DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N753458181

FACILITY: WIL-KAST INC		**SRN / ID:** N7534
LOCATION: 8025 S DIVISION, GRAND RAPIDS		**DISTRICT:** Grand Rapids
CITY: GRAND RAPIDS		**COUNTY:** KENT
CONTACT: Curt Wilkerson , Owner		**ACTIVITY DATE:** 05/20/2021
STAFF: Eric Grinstern	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MINOR
SUBJECT: On-site, unannounced inspection		
RESOLVED COMPLAINTS:		

FACILITY DESCRIPTION

Wil Kast is an aluminum and zinc die casting facility. The facility currently has operations in three buildings located at 8025 South Division, Grand Rapids (Cutlerville). The facility's operations are organized as follows: Building 1 – Aluminum Casting, Building 2 – Zinc Casting, Building 3 – CNC/Shipping. The facility is in the process of constructing a building on Byron Center Commerce Dr. SW, Byron Center, that will also house manufacturing operations.

At the facility, AQD staff met Curt Wilkerson, Operations Manager. Mr. Wilkerson accompanied staff on a tour of the facility. Mr. Wilkerson provided contact information for the Die Cast Production Manager, Keven Gibson, for detailed questions regarding die casting operations. This was an unannounced inspection. During the inspection, face masks were worn, and social distancing was practiced.

REGULATORY OVERVIEW

The facility is a minor source that currently holds one air use permit, PTI No. 90-06. PTI No. 90-06 permits two natural gas-fired zinc melting furnaces (EUZNFURNACES), each with a holding capacity of 15,750 pounds. Only one of the permitted zinc melting furnaces remains at the facility. The facility has additional zinc and aluminum casting machines, holding furnaces, aluminum melting furnaces, and buffing operations, for which the compliance status is evaluated below.

COMPLIANCE EVALUATION

Zinc Casting

Building 2 contains zinc casting operations. The facility holds one permit for the zinc casting operation (PTI No. 90-06). The permit addresses two melt furnaces, of which only one remains onsite. The permit lists the furnace holding capacity at 15,750 pounds; however, the furnace currently has a #43 crucible, which has a capacity of 14,586 pounds. As long as the crucible capacity is less than the permitted size, this is not a compliance issue. The facility calls the gas-fired crucible furnace the "remelt furnace". The remelt furnace is equipped with a hood and stack. Spec zinc and internal runaround is processed in the furnace. Molten zinc from the remelt furnace is supplied to holding pots on five die casting lines (Casters No. 2, 3, 5, 6 & 7) by ladle. The gas-fired holding pots have a capacity of 650 pounds.

Permit No. 90-06 contains two special conditions requiring that the furnace only burn natural gas and that no flux material is used. No other gas source besides natural gas was observed during the inspection and no flux is used in the zinc furnace.

Building 2 contains a total of nine die casting lines. As was previously mentioned, molten zinc from the remelt furnace is ladled to the holding pots on Casters No. 2,3,5,6 &7. Spec ingot is hand fed to the holding/melting pots on Casters No. 1,4,8 & 9. The gas-fired holding/melting pots on Casters 1 &4 each have a capacity of 650 pounds. The holding/melting pots on Casters 8 & 9 are electric and have a holding capacity of 500 pounds.

The holding pots associated with Casters 2,3,5,6 &7, as well as the holding/melting pots associated with Casters 1,4,8 & 9 are exempt from the requirement to obtain a permit to install under Rule 282(2)(a)(iv), because they have a capacity under 1,000 pounds and flux is not used.

The casting machines are exempt from permitting under Rule 284(2)(l)(ii). Each of the casting machines use a die spray release coating agent. The die spray release coating agent is exempted under Rule 287(2)(c).

<u>Aluminum Casting</u>

Building 1 contains aluminum casting operations. The facility has one large aluminum reverb furnace that is equipped with a hood and stack. This is a Lindberg gas-fired furnace with a holding capacity of 28,000 pounds. The facility stated that only nitrogen gas is used in the system, no reactive fluxes.

The reverb furnace conveys molten aluminum via a launder system to the electric holding pots on three die casting lines. The pots have a holding capacity of 1,400 pounds.

Additionally, there are two lines that have dedicated gas-fired melting furnaces that supply molten aluminum to casting lines. The line with a Lindberg furnace has a holding capacity of 8,500 pounds. The line with a Stotek furnace has a holding capacity of 2,400 pounds.

Adjacent to the large 28,000 pound capacity aluminum reverb furnace is an uninstalled Stotek gas -fired melting furnace. The furnace has a holding capacity of 2,400 pounds.

Within Building 1 are three buffing stations that vent to a small baghouse that vents internally. The buffing operation is exempt from permitting under Rule 285(2)(l)(vi)(B).

The following furnaces currently do not have a permit to install, but should have obtained one prior to installation:

28,000-pound capacity gas-fired Lindberg reverb furnace

8,500-pound capacity gas-fired Lindberg furnace

2,400-pound capacity gas-fired Stotek furnace

(3) 1,400-pound capacity holding furnaces

Additionally, the associated five (5) casting machines and laundering system should have obtained permits to install prior to installation since they were installed as part of one project with the furnaces.

CNC/Shipping

Building 3 contains CNC and shipping operations. The CNC operation is exempt from permitting under Rule 285(2)(l)(vi).

Miscellaneous

Cold Cleaners – Solvent cold cleaners were observed onsite. The observed cold cleaners are exempt from permitting under Rule 281(2)(h)

New Building

The facility is in the process of constructing a new building on Byron Center Commerce Drive SW, Byron Center. When the building is complete, it will house the CNC and shipping operations currently in Building 3. Additionally, two aluminum melting furnaces with associated die casting lines will be installed. Staff discussed the need to evaluate if air use permits are required prior to the installation of the furnaces and associated equipment.

CONCLUSION

Based on the information obtained and observations made during this inspection, the facility appears to be in compliance with all applicable air quality rules and regulations, except for the following:

Installation of the following furnaces, and associated equipment, without obtaining a permit to install:

28,000-pound capacity gas-fired Lindberg reverb furnace and laundering system

8,500-pound capacity gas-fired Lindberg furnace and die caster

2,400-pound capacity gas-fired Stotek furnace and die caster

(3) 1,400-pound capacity holding furnaces and three (3) die casters

A Violation Notice (VN) will be issued to address the unpermitted equipment.

NAME Eric Grinstern DATE 6/9/2021 SUPERVISOR HH