

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

U8011050050037

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| FACILITY: St. Julian Wine Company | | SRN / ID: U80110500 |
| LOCATION: 716 S. Kalamazoo St., Paw Paw | | DISTRICT: Kalamazoo |
| CITY: Paw Paw | | COUNTY: VAN BUREN |
| CONTACT: Todd Jaranoski , Compliance Director | | ACTIVITY DATE: 08/13/2019 |
| STAFF: Rachel Benaway | COMPLIANCE STATUS: Compliance | SOURCE CLASS: |
| SUBJECT: | | |
| RESOLVED COMPLAINTS: | | |

The purpose of this unannounced inspection was to evaluate exemption from requiring an air use permit. The inspection consisted of a pre-inspection discussion and a facility walk-through. The staff members present were Rachel Benaway, Chance Collins, and Amanda Chapel. Staff arrived at 11:05am and met with Todd Jaranowski, the Compliance Director, and Kyle Totzke, the Assistant Wine Maker.

St. Julian Wine Company is the oldest operating winery in Michigan, located in Paw Paw, MI since 1941. They produce a large assortment of still table wines (9-12% alcohol content), including a line of sparkling and dessert wines, and a variety of spirits including brandy, vodka, and gin. They have approximately 24 staff members including plant operations and administration. The bottling line was in operation the day of inspection but was on a break during staff's tour. Since the last inspection in 2012, a new canning line has been added to the facility but is not yet operating. According to facility contact, St. Julian produced 174,222 gallons of red wine and 301,158 gallons of white wine between August 2018 and July 2019.

St. Julian is an unregistered facility with multiple exempt units including: a 150 hp natural gas-fired boiler used during grape processing between September and October and a smaller 840,000 BTU/hr natural gas-fired boiler installed in 1998 for pressurization during grape processing (Rule 282(2)(a)). The larger boiler also provides steam for the still. The facility uses a natural gas-fired furnace for heating the office and retail area (Rule 284(2)(h)).

There are two large presses for grape processing (only one currently being used) and approximately 14 stainless steel 12,000lb tanks used for the fermentation process. The ammonia refrigeration system was replaced last fall with a propylene glycol system.

There is a parts washer in the maintenance area that uses Super Agitene 141 cleaning solvent. The lid was closed, staff provided new stickers, and was provided an MSDS sheet for the solvent (attached). The facility uses labels which are printed elsewhere for most inventory. For specialty bottles they print their own labels using a laser-jet printer on peel-and-stick labels. A hotmelt adhesive (Technomelt DM 901B Dispomelt) is used to adhere foil to the bottle tops during the bottling process. Staff was provided with the MSDS for this material (attached).

The still has a 240-liter capacity. Rule 285(2)(nn) exempts craft distillery operations if (i) total spirit production does not exceed 1,500 gallons per month, as produced, and (ii) monthly production records are maintained for most recent 5-year period. The facility reported monthly distillation amounts that average just over 500 gallons of distilled spirits per month with a range of 182 gallons/month to 1,005 gallons/month. In conference after the inspection, staff informed the Compliance Director of the exemption limits and suggested reaching out to the Environmental Assistance Center as a resource for further guidance should before they increase their production over the 1,500 gallon/month limit.

Staff observed a locked room containing various cleaning solutions, including a hydrogen-based peracetic acid and other foam cleansers. All chemicals were contained properly. A separate room housed a variety of powdered additives used for flavor, oxidation, and spoilage control.

This facility uses potassium metabisulfite (KMBS) as their sulfur dioxide additive to control oxidation, spoilage, and wild yeast contamination and reports using a total of 551.2 lbs last year. The facility also reports purchasing 7 cylinders of 6% sulfur dioxide for a total use of 1,050 lbs between August 2018 and July 2019. Carbonation for the sparkling beverage line occurs as a force-injection process through CO2 injection equipment housed just outside of the bottling room. Still wines receive nitrogen shots as they are bottled for increased shelf life, therefore nitrogen cannisters are also kept on the premises.

AP-42 Emission factors and controls:

Primary emission compounds include ethanol and CO2 during fermentation. Also emitted are acetaldehyde, methyl alcohol (methanol), n-propyl alcohol, n-butyl alcohol, sec-butyl alcohol, isobutyl alcohol, isoamyl alcohol, hydrogen sulfide. During fermentation, acetates, monoterpenes, higher alcohols, higher acids, aldehydes and ketones, and organosulfides are emitted. Fugitive ethanol emissions occur during the screening of red wines, pressing of the pomace cap, aging in oak cooperage, and the bottling process. Liquified SO2 is used as an additive after harvest, to "must" before fermentation, and to wine after fermentation.

AP-42 (9.12.2-5) gives an *E-rated* emission factor for ethanol emissions during the fermentation of 4.6 lbs/1,000 gallons (red wine) and 1.8 lbs/1,000 gallons (white wine).

Ethanol Emission Factors:

Fermentation:

Red: 4.6lbs ethanol / 1,000 gal wine White: 1.8lbs ethanol / 1,000 gal wine
 174,222 gallons **red** produced/year *(0.0046) = 801.4 lbs ethanol a year (A)
 301,158 gallons **white** produced/year *(0.0018) = 542.1 lbs ethanol a year (B)

Fugitive emissions during pomace screening:

Red only: 0.5lbs ethanol / 1,000 gal wine produced
 174,222 gallons produced/year * (0.0005) = 87.1 lbs ethanol/year (C)

Total Ethanol = (A+B+C) = 1,430.6 lbs / year

The facility appears to be exempt from needing a PTI at this time.

NAME Rochel Benaway DATE 8-23-19 SUPERVISOR Ril 8/26/19