

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

N 3922
FY 2018 Insp-

N392242753

FACILITY: DIAMOND AUTOMATION INC		SRN / ID: N3922
LOCATION: 23400 HAGGERTY RD, FARMINGTN HLS		DISTRICT: Southeast Michigan
CITY: FARMINGTN HLS		COUNTY: OAKLAND
CONTACT:		ACTIVITY DATE: 11/30/2017
STAFF: Iranna Konanahalli	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: 2 FY 2018 self-initiated inspection of Diamond Moba Americas ("Diamond")		
RESOLVED COMPLAINTS:		

Diamond Moba Americas (N3922) –DBA since January 12, 2009
23400 Haggerty Road
Farmington Hills, Michigan 48335-2613

Phone: 248-476-7100

Ownership: Diamond Automation, Inc. is a legal name. Food Processing Systems, Inc. (FPS) owns Diamond Automation, Inc. Diamond Systems, Inc was a DBA before January 12, 2009; however, Diamond Moba Americas is a DBA since January 12, 2009. Soon DBA will be Moba.

PTI void: Permit-to-Install No. 534-93 dated August 11, 1993, for powder coating process (voided 6/17/2005 per May 10, 2005, inspection). Based upon FY 2005 inspection, all sheet metal used in the egg processing machines is stainless steel (SS), which need not be painted.

Rule 336.1285

On November 30, 2017, I conducted a level 2 **FY 2018 self-initiated inspection** of Diamond Moba Americas ("Diamond") located at 23400 Haggerty Road, Farmington Hills, Michigan 48335. The inspection was conducted to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451; and Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) rules.

During the inspection, Mr. Fred (Butch) Pack (Phone: 248-476-7100-ext. 3183 or 248-919-5140; Fax: 248-476-0849; E-mail: Fred.Pack@dma-group.com), Manufacturing Engineer, assisted me.

Mr. Jon Robinson (Phone: 248-476-7100-ext. NA or 248-919-5146; Fax: 248-476-0849; E-mail: Jon.Robinson@dma-group.com), changed his position from Director of Production and Integration to Project Manager.

Mr. David Lewis (Phone: 248-476-7100-ext. NA; Fax: 248-476-0849; E-mail: David.Lewis@dma-group.com), Quality Engineer, separated about November 2016. Mr. Jay Smith (Phone: 248-919-5151; Fax: 248-476-0849; E-mail: Jay.Smith@dma-group.com), Process Improvement Manager, separated about September 2011.

Diamond Moba Americas is a sales, service and support organization for the egg grading and packing industry in North and South America. It represents two innovative and leading brands of equipment: Diamond and Moba. This organization, as they merged about 2009 as a resolution of patent litigation, combines the operations of Diamond Automations, Inc. of Farmington Hills, Michigan, and Moba USA, Inc. of Lancaster, Pennsylvania. Food Processing Systems, Inc. (FPS) owns Diamond Automation, Inc. Soon, Moba will be a DBA, a change from DBA Diamond Moba Americas.

Diamond is a Michigan corporation that manufactures and sells high-speed egg processing machines to sort batches of eggs into different categories by weight and quality. Diamond developed these machines during the early 1980s with technology that significantly increased the processing speed for eggs. Diamond obtained various patents covering aspects of that technology. Diamond supports egg grading and packaging industry in North and South Americas. Equipment includes egg washers, dryers, detection, identification, packaging, breaking into liquid eggs, etc. Moba is headquartered in Netherlands. Diamond Moba practices Lean Kaizen methods.

The "front end" process first washes the eggs, and then introduces them into a candling station where a high intensity light source checks the eggs for defects such as blood spots or cracks. The process then weighs the eggs. A computer stores this information for use in sorting the eggs at a later point. Each egg is identified electronically using an unique electronic image signature.

Diamond and FPS were in patent infringement litigation before the merger. Diamond claimed its patents were infringed upon.

Diamond makes equipment for poultry industry for egg production. Diamond makes various egg production related machines, all made of stainless steel. Diamond designs, builds and assembles the machines for egg production: chicken-to-grocery cartons. After converting to "stainless steel egg processing equipment only", a powder coating booth was not required; and it was removed about 1999 as confirmed by FY 2005 inspection.

Liquid egg processing equipment is sold under the brand name Diamond-Moba; "OvaPro" trade name has not been used since March 2011.

For many years, Diamond removed all equipment, such as CNC machines, relating to machining, fabrication, grinding, polishing as it dedicated its operations to "*assembly only*"; all parts were then imported from other facilities. However, in March 2011, Diamond-Moba started SS sheet-metal work again as it wanted restart manufacturing. As a result, laser cutting, polishing, sanding, etc. equipment were added. In addition, about October 2017, two (2) CNC machines were installed to improve delivery time on service parts; "service parts" is a high profit-margin business.

CNC Machines (2)

About October 2017, two (2) CNC machines were installed to improve delivery time on service parts: one Mill (Haas V4 Vertical CNC Machine) and one Lathe (Haas ST10 Horizontal CNC Machine). Each CNC machine is equipped with see-through enclosure such that particulate emissions, if any, do not escape the machines. Water-based coolant is used in cutting areas to cool the tools to protect them from damage due to high temperatures. The coolant fluid is recycled upon aeration to prevent anaerobic bacterial action. Anaerobic decomposition causes "stinky" odor. No exhaust to outside ambient air and in-plant air as

well. The CNC machines (2) are exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(l).

Laser-cutting machine

CY-Laser (www.cy-laser.com, High Brilliance Laser Systems) cutting machine with a dedicated Donaldson Torit Cartridge system is present. Six (6) cartridge filters in two stages are present: four (4) on dirty air intake side and two (2) on clean air exhaust side. The filters are cleaned once every five minutes by pulse-jet air. The metal particles are collected in a 30-gallon drum, which is emptied once in about six months. The filter system is equipped with fire suppressant water spray. Filtered air is exhausted to in-plant environment. The laser cutting machine is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(l).

Polishing and sanding machine

A sanding and polishing machine (Model # DC 5500, Serial # 3228-008), by Midwest Sand-right Company (Minneapolis, Minnesota), sands and polishes SS metal sheets. Particulate emissions are controlled by a box equipped with baffles and standing water. The baffles together with water curtain capture sanding particulate matter and retain captured particles in water, which needs to be disposed of periodically. Filtered air is exhausted to in-plant environment. The machine is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(l).

Sludge and dirty water removed once in about one year. Also, make-up water is added to compensate evaporative losses.

Welding station

One welding station is present. Particulate laded exhaust is treated by the above water curtain control equipment with baffles and water (Sand-right Company). Filtered air is exhausted to in-plant environment. The welding station is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(i).

Belt sanders

Belt sanders are not equipped with any air pollution control devices. They release exhaust to in-plant environment.

The sanders are exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(l).

PTI No. 534-93: Powder coating

Powder coating booth (PTI No. 534-93) was torn down about 2005. Paint line removal could be accomplished because Diamond decided to make "stainless steel only" equipment. However, powder coating is now exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1287(d) subject the conditions in the rule.

AccurPress

Accell AccurPress Brake 245-ton machine forms stainless steel sheet metal to a desired form and shape by application of pressure on the sheet. The process hardly produces any pollution

and is not equipped with any air pollution control device. The press exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(l).

Carpenter saw machines

About 2015-16, Carpenter saw machines were installed. One Dust-Dog (V-Weave Filter Technology) pleated filter canister unit is installed. Saw dust is collected in a 55-gallon plastic bag. Filtered air is exhausted to in-plant environment. The machine is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(l).

This V-Weave Filter Technology combines cyclone and filtration technologies. Vortex removes large / heavy particles via inertial forces and thus reducing load and "wear and tear" on pleated filter. I asked Mr. Butch to ensure that the Dust-Dog unit has sufficient capacity for all units to be operated simultaneously.

Egg-breaker machines

One egg-breaker machine was assembled during the previous inspection. The machine breaks 600 cases per hour; based upon 36-dozens per case, 259,000 eggs per hour.

During the FY 2018 inspection, OMNIA PX 700 machine was assembled. The assembly was completed in November 2017 from the parts built / made in Netherland. The machine breaks 700 cases per hour; based upon 36-dozens per case, 302,400 eggs per hour. The customer is being trained about the machine.

Space heater boiler is rendered inoperable and the heat to the building is now supplied by roof-top space heaters, which are natural gas fired. Mr. Smith stated that after converting to 100 percent stainless steel machines, Diamond removed coating booth and associated equipment and processes. Therefore, PTI No. 534-93 dated August 11, 1993, is voided.

Conclusion

Diamond Systems, Inc. appeared to be in compliance Rule 285. The powder coating booth is permanently removed.

NAME



DATE



SUPERVISOR

