Commonwealth of Kentucky
Division for Air Quality

STATEMENT OF BASIS/SUMMARY

Title V, Construction/Operating
Permit: V-22-007
GPM Manufacturing LLC
3100 Bowling Green Road
Franklin, KY 42134
March 2, 2022
Jonathon Hughes, Reviewer

SOURCE ID: 21-213-00080
AGENCY INTEREST: 171322
ACTIVITY: APE20220001

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**SECTION 1 – SOURCE DESCRIPTION**

SIC Code and description: 3088, Plastics Plumbing Fixtures

Single Source Det.  ☐ Yes  ☒ No  If Yes, Affiliated Source AI:

Source-wide Limit  ☒ Yes  ☐ No  If Yes, See Section 4, Table A

28 Source Category  ☐ Yes  ☒ No  If Yes, Category:

County: Simpson

Nonattainment Area  ☒ N/A  ☐ PM10  ☐ PM2.5  ☐ CO  ☐ NOx  ☐ SO2  ☐ Ozone  ☐ Lead

If yes, list Classification:

PTE* greater than 100 tpy for any criteria air pollutant  ☒ Yes  ☐ No
If yes, for what pollutant(s)?
   ☐ PM10  ☐ PM2.5  ☐ CO  ☐ NOx  ☐ SO2  ☒ VOC

PTE* greater than 250 tpy for any criteria air pollutant  ☒ Yes  ☐ No
If yes, for what pollutant(s)?
   ☐ PM10  ☐ PM2.5  ☐ CO  ☐ NOx  ☐ SO2  ☒ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP)  ☒ Yes  ☐ No
If yes, list which pollutant(s): Styrene

PTE* greater than 25 tpy for combined HAP  ☒ Yes  ☐ No

*PTE does not include self-imposed emission limitations.

Description of Facility:

GPM Manufacturing manufacturers hot tubs and related items by vacuum molding electrically heated plastic sheet to form an interior tub shell and subsequently applying styrene-based catalyzed resins and with glass fiber reinforcement to the underside of the shell.
**SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM**

Permit Number: V-22-007  
Activity: APE20220001

Received: January 10, 2022  
Application Complete Date: February 17, 2022

Permit Action: ☒ Initial  ☐ Renewal  ☐ Significant Rev  ☐ Minor Rev  ☐ Administrative

Construction/Modification Requested?  ☒ Yes  ☐ No  
NSR Applicable? ☐ Yes  ☒ No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action  ☐ Yes  ☒ No

**Description of Action:**
Initial construction permit for a lamination operation at an already existing facility. Facility has requested a limitation of VOC emissions to preclude PSD applicability.

<table>
<thead>
<tr>
<th>V-22-007 Emission Summary</th>
<th>2021 Actual (tpy)</th>
<th>PTE (V-22-007) (tpy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>N/A</td>
<td>7.03</td>
</tr>
<tr>
<td>NOx</td>
<td>N/A</td>
<td>8.37</td>
</tr>
<tr>
<td>PT</td>
<td>N/A</td>
<td>1.23</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>N/A</td>
<td>1.23</td>
</tr>
<tr>
<td>PM₂.₅</td>
<td>N/A</td>
<td>0.752</td>
</tr>
<tr>
<td>SO₂</td>
<td>N/A</td>
<td>0.050</td>
</tr>
<tr>
<td>VOC</td>
<td>N/A</td>
<td>274</td>
</tr>
<tr>
<td>Lead</td>
<td>N/A</td>
<td>0</td>
</tr>
</tbody>
</table>

**Greenhouse Gases (GHGs)**

<table>
<thead>
<tr>
<th></th>
<th>2021 Actual (tpy)</th>
<th>PTE (V-22-007) (tpy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Dioxide</td>
<td>N/A</td>
<td>10048</td>
</tr>
<tr>
<td>Methane</td>
<td>N/A</td>
<td>0.193</td>
</tr>
<tr>
<td>Nitrous Oxide</td>
<td>N/A</td>
<td>0.184</td>
</tr>
<tr>
<td>CO₂ Equivalent (CO₂e)</td>
<td>N/A</td>
<td>10108</td>
</tr>
</tbody>
</table>

**Hazardous Air Pollutants (HAPs)**

<table>
<thead>
<tr>
<th></th>
<th>2021 Actual (tpy)</th>
<th>PTE (V-22-007) (tpy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate</td>
<td>N/A</td>
<td>0.792</td>
</tr>
<tr>
<td>Styrene</td>
<td>N/A</td>
<td>236</td>
</tr>
<tr>
<td>Toluene</td>
<td>N/A</td>
<td>2.23</td>
</tr>
<tr>
<td>Combined HAPs:</td>
<td>N/A</td>
<td>239</td>
</tr>
</tbody>
</table>
**SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Limit or Standard</th>
<th>Regulatory Basis for Emission Limit or Standard</th>
<th>Emission Factor Used and Basis</th>
<th>Compliance Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC</td>
<td>Source wide 150 tpy</td>
<td>To preclude 401 KAR 51:017</td>
<td>Material Balance &amp; MSDS</td>
<td>Monthly recordkeeping, 12 month rolling total</td>
</tr>
<tr>
<td>PM</td>
<td>2.34 lbs/hr</td>
<td>401 KAR 59:010, Section 3(2)</td>
<td>Material Balance &amp; MSDS with 65% transfer efficiency</td>
<td>Panel Filters, 98% C.E.</td>
</tr>
<tr>
<td>Opacity</td>
<td>20%</td>
<td>401 KAR 59:010, Section 3(1)</td>
<td>N/A</td>
<td>Weekly Visual Observation</td>
</tr>
<tr>
<td>HAPs</td>
<td>Limits that apply as shown in Table 3 to subpart WWWW</td>
<td>40 CFR Part 63, Subpart WWWW</td>
<td>EF calculated according to Table 1 of subpart WWWW and/or MSDS</td>
<td>See Subpart WWWW</td>
</tr>
</tbody>
</table>

**Initial Construction Date:** Proposed 2022

**Process Description:**
Three (3) laminating areas for resin application and occasional gel coat application on plastic parts. For purposes of subpart WWWW, these lamination areas will process both small and large parts per the definition in the subpart.

Maximum throughput: 0.25 tons per hour resin per area; 0.75 tons per hour total

**Applicable Regulation:**
401 KAR 50:012, General application. Per section 1(2), In the absence of a standard specified in these administrative regulations, all major air contaminant sources shall as a minimum apply control procedures that are reasonable, available, and practical (RAP). The facility RAP plan is compliance with the MACT subpart WWWW work practice standards and emission limitations.

401 KAR 59:010, New process operations

401 KAR 63:002, Section 2(4)(bbbbb) 40 C.F.R. 63.5780 through 63.5935, Tables 1 through 15, and Appendix A (Subpart WWWW), National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production

**Precluded Regulations:**
401 KAR 51:017, Prevention of significant deterioration of air quality is precluded since the facility has requested limitations below that of a PSD major source threshold.

**Comments:**
Raw materials are received and stored in the main manufacturing facility. Materials of significance to this application are VOC and HAP containing substances which also have the potential to emit particulate matter. Predominant VOC and HAP containing materials are gelcoats and resins. Most gelcoats and resins...
Emission Unit #1 Lamination Areas

contain styrene in ranges from 20 to 50%; some gelcoats also contain methyl methacrylate (MMA). Two-part adhesives also contain high levels of MMA and/or styrene, though emissions from these materials are generally less than 1% of available VOC as determined by manufacturers testing. Two-part insulating foam is received in 55-gallon drums and emissions after mixing and application are negligible.

Gelcoats are normally received and stored in 5 and 30-gallon containers. Resin is normally received and stored in 3000-pound containers. Resin is transferred to 500-gallon process tanks where filler material, usually calcium carbonate, is added. Numerous other small usage VOC containing materials are stored inside the manufacturing facility and delivered to the manufacturing floor on an ‘as-need’ need basis.

**Lamination**

After the heat formed laminate is cooled, resin, chopped glass and glass matt are applied to the underside of the laminate. Resin is applied via non-atomized mechanical application equipment. The resin is catalyzed with Methyl Ethyl Ketone Peroxide (MEKP) at the application gun. The application area is ventilated by means of exhaust fans and discharges filtered air above the roof. The exhaust air is filtered for PM removal prior to entering the exhaust ductwork. Make-up air is provided to the lamination area via several natural gas fired make-up air units. Air emissions from this process are VOCs, HAPs, and particulate matter (PM).

**Curing**

After lamination, parts transferred to a ventilated curing area where the parts cool and offgas. Air emissions from this process are VOCs and HAPs. All the emissions from this process are reported as if they came from the lamination area.

Emission factors for HAPs from open molding processes are based on Table 1 of Subpart WWWW.

According to 40 CFR 63.5805(d), a new facility that emits 100 tpy or more of HAP, source must reduce the total organic HAP emissions at least 95 percent by weight or organic HAP emissions limits in Table 5. For purposes of subpart WWWW since the facility produces both small and large parts (as defined in the subpart) the VOC reduction requirement exemption for exceeding 100 tpy of HAP for large parts [40 CFR 63.5805(d)(2)] does not apply. This exemption to exceed 100 tpy of HAP and not be subject to VOC reduction would apply if ONLY large parts are produced.
SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements\Results

N/A

Footnotes:
SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

<table>
<thead>
<tr>
<th>Emission and Operating Limit</th>
<th>Regulation</th>
<th>Emission Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 tpy of VOC emissions</td>
<td>To preclude 401 KAR 51:017</td>
<td>Source-wide</td>
</tr>
</tbody>
</table>

Table B - Summary of Applicable Regulations:

<table>
<thead>
<tr>
<th>Applicable Regulations</th>
<th>Emission Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>401 KAR 50:012, General application</td>
<td>01</td>
</tr>
<tr>
<td>401 KAR 59:010, New process operations</td>
<td>01</td>
</tr>
<tr>
<td>401 KAR 63:002, Section 2(4)(bbbc) 40 C.F.R. 63.5780 through 63.5935, Tables 1 through 15, and Appendix A (Subpart WWWW), National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production</td>
<td>01</td>
</tr>
<tr>
<td>401 KAR 63:020, Potentially hazardous matter or toxic substances.</td>
<td>IAs</td>
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Table C - Summary of Precluded Regulations:

<table>
<thead>
<tr>
<th>Precluded Regulations</th>
<th>Emission Unit</th>
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<tbody>
<tr>
<td>401 KAR 51:017, Prevention of significant deterioration of air quality</td>
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</tbody>
</table>

Table D - Summary of Non Applicable Regulations:

N/A

Air Toxic Analysis

N/A

Single Source Determination

N/A
### SECTION 5 – PERMITTING HISTORY

<table>
<thead>
<tr>
<th>Permit</th>
<th>Permit Type</th>
<th>Activity#</th>
<th>Complete Date</th>
<th>Issuance Date</th>
<th>Summary of Action</th>
<th>PSD/Syn Minor</th>
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<td>N/A</td>
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</tr>
</tbody>
</table>
SECTION 6 – PERMIT APPLICATION HISTORY

N/A
APPENDIX A – ABBREVIATIONS AND ACRONYMS

AAQS – Ambient Air Quality Standards
BACT – Best Available Control Technology
Btu – British thermal unit
CAM – Compliance Assurance Monitoring
CO – Carbon Monoxide
Division – Kentucky Division for Air Quality
ESP – Electrostatic Precipitator
GHG – Greenhouse Gas
HAP – Hazardous Air Pollutant
HF – Hydrogen Fluoride (Gaseous)
MSDS – Material Safety Data Sheets
mmHg – Millimeter of mercury column height
NAAQS – National Ambient Air Quality Standards
NESHAP – National Emissions Standards for Hazardous Air Pollutants
NOx – Nitrogen Oxides
NSR – New Source Review
PM – Particulate Matter
PM10 – Particulate Matter equal to or smaller than 10 micrometers
PM2.5 – Particulate Matter equal to or smaller than 2.5 micrometers
PSD – Prevention of Significant Deterioration
PTE – Potential to Emit
SO2 – Sulfur Dioxide
TF – Total Fluoride (Particulate & Gaseous)
VOC – Volatile Organic Compounds