/Permit Condition Violated	Comments
Heat treating process including 8 Molten salt baths	Permit to Install No. 811 -89, Special Condition Nos.15 & 17	The molten salt bath capture systems were not operating properly resulting in visible emissions. One (Bath # 13) of 8 molten salt bath capture systems was not capturing fumes at all because the baghouse and the cartridge filter system were plugged. It may be noted that only Bath No. 13 was operating during the inspection; the rest (7) were idled. I observed blue salt haze (visible emissions) in the salt bath area. The haze may be attributable to visible emissions not being captured by the ventilation system because of insufficient suction air due to the plugged bags / cartridge filters.
Heat treating process including 8 Molten salt baths	Rule 336.1910	Plugged bags and cartridge filters.

On February 4, 2011, AQD staff observed operation of heat treating process including 8 molten salt baths while the baghouse and the cartridge filter system, which operate in parallel, were malfunctioning as a result of bag and cartridge filter plugging.

The salt fumes were escaping the bath area without being captured as indicated by the visible emissions and blue haze in the molten salt bath area. The capture systems were malfunctioning due to insufficient air flow through the plugged bags (baghouse) / filters (cartridge filter).

This constitutes a violation of Act 451, Rule 336.1910, which requires that an air-cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the administrative rules and existing law.

It should be noted that, on November 1, 2006, AQD issued the letter of violation for operating the process when the bags / filters were plugged (PTI No. 811-89). As a result of November 1, 2006, LOV, Sun started a program of replacing cartridge filters (once / 3 months) and bags (once / year). This schedule may be insufficient as indicated by February 4, 2011, visible emissions observation.

A push-pull ventilation system works well for a molten salt bath. Pursuant to the American Conference of Governmental Industrial Hygienists, for proper operation of push-pull systems, pull flow should be approximately two times the push flow. In addition, the flows should produce adequate capture velocities and no other fan or air draft should be interfering with the push-pull ventilation system.

Please initiate actions necessary to correct the cited and submit a written response to this Violation Notice by March 7, 2011, (which coincides with 21 calendar days from the date of this letter). The written response should include: the dates the occurred; an explanation of the causes and duration of the ; whether the ongoing; a summary of the actions that have been taken and are proposed to be taken to correct the and the dates by which these actions will take place; and what steps are being taken to prevent a reoccurrence.

If Sun believes the above observations or statements are inaccurate or do not constitute violations of the applicable legal requirements cited, please provide appropriate factual information to explain your position.

Thank you for your attention to resolving the cited above and for the cooperation that was extended to me during my inspection of Sun. If you have any questions regarding the or the actions necessary to

bring this facility into compliance, please contact me at the number listed below or the DNRE, Air Quality Division (AQD),Southeast Michigan (Warren) District Office , 27700 Donald Court, Warren, Michigan 48092-2793.

Sincerely,

Iranna Konanahalli

Air Quality Division
586-753-3741

ISK:VLL

cc: Mr. Jim Miller, Safety, Environmental and Purchasing Manager, Sun Steel Treating, Inc.
Ms. Teresa Seidel, DNRE
Mr. Thomas Hess, DNRE
Mr. Christopher Ethridge, DNRE
Mr. Stephen Weis, DNRE

November 1, 2006

CERTIFIED MAIL

Mr. Jim Miller
Safety, Environmental and Purchasing Manager
Sun Steel Treating, Inc.
550 Mill Street
P.O. Box 759
South Lyon, Michigan 48178-0759 SRN: B8851, Oakland County

Dear Mr. Miller:

LETTER OF VIOLATION

On October 13, 2006, the Department of Environmental Quality (DEQ), Air Quality Division (AQD), conducted an inspection of your facility located at 550 Mill Street, South Lyon, Michigan 48178-0759. The purpose of this inspection was to determine your facility's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451).

During the inspection, the following air pollution violations were identified:

Process Description	Rule/Permit Condition Violated	Comments
8 Molten Salt Baths	Permit to Install No. 811-89, Special Condition 15 & 17	8 molten salt bath capture systems were not operating properly resulting in visible emissions. One of 8 molten salt bath capture systems

	Permit to Install No. 477-81, Special Condition 15 &16	was not capturing fumes at all because the ventilation slots were plugged.

On October 13, 2006, the AQD staff observed operation of the 8 molten salt baths while the fumes emissions capture systems were malfunctioning and the fumes were not delivered to the control devices, two dust collectors; the fumes were escaping to the plant area as indicated by visible emissions. One of 8 molten salt bath capture systems was not capturing fumes at all because the ventilation slots were plugged. This constitutes a violation of Act 451, Rule 910, which requires that air-cleaning devices, including an emissions capture system, shall be installed, maintained, and operated in a satisfactory manner and in accordance with the administrative rules and existing law.

A push-pull ventilation system works well for a molten salt bath. Pursuant to the American Conference of Governmental Industrial Hygienists, for proper operation of push-pull systems, pull flow should be approximately two times the push flow. In addition, the flows should produce adequate capture velocities and no other fan or air draft should be interfering with the push-pull ventilation system.

You should immediately initiate necessary actions to correct the cited violations. Additionally, please submit a report of your program for compliance with Rule 336.1910 by December 1, 2006. At a minimum, this report should explain the causes and duration of the violation, whether the violation is ongoing, remedial action taken, and what steps are being taken to prevent a reoccurrence. If the violation is not resolved by the date of your response, describe what equipment you will install, procedures you will implement, processes or process equipment you will shut down, or other actions you will take and by what dates these actions will take place.

Notwithstanding your response to the preceding citations, the AQD may initiate further enforcement action to address violation of state and federal Clean Air Acts, rules and regulations.

Thank you for your attention to resolving the violation cited above and for the cooperation extended to me during my inspection of your facility. If you have any questions regarding the violation or the actions necessary to bring your facility into compliance, please call me at the number listed below.

Sincerely,

Iranna S. Konanahalli

Air Quality Division
586-753-3741

ISK:JMS

cc: Mr. Gerald Avery, DEQ
Mr. Thomas Hess, DEQ
Ms. Teresa Seidel, DEQ

Mr. Christopher Ethridge, DEQ
Mr. Richard Taszreak, DEQ

NAME [signature] DATE 8/17/2017 SUPERVISOR [signature]