

**Synthetic Minor Determination and/or**  **Netting Determination**

Permit To Install No. 02-21414

**A. Source Description**

Mar-Bal, Inc. is a compounder and molder of electrical and structural reinforced thermosetting materials. The facility currently has four (4) BMC (bulk molding compound) mixers with a baghouse to control particulate emissions. There are also insignificant (de minimis) emissions units in the facility, such as storage tanks, pre-blending tanks, extruders, BMC storage, injection and compress molding machines.

**B. Facility Emissions and Attainment Status**

Mar-Bal, Inc. is located at 16930 Munn Road, Newbury Township, Geauga County, an area designated as "non-attainment" for ozone, and "attainment" for sulfur dioxide, PM<sub>2.5</sub>, carbon monoxide and lead. The facility will not be a "Major Source" for a single hazardous air pollutant (styrene), based upon the bottle neck and restriction of throughout styrene input in their operation. Therefore, MACT and Title V requirements will not apply to them.

**C. Source Emissions**

The facility has an operational requirement that all liquid materials have to be pre-blended at the two pre-blending tanks inside of the facility. Each batch of pre-blended liquid material (entire batch) can only be fed to a single mixer. Therefore, only two mixers can be operated at the same time. With the limitation of operating only two mixers at one time (the "bottleneck") and the limitation of total styrene throughput of 1,755,410 pounds per rolling 12-month average, the maximum facility-wide potential to emit (PTE) of styrene will be no more than 9.00 tons per year. (For a detailed breakdown calculation for each piece of equipment, please see the attachment - PTE calculation.) The facility, therefore, is not a major source for Title V and MACT requirements.

This synthetic minor PTI for the four mixers (emissions units P002, P003, P004, and P005) will contain terms and conditions that limit emissions of VOC (styrene) to 9.00 tons per year through the bottleneck restrictions and styrene throughput to no more than 1,755,410 pounds per year. Also, this synthetic minor PTI requires that Mar-Bal track their VOC (styrene) emissions, keep records and submit reports.

**D. Conclusion**

The emission limits contained in this synthetic minor PTI are adequate to provide federally enforceable limitations to ensure that the applicable MACT and Title V thresholds will not be exceeded.



State of Ohio Environmental Protection Agency

Street Address:

Lazarus Gov. Center  
122 S. Front Street  
Columbus, OH 43215

TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center  
P.O. Box 1049  
Columbus, OH 43216-1049

**RE: DRAFT PERMIT TO INSTALL**

**GEAUGA COUNTY**

**Application No: 02-21414**

**Fac ID: 0228000194**

**DATE: 2/9/2006**

Mar-Bal Inc  
Gary Petruska  
16930 Munn Rd  
Chagrin Falls, OH 44023

**CERTIFIED MAIL**

Y	TOXIC REVIEW
	PSD
Y	SYNTHETIC MINOR
	CEMS
	MACT
	NSPS
	NESHAPS
	NETTING
	MAJOR NON-ATTAINMENT
Y	MODELING SUBMITTED
	GASOLINE DISPENSING FACILITY

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43266-0149.

A Permit to Install may be issued in proposed or final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install a fee of **\$1450** will be due. Please do not submit any payment now.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.

Sincerely,

Michael W. Ahern, Manager  
Permit Issuance and Data Management Section  
Division of Air Pollution Control

**GEAUGA COUNTY**

**PUBLIC NOTICE**  
**ISSUANCE OF DRAFT PERMIT TO INSTALL 02-21414 FOR AN AIR CONTAMINANT SOURCE FOR**  
**Mar-Bal Inc**

On 2/9/2006 the Director of the Ohio Environmental Protection Agency issued a draft action of a Permit To Install an air contaminant source for **Mar-Bal Inc**, located at **16930 Munn Rd, Auburn Township, Ohio**.

Installation of the air contaminant source identified below may proceed upon final issuance of Permit To Install 02-21414:

**3 BMC mixers.**

Comments concerning this draft action, or a request for a public meeting, must be sent in writing to the address identified below no later than thirty (30) days from the date this notice is published. All inquiries concerning this draft action may be directed to the contact identified below.

Dennis Bush, Ohio EPA, Northeast District Office, 2110 East Aurora Road, Twinsburg, OH 44087 [(330)425-9171]



**Permit To Install  
Terms and Conditions**

**Issue Date: To be entered upon final issuance  
Effective Date: To be entered upon final issuance**

**DRAFT PERMIT TO INSTALL 02-21414**

Application Number: 02-21414  
Facility ID: 0228000194  
Permit Fee: **To be entered upon final issuance**  
Name of Facility: Mar-Bal Inc  
Person to Contact: Gary Petruska  
Address: 16930 Munn Rd  
Chagrin Falls, OH 44023

Location of proposed air contaminant source(s) [emissions unit(s)]:  
**16930 Munn Rd  
Auburn Township, Ohio**

Description of proposed emissions unit(s):  
**3 BMC mixers.**

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

## Part I - GENERAL TERMS AND CONDITIONS

### A. Permit to Install General Terms and Conditions

#### 1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

#### 2. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

#### 3. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

#### 4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections,

conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

#### **5. Scheduled Maintenance/Malfunction Reporting**

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

#### **6. Permit Transfers**

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

#### **7. Air Pollution Nuisance**

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

#### **8. Termination of Permit to Install**

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

#### **9. Construction of New Sources(s)**

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental

Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

#### **10. Public Disclosure**

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

#### **11. Applicability**

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

#### **12. Best Available Technology**

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

#### **13. Source Operation and Operating Permit Requirements After Completion of Construction**

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the emissions unit(s) covered by this permit.

#### 14. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

#### 15. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit to Install fees within 30 days after the issuance of this Permit to Install.

### B. Permit to Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

#### SUMMARY (for informational purposes only) TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons Per Year</u>
PE	4.38
VOC (facility-wide)	9.00
VOC (P002 -P005)	7.46
OC (clean-up materials used in P002 - P005)	0.40

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>P002 - BMC Mixer No. 1052 Baker-Perkins 100-gallon (800 lb) Sigma Mixer</p>	<p>OAC rule 3745-31-05 (A)(3)</p>	<p>Visible particulate emissions from the dust collector stack shall not exceed five percent (5%) opacity as a six-minute average.</p> <p>See sections A.2.b - A.2.g of these terms and conditions.</p>
<p>The requirements of this PTI supercede the requirements in PTI No. 02-14756 for this emissions unit (issued on April 12, 2001).</p>	<p>OAC rule 3745-31-05 (C)</p>	<p>See sections A.2.h - A.2.i and B.1 of these terms and conditions.</p>
	<p>OAC rule 3745-17-07 (A)</p>	<p>The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05 (A)(3).</p>
	<p>OAC rule 3745-17-11 (B)</p>	<p>The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05 (A)(3).</p>
	<p>OAC rule 3745-21-07 (G)(2)</p>	<p>The hourly limit based on this applicable rule is less stringent</p>

than the hourly limit established pursuant to OAC rule 3745-31-05 (A)(3).

See section A.2.a of these terms and conditions.

## 2. Additional Terms and Conditions

- 2.a The emissions of organic materials from the production operation consist of styrene, a photochemically reactive material, as defined in OAC rule 3745-21-01 (C)(5).
- 2.b The permittee shall only use non-photochemically reactive material for clean-up.
- 2.c Particulate emissions generated from emissions units P002, P003, P004, and P005 combined shall not exceed 1.00 pounds per hour and 4.38 tons per year.
- 2.d Organic compounds (OC) emissions from the use of acetone or any other non-photochemically reactive clean-up material in emissions units P002, P003, P004, and P005 combined shall not exceed 0.40 tons per year.
- 2.e A cover shall be used on this emissions unit. The permittee shall keep the mixer cover closed while actual mixing is occurring, except when adding materials to this emissions unit.
- 2.f The permittee shall use a shaking-type dust collector with timer, which shall periodically clean the dust cake from the bags, to control the particulate emissions generated from the operation of this emissions unit.
- 2.g The permittee shall use VOC vapor-suppressed bags to store the mixed materials prior to further use.
- 2.h The facility-wide VOC (styrene) emissions shall not exceed 9.00 tons per year, based upon a rolling, 12-month summation.
- 2.i The permittee shall seek pre-approval from Ohio EPA, by (at a minimum) submitting facility-wide potential-to-emit (PTE) analysis, before the installation of any additional pre-blending tank at the facility. This does not waive the permittee responsibility to comply with OAC rule 37465-31.
- 2.j The maximum percentage of styrene in the pre-blended liquid materials shall not exceed forty-six percent (46.00 %) by weight.
- 2.k Only pre-blended liquid materials originating from this facility's pre-blending tanks shall be used in this emissions unit. Pre-blended liquid materials are prohibited from

being transferred to any holding tanks or storage vessels in or outside of this facility, except in cases of malfunction.

- 2.1 The pre-blending tanks in the facility shall be operated in such a manner that each complete batch of the pre-blended liquid materials shall be transferred to only one mixer at this facility. Therefore, when the two pre-blending tanks are operating there shall be no more than two mixers in operation at any given time at this facility.

**B. Operational Restrictions**

- 1. The total styrene throughput at the facility shall be no more than 1,755,410 pounds on a rolling, 12-month summation basis.

The permittee shall demonstrate compliance with this limitation upon the issuance of this permit to install or comply with the following:

To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the styrene throughput specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Styrene Throughput (Pounds)</u>
1	146,284
1-2	292,568
1-3	438,852
1-4	585,136
1-5	731,420
1-6	877,704
1-7	1,023,988
1-8	1,170,272
1-9	1,316,556
1-10	1,462,840
1-11	1,609,124
1-12	1,755,410

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual total styrene throughput limitation shall be based upon a rolling, 12-month summation of styrene throughput..

**C. Monitoring and/or Recordkeeping Requirements**

- 1. The permittee shall properly operate and maintain the timer in the dust collector, which shall periodically clean the dust cake from the bags, while the emissions unit is in operation. The timer shall be installed, calibrated, operated, and maintained in accordance with the

manufacturer's recommendations, instructions, and operating manual(s). The permittee shall check the timer on a weekly basis.

2. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack of the dust collector serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in operation log:
  - a. the color of the emissions;
  - b. whether the emissions are representative of normal operations;
  - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
  - d. the total duration of any visible emission incident; and
  - e. any corrective actions taken to eliminate the visible emissions.
3. The permittee shall record the following information for this emissions unit each day:
  - a. The name and identification number of each batch of materials mixed in this emissions unit.
  - b. The total operating hours of this emissions unit, defined as "OT", in hours per day.
  - c. The amount of pre-blended liquid materials used in each batch, defined as "AM", in pounds per batch.
  - d. The percentage of styrene in the pre-blended liquid materials by weight in each batch, defined as "ST%", in pounds styrene per pound of pre-blended liquid materials.
  - e. The total VOC (styrene) emissions from this emissions unit for the day, defined as " $D_{VOC}$ ", in pounds per day. " $D_{VOC}$ " shall be calculated as follows:

$$D_{VOC} = \text{the sum, from } i = 1 \text{ to } i = n \text{ of } [(AM)(ST\%)(EF)]_i,$$

where,

$i$  = subscript denoting an individual mixing batch of this emissions unit;

$n$  = the total number of mixing batch of this emissions unit; and

EF = emission factor, in pounds VOC emissions per pound of styrene input, determined by the most recent stack test in emissions unit P003.

- f. The average hourly VOC (styrene) emissions from this emissions unit, "Hvoc", in pounds per hour, shall be calculated as follows:

$$\text{Hvoc} = (D_{\text{VOC}})/(\text{OT})$$

- 4. The permittee shall keep the following information each month:
  - a. The monthly VOC (styrene) emissions from this emissions unit, in tons per month;
  - b. The monthly facility-wide VOC (styrene) emissions, in tons per month;
  - c. The rolling, 12-month summation of the total facility-wide VOC (styrene) emissions, in tons;
  - d. The monthly styrene throughput, in pounds per month; and
  - e. The rolling, 12-month summation of total styrene throughput, in pounds.
- 5. The permittee shall keep the following clean-up material information each month for emissions units P002, P003, P004, and P005 combined:
  - a. The identification of each clean-up material employed and whether the clean-up material is a non-photochemically reactive material.
  - b. The volume of each clean-up material employed, defined as " $V_{\text{clean-up}}$ ", in gallons per month.
  - c. The OC content of each clean-up material, defined as " $\text{OC}_{\text{content}}$ ", in pounds OC per gallon of the clean-up material.
  - d. The total OC emissions from clean-up materials, " $\text{OC}_{\text{clean-up}}$ ", in pounds per month, shall be calculated as follows:  
  
$$\text{OC}_{\text{clean-up}} = \text{the sum, from } j = 1 \text{ to } j = m \text{ of } [(V_{\text{clean-up}})(\text{OC}_{\text{content}})]j,$$
  
  
where,  
j = subscript denoting an individual clean-up material; and  
m = the total number of clean-up materials employed.
  - f. The rolling, 12-month summation of the total OC emissions from clean-up materials, in tons.

- 6. The permittee shall keep a daily operating log with the following information:
  - a. Whether a cover is used while actual mixing is occurring (except when adding materials to this emissions unit). If a cover is not used in this emissions unit while

actual mixing is occurring (except when adding materials to this emissions unit), an explanation of why this emissions unit's cover is not closed;

- b. Whether this emissions unit accepts pre-blended liquid materials from one of the two pre-blending tanks at the facility. If this emissions unit accepts pre-blended liquid materials other than those originating from one of the two facility's pre-blending tanks, the reason for this activity, and the actual amount of pre-blended liquid materials being used by this emissions unit in this manner;
  - c. Whether the pre-blended liquid materials from pre-blending tanks at the facility are transferred into holding tanks or any other type of containers prior to use in the mixers. The log should include an explanation of any time material is transferred to a holding tank or other container because of an emergency or other abnormal circumstance, and the actual amount of pre-blended liquid materials being transferred.
7. The permit to install for emissions units P002, P003, P004 and P005 was evaluated based on the actual materials and design parameters of the emissions units' exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant potentially emitted by this emissions unit, using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: styrene

TLV (mg/m3): 85.202

Maximum Hourly Emission Rate (lbs/hr): 2.06

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 1,330

MAGLC (ug/m3): 2,029

8. Physical changes to or changes in the method of operation of the emissions unit after its installation could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:
- a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)", than the lowest TLV value previously modeled;

- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions units or the exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install would not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

- 9. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":
  - a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
  - b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
  - c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

#### **D. Reporting Requirements**

- 1. The permittee shall submit quarterly written reports which:
  - a. identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit; and
  - b. describe any corrective actions taken to eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) in accordance with the deviation reporting requirements in the General Terms and Conditions.

- 2. The permittee shall submit deviation (excursion) reports which include the following information for this emissions unit:

- a. An identification of each day during which the average hourly VOC (styrene) emissions from this emissions unit exceeded 0.81 pound, and the actual average hourly VOC (styrene) emissions for each such day.
  - b. An identification of each month during which the rolling, 12-month facility-wide VOC (styrene) emissions exceeded 9.96 tons, and the actual rolling 12-month facility-wide VOC (styrene) emissions for each such month.
  - c. An identification of each day during which the maximum percentage of styrene in any batch of pre-blended liquid materials exceeded forty-six percent (46.00%) by weight, and the actual styrene percentage by weight in pre-blended liquid materials for each such a batch in each day.
  - d. An identification of each day during which this emissions unit accepted pre-blended liquid material other than directly from one of the pre-blending tanks at this facility, and the actual amount of pre-blended liquid materials transferred into this emissions unit other than directly from one of the pre-blending tanks in each day
  - e. An identification of each day during which any batch of pre-blended liquid materials originating from this facility's pre-blended tanks were transferred to more than one mixer in this facility, and the actual amount of pre-blended liquid materials has been transferred to each mixer for each such a batch in each day, along with the reason for such activities.
  - f. An identification of each day during which pre-blended liquid materials were transferred into outside of this facility, and the actual amount of pre-blended liquid materials transferred, along with the reason for such activities.
  - g. An identification of each month during which a photochemically reactive clean-up material was employed in emissions units P002, P003, P004, and P005, and the actual amount of photochemically reactive clean-up material employed for each such month.
  - h. An identification of each month during which the rolling, 12-month total throughout styrene input in the facility exceeded 1,755,410 pounds, and the actual amount of throughout styrene input in each such month.
3. All deviation (excursion) reports shall be submitted in accordance with the General Terms and Conditions.
  4. The permittee shall submit annual reports that specify the VOC (styrene) emissions from this emissions unit, OC emissions from clean-up material employed in emissions units P002, P003, P004, and P005, as well as the total throughout styrene input and facility-wide VOC (styrene) emissions. The reports shall include the calculations, shall be submitted by January 31 of each year, and shall cover the previous calendar year.

## E. Testing Requirements

1. Compliance with the emission limitation in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation: 1.0 lb/hr of particulate for emissions units P002 - P005 combined

Applicable Compliance Method:

Compliance shall be determined in accordance with the following:

$$EP_{P002-P005} = (ME)(FR)(60 \text{ min/hr})/(7,000 \text{ grains/lb})$$

where,

ME = the maximum emission rate from the dust collector stack of 0.03 grain/ft<sup>3</sup>; and

FR = the maximum flow rate of the dust collector = 3,900 ft<sup>3</sup>/min.

If required, the permittee shall demonstrate compliance by emission testing in accordance with Method 5, 40 CFR Part 60, Appendix A.

- b. Emissions Limitation: 0.81 lb/hr of VOC (styrene)

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.3 of these terms and conditions. If required, the permittee shall demonstrate compliance by emission testing in accordance with Method 25A, 40 CFR Part 60, Appendix A.

- c. Emission Limitation: 3.34 tons/yr of VOC (styrene)

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.4 of these terms and conditions.

- d. Emission Limitation: 0.4 ton/yr of OC from clean-up material employed in emissions units P002 -P005 combined

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.5 of these terms and conditions.

- e. Emission Limitation: 4.38 tons/yr of particulate for emissions units P002 - P005 combined

**Applicable Compliance Method:**

The tons per year limitation was developed by multiplying the pound per hour limitations by the maximum operating schedule of 8,760 hours per year, and dividing by 2,000 pounds per ton. Therefore, provided compliance is shown with the hourly limitations, compliance will also be shown with the annual limitations.

- f. Emission Limitation: 5% opacity as 6-minute average

**Applicable Compliance Method:**

Compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03 (B)(1) using the test methods and procedures specified in U.S. EPA Reference Method 9.

- g. Emission Limitation: 9.00 tons per year of VOC (styrene) facility-wide

**Applicable Compliance Method:**

Compliance shall be determined based upon record keeping requirements specified in section C.4 of these terms and conditions.

- h. Emissions Limitation: 46.00% styrene by weight in pre-blended liquid materials

**Applicable Compliance Method:**

Compliance shall be determined based upon record keeping requirements specified in section C.3 of these terms and conditions.

- i. Emission Limitation: 1,755,410 pounds of total styrene throughput

**Applicable Compliance Method:**

Compliance shall be determined based upon record keeping requirements specified in section C.4 of these terms and conditions.

**F. Miscellaneous Requirements**

None

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P003 - BMC Mixer No. 1053 Werner Pfloderer 100- gallon (800 lb) Sigma Mixer	OAC rule 3745-31-05 (A)(3)	Visible particulate emissions from the dust collector stack shall not exceed five percent (5%) opacity as a six-minute average.  See sections A.2.b - A.2.g of these terms and conditions.
The requirements of this PTI supercede the requirements in PTI No. 02-14756 for this emissions unit (issued on April 12, 2001).	OAC rule 3745-31-05 (C)	Volatile organic compound (VOC) emissions (styrene) from this emissions unit shall not exceed 0.81 pound per hour and 3.34 tons per year.
	OAC rule 3745-17-07 (A)	See sections A.2.h - A.2.i and B.1 of these terms and conditions.  The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05 (A)(3).
	OAC rule 3745-17-11 (B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05 (A)(3).
	OAC rule 3745-21-07 (G)(2)	The hourly limit based on this applicable rule is less stringent

than the hourly limit established pursuant to OAC rule 3745-31-05 (A)(3).

See section A.2.a of these terms and conditions.

## 2. Additional Terms and Conditions

- 2.a The emissions of organic materials from the production operation consist of styrene, a photochemically reactive material, as defined in OAC rule 3745-21-01 (C)(5).
- 2.b The permittee shall only use non-photochemically reactive material for clean-up.
- 2.c Particulate emissions generated from emissions units P002, P003, P004, and P005 combined shall not exceed 1.00 pounds per hour and 4.38 tons per year.
- 2.d Organic compounds (OC) emissions from the use of acetone or any other non-photochemically reactive clean-up material in emissions units P002, P003, P004, and P005 combined shall not exceed 0.40 tons per year.
- 2.e A cover shall be used on this emissions unit. The permittee shall keep the mixer cover closed while actual mixing is occurring, except when adding materials to this emissions unit.
- 2.f The permittee shall use a shaking-type dust collector with timer, which shall periodically clean the dust cake from the bags, to control the particulate emissions generated from the operation of this emissions unit.
- 2.g The permittee shall use VOC vapor-suppressed bags to store the mixed materials prior to further use.
- 2.h The facility-wide VOC (styrene) emissions shall not exceed 9.00 tons per year, based upon a rolling, 12-month summation.
- 2.i The permittee shall seek pre-approval from Ohio EPA, by (at a minimum) submitting facility-wide potential-to-emit (PTE) analysis, before the installation of any additional pre-blending tank at the facility. This does not waive the permittee responsibility to comply with OAC rule 37465-31.
- 2.j The maximum percentage of styrene in the pre-blended liquid materials shall not exceed forty-six percent (46.00 %) by weight.

- 2.k Only pre-blended liquid materials originating from this facility's pre-blending tanks shall be used in this emissions unit. Pre-blended liquid materials are prohibited from being transferred to any holding tanks or storage vessels in or outside of this facility, except in cases of malfunction.
  
- 2.l The pre-blending tanks in the facility shall be operated in such a manner that each complete batch of the pre-blended liquid materials shall be transferred to only one mixer at this facility. Therefore, when the two pre-blending tanks are operating there shall be no more than two mixers in operation at any given time at this facility.

**B. Operational Restrictions**

- 1. The total styrene throughput in the facility shall be no more than 1,755,410 pounds on a rolling, 12-month summation basis.

The permittee shall demonstrate compliance with this limitation upon the issuance of this permit to install or comply with the following:

To ensure enforceability during the first 12 calendar months of operation, following the issuance of this permit, the permittee shall not exceed the styrene throughput specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Styrene Throughput (Pounds)</u>
1	146,284
1-2	292,568
1-3	438,852
1-4	585,136
1-5	731,420
1-6	877,704
1-7	1,023,988
1-8	1,170,272
1-9	1,316,556
1-10	1,462,840
1-11	1,609,124
1-12	1,755,410

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual styrene throughput limitation shall be based upon a rolling, 12-month summation of styrene throughput.

### C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly operate and maintain the timer in the dust collector, which shall periodically clean the dust cake from the bags, while the emissions unit is in operation. The timer shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall check the timer on a weekly basis.
2. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack of the dust collector serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in operation log:
  - a. the color of the emissions;
  - b. whether the emissions are representative of normal operations;
  - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
  - d. the total duration of any visible emission incident; and
  - e. any corrective actions taken to eliminate the visible emissions.
3. The permittee shall record the following information for this emissions unit each day:
  - a. The name and identification number of each batch of materials mixed in this emissions unit.
  - b. The total operating hours of this emissions unit, defined as "OT", in hours per day.
  - c. The amount of pre-blended liquid materials used in each batch, defined as "AM", in pounds per batch.
  - d. The percentage of styrene in the pre-blended liquid materials by weight in each batch, defined as "ST%", in pounds styrene per pound of pre-blended liquid materials.
  - e. The total VOC (styrene) emissions from this emissions unit for the day, defined as " $D_{VOC}$ ", in pounds per day. " $D_{VOC}$ " shall be calculated as follows:

$$D_{VOC} = \text{the sum, from } i = 1 \text{ to } i = n \text{ of } [(AM)(ST\%)(EF)]_i,$$

where,

i = subscript denoting an individual mixing batch of this emissions unit;

n = the total number of mixing batch of this emissions unit; and

EF = emission factor, in pounds VOC emissions per pound of styrene input, determined by the most recent stack test.

- f. The average hourly VOC (styrene) emissions from this emissions unit, "Hvoc", in pounds per hour, shall be calculated as follows:

$$Hvoc = (D_{VOC})/(OT)$$

4. The permittee shall keep the following information each month:

- a. The monthly VOC (styrene) emissions from this emissions unit, in tons per month;
- b. The monthly facility-wide VOC (styrene) emissions, in tons per month; and
- c. The rolling, 12-month summation of the total facility-wide VOC (styrene) emissions, in tons.
- d. The monthly styrene throughput, in pounds per month; and
- e. The rolling, 12-month summation of total styrene throughput, in pounds.

5. The permittee shall keep the following clean-up material information each month for emissions units P002, P003, P004, and P005 combined:

- a. The identification of each clean-up material employed and whether the clean-up material is a non-photochemically reactive material.
- b. The volume of each clean-up material employed, defined as " $V_{\text{clean-up}}$ ", in gallons per month.
- c. The OC content of each clean-up material, defined as " $OC_{\text{content}}$ ", in pounds OC per gallon of the clean-up material.
- d. The total OC emissions from clean-up materials, " $OC_{\text{clean-up}}$ ", in pounds per month, shall be calculated as follows:

$$OC_{\text{clean-up}} = \text{the sum, from } j = 1 \text{ to } j = m \text{ of } [(V_{\text{clean-up}})(OC_{\text{content}})]j,$$

where,

j = subscript denoting an individual clean-up material; and

m = the total number of clean-up materials employed.

- e. The rolling, 12-month summation of the total OC emissions from clean-up materials, in tons.
6. The permittee shall keep a daily operating log with the following information:
    - a. Whether a cover is used while actual mixing is occurring (except when adding materials to this emissions unit). If a cover is not used in this emissions unit while actual mixing is occurring (except when adding materials to this emissions unit), an explanation of why this emissions unit's cover is not closed;
    - b. Whether this emissions unit accepts pre-blended liquid materials from one of the two pre-blending tanks at the facility. If this emissions unit accepts pre-blended liquid materials other than those originating from one of the two facility's pre-blending tanks, the reason for this activity, and the actual amount of pre-blended liquid materials being used by this emissions unit in this manner;
    - c. Whether the pre-blended liquid materials from pre-blending tanks at the facility are transferred into holding tanks or any other type of containers prior to use in the mixers. The log should include an explanation of any time material is transferred to a holding tank or other container because of an emergency or other abnormal circumstance, and the actual amount of pre-blended liquid materials being transferred.
  7. The permit to install for emissions units P002, P003, P004, and P005 combined were evaluated based on the actual materials and design parameters of the emissions units' exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant potentially emitted by this emissions unit, using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: styrene

TLV (mg/m3): 85.202

Maximum Hourly Emission Rate (lbs/hr): 2.06

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 1,330

MAGLC (ug/m3): 2,029

8. Physical changes to or changes in the method of operation of the emissions unit after its installation could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic

Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)", than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions units or the exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install would not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

9. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":
  - a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
  - b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
  - c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

#### **D. Reporting Requirements**

1. The permittee shall submit quarterly written reports which:
  - a. identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit; and

- b. describe any corrective actions taken to eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) in accordance with the deviation reporting requirements in the General Term and Conditions.

- 2. The permittee shall submit deviation (excursion) reports which include the following information for this emissions unit:
  - a. An identification of each day during which the average hourly VOC (styrene) emissions from this emissions unit exceeded 0.81 pound, and the actual average hourly VOC (styrene) emissions for each such day.
  - b. An identification of each month during which the rolling, 12-month facility-wide VOC (styrene) emissions exceeded 9.96 tons, and the actual rolling 12-month facility-wide VOC (styrene) emissions for each such month.
  - c. An identification of each day during which the maximum percentage of styrene in any batch of pre-blended liquid materials exceeded forty-six percent (46.00%) by weight limitation, and the actual styrene percentage by weight in pre-blended liquid materials for each such a batch in each day.
  - d. An identification of each day during which this emissions unit accepted pre-blended liquid materials other than those originating from one of the pre-blending tanks at this facility, and the actual amount of pre-blended liquid materials accepted by this emissions units for each such a batch in each day, along with the reason for such an activity.
  - e. An identification of each day during which any batch of pre-blended liquid materials originating from this facility's pre-blended tanks were transferred to more than one mixer in this facility, and the actual amount of pre-blended liquid materials has been transferred to each mixer for each such a batch in each day, along with the reason for such activities.
  - f. An identification of each day during which pre-blended liquid materials were transferred into any holding tanks or storage vessels in or outside of this facility, and the actual amount of pre-blended liquid materials has been transferred, along with the reason for such activities.
  - g. An identification of each month during which a photochemically reactive clean-up material was employed in emissions units P002, P003, P004, and P005, and the actual amount of photochemically reactive clean-up material has been employed for each such a month.

- h. An identification of each month during which the rolling, 12-month total throughout styrene input in the facility exceeded 1,755,410 pounds, and the actual amount of throughout styrene input in each such month.
- 3. All deviation (excursion) reports shall be submitted in accordance with the General Terms and Conditions.
- 4. The permittee shall submit annual reports that specify the VOC (styrene) emissions from this emissions unit, OC emissions from clean-up material employed in emissions units P002, P003, P004, and P005, as well as the total throughout styrene input and facility-wide VOC (styrene) emissions. The reports shall include the calculations, shall be submitted by January 31 of each year, and shall cover the previous calendar year.

**E. Testing Requirements**

- 1. Compliance with the emission limitation in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation: 1.0 lb/hr of particulate for emissions units P002 - P005 combined

Applicable Compliance Method:

Compliance shall be determined in accordance with the following:

$$EP_{P002-P005} = (ME)(FR)(60 \text{ min/hr})/(7,000 \text{ grains/lb})$$

where,

ME = the maximum emission rate from the dust collector stack by the manufacture guarantee number, which is 0.03 grain/ft<sup>3</sup>; and

FR = the maximum flow rate of the dust collector = 3,900 ft<sup>3</sup>/min.

If required, the permittee shall demonstrate compliance by emission testing in accordance with Method 5, 40 CFR Part 60, Appendix A.

- b. Emissions Limitation: 0.81 lb/hr of VOC (styrene)

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.3 of these terms and conditions. If required, the permittee shall demonstrate compliance by emission testing in accordance with Method 25A, 40 CFR Part 60, Appendix A.

- c. Emission Limitation: 3.34 tons/yr of VOC (styrene)

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.4 of these terms and conditions.

- d. Emission Limitation:  
0.4 ton/yr of OC from clean-up material employed in emissions units P002 -P005 combined

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.5 of these terms and conditions.

- e. Emission Limitation:  
4.38 tons/yr of particulate for emissions units P002 - P005 combined

Applicable Compliance Method:

The tons per year limitations were developed by multiplying the pound per hour limitations by the maximum operating schedule of 8,760 hours per year, and dividing by 2,000 pounds per ton. Therefore, provided compliance is shown with the hourly limitations, compliance will also be shown with the annual limitations.

- f. Emission Limitation: 5% opacity as 6-minute average

Applicable Compliance Method:

Compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03 (B)(1) using the test methods and procedures specified in U.S. EPA Reference Method 9.

- g. Emission Limitation: 9.00 tons per year of VOC (styrene) facility-wide

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.4 of these terms and conditions.

- h. Emissions Limitation: 46.00% styrene by weight in pre-blended liquid materials

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.3 of these terms and conditions.

- i. Emission Limitation: 1,755,410 pounds of total styrene throughput

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.4 of these terms and conditions.

**Mar-Bal Inc**

**PTI Application: 02-21414**

**Issued: To be entered upon final issuance**

**Facility ID: 0228000194**

**Emissions Unit ID: P003**

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
  - a. The emission testing shall be conducted within three months after issuance of the permit. Testing performed in the six-month period prior to the issuance of the permit shall be deemed to meet this requirement.
  - b. The emission testing shall be conducted to demonstrate compliance with the allowable hourly mass emission rate for VOC (styrene) from this emissions unit and determine an emission factor of VOC (styrene) emissions for this emissions unit.
  - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for VOC (styrene) mass emission rate, Method 25A of 40 CFR Part 60, Appendix A and Method 204F of 40 CFR Part 51 Appendix M. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

**Mar-Bal Inc**

**PTI Application: 02-21414**

**Issued: To be entered upon final issuance**

**Facility ID: 0228000194**

**Emissions Unit ID: P003**

**F. Miscellaneous Requirements**

None

**Mar-Bal Inc**

**PTI Application: 02-21414**

**Issued: To be entered upon final issuance**

**Facility ID: 0228000194**

**Emissions Unit ID: P004**

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>P004 - BMC Mixer No. 1056 Littleford FKM-600-D 95-gallon (600 lb) Plow Mixer</p>	<p>OAC rule 3745-31-05 (A)(3)</p>	<p>Visible particulate emissions from the dust collector stack shall not exceed five percent (5%) opacity as a six-minute average.</p> <p>See sections A.2.b - A.2.g of these terms and conditions.</p>
<p>The requirements of this PTI supercede the requirements in PTI No. 02-14756 for this emissions unit (issued on April 12, 2001).</p>	<p>OAC rule 3745-31-05 (C)</p>	<p>See sections A.2.h - A.2.i and B.1 of these terms and conditions.</p>
	<p>OAC rule 3745-17-07 (A)</p>	<p>The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05 (A)(3).</p>
	<p>OAC rule 3745-17-11 (B)</p>	<p>The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05 (A)(3).</p>
	<p>OAC rule 3745-21-07 (G)(2)</p>	<p>The hourly limit based on this applicable rule is less stringent</p>

than the hourly limit established pursuant to OAC rule 3745-31-05 (A)(3).

See section A.2.a of these terms and conditions.

## **2. Additional Terms and Conditions**

- 2.a** The emissions of organic materials from the production operation consist of styrene, a photochemically reactive material, as defined in OAC rule 3745-21-01 (C)(5).
- 2.b** The permittee shall only use non-photochemically reactive material for clean-up.
- 2.c** Particulate emissions generated from emissions units P002, P003, P004, and P005 combined shall not exceed 1.00 pounds per hour and 4.38 tons per year.
- 2.d** Organic compounds (OC) emissions from the use of acetone or any other non-photochemically reactive clean-up material in emissions units P002, P003, P004, and P005 combined shall not exceed 0.40 tons per year.
- 2.e** A cover shall be used on this emissions unit. The permittee shall keep the mixer cover closed while actual mixing is occurring, except when adding materials to this emissions unit.
- 2.f** The permittee shall use a shaking-type dust collector with timer, which shall periodically clean the dust cake from the bags, to control the particulate emissions generated from the operation of this emissions unit.
- 2.g.** The permittee shall use VOC vapor-suppressed bags to store the mixed materials prior to further use.
- 2.h** The facility-wide VOC (styrene) emissions shall not exceed 9.00 tons per year, based upon a rolling, 12-month summation.
- 2.i** The permittee shall seek pre-approval from Ohio EPA, by (at a minimum) submitting facility-wide potential-to-emit (PTE) analysis, before the installation of any additional pre-blending tank at the facility. This does not waive the permittee responsibility to comply with OAC rule 37465-31.
- 2.j** The maximum percentage of styrene in the pre-blended liquid materials shall not exceed forty-six percent (46.00 %) by weight.

- 2.k Only pre-blended liquid materials originating from this facility's pre-blending tanks shall be used in this emissions unit. Pre-blended liquid materials are prohibited from being transferred to any holding tanks or storage vessels in or outside of this facility, except in cases of malfunction.
  
- 2.l The pre-blending tanks in the facility shall be operated in such a manner that each complete batch of the pre-blended liquid materials shall be transferred to only one mixer at this facility. Therefore, when the two pre-blending tanks are operating there shall be no more than two mixers in operation at any given time at this facility.

**B. Operational Restrictions**

- 1. The total styrene throughput at the facility shall be no more than 1,755,410 pounds on a rolling, 12-month summation basis.

The permittee shall demonstrate compliance with this limitation upon the issuance of this permit to install or comply with the following:

To ensure enforceability during the first 12 calendar months of operation, following the issuance of this permit, the permittee shall not exceed the styrene throughput specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Styrene Throughput (Pounds)</u>
1	146,284
1-2	292,568
1-3	438,852
1-4	585,136
1-5	731,420
1-6	877,704
1-7	1,023,988
1-8	1,170,272
1-9	1,316,556
1-10	1,462,840
1-11	1,609,124
1-12	1,755,410

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual styrene throughput limitation shall be based upon a rolling, 12-month summation of styrene throughput.

### C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly operate and maintain the timer in the dust collector, which shall periodically clean the dust cake from the bags, while the emissions unit is in operation. The timer shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall check the timer on a weekly basis.
2. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack of the dust collector serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in operation log:
  - a. the color of the emissions;
  - b. whether the emissions are representative of normal operations;
  - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
  - d. the total duration of any visible emission incident; and
  - e. any corrective actions taken to eliminate the visible emissions.
3. The permittee shall record the following information for this emissions unit each day:
  - a. The name and identification number of each batch of materials mixed in this emissions unit.
  - b. The total operating hours of this emissions unit, defined as "OT", in hours per day.
  - c. The amount of pre-blended liquid materials used in each batch, defined as "AM", in pounds per batch.
  - d. The percentage of styrene in the pre-blended liquid materials by weight in each batch, defined as "ST%", in pounds styrene per pound of pre-blended liquid materials.
  - e. The total VOC (styrene) emissions from this emissions unit for the day, defined as "D<sub>VOC</sub>", in pounds per day. "D<sub>VOC</sub>" shall be calculated as follows:

$$D_{VOC} = \text{the sum, from } i = 1 \text{ to } i = n \text{ of } [(AM)(ST\%)(EF)]_i,$$

where,

$i$  = subscript denoting an individual mixing batch of this emissions unit;

$n$  = the total number of mixing batch of this emissions unit; and

EF = emission factor, in pounds VOC emissions per pound of styrene input, determined by the most recent stack test.

- f. The average hourly VOC (styrene) emissions from this emissions unit, "Hvoc", in pounds per hour, shall be calculated as follows:

$$Hvoc = (D_{VOC})/(OT)$$

4. The permittee shall keep the following information each month:
- a. The monthly VOC (styrene) emissions from this emissions unit, in tons per month;
  - b. The monthly facility-wide VOC (styrene) emissions, in tons per month; and
  - c. The rolling, 12-month summation of the total facility-wide VOC (styrene) emissions, in tons.
  - d. The monthly throughout styrene input, in pounds per month; and
  - e. The rolling, 12-month summation of total styrene throughput, in pounds.
5. The permittee shall keep the following clean-up material information each month for emissions units P002, P003, P004, and P005 combined:
- a. The identification of each clean-up material employed and whether the clean-up material is a non-photochemically reactive material.
  - b. The volume of each clean-up material employed, defined as " $V_{\text{clean-up}}$ ", in gallons per month.
  - c. The OC content of each clean-up material, defined as " $OC_{\text{content}}$ ", in pounds OC per gallon of the clean-up material.
  - d. The total OC emissions from clean-up materials, " $OC_{\text{clean-up}}$ ", in pounds per month, shall be calculated as follows:

$$OC_{\text{clean-up}} = \text{the sum, from } j = 1 \text{ to } j = m \text{ of } [(V_{\text{clean-up}})(OC_{\text{content}})]j,$$

where,

$j$  = subscript denoting an individual clean-up material; and

$m$  = the total number of clean-up materials employed.

- e. The rolling, 12-month summation of the total OC emissions from clean-up materials, in tons.
6. The permittee shall keep a daily operating log with the following information:
    - a. Whether a cover is used while actual mixing is occurring (except when adding materials to this emissions unit). If a cover is not used in this emissions unit while actual mixing is occurring (except when adding materials to this emissions unit), an explanation of why this emissions unit's cover is not closed;
    - b. Whether this emissions unit accepts pre-blended liquid materials from one of the two pre-blending tanks at the facility. If this emissions unit accepts pre-blended liquid materials other than those originating from one of the two facility's pre-blending tanks, the reason for this activity, and the actual amount of pre-blended liquid materials being used by this emissions unit in this manner;
    - c. Whether the pre-blended liquid materials from pre-blending tanks at the facility are transferred into holding tanks or any other type of containers prior to use in the mixers. The log should include an explanation of any time material is transferred to a holding tank or other container because of an emergency or other abnormal circumstance, and the actual amount of pre-blended liquid materials being transferred.
  7. The permit to install for emissions units P002, P003, P004, and P005 combined were evaluated based on the actual materials and design parameters of the emissions units' exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant potentially emitted by this emissions unit, using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: styrene

TLV (mg/m3): 85.202

Maximum Hourly Emission Rate (lbs/hr): 2.06

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 1,330

MAGLC (ug/m3): 2,029

8. Physical changes to or changes in the method of operation of the emissions unit after its installation could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic

Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)", than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions units or the exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install would not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

9. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":
  - a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
  - b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
  - c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

#### **D. Reporting Requirements**

1. The permittee shall submit quarterly written reports which:
  - a. identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit; and

- b. describe any corrective actions taken to eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) in accordance with the deviation reporting requirements in the General Term and Conditions.

- 2. The permittee shall submit deviation (excursion) reports which include the following information for this emissions unit:
  - a. An identification of each day during which the average hourly VOC (styrene) emissions from this emissions unit exceeded 0.85 pound, and the actual average hourly VOC (styrene) emissions for each such day.
  - b. An identification of each month during which the rolling, 12-month facility-wide VOC (styrene) emissions exceeded 9.96 tons, and the actual rolling 12-month facility-wide VOC (styrene) emissions for each such month.
  - c. An identification of each day during which the maximum percentage of styrene in any batch of pre-blended liquid materials exceeded forty-six percent (46.00%) by weight limitation, and the actual styrene percentage by weight in pre-blended liquid materials for each such a batch in each day.
  - d. An identification of each day during which this emissions unit accepted pre-blended liquid materials other than those originating from one of the pre-blending tanks at this facility, and the actual amount of pre-blended liquid materials accepted by this emissions units for each such a batch in each day, along with the reason for such an activity.
  - e. An identification of each day during which any batch of pre-blended liquid materials originating from this facility's pre-blended tanks were transferred to more than one mixer in this facility, and the actual amount of pre-blended liquid materials has been transferred to each mixer for each such a batch in each day, along with the reason for such activities.
  - f. An identification of each day during which pre-blended liquid materials were transferred into any holding tanks or storage vessels in or outside of this facility, and the actual amount of pre-blended liquid materials has been transferred, along with the reason for such activities.
  - g. An identification of each month during which a photochemically reactive clean-up material was employed in emissions units P002, P003, P004, and P005, and the actual amount of photochemically reactive clean-up material has been employed for each such a month.

- h. An identification of each month during which the rolling, 12-month total throughout styrene input in the facility exceeded 1,755,410 pounds, and the actual amount of throughout styrene input in each such month.
- 3. All deviation (excursion) reports shall be submitted in accordance with the General Terms and Conditions.
- 4. The permittee shall submit annual reports that specify the VOC (styrene) emissions from this emissions unit, OC emissions from clean-up material employed in emissions units P002, P003, P004, and P005, as well as the total throughout styrene input and facility-wide VOC (styrene) emissions. The reports shall include the calculations, shall be submitted by January 31 of each year, and shall cover the previous calendar year.

**E. Testing Requirements**

- 1. Compliance with the emission limitation in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation: 1.0 lb/hr of particulate for emissions units P002 - P005 combined

Applicable Compliance Method:

Compliance shall be determined in accordance with the following:

$$EP_{P002-P005} = (ME)(FR)(60 \text{ min/hr}) / (7,000 \text{ grains/lb})$$

where,

ME = the maximum emission rate from the dust collector stack by the manufacture guarantee number, which is 0.03 grain/ft<sup>3</sup>; and

FR = the maximum flow rate of the dust collector = 3,900 ft<sup>3</sup>/min.

If required, the permittee shall demonstrate compliance by emission testing in accordance with Method 5, 40 CFR Part 60, Appendix A.

- b. Emissions Limitation: 0.85 lb/hr of VOC (styrene)

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.3 of these terms and conditions. If required, the permittee shall demonstrate compliance by emission testing in accordance with Method 25A, 40 CFR Part 60, Appendix A.

- c. Emission Limitation: 3.40 tons/yr of VOC (styrene)

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.4 of these terms and conditions.

- d. Emission Limitation:  
0.4 ton/yr of OC from clean-up material employed in emissions units P002 -P005 combined

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.5 of these terms and conditions.

- e. Emission Limitation:  
4.38 tons/yr of particulate for emissions units P002 - P005 combined

Applicable Compliance Method:

The tons per year limitations were developed by multiplying the pound per hour limitations by the maximum operating schedule of 8,760 hours per year, and dividing by 2,000 pounds per ton. Therefore, provided compliance is shown with the hourly limitations, compliance will also be shown with the annual limitations.

- f. Emission Limitation: 5% opacity as 6-minute average

Applicable Compliance Method:

Compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03 (B)(1) using the test methods and procedures specified in U.S. EPA Reference Method 9.

- g. Emission Limitation: 9.00 tons per year of VOC (styrene) facility-wide

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.4 of these terms and conditions.

- h. Emissions Limitation: 46.00% styrene by weight in pre-blended liquid materials

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.3 of these terms and conditions.

- i. Emission Limitation: 1,755,410 pounds of total styrene throughput

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.4 of these terms and conditions.

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
  - a. The emission testing shall be conducted within three months after issuance of the permit. Testing performed in the six-month period prior to the issuance of the permit shall be deemed to meet this requirement.
  - b. The emission testing shall be conducted to demonstrate compliance with the allowable hourly mass emission rate for VOC (styrene) from this emissions unit and determine an emission factor of VOC (styrene) emissions from this emissions unit.
  - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for VOC (styrene) mass emission rate, Method 25A of 40 CFR Part 60, Appendix A and Method 204F of 40 CFR Part 51 Appendix M. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

**Mar-Bal Inc**

**PTI Application: 02-21414**

**Issued: To be entered upon final issuance**

**Facility ID: 0228000194**

**Emissions Unit ID: P004**

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

**F. Miscellaneous Requirements**

None

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P005 - BMC Mixer No. 1051 J.H. Day Cincinnati 200-gallon (1,200 lb) Sigma Mixer	OAC rule 3745-31-05 (A)(3)	Visible particulate emissions from the dust collector stack shall not exceed five percent (5%) opacity as a six-minute average.  See sections A.2.b - A.2.g of these terms and conditions.  Volatile organic compound (VOC) emissions (styrene) from this emissions unit shall not exceed 0.81 pound per hour and 3.34 tons per year.
	OAC rule 3745-31-05 (C)	See sections A.2.h - A.2.i and B.1 of these terms and conditions.
	OAC rule 3745-17-07 (A)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05 (A)(3).
	OAC rule 3745-17-11 (B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05 (A)(3).
	OAC rule 3745-21-07 (G)(2)	The hourly limit based on this applicable rule is less stringent

than the hourly limit established pursuant to OAC rule 3745-31-05 (A)(3).

See section A.2.a of these terms and conditions.

## 2. Additional Terms and Conditions

- 2.a The emissions of organic materials from the production operation consist of styrene, a photochemically reactive material, as defined in OAC rule 3745-21-01 (C)(5).
- 2.b The permittee shall only use non-photochemically reactive material for clean-up.
- 2.c Particulate emissions generated from emissions units P002, P003, P004, and P005 combined shall not exceed 1.00 pounds per hour and 4.38 tons per year.
- 2.d Organic compounds (OC) emissions from the use of acetone or any other non-photochemically reactive clean-up material in emissions units P002, P003, P004, and P005 combined shall not exceed 0.40 tons per year.
- 2.e A cover shall be used on this emissions unit. The permittee shall keep the mixer cover closed while actual mixing is occurring, except when adding materials to this emissions unit.
- 2.f The permittee shall use a shaking-type dust collector with timer, which shall periodically clean the dust cake from the bags, to control the particulate emissions generated from the operation of this emissions unit.
- 2.g The permittee shall use VOC vapor-suppressed bags to store the mixed materials prior to further use.
- 2.h The facility-wide VOC (styrene) emissions shall not exceed 9.00 tons per year, based upon a rolling, 12-month summation.
- 2.i The permittee shall seek pre-approval from Ohio EPA, by (at a minimum) submitting facility-wide potential-to-emit (PTE) analysis, before the installation of any additional pre-blending tank at the facility. This does not waive the permittee responsibility to comply with OAC rule 37465-31.
- 2.j The maximum percentage of styrene in the pre-blended liquid materials shall not exceed forty-six percent (46.00 %) by weight.

- 2.k Only pre-blended liquid materials originating from this facility's pre-blending tanks shall be used in this emissions unit. Pre-blended liquid materials are prohibited from being transferred to any holding tanks or storage vessels in or outside of this facility, except in cases of malfunction.
  
- 2.l The pre-blending tanks in the facility shall be operated in such a manner that each complete batch of the pre-blended liquid materials shall be transferred to only one mixer at this facility. Therefore, when the two pre-blending tanks are operating there shall be no more than two mixers in operation at any given time at this facility.

**B. Operational Restrictions**

- 1. The total styrene throughput at the facility shall be no more than 1,755,410 pounds on a rolling, 12-month summation basis.

The permittee shall demonstrate compliance with this limitation upon the issuance of this permit to install or comply with the following:

To ensure enforceability during the first 12 calendar months of operation, following the issuance of this permit, the permittee shall not exceed the styrene throughput specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Styrene Throughput (Pounds)</u>
1	146,284
1-2	292,568
1-3	438,852
1-4	585,136
1-5	731,420
1-6	877,704
1-7	1,023,988
1-8	1,170,272
1-9	1,316,556
1-10	1,462,840
1-11	1,609,124
1-12	1,755,410

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual styrene throughput limitation shall be based upon a rolling, 12-month summation of styrene throughput.

### C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly operate and maintain the timer in the dust collector, which shall periodically clean the dust cake from the bags, while the emissions unit is in operation. The timer shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall check the timer on a weekly basis.
2. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack of the dust collector serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in operation log:
  - a. the color of the emissions;
  - b. whether the emissions are representative of normal operations;
  - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
  - d. the total duration of any visible emission incident; and
  - e. any corrective actions taken to eliminate the visible emissions.
3. The permittee shall record the following information for this emissions unit each day:
  - a. The name and identification number of each batch of materials mixed in this emissions unit.
  - b. The total operating hours of this emissions unit, defined as "OT", in hours per day.
  - c. The amount of pre-blended liquid materials used in each batch, defined as "AM", in pounds per batch.
  - d. The percentage of styrene in the pre-blended liquid materials by weight in each batch, defined as "ST%", in pounds styrene per pound of pre-blended liquid materials.
  - e. The total VOC (styrene) emissions from this emissions unit for the day, defined as "D<sub>VOC</sub>", in pounds per day. "D<sub>VOC</sub>" shall be calculated as follows:

$$D_{VOC} = \text{the sum, from } i = 1 \text{ to } i = n \text{ of } [(AM)(ST\%)(EF)]_i,$$

where,

i = subscript denoting an individual mixing batch of this emissions unit;

n = the total number of mixing batch of this emissions unit; and

EF = emission factor, in pounds VOC emissions per pound of styrene input, determined by the most recent stack test.

- f. The average hourly VOC (styrene) emissions from this emissions unit, "Hvoc", in pounds per hour, shall be calculated as follows:

$$Hvoc = (D_{VOC})/(OT)$$

4. The permittee shall keep the following information each month:
- a. The monthly VOC (styrene) emissions from this emissions unit, in tons per month;
  - b. The monthly facility-wide VOC (styrene) emissions, in tons per month; and
  - c. The rolling, 12-month summation of the total facility-wide VOC (styrene) emissions, in tons.
  - d. The monthly styrene throughput, in pounds per month; and
  - e. The rolling, 12-month summation of total styrene throughput, in pounds.
5. The permittee shall keep the following clean-up material information each month for emissions units P002, P003, P004, and P005 combined:
- a. The identification of each clean-up material employed and whether the clean-up material is a non-photochemically reactive material.
  - b. The volume of each clean-up material employed, defined as " $V_{\text{clean-up}}$ ", in gallons per month.
  - c. The OC content of each clean-up material, defined as " $OC_{\text{content}}$ ", in pounds OC per gallon of the clean-up material.
  - d. The total OC emissions from clean-up materials, " $OC_{\text{clean-up}}$ ", in pounds per month, shall be calculated as follows:

$$OC_{\text{clean-up}} = \text{the sum, from } j = 1 \text{ to } j = m \text{ of } [(V_{\text{clean-up}})(OC_{\text{content}})]j,$$

where,

j = subscript denoting an individual clean-up material; and

m = the total number of clean-up materials employed.

- e. The rolling, 12-month summation of the total OC emissions from clean-up materials, in tons.
6. The permittee shall keep a daily operating log with the following information:
    - a. Whether a cover is used while actual mixing is occurring (except when adding materials to this emissions unit). If a cover is not used in this emissions unit while actual mixing is occurring (except when adding materials to this emissions unit), an explanation of why this emissions unit's cover is not closed;
    - b. Whether this emissions unit accepts pre-blended liquid materials from one of the two pre-blending tanks at the facility. If this emissions unit accepts pre-blended liquid materials other than those originating from one of the two facility's pre-blending tanks, the reason for this activity, and the actual amount of pre-blended liquid materials being used by this emissions unit in this manner;
    - c. Whether the pre-blended liquid materials from pre-blending tanks at the facility are transferred into holding tanks or any other type of containers prior to use in the mixers. The log should include an explanation of any time material is transferred to a holding tank or other container because of an emergency or other abnormal circumstances, and the actual amount of pre-blended liquid materials being transferred.
  7. The permit to install for emissions units P002, P003, P004, and P005 combined were evaluated based on the actual materials and design parameters of the emissions units' exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant potentially emitted by this emissions unit, using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: styrene

TLV (mg/m3): 85.202

Maximum Hourly Emission Rate (lbs/hr): 2.06

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 1,330

MAGLC (ug/m3): 2,029

8. Physical changes to or changes in the method of operation of the emissions unit after its installation could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic

Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)", than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions units or the exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install would not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

9. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":
  - a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
  - b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
  - c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

#### **D. Reporting Requirements**

1. The permittee shall submit quarterly written reports which:
  - a. identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit; and

- b. describe any corrective actions taken to eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) in accordance with the deviation reporting requirements in the General Term and Conditions.

- 2. The permittee shall submit deviation (excursion) reports which include the following information for this emissions unit:
  - a. An identification of each day during which the average hourly VOC (styrene) emissions from this emissions unit exceeded 1.21 pound, and the actual average hourly VOC (styrene) emissions for each such day.
  - b. An identification of each month during which the rolling, 12-month facility-wide VOC (styrene) emissions exceeded 9.96 tons, and the actual rolling 12-month facility-wide VOC (styrene) emissions for each such month.
  - c. An identification of each day during which the maximum percentage of styrene in any batch of pre-blended liquid materials exceeded forty-six percent (46.00%) by weight limitation, and the actual styrene percentage by weight in pre-blended liquid materials for each such a batch in each day.
  - d. An identification of each day during which this emissions unit accepted pre-blended liquid materials other than those originating from one of the pre-blending tanks at this facility, and the actual amount of pre-blended liquid materials accepted by this emissions units for each such a batch in each day, along with the reason for such an activity.
  - e. An identification of each day during which any batch of pre-blended liquid materials originating from this facility's pre-blended tanks were transferred to more than one mixer in this facility, and the actual amount of pre-blended liquid materials has been transferred to each mixer for each such a batch in each day, along with the reason for such activities.
  - f. An identification of each day during which pre-blended liquid materials were transferred into any holding tanks or storage vessels in or outside of this facility, and the actual amount of pre-blended liquid materials has been transferred, along with the reason for such activities.
  - g. An identification of each month during which a photochemically reactive clean-up material was employed in emissions units P002, P003, P004, and P005, and the actual amount of photochemically reactive clean-up material has been employed for each such a month.

- h. An identification of each month during which the rolling, 12-month total throughout styrene input in the facility exceeded 1,755,410 pounds, and the actual amount of throughout styrene input in each such month.
- 3. All deviation (excursion) reports shall be submitted in accordance with the General Terms and Conditions.
- 4. The permittee shall submit annual reports that specify the VOC (styrene) emissions from this emissions unit, OC emissions from clean-up material employed in emissions units P002, P003, P004, and P005, as well as the total throughout styrene input and facility-wide VOC (styrene) emissions. The reports shall include the calculations, shall be submitted by January 31 of each year, and shall cover the previous calendar year.

**E. Testing Requirements**

- 1. Compliance with the emission limitation in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation: 1.0 lb/hr of particulate for emissions units P002 - P005 combined

Applicable Compliance Method:

Compliance shall be determined in accordance with the following:

$$EP_{P002-P005} = (ME)(FR)(60 \text{ min/hr})/(7,000 \text{ grains/lb})$$

where,

ME = the maximum emission rate from the dust collector stack by the manufacture guarantee number, which is 0.03 grain/ft<sup>3</sup>; and

FR = the maximum flow rate of the dust collector = 3,900 ft<sup>3</sup>/min.

If required, the permittee shall demonstrate compliance by emission testing in accordance with Method 5, 40 CFR Part 60, Appendix A.

- b. Emissions Limitation: 1.21 lb/hr of VOC (styrene)

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.3 of these terms and conditions. If required, the permittee shall demonstrate compliance by emission testing in accordance with Method 25A, 40 CFR Part 60, Appendix A.

- c. Emission Limitation: 4.85 tons/yr of VOC (styrene)

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.4 of these terms and conditions.

- d. Emission Limitation:  
0.4 ton/yr of OC from clean-up material employed in emissions units P002 -P005 combined

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.5 of these terms and conditions.

- e. Emission Limitation:  
4.38 tons/yr of particulate for emissions units P002 - P005 combined

Applicable Compliance Method:

The tons per year limitations were developed by multiplying the pound per hour limitations by the maximum operating schedule of 8,760 hours per year, and dividing by 2,000 pounds per ton. Therefore, provided compliance is shown with the hourly limitations, compliance will also be shown with the annual limitations.

- f. Emission Limitation: 5% opacity as 6-minute average

Applicable Compliance Method:

Compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03 (B)(1) using the test methods and procedures specified in U.S. EPA Reference Method 9.

- g. Emission Limitation: 9.00 tons per year of VOC (styrene) facility-wide

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.4 of these terms and conditions.

- h. Emissions Limitation: 46.00% styrene by weight in pre-blended liquid materials

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.3 of these terms and conditions.

- i. Emission Limitation: 1,755,410 pounds of total styrene throughput

Applicable Compliance Method:

Compliance shall be determined based upon record keeping requirements specified in section C.4 of these terms and conditions.

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
  - a. The emission testing shall be conducted within three months after issuance of the permit. Testing performed in the six-month period prior to the issuance of the permit shall be deemed to meet this requirement.
  - b. The emission testing shall be conducted to demonstrate compliance with the allowable hourly mass emission rate for VOC (styrene) from this emissions unit and determine an emission factor of VOC (styrene) emissions for this emissions unit.
  - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for VOC (styrene) mass emission rate, Method 25A of 40 CFR Part 60, Appendix A and Method 204F of 40 CFR Part 51 Appendix M. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

**Mar-Bal Inc**

**PTI Application: 02-21414**

**Issued: To be entered upon final issuance**

**Facility ID: 0228000194**

**Emissions Unit ID: P005**

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

**F. Miscellaneous Requirements**

None