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

N214834340

FACILITY: Key Plastics L.L.C. - Howell Plant		**SRN / ID:** N2148
LOCATION: 1301 McPherson Park Dr., HOWELL		**DISTRICT:** Lansing
CITY: HOWELL		**COUNTY:** LIVINGSTON
CONTACT: Tim Lane , Manufacturing Engineering Manager		**ACTIVITY DATE:** 04/26/2016
STAFF: Daniel McGeen	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Partial Compliance Evaluation (PCE) activities, conducted as part of a Full Compliance Evaluation (FCE): 1. unannounced, scheduled inspection, and 2. review of records and operational logs.		
RESOLVED COMPLAINTS:		

On 4/26/2016, the Department of Environmental Quality (DEQ), Air Quality Division (AQD), conducted an unannounced, scheduled inspection of the Key Plastics L.L.C. Howell plant. This was conducted as a Partial Compliance Evaluation (PCE) activity, part of a Full Compliance Evaluation (FCE). Another PCE activity conducted todays was review of recordkeeping.

Facility environmental contacts:

Tim Lane, Manufacturing Engineering Manager; 517-546-1900, ext. 25296; tlane@keyplastics.com

George McLaughlin, Health, Safety & Environmental Coordinator; 517-546-1900, ext. 25238; gmclaughlin@keyplastics.com

Facility description:

Key Plastics LLC's Howell plant creates injection molded plastic parts for the auto industry, and coats them. They also perform some minor assembly.

Emission units:

Emission unit ID	Emission unit description	Control equipment	Permit to Install or exemption	Operating status
EU-PBPLINE2	Plant 2 consists of a plastic parts coating system, which includes a paint mix room, water-based power wash system, seven downdraft water wash spray booths, and two bake ovens with associated control equipment	Water wash control for spray booths, fabric filter collector and subsequent rotary zeolite concentrator and recuperative thermal incinerator for the ovens	275-02	Compliance
2 dry filter paint spray booths	Two paint spray booths, considered Rule 287(c) exempt, which have been removed from plant	Dry particulate filters	Rule 287(c)	Removed from plant
EU-INJECTMOLD	31 plastic injection molding processes		Rule 286(b)	Compliance
EU-SPACEHEATERS	All plant fuel burning equipment (space heaters, booth ovens, recuperative thermal incinerator)		Rule 282(b)(i)	Compliance
FG-FACILITY	All equipment in the stationary source including equipment covered by other permits, grandfathered equipment and exempt equipment		275-02	Compliance
EUBURNOFF	A batch type natural gas-fired burn-off oven with a secondary chamber or afterburner, used to remove cured paints from metal parts by thermal decomposition in a primary chamber.	Secondary chamber/afterburner	58-15	Unknown

Regulatory overview:

This facility has a synthetic minor permit, Permit to Install (PTI) No. 275-02, which contains restrictions that limit the facility's Potential to Emit (PTE) of Volatile Organic Compounds (VOCs) to below the 100 ton major source threshold. Major sources of criteria pollutants, such as VOCs, are required to obtain a

Renewable Operating Permit (ROP). The PTI also limits the plant's PTE for Hazardous Air Pollutants (HAPs), to less than the major source threshold of 10 tons per year (TPY) for any single HAP, or 25 TPY for total HAPs.

Additionally, Key Plastics has a PTI for a burnoff oven, to remove paint from metal coating racks. The unit has a secondary chamber with a design heat input capacity slightly higher than the cutoff point in the applicability criteria for the general PTI for a burnoff oven, so a site-specific permit was issued.

Fee status:

This facility is not considered fee-subject, for the following reasons. Because it is not a major source for criteria pollutants, it is not classified as Category I. Additionally, because it is not a major source for Hazardous Air Pollutants (HAPs), and is not subject to federal New Source Performance Standards, it is not classified as Category II. Finally, because it is not subject to federal Maximum Achievable Control Technology standards, it is not classified as Category III. This facility reports emissions annually, through the Michigan Air Emissions Reporting System (MAERS).

Recent history:

The Key Plastics Howell plant was once known as Libralter Plastics. AQD received frequent odor complaints regarding this source, from 1995 through 1999. Following the replacement of the original recuperative thermal incinerator with a more advanced unit, in 2000, and an associated increase in stack height of 13 feet, the number of odor complaints greatly decreased.

The most recent complaint received had been in 2010, until an odor complaint was received from a nearby school, in late March, 2016. Odor evaluations downwind of Key Plastics on 4/5 and 4/5/2016 found odors in a residential neighborhood not far from the school, but they did not appear to match odors which I detected much closer to Key Plastics and an adjacent facility.

Location:

The Key Plastics Howell plant is in an industrial park on the west side of Howell. Roughly 400 feet to the north and east is a large subdivision, so odorous emissions woud have the potential to impact neighbors. Several hundred feet to the southeast, south, and west are other industries.

Arrival:

This was an unannounced inspection. The DEQ was represented by myself, and by Ms. Rebekah Banas, a DEQ intern from the Office of Environmental Assistance OEA), who has done some work for AQD.

At 1:30 PM, we arrived in the parking lot of Key Plastics. No visible emissions were visible from exhaust stacks or the roofline of the plant. There was a barely detectable (level 1 on the 0 to 5 odor scale used by AQD) odor of paint in the parking lot, which fluctuated to a level 2 (distinct and definite) paint odor. Weather conditions were cloudy and 50 degrees F, with winds out of the north northeast, at 10-15 miles per hour.

We met with Mr. Tim Lane, Manufacturing Engineering Manager, and Mr. George McLaughlin, Health, Safety & Environmental Coordinator. I provided them with a copy of the DEQ brochure *Environmental Inspections: Rights and Responsibilities*, and a copy of the Boiler NESHAP card, per AQD procedure.

Inspection:

We observed assembly operations within the plant. These involve mechanical assembly, with installation of pins and parts. There appeared to be no air emissions from these processes. Processes involving flaring of metal (squeezing the metal, to impart a slight change of shape to it), could be considered exempt under Rule 285(l)(l), for bending or forming or pressing of metals.

EU-PBPLINE2; PTI No. 272-02:

The power wash system has 5 stages, and operates at a pressure of 15 pounds per square inch (psi). Stage 1 is the pre-clean; stage 2 contains the cleaner itself (surfactant); stage 3 is a rinse stage with city-supplied water; stage 4 contains previously used reverse osmosis (RO) rinse water; stage 5A contains recirculated RO rinse water (cleaner than in stage 4); and stage 5B, the Halo rinse, contains virgin RO water, plus Aqua Shed, a rinse agent which prevents water spots on parts. They try to reuse the RO water, as much as they can. Natural gas is used to heat the water in the wash system. It is not uncommon to see a steam plume from the two booth exhaust stacks, during the cold months of the year.

Air nozzles blow water droplets off the freshly washed parts, which then enter a natural gas-fired dry off oven. A tunnel serves as a cool down area for the parts, which are then ready to be primed.

We observed the paint room or paint mix kitchen, where paint travels through paint lines to the spray booths.

The plastic parts coating system consists of manual prime booths 1 and 2, base coat booths 1 through 3, and clearcoat booths 1 and 2.

Prime booths 1 and 2 are manually operated, with two hand held High Volume, Low Pressure (HVLP) spray guns per booth, which apply an adhesion promoter. Parts receive their first coating in booth 1, and their second coating in booth 2. A water wash paint system is used to capture particulate emissions of paint droplets. Air enters through the top of the booths, and is drawn through the water. The parts coated with adhesion promoter pass though a bake oven, where zone 1 is around 210 degrees F, and zone 2 is around 270 degrees F. Prime booth 1 was running, though no parts were running through it, at the moment, while booth 2 was idle. Parts are baked after being primed, we were informed.

Base coat booths 1 and 2 are used for applying color coats to parts, and utilize two robotic, electrostatic spray guns per booth. The part racks are negatively charged, the part are grounded, and the paint is positively charged, so the paint is drawn to the parts, minimizing waste. Base coat booth 3 is used strictly for touching up parts, and is manually operated, with two HVLP guns. It is used only occasionally. Base coat booth 1 was operating during the inspection, while booths 2 and 3 were turned off. Parts are not baked after the base coat, but go to the clear coat booths, we were told, where the clear coat is applied "wet on wet."

Clear coat booths 1 and 2 apply successive layers of clear coat. Each booth uses two robotic, electrostatic spray guns. There is enough of a flash off area after booth 1, to prevent runs when booth 2 applies the next layer of clear coat. Clear coat is used in the automotive industry, as it is more durable and scratch resistant than color coats. After being clear coated, parts are baked.

It is my understanding that the paint spray guns are purged with cleaners, including acetone, by spraying into a funnel. The used cleaning solutions are collected for proper disposal, I was informed. One of the cleaners is a soap, "Chemico 7915," I was informed.

Earlier during the inspection, we observed the area where collected paint solids are removed from the water which circulates through the water wash system. The water can reportedly be reused for 1.5 to 2 years, before needing to be changed out. It is my understanding that they do not use dry filters because they would need to be replaced multiple times per day, due to the large amounts of coatings they apply. I found the odors to be minimal, and only in one small area within the room did I detect an odor which had a slight musty quality to it. A dewatering paper is used to remove water from the sludge, which drip dries, and we were told the sludge is disposed of as a non-hazardous waste.

The control technology for the bake ovens and the paint room is a rotary zeolite concentrator, with recuperative thermal incinerator, preceded by a three stage fabric filter collector. The fabric filter protects the more delicate control devices which follow it from damage that could be caused by airborne particulate matter. Such damage would be extremely costly to repair. The recuperative thermal incinerator is also known as a regenerative thermal oxidizer, or RTO. It is rated at a 90% capture

rate and 95% destruction efficiency, for VOC emissions.

There were no visible emissions from the RTO exhaust stack. I collected data from the controller, as follows:

Desorb setpoint: 355 degrees F

Desorb actual temperature: 334 degrees F

Pressure drop: -3.47 " water column

RTO setpoint: 1,550 degrees F

RTO actual temperature: 1,552 degrees F

PTI No. 275-02 requires a minimum temperature of 1,300 degrees F, so they are well above that.

I observed a weekly circular chart recorder.

The permit contains a required daily maintenance check sheet for the RTO, as Appendix A. It is my understanding that their maintenance department fills out a more detailed maintenance check sheet, every two hours.

Plastic injection modling machines; Rule 286(b):

They now have a total of 31 plastic injection molding machines.

EUBURNOFF; PTI No. 58-15:

The burnoff oven would have qualified for the general permit for burnoff ovens, except for the secondary chamber having a slightly higher heat input capacity than allowed by the general PTI.

We were shown the burnoff oven, which was not running, during the inspection. It was explained to us that the set point for the afterburner is 1,575 degrees F, well above the 1,400 degrees F minimum temperature specified in PTI No. 58-15. I observed a circular recording chart, which showed that recent operations were above 1,500 degrees F, peaking at 1,700 degrees F. The primary burn chamber operates at 800 degrees F, we were told.

I explained that the rain cap on the burnoff oven's exhaust stack may not be in compliance with the permit, which requires the burn-off oven be exhausted unobstructed, vertically upwards. Mr. Lane indicated he had asked someone in the private sector about the rain cap, in the past, and been informed that the cap was far enough above the outlet of the exhaust stack, that it would not obstruct air flow. I indicated that I would discuss this with AQD Permits staff, and determine if the existing rain cap complies with the permit condition. A photo of the rain cap, taken from the parking lot, is attached, for reference.

Recordkeeping:

We reviewed facility recordkeeping, which is kept in an orderly manner in a binder by Mr. McLaughlin, in addition to electronically.

EU-PBPLINE2 VOC daily limit: 662.4 lbs/day

For 1/1 through 3/31/2016, year to date (YTD), the highest value for EU-PBPLINE2 is 252.6 lbs, below the daily limit.

EU-PBPLINE2 yearly VOC limit: 69 tons per year (TPY), on a 12-month rolling average.

As of March 2016, the 12-month rolling average is 23.36 tons, below the yearly limit.

The VOC emissions from purge solvent usage for EU-PBPLINE2 were documented as 3.73%, below the 10% specified in PTI No. 275-02. Mr. McLaughlin showed me the purge solvent report, which is broken down by type of purge solvent or thinner. THe cleaning solutions I saw included acetone, and a soap or surfactant, chemico 7915.

I also observed a paint summary report for March 2016, identifying all paints used, average VOC content, and average VOC content minus water.

FGFACILITY individual HAPs limit: <9.0 TPY

FGFACILITY total HAPs limit <22.5 TPY

The total HAPs emissions for the March, 2016 12-month rolling average were 2.35 TPY. In addition to being below the total HAPs limit, this is below the limit for individual HAPs.

All coatings and all solvents which they have ever used at the site are documented, even if those materials are not currently in use.

Review of the recordkeeping binder showed that they are keeping the following records, in accordance with PTI No. 275-02, Special Condition No. 2.5 (a) through (e), for FG-FACILITY:

- Gallons of each material used.
- Where applicable, gallons or pounds of each material reclaimed.
- HAP content of each material used.
- Individual and aggregate HAP emission calculations determining monthly emission rate in tons per month.
- Individual and aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period.

Review of the recordkeeping binder showed that they are keeping the following records, in accordance with PTI No. 275-02, Special Condition No. 2.6 (a) through (e), for FG-FACILITY:

- Gallons or pounds of each material used.
- Where applicable, gallons or pounds of each material reclaimed.
- VOC content, in lbs/gal or lbs/lb, of each material used.
- VOC emission calculations determingng the monthly emission rate of each in tons per calendar month.
- VOC emission calculations determining the annual emission rate of each in tons per 12-month rolling time period.

MAERS reporting:

The MAERS report submitted for the operating year 2015 passed the audit conducted on 5/13/2016. For 2015, VOC emissions for EU-PBPLINE2 were 24.73 tons, below the permitted VOC limit of 69.0 TPY.

We left the site at 3:10 PM.

Conclusion:

The only instance of noncompliance was the rain cap atop the exhaust stack for the burnoff oven. This violates Special Condition of PTI No. 58-15, which requires that exhaust be discharged unobstructed vertically upwards. Discussion with AQD Permit staff has indicated that rain caps are considered to obstruct airflow, and that a no-loss stack design would be an acceptable resolution. Violation Notice to be sent.

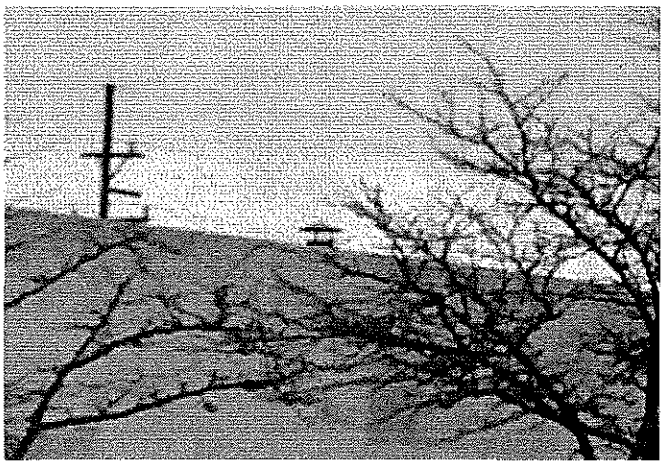

Image 1(Photo 1) : Burnoff oven rain cap.

NAME _____ DATE 6/27/16 SUPERVISOR B.M.