

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

N716468151

<b>FACILITY:</b> Quala		<b>SRN / ID:</b> N7164
<b>LOCATION:</b> 50321 E Russell Schmidt, CHESTERFIELD		<b>DISTRICT:</b> Warren
<b>CITY:</b> CHESTERFIELD		<b>COUNTY:</b> MACOMB
<b>CONTACT:</b> Dylan Stackpoole , General Manager		<b>ACTIVITY DATE:</b> 07/13/2023
<b>STAFF:</b> Kerry Kelly	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> SM OPT OUT
<b>SUBJECT:</b> FY 2023 targeted inspection		
<b>RESOLVED COMPLAINTS:</b>		

On July 13, 2023, I (Kerry Kelly), Michigan Department of Environment, Great Lakes, and Energy - Air Quality Division (EGLE-AQD), conducted an on-site inspection of Quala located at 50321 Russell Schmidt Drive, Chesterfield, Michigan. This facility is identified by the Air Quality Division with the State Registration Number (SRN) N7164 . Marie Reid, EGLE-AQD Environmental Quality Analyst, Jeff Khaled, EGLE-AQD Permit Engineer, and Rachel Fuller, EGLE-AQD, Permit Engineer accompanied me on the inspection. The purpose of this inspection was to determine the facility's compliance with the requirements of the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); Michigan Administrative Rules; and Permit to Install (PTI) No. 79-03C.

### Facility Description

Quala is located in central Macomb County. Macomb County is currently designated by the United States Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants. The area surrounding Quala is densely populated with industrial and residential properties. The nearest residential properties are less than a tenth of a mile west of Quala. The facility is a synthetic minor for hazardous air pollutants (HAP) and volatile organic compounds (VOC).

At the facility, Quala cleans intermediate bulk containers (IBC), also called totes, used for paint storage. The totes range in size from 200 to 600 gallons. The tote cleaning process involves removing all components (valves, impellers, etc) from the tote, draining residual paint (heel) from the inside of the tote, rinsing the interior of each tote and the components with water, potassium hydroxide, and solvents at various pressures, re-assembling the tote, and cleaning the exterior of the tote by hand using glacial acetic acid and solvent. The interior of each tote goes through five rinse stations. The cleaning solution for the third and fourth rinse station is collected and reused in the pre-wash. The majority of containers are cleaned using a semi-continuous container cleaning process line (FGPROCESSLINE). The remainder of the containers are cleaned using an "offline" container cleaning process (EUOFFLINE). Valves, impellers, and other components are cleaned in separate wash cabinets (EUIPELLERWASH and EUVALVEWASH). The aforementioned processes are included in PTI 79-03C.

### Inspection and Compliance Evaluation

Brett Kauser, EHS Specialist, Quala, provided emissions and material usage records required in PTI 79-03C via email on July 12, 2023.

### Inspection

I arrived at Quala at approximately 12:50 PM on July 13, 2023. Marie, Jeff, Rachel and I entered the office, and I introduced myself, Marie, Jeff, and Rachel to Drew Wilson, Quala, Dylan Stackpoole, Quala and Brett Kauser, Quala. Marie, Jeff, Rachel and I signed the

visitor log book. I showed my photo credentials to Drew, Dylan, and Brett and explained the purpose of my visit to the group. Drew, Dylan, and Brett answered questions about facility operations/processes. Process changes observed and discussed during the inspection include; adding a 20% potassium hydroxide/10% caustic boost/70% water rinse, adding a 3% caustic/97% water wash, adding a caustic rinse station for difficult to clean totes, changing the solvent used in EUEXTERIOR from SP 3341 to Midas Strip and glacial acetic acid, and no longer using SP 752 to clean lids and small parts in FGOFFLINE.

## **EUEXTERIOR**

According to the PTI, EUEXTERIOR involves cleaning paint and sticker residue from the outside of the tote using the solvent SP 3341.

Quala is limited to 32.7 tons/year of VOC emissions and 9,000 gallons/year cleaning solvent usage for EUEXTERIOR (SC I.1 and II.1 respectively). Brett provided 12-month rolling VOC emissions and cleaning solvent usage records for EU-EXTERIOR, as required in EU-EXTERIOR SC VI.3, for July 2022 through May 2023 (Attachment 1). These records include VOC emissions from SP 3341, glacial acetic acid, and Midas Strip. The records provided indicate the highest 12-month rolling VOC emissions during the time period were 16.66 tons reported for the 12-month period ending January 2023. The highest 12-month rolling SP 3341 usage was 4,356 gallons reported for the period ending January 2023.

During the permitting process for PTI 79-03C, Chuck Boyd, Quala, commented on preliminary draft conditions, in an email dated 6/10/2020, stating that the facility will no longer use Vinegar (glacial acetic acid) on exterior washes once the new permit is issued. The preliminary draft that Chuck reviewed included a 200 gallon/year vinegar limit with a Rule 224 citation. The vinegar throughput limit was removed from subsequent drafts and the final permit. The VOC emissions records include the amount of acetic acid used per month (15 gallons/month) and VOC emissions from vinegar. At 15 gallons per month, 12-month rolling acetic acid usage would be 180 gallons.

In addition, the records submitted indicate the facility stopped using SP 3341 and started using Midas Strip in April 2023. SP 3341 contains cumene, a hazardous air pollutant (HAP) and toxic air contaminant with an annual Initial Risk Screening Level (IRSL) of 0.1 micrograms/cubic meter. There are two basic requirements of the Michigan's Air Toxic rules. First, each source must apply the best available control technology for toxics (T-BACT). After the application of T-BACT, the emissions of the toxic air contaminant cannot result in a maximum ambient concentration that exceeds the applicable health based screening level. The current permit, PTI 79-03C, contains restrictions to meet the air toxics rules. According to Brett and Dylan, the facility switched to Midas Strip because it does not contain cumene and was previously approved by Quala's customer to use in the exterior cleaning process.

Based on the records provided, the facility is in compliance with the VOC emission limit in EUEXTERIOR SC I.1 for this compliance period.

The permit requires Quala to capture all waste materials from the exterior cleaning process and to store them in closed containers (EUEXTERIOR SC III.1) and to handle all VOC or HAP containing materials in a manner to minimize generation of fugitive emissions (EUEXTERIOR SC III.2).

Dylan showed us the exterior cleaning process. In this area I observed approximately 8 totes, a cart with a 5-gallon plastic pail labeled Midas Strip and an approximately half gallon plastic container labeled acetic acid. These containers were covered at the time of the inspection. There were two workers in the area cleaning the tote exteriors during the inspection. To clean the exterior, employees use a tool to remove labels then dip rags into the 5-gallon bucket of Midas Strip and wipe the exterior of the tote to remove the label glue and other residue. Based on my observations, Quala is in compliance with EUEXTERNAL SC III.2.

The used solvent-laden rags are transferred to a 300-gallon plastic tote with a rack on the bottom and free solvent is collected in the tote, below the rack. After drying and draining, the rags are transferred to a second 300-gallon cardboard box with a woven poly vinyl liner and cover. Both 300-gallon containers were covered during the inspection. Based on my observations, Quala is in compliance with EUEXTERNAL SC III.1.

Quala is required to keep overhead doors located adjoining the tote cleaning process closed for half hour after tote cleaning operations are complete per SC III.3. I did not see any overhead doors adjoining the exterior cleaning process. I did observe two 4 ft x 4 ft vents near the top of the wall adjacent to the exterior cleaning area. Dylan stated the two vents are air intake vents.

### **FGPROCESSLINE**

FGPROCESSLINE consists of EULINEHEELING, EUIMPELLERWASH, EUVALVEWASH, EUFIRSTRINSE, EUSECONDRIINSE, EUTHIRDRIINSE, and EUFINALRINSE. VOC emissions from this process are generated from the 2-butoxyethanol (also know as butyl cellosolve or glycol ether) used to clean the totes and parts and from the removal of residual paint (heel) in totes. HAP emissions are generated from the heel removal process.

Quala is limited to 42.62 tons/year of VOC emissions (SC I.1). Brett provided 12-month rolling VOC emissions records for FGPROCESSLINE, as required in FG-PROCESSLINE SC VI.3, for July 2022 through May 2023 (Attachment 2). The records provided indicate Quala is using the emission factors stated in PTI 79-03C. VOC emissions from the heel waste and butyl cellosolve emissions are calculated separately for the FGPROCESSLINE. The highest recorded 12-month rolling VOC emissions from butyl cellosolve were 24.24 tons and from heel waste were 18.1 tons for FGPROCESSLINE, reported in the 12-month periods ending July 2022 and August 2022 respectively. The highest 12-month rolling VOC emissions for FGPROCESSLINE (butyl cellosolve and heel waste combined) was 41.2 tons for the 12-month period ending August 2022. The records indicate the facility met the 12-month rolling VOC emission limit in FGPROCESSLINE SC I.1 between July 2022 and May 2023.

The permit contains limits of 50,000 gallons/year butyl cellosolve usage and 200,000 gallons heel waste collected for FG-PROCESSLINE (SC II.1 and SC II.2) respectively. Following the approval of PTI 79-03C, EGLE-AQD became aware that the butyl cellosolve and heel waste throughput limits in the permit were not correct. Specifically, using the throughput limits and emission factors in the PTI for FGPROCESSLINE, the 42.62 ton/year VOC emission limit would be exceeded. It appears the butyl cellosolve and heel waste limits were inadvertently carried over from the previous permit (PTI 79-03A). I informed the Quala representatives of the error.

The permit also contains a limit of 25 totes processed per hour and 60,000 totes processed per year (FG-PROCESSLINE SC III.4). This limit was also in the previous permit. Brett provided records of the number of totes cleaned (Attachment 3). These records indicate the highest number of totes processed per hour was 14 and the highest 12-month rolling number of totes cleaned was 22,961 for the period ending May 2023.

Compliance with the butyl cellosolve, heel waste, and totes processed limits were not evaluated because they do not correspond with the applicable VOC limits. The company is keeping records of this information as required in FG-PROCESSLINE SC VI.5, 6, and 7.

Dylan showed us the semi-continuous tote cleaning process during the inspection. FG-PROCESSLINE was being operated during the inspection. The process line consists of the following stations:

heel waste draining -> 50% butyl cellosolve/50% water wash and/or 100% water pressure wash -> 20% potassium hydroxide/10% boost/70% water wash -> 3% caustic/97% water wash -> 100% recycled butyl cellosolve wash -> 100% virgin butyl cellosolve wash. There is an additional caustic wash station for FGPROCESSINE that is located near FGOFFLINE.

The caustic wash station near FGOFFLINE is used to re-work totes that are difficult to clean. I inspected the caustic wash station near FGOFFLINE. This station has three spray heads. I did not note seeing any labels on the totes.

PTI 79-03C requires Quala to capture all waste materials from the semi-continuous cleaning process and to store them in closed containers (EU-EXTERIOR SC III.2) and to handle all VOC or HAP containing materials in a manner to minimize generation of fugitive emissions (EU-EXTERIOR SC III.3). According to the permit, operations to minimize fugitive emissions shall include, but are not limited to, the following:

- a. Keeping containers covered at all times except when operator access is necessary.
- b. Installing and maintaining a level sensor on the heel waste collection system to ensure only liquid waste is being pumped from the storage trough into the storage tank.
- c. Installing and maintaining a properly operating control valve on the heel waste storage tank to minimize the venting of fugitive emissions.
- d. Inspecting the heel waste collection system, including level sensor and control valve, for proper operation on a daily basis and making repairs in a timely manner.
- e. Inspecting the container cleaning process line, including tanks and valves, for leaks on a daily basis and repairing leaks in a timely manner.
- f. Emptying the containment pit (secondary containment) for the container cleaner process line in a timely manner, not to exceed 24 hours.

Compliance with the inspections required in SC III.2 d) through f) is demonstrated through recordkeeping required in SC VI.8 and SC VI.9. Dylan provided the completed inspection checklist for the June 2022 – July 2023 (Attachment 4).

Dylan showed me the heel waste station. Heel waste was being collected while I was inspecting the process.

At the heel waste station, heel drains through an opening at the bottom of each tote into an open trough. Following the inspection in July 2022, Quala installed a new trough construction that uses gravity draining, eliminating the vacuum pump that was previously

installed, and the need for a level sensor and vapor release valve (required in SC III.3. b and c). I inspected the new construction during this inspection and observed a trough with a drain hole near the center and a 300-gallon poly tote with an approximately 6-inch diameter hole within about 6 inches from the bottom of the drain hole. The new heel configuration does not utilize the vacuum pump. I did not see any heel pooled in the trough during the inspection. The trough appeared to have recently been cleaned with a squeegee.

During the previous two inspections, conducted on 6/10/2021 and 8/25/2022, the heel waste collection system was using a vacuum pump and did not have a level sensor nor a vapor control valve and a notice of violation of FGPROCESSLINE SC III.3 was issued on 7/21/2021 and 9/26/2022. It was determined that these violations would need to be resolved by either installing level sensor and vapor control valve on the heel waste system to comply with PTI 79-03C or by modifying PTI 79-03C to reflect the new configuration and remove the vacuum pump and the requirements for the level sensor and vapor control valve. Quala submitted a PTI application to AQD Permit Section in January 2023 and July 2023.

Next I inspected the pre-wash station (50% butyl cellosolve/50% water and/or 100% water). Waste from the pre-wash station is collected in a trough. There is a vacuum pump attached to the bottom of the trough to drain and collect heel and butyl cellosolve/water waste. The pre-wash waste collection tote was covered during the inspection.

Adjacent to the heel waste station, I observed wash cabinets used to clean lids, impellers, and valves. I saw an employee wiping an impeller with a rag. This process was added to reduce the time the impeller spent in the wash cabinet and the amount of butyl cellosolve used in the cabinet.

In the same area, one of the cabinets was open and an employee was cleaning lids in the open cabinet. The other cabinets were closed during the inspection. Butyl cellosolve is used in the wash cabinets in this area.

Next to the area with the cabinets I observed an open "containment" pit. I did not see any liquid accumulated in the pit. The permit requires the containment pit be emptied in a timely manner, not to exceed 24 hours. Previously, Quala would empty the butyl cellosolve holding tank into the containment pit and empty the pit into totes at the end of each day. During this inspection, Dylan stated Quala has started emptying the tank directly into a tote instead of the containment pit. I saw an approximately 600-1000 gallon poly tote near the rinse tanks during this inspection. Dylan stated that this is the tote the tanks are drained into. Inspection records provided by Dylan indicate the containment pit has been drained each operating day from July 2022 - July 2023.

From the heel waste and pre-wash stations, totes travel along rollers to each rinse station. At the rinse stations, spray heads are attached to the top of each tote and the pressurized cleaning solutions are sprayed into the totes at varying pressures. The rinse solutions continuously drain from the bottom of each tote during the first, second, and third rinse cycle. As the liquids drain, they are collected in an open trough with a sump drain located a couple inches from the bottom of the trough. Metal panels and vinyl curtains were in place along the length of the trough during the inspection. The panels and curtains minimize fugitive emissions and splashing from this process. The recovered rinse solution is run through a fabric filter before being returned to the holding tanks.

In the final rinse, a hose is connected to the bottom of each tote. The other end of the hose is connected to piping and a pump which routes the butyl cellosolve to the third rinse holding tank. This system is a closed loop, which minimizes fugitive emissions.

On the north side of the process line I observed another valve wash cabinet. According to Dylan, potassium hydroxide is used in this cabinet. This cabinet has a stack vented to the ambient air.

The permit requires verification of the butyl cellosolve emission factor from FG-PROCESSLINE to be conducted within 2 years of permit issuance. PTI 79-03C was approved August 17, 2020. AQD has not received a test plan nor test report, required in FGPROCESSLINE SC V.1. A notice of violation was issued to Quala on September 26, 2022. In response to this violation, Quala stated "the current requirement for emissions testing as outlined in the permit would include testing from a stack at which the facility doesn't currently have present for any of the processes. Quala plans to complete a permit application to look to change several conditions in the permit. This condition being one of those. Additional data is in the process of being collected from the pit waste stream to determine the actual amount of butyl cellosolve and butyl acetate in the waste stream. Collecting this data will allow the facility to perform a mass balance for the facility calculations versus using a theoretical emission factor. The permit application is planned to be submitted by December 30, 2022." Quala submitted a permit application in January 2023. This application was withdrawn to address questions/comments from AQD Permit Section. An updated application was re-submitted in July 2023. Sampling/testing methods to verify emission factors will be evaluated during review of the permit application currently in house.

Quala is required to keep overhead doors located adjoining the tote cleaning process closed while cleaning totes and for half hour after tote cleaning operations are complete per SC III.5. This condition was added to the PTI to reduce the potential for solvent odors outside of the facility. The overhead doors adjacent to FG-PROCESSLINE were closed during the inspection. Prior to entering Quala for the inspection, I conducted odor observations in the parking lot of Quala and on E. Russell Schmidt, about 220 feet downwind, south-southeast, of Quala. I just barely detected solvent odors intermittently at these locations. The intensity, frequency, and duration of the odors detected were not at a level expected to cause unreasonable interference with the comfortable enjoyment of life and property.

### **FG-OFFLINE**

The offline tote cleaning process includes tote disassembly, heel removal, and two rinses. Totes being cleaned in the offline process contained Imron Activator 295S heel according to a label I observed on one of the totes. During the inspection on 8/25/22, I noted the totes being cleaned contained Tufcote Plus Isocyanate Activator heel.

The solvent used in the first rinse is a mixture of water and butyl cellosolve. n-butyl acetate is used in the second rinse and to clean small parts and lids. According to Dylan, Quala no longer uses SP 752 to clean lids and small parts in FGOFFLINE.

The heel and cleaning products used in FGOFFLINE process contain VOCs (including butyl cellosolve, butyl acetate, hexamethylene diisocyanate, and ethyl acetate). I did not see the components listed in the SDSs for Imron Activator 295S and Tufcote Plus Isocyanate Activator in EPA's list of HAPs.

The permit requires Quala conduct cleaning by use of an organic solvent if the equipment being cleaned is completely covered or enclosed, except for an opening that is no larger than necessary to allow for safe clearance considering the methods and materials being used (FGOFFLINE SC III.1).

At the offline first rinse station I observed vapors constantly escaping between the spray head lid and the tote while a tote was being rinsed. In addition, I saw liquid escaping intermittently from the lid. Dylan stated the vapors were steam. Following the inspection in August 2022, a Quala employee explained to me that it would be difficult to completely eliminate vapors escaping from the lid because the mechanical device used to clean and recirculate water or cleaning solutions is mounted below the cover plate. The mechanical device or "Spinner" operates on a two-axis rotation to clean the interior of the totes.

When I mentioned the vapors to Jeff Khaled during the current inspection, Jeff stated he expected the VOCs emitted from the heel would be minimal due to the the vapor pressure of the heel. VOC emissions from the cleaning solvent are currently being calculated using the emission factor for FGPROCESSLINE. In the current PTI application, Quala is proposing to use mass balance to calculate VOC emissions from butyl cellosolve use. Using mass balance, any VOC/solvent losses through the lid would be accounted for in the emissions.

The permit requires Quala to capture all waste materials and store them in closed containers and to handle all VOC or HAP containing materials in a manner to minimize generation of fugitive emissions, including keeping containers covered at all times except when operator access is necessary (EU-OFFLINE SC III.2 and III.3 respectively).

The offline heel waste collection drums I observed during the inspection were covered with a tight-fitting lids.

I observed, at the offline second rinse station, the rinse head, butyl acetate tank, and three parts washers used for small parts and lid cleaning. The butyl acetate rinse station tank was closed and labeled during the inspection. I saw a hose connected to the bottom of a tote at the second rinse station. The other end of the hose is routed to the butyl acetate tank holding tank. This system is a closed loop, which minimizes fugitive emissions. The covers to each of the parts washers were closed and operating instructions were placed on each tank. Dylan stated butyl acetate is used in the parts washers.

The permit contains a limit of 3 totes processed per hour based on a daily average and 4,000 totes processed per year at the offline cleaning station (FGOFFLINE SC III.4). Brett provided records of the number of totes processed at FGOFFLINE, as required in FGOFFLINE SC VI.3, between July 2022 and May 2023 (Attachment 5). The records indicate the highest hourly average amount of totes cleaned was 2.5 reported on August 7, 2022. The highest reported number of totes process per year for FGOFFLINE was 2592 reported for the 12-month period ending April 2023.

FGOFFLINE SC VI.4 requires Quala to keep records of the amount of butyl cellosolve used in EUOFFFIRSTRINSE each calendar month and 12-month rolling time period as determined at the end of each calendar month, as required by SC II.1. Brett provided the butyl cellosolve records for the first rinse, however, FGOFFLINE SC II does not contain any butyl cellosolve usage limits.

**FGFACILITY**

PTI 79-03C contains a facility-wide individual HAP limit of 9 tons/year (FGFACILITY SC I.1), an aggregate HAP limit of 22.5 tons/year (FGFACILITY SC I.2), and a VOC limit of 80 tons/year (FGFACILITY I.3) .

Brett provided monthly and 12-month rolling VOC and HAP emissions calculations for July 2022 through May 2023 (Attachment 6). Based on my review of the SDSs for cleaning solvents used and FGOFFLINE heel, as well as FGPROCESSLINE heel sampling data, SP 3341 and the process line heel are the only materials uses/processed that contain HAPs. Quala is using the HAP emissions factors in Appendix A of PTI 79-03C for process line heel waste emissions.

The emissions from EUEXTERIOR (SP-3341) are not included in the individual and aggregate HAP emissions calculations. The SDS for SP-3341 indicates it contains up to 9% HAP (0-6% cumene and 0-3% xylene). The records provided indicate the highest 12-month rolling aggregate HAP emissions were 1.45 tons reported in August 2022. Using the highest HAP percentage listed in the SDS EUEXTERIOR (SP-3341) and the 12-month rolling VOC emissions from SP-3341 for EUEXTERIOR for the period ending August 2022, the highest aggregate HAP emissions would be approximately 1.55 tons which is still less than the limits in FGFACILITY SC I.1 and I.2.

The highest reported 12-month rolling VOC emissions on the facility summary page between July 2022 and May 2023 were 58.99 tons reported in August 2022. The highest reported VOC emissions are less than the limits in FGFACILITY SC I.3.

**Michigan Air Emissions Reporting System (MAERS)**

Quala submitted facility-wide VOC emissions for RY 2022 on time. The facility-wide VOC emissions reported to MAERS for RY 2022 were 53.98 tons which is about 4 tons more than indicated in the records submitted for this inspection for calendar year 2022. The 4 ton difference is the result of a glacial acetic acid emissions calculation error for EUEXTERIOR in the MAERS reported emissions. The MAERS attachment shows acetic acid emissions increasing by 0.06 to 0.07 tons/month each month in 2022 (0.07 tons in January 2022, 0.13 tons in February 2022, 0.20 tons in March 2022, etc). Based on glacial acetic acid usage and emissions information in the inspection records, glacial acetic acid emissions are 0.07 tons each month.

**CONCLUSION**

During the previous two inspections, conducted on 6/10/2021 and 8/25/2022, Quala exceeded the 42.62 ton/year VOC emission limit for FGPROCESSLINE, the 80 tons/year VOC limit for FGFACILITY, and other process/operational and testing requirements. Notices of violation were issued on 7/21/2021 and 9/26/2022. On March 10, 2023, AQD sent a letter to Quala providing them with an opportunity to formally resolve these violations through the entry of a legally enforceable agreement that will include a compliance program and payment of an appropriate monetary penalty pursuant to Section 5528 of Part 55 of NREPA, MCL 324.5528.

Quala applied for a permit to install in January 2023 and July 2023. In the application, Quala is proposing a new methodology for quantifying VOC emissions and requesting to re-classify emission units.



Based on information gathered and reviewed for the inspection on July 13, 2023, Quala has met the VOC emission limits in FGPROCESSLINE and FGFACILITY each 12-month period between July 2022 and May 2023. During the July 13, 2023 inspection I observed that VOC/HAP containing waste and materials were being handled and stored in a manner to minimize fugitive VOC/HAP emissions. In addition, Quala modified the heel collection process to eliminate the use of the vacuum pump system and the need for a level sensor and vapor balance system. The testing requirement in FGPROCESSLINE V.1 has not been met. Sampling/testing methods to verify emission factors will be evaluated during review of the permit application currently in house.

NAME

K. KellyDATE 08/02/2023

SUPERVISOR

Joyce