

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

N047846701

FACILITY: Atmosphere Annealing, LLC Lansing Bassett Facility		SRN / ID: N0478
LOCATION: 1801 BASSETT ST, LANSING		DISTRICT: Lansing
CITY: LANSING		COUNTY: INGHAM
CONTACT: Larry Feldkamp , Electrical Supervisor		ACTIVITY DATE: 10/19/2018
STAFF: Michelle Luplow	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled, unannounced inspection to determine compliance with PTI No's 88-16, 473-97A, and 1270-91.		
RESOLVED COMPLAINTS:		

Inspected by: Michelle Luplow

Personnel Present: Larry Feldkamp, Electrical Supervisor (larry.feldkamp@premierthermal.com)  
Ron Sturdivant, Production Manager (ron.sturdivant@premierthermal.com)

**Purpose**

Conduct an unannounced, scheduled compliance inspection of Atmosphere Annealing to determine compliance with PTI No's 1270-91, 473-97A, and 88-16. PTI 88-16 was issued after the last inspection in 2015, and therefore particular attention was paid to compliance with PTI 88-16 for the anhydrous ammonia tank.

Particular attention was also paid to whether Atmosphere Annealing had been using PFOS (perfluorooctane sulfonic acid) or PFAS (perfluoroalkyl and polyfluoroalkyl substances) chemicals as fume suppressants for their EUCOAT line.

**Facility Background**

Atmosphere Annealing's predominant industry is heat treating surfaces for forging companies, which includes phosphate coating of parts and ammonia heat treating.

I asked both Ron Sturdivant, Production Manager, and Larry Feldkamp, Electrical Supervisor, if Atmosphere Annealing is currently using or has used in the past any demisters, defoamers, mist suppressants, wetting agents, or surfactants as a form of fume suppressant (and can contain PFOS/PFAS compounds) on the EUCOAT line, but both agreed that they do not use these types of chemicals.

**Inspection**

I arrived at Atmosphere Annealing at approximately 8:00 a.m. October 19, 2018 and met with Ron Sturdivant and Larry Feldkamp. I provided R. Sturdivant with a January 2017 Permit to Install Exemptions handbook and explained to him that any installations should be reviewed for exemption and if they do not meet the exemption a PTI must be applied for.

L. Feldkamp and R. Sturdivant provided with me a tour of the facility, which included observation of the permitted pieces of equipment.

Table 1 contains a list of all permitted and exempt equipment which I identified during the inspection.

**Table 1.** Equipment located onsite

Unit	Description	PTI/ Exemption	Compliance Status
Hardening/Tempering Line	Holcroft CJ-4253 Continuous Atmosphere Hardening and Tempering oil quench furnaces	PTI 1270-91	
EUCOAT	Metal Heat Treating & Phosphating  Tank 2A (cleaner 1)  Tank 2B (cleaner 2)	PTI 473-97A	

	Tank 3 (Hot water rinse) Tank 4 (hot water rinse) Tank 5A (sulfuric acid) – wet scrubber Tank 5B (sulfuric acid) – wet scrubber Tank 6 (water rinse) Tank 7 (hot water rinse) – wet scrubber Tank 8A (phosphate) – wet scrubber Tank 8AA (phosphate) – wet scrubber Tank 8B (phosphate) – wet scrubber Tank 9 (water rinse) Tank 10 (water rinse) Tank 11 (neutralizer) Tank 12A (lube) Tank 12B (lube) Tank 12C (polymer) Tank 12D (oil)		
EU AMMONIA 01	1,000-gallon NH3 storage tank used as a process gas in Bell Annealing furnace	PTI 88-16	Non-Compliance
Natural gas-fired Boiler 8.37 MMBtu/hr	Used for hot water/steam to EUCOAT  No dual fuel capability; runs only on natural gas	Rule 282(2)(b)(i)	Compliance
2 Shot Blasters	Both units vented only to the in-plant dust collectors. No external ventilation from dust collectors	Rule 285(2)(l)(vi)	Compliance

**PTI 1270-91**

This permit covers the atmosphere hardening and tempering line.

Visible emissions from this process are limited to 20% opacity. While onsite outside, I did not see any signs of opacity from any of the stacks at Atmosphere Annealing.

Atmosphere Annealing is also required to notify and get approval for the use of a substitute fuel in the burners and protective atmosphere. The hardening and tempering line was permitted with natural gas as the fuel source. R. Sturdivant verified that they still only use natural gas in this process.

*Atmosphere Annealing is in compliance with all the conditions in PTI 1270-91.*

**PTI 473-97A**

EUCOAT, a metal heat treating and phosphating line, is permitted under 473-97A. It consists of 18 total tanks, where the sulfuric acid tanks (5A, 5B), phosphate tanks (8A, 8AA, 8B), and hot water rinse tank (7) are vented to a wet scrubber.

Material Limits & Recordkeeping

(Note, there are no emission limits for EUCOAT at this time)

Atmosphere Annealing is limited to 34,000 lbs of coated parts per hour on a monthly average hourly throughput rate and they

are required to keep monthly and 12-month rolling records of the pounds of parts coated in EUCOAT. R. Sturdivant said EUCOAT is operated 5 days per week, 24 hours per day, which equates to approximately 480 hours of operation per month, conservatively. L. Feldkamp provided me with monthly records from October 2017 – September 2018 for lbs of parts coated on a monthly basis (see attached). Based on monthly operating hours and pounds of production, the month with the highest lbs of coated parts produced was 12,283 lbs in May 2018, which is under the 34,000 lb limit.

#### Design/Equipment Parameters

The wet scrubber is required to be installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes operating the scrubber between 0.5 and 1.5 inches water gauge. The pressure drop recorded during the inspection was 1 inch H<sub>2</sub>O, within the permitted pressure drop range.

Atmosphere Annealing conducts monthly calibration checks on the pressure drop monitor for the wet scrubber; however, during the inspection we noted that the last time the monitor was calibrated was August 5, 2018 (with a marked due date of September 25, 2018). Within the same day as the inspection, Atmosphere Annealing recalibrated the monitor and L. Feldkamp sent me photographic evidence that the instrument was calibrated on October 19, with a new calibration due date of November 19<sup>th</sup>. Although the monitor had not been satisfactorily calibrated (maintained) within a 2-month period, because Atmosphere Annealing fixed the problem the same day as the inspection, I will not be sending a violation notice.

L. Feldkamp said that they also conduct weekly preventative maintenance on the system which includes checking to ensure that the pressure drop is within the permitted pressure drop range.

The gauge that measures pressure drop is also required to sound an alarm when the pressure drop is below 0.5 inches or exceeds 1.5 inches water. L. Feldkamp demonstrated to me that the alarm works by removing the plastic tubing connected to the gauge, causing the pressure to drop below 0.5 inches water. The alarm sounded at that point, demonstrating compliance with this condition.

#### Monitoring & Recordkeeping

Atmosphere Annealing is required to monitor the chemical concentrations of Tanks 5A, 5B, 8A, 8AA, and 8B on a daily basis, and are required to also record the daily chemical concentrations for each day EUCOAT operates.

L. Feldkamp provided me with the daily records for the entire month of August 2018 on their "Titrations" documents. All tanks are accounted for on these documents. Iron and sulfuric acid concentrations are measured in tanks 5A and 5B; iron and phosphate concentrations are measured in tanks 8A and 8AA, and phosphate concentration is measured in tank 8B.

*Atmosphere Annealing is in compliance with all requirements in PTI 473-97A.*

#### **PTI 88-16**

EU-AMMONIA-01 is permitted under PTI 88-16 for a 1,000-gallon anhydrous ammonia tank used to supply process gas to the Bell Annealing furnace. L. Feldkamp said that this unit was installed in 2017, but full production on the Bell Annealing furnace has yet to be reached, and therefore L. Feldkamp said the tank has only been filled once since its installation.

A site-specific permit, rather than a General Permit to Install, was issued for this unit because it could not meet the 500' setback distance from residences. The nearest residence is 280 feet. See attached map for location.

*There are currently no Emission Limits, Material Limits, Testing/Sampling Requirements, or Stack/Vent Restrictions for EU-AMMONIA-01.*

#### Process/Operational Restrictions & Monitoring/Recordkeeping

Atmosphere Annealing is required to have an emergency response plan that has been approved by the local fire department or county emergency response agency that is implemented and maintained, as well as reviewed annually by the local fire department or emergency response agency every spring. Records of the annual review and approval of the emergency response plan are also required to be kept.

At this time Atmosphere Annealing does not have an emergency response plan for the anhydrous ammonia tank, thus a plan has not been reviewed by their local emergency planning committee (LEPC), and therefore no records have been kept on the annual review. A violation notice will be sent to address these deficiencies.

All transfer operations are required to be conducted by reliable people properly trained and made responsible for proper compliance with all applicable procedures. L. Feldkamp said that Airgas is the company who delivers the anhydrous ammonia and also conducts the transfer operations. He and other Atmosphere Annealing personnel are on standby, witnessing the transfer also. One of Airgas' specialties is anhydrous ammonia and therefore are specialists in anhydrous ammonia transfer operations, who according to Airgas' website, follow all the latest OSHA safety guidelines.

#### Design/Equipment Parameters

The anhydrous ammonia tank is required to be equipped with a remotely operated internal or external positive shut-off valve

to allow access for emergency shut-off of all flow from the tank. L. Feldkamp stated that they have two solenoid controllers located within the building that are used to shut off the tank during an emergency.

All hoses on the tank are required to be replaced every 5 years (or sooner if there is evidence of damage or deterioration). There are currently no hoses equipped to the tank. All anhydrous ammonia transfer from the tank to the process is done through metal piping.

All vapor and liquid lines, exclusive of couplings, requiring venting after ammonia transfer are required to be vented through a water trap of 55 gallons minimum size. L. Feldkamp said he spoke with Airgas who stated that they do not bleed off any lines after transfer.

Atmosphere Annealing is required to conspicuously place an emergency contact sign at the facility entrance stating the emergency phone numbers for the owner, primary operator, local and state police, local fire department and ambulance service. They did not have a sign posted during the inspection, however, before the end of the day they sent me photographic evidence that they placed an emergency contact list on their facility entrance door. I explained that this will not fully meet the intent of the requirement, but that it sufficient has a temporary substitution. L. Feldkamp stated they would be installing a 18" x 24" sign at the entrance of the plant containing the same information that the sheet of paper posted on the door contains. Failure to do so could result in a future violation. See attached map for proposed location of the emergency contact sign.

#### Reporting

I reminded L. Feldkamp and R. Sturdivant that Atmosphere Annealing is required to notify the Pollution Emergency Alert System (PEAS) and/or the AQD District Supervisor immediately if there is any abnormal release of anhydrous ammonia from EU-AMMONIA-01.

I will request that I be informed of the next anhydrous ammonia tank-filling event so that I may watch the process and ensure that Atmosphere Annealing is in compliance with the permit requirements for this unit.

#### **Safety Precautions During Inspection**

Hard hat, safety glasses, hearing protection and a high visibility vest are essential for inspection of this facility.

**Compliance Statement:** Atmosphere Annealing is currently in non-compliance with PTI No 88-16 for failure to procure and implement an emergency response plan, which includes review and approval of the plan by the LEPC every spring (annually). A violation will be sent to address this non-compliance issue.

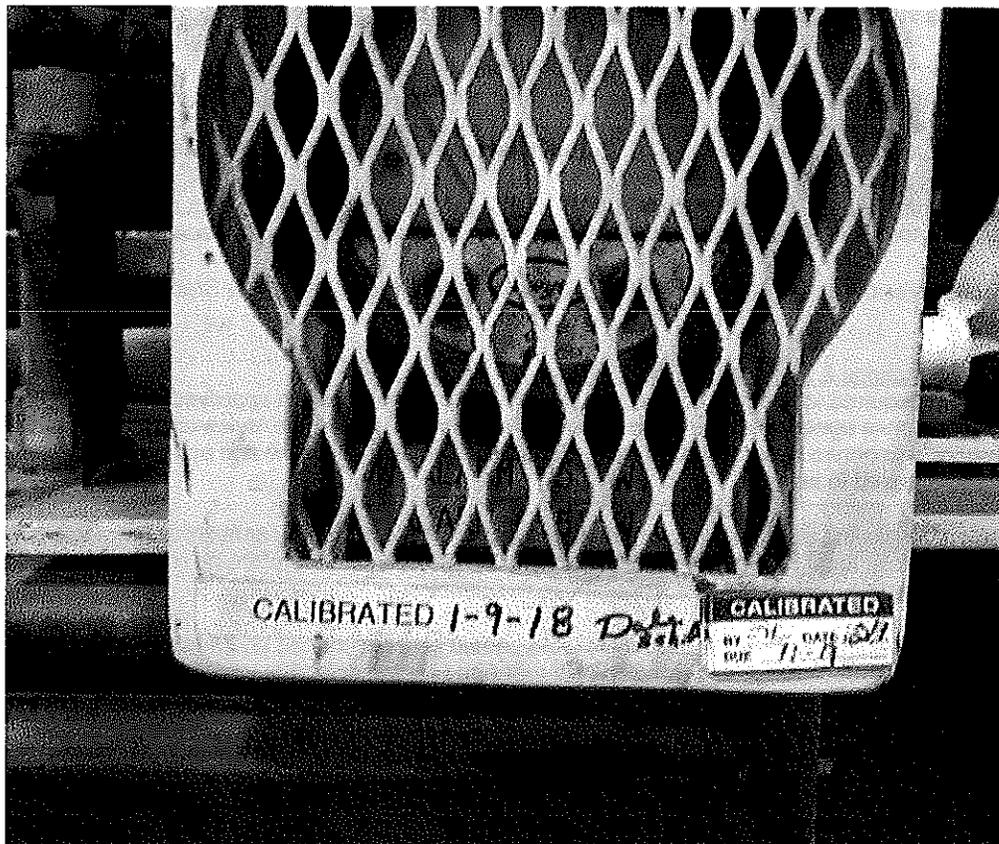
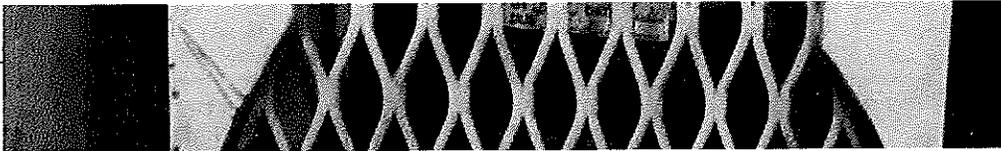


Image 1(EU



hand sticker)

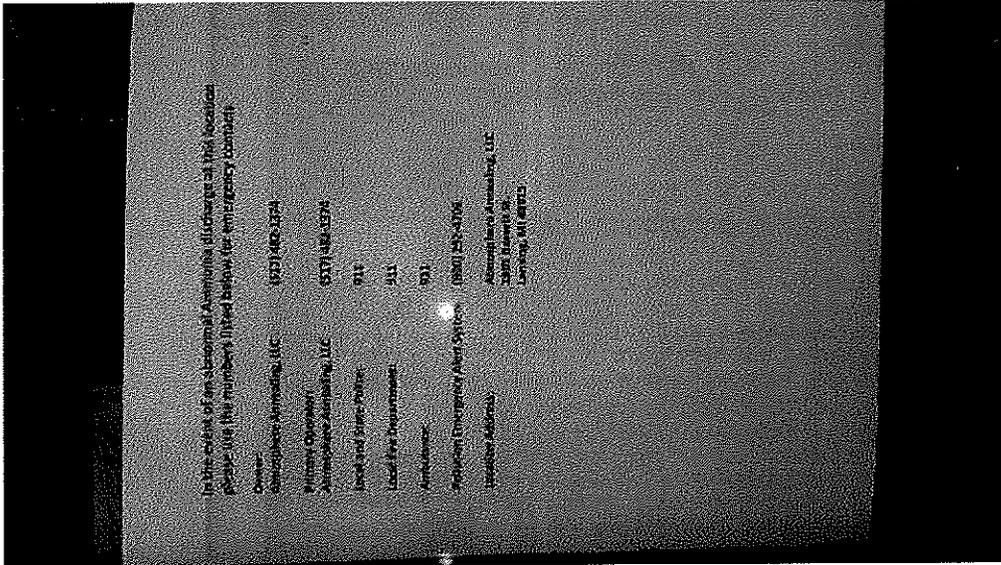


Image 2(Emergency sign) : Emergency contact sign posted at door entrance of facility for temporary use.



**Image 3(Site Map)** : Contains locations for the anhydrous ammonia tank and proposed emergency contact sign location.

NAME M. J. [Signature]

DATE 11/2/18

SUPERVISOR B. M. [Signature]