

STATE OF MISSOURI

PERMIT BOOK



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **092013-008**

Project Number: 2013-01-054

Installation Number: 055-0038

Parent Company: Mar-Bal, Inc.

Parent Company Address: 10095 Queens Way, Chagrin Falls, OH 44023

Installation Name: Mar-Bal, Inc.

Installation Address: 202 Commerce Dr, Cuba, MO 65453

Location Information: Crawford County, S31, T39N, R4W

Application for Authority to Construct was made for:

A modification to the plasma vapor deposition (PVD) line for EP-7 surface coating, new EP-8 silk screening, and new EP-9 screen wash. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

**SEP 11 2013**

EFFECTIVE DATE

DIRECTOR OR DESIGNEE  
DEPARTMENT OF NATURAL RESOURCES

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

Mar-Bal, Inc.  
Crawford County, S31, T39N, R4W

1. Superseding Condition  
The conditions of this permit supersede the following special conditions found in construction permits issued by the Air Pollution Control Program.
  - A. Permit 0596-022, Special Conditions 1, 2, and 3.
  - B. Permit 0995-019, Special Conditions 1, 2, and 3.
2. VOC and HAPs Emission Limitations
  - A. Mar-Bal, Inc. shall emit less than 40.0 tons of VOC in any consecutive 12-month period from the entire installation as defined in Table 2.
  - B. Mar-Bal, Inc. shall emit less than 10.0 tons individually and 25.0 tons combined of HAPs in any consecutive 12-month period from the entire installation as defined in Table 2.
  - C. Attachment A, Attachment B and Attachment C or equivalent forms, such as electronic forms, preapproved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 2.A. and 2.B.
3. Capture Device Requirement – PVD Line Surface Coating Booth (EP-7)
  - A. Mar-Bal, Inc. shall capture emissions from the spray applied surface coating operation with a booth and exhaust fan(s).
  - B. Negative pressure shall be demonstrated and recorded at all booth openings at least once every 24 hours using visual indication such as streamers, powder puff, smoke, or other method preapproved by the Air Pollution Control Program. Periods when spray applied surface coating is non-operational shall be recorded.

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#### SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- C. Mar-Bal, Inc. shall operate the surface coating booth's exhaust fan(s) at all times surface coating is spray applied.
  - D. No more than one spray gun shall operate at one time.
4. Control Device Requirement – PVD Line Surface Coating Booth (EP-7)
- A. Mar-Bal, Inc. shall control emissions from the spray applied surface coating operation using an exhaust filter.
  - B. The filter shall be operated and maintained in accordance with the manufacturer's specifications.
  - C. The filter shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Department of Natural Resources' employees may easily observe them. The pressure drop shall be measured and recorded at least once every 24 hours. Periods when spray applied surface coating is non-operational shall be recorded. The pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
  - D. Mar-Bal, Inc. shall maintain a copy of the filter manufacturer's performance warranty on site.
  - E. Mar-Bal, Inc. shall maintain an operating and maintenance log for the filter which shall include the following:
    - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
    - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
5. Operational Requirement - Solvent/Ink Cloths  
Mar-Bal, Inc. shall keep all coatings, inks, and solvents in sealed containers whenever the materials are not in use. Mar-Bal, Inc. shall provide and maintain suitable, easily read, permanent markings on all coating, ink, and solvent containers used with this equipment.
6. Use of Alternative Coating in the PVD Surface Coating and Silk Screen
- A. Before using an alternative coating in the surface coating spray gun or silk screen that differs from a material listed in the Application for Authority to

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**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

- Construct, Mar-Bal, Inc. shall calculate the potential emissions of all individual HAPs and total VOC in the alternative material.
- B. Mar-Bal, Inc. shall seek approval from the Air Pollution Control Program New Source Review Unit before use of the alternative material if the potential individual HAP emissions for the alternative material are greater than or equal to the SMAL for any HAP listed in Appendix B, or if the potential VOC emissions are greater than or equal to 14.64 tpy.
  - C. Attachment D or equivalent forms, such as electronic forms, preapproved by the Air Pollution Control Program shall be used to show compliance with Special Condition 6.A.
7. Record Keeping and Reporting Requirements
- A. Mar-Bal, Inc. shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include MSDS for all materials used.
  - B. Mar-Bal, Inc. shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (5) REVIEW

Project Number: 2013-01-054  
Installation ID Number: 055-0038  
Permit Number:

Mar-Bal, Inc.  
202 Commerce Dr  
Cuba, MO 65453

Complete: January 24, 2013

Parent Company:  
Mar-Bal, Inc.  
10095 Queens Way  
Chagrin Falls, OH 44023

Crawford County, S31, T39N, R4W

REVIEW SUMMARY

- Mar-Bal, Inc. has applied for authority to modify the PVD line surface coating (EP-7) to allow color based coating, install new silk screening (EP-8) on the PVD line, and install solvent clean up (EP-9) for the silk screening.
- HAP emissions are expected from the project equipment. Potential HAP emissions from the PVD line surface coating (EP-7) include HDI (CAS 822-06-0). Potential HAP emissions from the PVD line silk screening (EP-8) include diethylene glycol monobutyl ether (CAS 112-34-5) and naphthalene (CAS 91-20-3). Potential HAP emissions from the PVD line silk screen solvent wash (EP-9) include xylene (CAS 1330-20-7), ethylene glycol monopropyl ether (CAS 2807-30-9), and ethylbenzene (CAS 100-41-4).
- None of the NSPS under 40 CFR 60 apply to the project equipment. Permit 032012-001 indicated the installation is subject to NSPS Subpart SS, *Standards of Performance for Industrial Surface Coating: Large Appliances*. However, since the installation does not surface coat metal parts, it is not subject to NSPS Subpart SS. NSPS Subpart HHHHHH, *National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources*, does not apply as the installation's spray applied coating do not contain a target HAP.
- None of the NESHAPs under 40 CFR 61 apply to the project equipment.
- None of the MACTs under 40 CFR 63 apply to the project equipment.
- An exhaust filter is being used to control the PM, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions from surface coating (EP-7).
- This review was conducted in accordance with Section (5) of Missouri State Rule

10 CSR 10-6.060, *Construction Permits Required*. Potential VOC emissions of the project exceed the insignificant emission exemption level in 10 CSR 10-6.061(3)(A)3.A., requiring a permit. Potential VOC emissions from the entire installation are conditioned below the de minimis level. Potential HAP emissions of the project are below respective SMAL. Potential HAP emissions from the entire installation are conditioned below the major source threshold.

- This installation is located in Crawford County, an attainment area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are below respective de minimis levels.
- Emissions testing is not required for the project equipment.
- No operating permit is required for this installation.
- Approval of this permit is recommended with special conditions.

#### INSTALLATION DESCRIPTION

Mar-Bal, Inc. is a manufacturer of custom-molded, non-metal parts for electrical distribution and control devices, plus a wide range of components for the appliance industry. The installation was an existing major styrene (HAP) source and minor VOC source. However, this status was a result of an error in permit 032012-001. The installation has accepted emission limits in this project to return to area HAP source and de minimis VOC source status. As a major styrene source, the installation was subject to MACT Subpart WWWW, *National Emission Standard for Hazardous Air Pollutants: Reinforced Plastic Composites Production*, and would remain subject under EPA's "once in, always in" policy. However, EPA Region 7 was consulted for MACT applicability, and it was determined the "once in, always in" policy does not apply.

The installation does not have an operating permit. The following New Source Review permits have been issued to Mar-Bal, Inc. from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
0995-019	Thermoset polyester manufacturing and molding installation
0596-022	One mixer, one extruder, five molding units
1299-017	Two paint booths and one natural gas oven
042001-002	One mixer and nine molding units
032012-001	Clearcoat surface coating (EP-7)

## PROJECT DESCRIPTION

Mar-Bal, Inc. proposes to modify the plasma vapor deposition (PVD) clearcoat paint line (EP-7) to add color paint capability. Only clearcoat was evaluated for permit 032012-001. Black and white paint, each with an activator and reducer will be used. New silk screening capability will be added at EP-8. Solvent clean-up/screen wash will be added at EP-9. An electric curing oven will be added, and some emissions from curing may emit from the oven. However, all coating emissions were considered emitted from the coating area, and an ambient air quality impact analysis was not performed. This project will not affect molding capacity or debottleneck any other emission units at the installation.

Surface coating MHDR of 0.9 gallons per hour was cited from permit 032012-001. Ink and screen wash MHDR of 0.04 gallons per hour and 72 gallons per year, respectively were based upon the installation's experience. Particulate matter overspray emissions are controlled by a booth with conveyor openings and a paint arrestor filter.

Table 2: Installation Emission Units

Emission Unit	Emission Point	Description
EU-1A through EU-1D	EP-1	Mixing (4 units)
EU-2A through EU-2S	EP-2	Molding (19 units)
EU-3A, EU-3B	EP-3	Resin tanks (2 units)
EU-4	EP-4	Silk screen
EU-6	EP-6	Paint line
EU-7	EP-7	Spray applied surface coating
EU-8	EP-8	Silk screening
EU-9	EP-9	Screen wash
Various	Various	Natural gas combustion

## EMISSIONS/CONTROLS EVALUATION

Potential emissions from the surface coating were calculated using mass balance, citing the paint MSDS. The conventional air atomized spray gun was assigned 50 percent solids transfer efficiency according to the EPA document, *Sources and Control of Volatile Organic Air Pollutants*, APTI Course 482, 3<sup>rd</sup> Edition, November 2002, Table 5-7. Remaining solids were assumed to be filterable PM<sub>2.5</sub>. All sprayed VOC and volatile HAPs were considered emitted. Potential emissions of each pollutant were selected from the greater of the two coatings respective emissions, regardless of the coating. For example, project PM emissions could be from one coating, while project VOC emissions could be from another coating. This approach represents the most conservative scenario. The paints do not contain particulate matter HAPs. The booth and exhaust filter will have negative pressure. However, the booth is not required to meet the definition of permanent total enclosure and was assigned 95% capture efficiency. The exhaust filter specification sheet shows 99.03% average removal efficiency, but this is an average and does not show particle size distribution. Therefore the filter was conservatively assigned 95% PM, PM<sub>10</sub>, and PM<sub>2.5</sub> control efficiency. Overall particulate matter removal efficiency is 90.25%, including the transfer efficiency is 95.125%.

Silk screening potential emissions were calculated using mass balance, citing the ink MSDS. Solids transfer efficiency is 100%. All applied VOC and volatile HAPs were considered emitted.

The following table provides an emissions summary for this project. Existing potential emissions were cited from permit 032012-001. Existing actual emissions were cited from the installation's 2012 EIQ. Potential emissions of the application represent the potential of the modified and new equipment, assuming continuous operation (8,760 hours per year). The new installation conditioned potential represents voluntary limits to avoid an operating permit, major HAP source status and subsequently MACT Subpart WWWW applicability.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2012 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/D	N/D	1.18	N/A
PM <sub>10</sub>	15.0	8.73	0.22	1.18	N/A
PM <sub>2.5</sub>	10.0	N/D	0.08	1.18	N/A
SO <sub>x</sub>	40.0	N/D	N/A	N/A	N/A
NO <sub>x</sub>	40.0	N/D	N/A	N/A	N/A
VOC	40.0	54.61	4.23	14.64	< 40.0
CO	100.0	N/D	N/A	N/A	N/A
HAPs	10.0 / 25.0	23.79	N/D	0.39	< 10.0 / 25.0
Ethylbenzene	10.0	1.2	N/D	0.08	< 10.0
Naphthalene	10.0	N/D	N/D	0.02	< 10.0
Methyl methacrylate	10.0	0.037	N/D	N/A	< 10.0
Toluene	10.0	4.0	N/D	N/A	< 10.0
Xylene	10.0	6.3	N/D	0.27	< 10.0
Styrene	1.0 <sup>1</sup>	12.33	N/D	N/A	< 10.0
Ethylene glycol ethers	5.0 <sup>1</sup>	N/D	N/D	0.09	< 10.0
Diethylene glycol ethers	5.0 <sup>1</sup>	N/D	N/D	0.09	< 10.0
HDI	0.02 <sup>1</sup>	N/D	N/D	1.49E-02	< 10.0
GHG (mass)	0.0 / 100.0 / 250.0	N/D	N/D	N/A	N/A
GHG (CO <sub>2</sub> e)	75,000 / 100,000	N/D	N/D	N/A	N/A

N/A = Not Applicable; N/D = Not Determined

<sup>1</sup> SMAL

### PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential VOC emissions of the project exceed the insignificant emission exemption level in 10 CSR 10-6.061(3)(A)3.A.,

requiring a permit. Potential VOC emissions from the entire installation are conditioned below the de minimis level. Potential HAP emissions of the project are below respective SMAL. Potential HAP emissions from the entire installation are conditioned below the major source threshold.

### APPLICABLE REQUIREMENTS

Mar-Bal, Inc. shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

### GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information, 10 CSR 10-6.110*
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin, 10 CSR 10-6.170*
- *Restriction of Emission of Visible Air Contaminants, 10 CSR 10-6.220*
- *Restriction of Emission of Odors, 10 CSR 10-6.165*

### SPECIFIC REQUIREMENTS

- *Restriction of Particulate Matter Emissions From Fuel Burning Equipment Used for Indirect Heating, 10 CSR 10-6.405. The units are natural gas fired and deemed in compliance.*

## STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

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David Little  
New Source Review Unit

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Date

### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated January 11, 2013, received January, 24, 2013, designating Mar-Bal, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.







## Attachment D – Alternative Coating Compliance Worksheet

Mar-Bal, Inc.  
 Crawford County, S31, T39N, R4W  
 Project: 2013-01-054  
 Installation ID: 055-0038  
 Permit:

Coating or material name \_\_\_\_\_ Date \_\_\_\_\_ Copy this sheet as needed.

A	B	C	D	E	F	G	H	I	J
Process and Emission Unit	Individual HAP Name and CAS No.	HAP is also Particulate Matter (yes / no)	Individual HAP Content (max weight %)	Maximum Hourly Application Rate (lbs coating per hour)	Overall PM Removal Efficiency (%)	SMAL (tpy)	Individual HAP PTE (tpy)	Coating VOC (weight %)	Coating VOC PTE (tpy)
<i>(Example) EP-7</i>	<i>Benzene 71-43-2</i>	<i>no</i>	<i>2.0%</i>	<i>9.76</i>	<i>N/A</i>	<i>2.0</i>	<i>0.85</i>	<i>36.61%</i>	<i>15.65</i>
<i>(Example) EP-7</i>	<i>Cobalt 2-Ethylhexanoate 136-52-7</i>	<i>yes</i>	<i>0.5%</i>		<i>95.125%</i>	<i>0.1</i>	<i>0.01</i>		

- A. Record the process description and emission unit.
- B. Record the all individual HAPs from this single coating/material MSDS.
- C. Compare the HAP to Appendix B for verification as particulate matter.
- D. Record the maximum weight percent of each HAP from the MSDS.
- E. Calculate the coating's maximum hourly application rate (lb/hr) by multiplying the coating density (lb/gal) by the MHDR of 0.90 gal/hr. Seek approval from the Air Pollution Control Program New Source Review Unit if the new MHDR will exceed 0.90 gal/hr.
- F. The overall PM removal efficiency includes the air atomized transfer efficiency (50%), booth capture efficiency (95%), and filter control efficiency (95%):  
 $50\% + (1 - 50\%) \times 95\% \times 95\% = 95.125\%$
- G. Record the respective HAP SMAL from Appendix B.
- H. Calculate the particulate matter HAP potential to emit:  $H = D \times E \times (1 - F) \times 8,760 / 2,000$ . Otherwise calculate the volatile HAP potential to emit:  $H = D \times E \times 8,760 / 2,000$ . If the individual HAP potential to emit is greater than or equal to the respective SMAL seek approval from the Air Pollution Control Program New Source Review Unit before using this coating.
- I. Record or calculate the coating's VOC weight % from the MSDS.
- J. Calculate the VOC potential to emit:  $J = E \times I \times 8,760 / 2,000$ . If the VOC potential to emit is greater than or equal to 14.64 tons per year seek approval from the Air Pollution Control Program New Source Review Unit before using this coating.

## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....	percent	<b>m/s</b> .....	meters per second
<b>°F</b> .....	degrees Fahrenheit	<b>Mgal</b> .....	1,000 gallons
<b>acfm</b> .....	actual cubic feet per minute	<b>MW</b> .....	megawatt
<b>BACT</b> .....	Best Available Control Technology	<b>MHDR</b> .....	maximum hourly design rate
<b>BMPs</b> .....	Best Management Practices	<b>MMBtu</b> ....	Million British thermal units
<b>Btu</b> .....	British thermal unit	<b>MMCF</b> .....	million cubic feet
<b>CAM</b> .....	Compliance Assurance Monitoring	<b>MSDS</b> .....	Material Safety Data Sheet
<b>CAS</b> .....	Chemical Abstracts Service	<b>NAAQS</b> ...	National Ambient Air Quality Standards
<b>CEMS</b> .....	Continuous Emission Monitor System	<b>NESHAPs</b>	..... National Emissions Standards for Hazardous Air Pollutants
<b>CFR</b> .....	Code of Federal Regulations	<b>NO<sub>x</sub></b> .....	nitrogen oxides
<b>CO</b> .....	carbon monoxide	<b>NSPS</b> .....	New Source Performance Standards
<b>CO<sub>2</sub></b> .....	carbon dioxide	<b>NSR</b> .....	New Source Review
<b>CO<sub>2e</sub></b> .....	carbon dioxide equivalent	<b>PM</b> .....	particulate matter
<b>COMS</b> .....	Continuous Opacity Monitoring System	<b>PM<sub>2.5</sub></b> .....	particulate matter less than 2.5 microns in aerodynamic diameter
<b>CSR</b> .....	Code of State Regulations	<b>PM<sub>10</sub></b> .....	particulate matter less than 10 microns in aerodynamic diameter
<b>dscf</b> .....	dry standard cubic feet	<b>ppm</b> .....	parts per million
<b>EQ</b> .....	Emission Inventory Questionnaire	<b>PSD</b> .....	Prevention of Significant Deterioration
<b>EP</b> .....	Emission Point	<b>PTE</b> .....	potential to emit
<b>EPA</b> .....	Environmental Protection Agency	<b>RACT</b> .....	Reasonable Available Control Technology
<b>EU</b> .....	Emission Unit	<b>RAL</b> .....	Risk Assessment Level
<b>fps</b> .....	feet per second	<b>SCC</b> .....	Source Classification Code
<b>ft</b> .....	feet	<b>scfm</b> .....	standard cubic feet per minute
<b>GACT</b> .....	Generally Available Control Technology	<b>SIC</b> .....	Standard Industrial Classification
<b>GHG</b> .....	Greenhouse Gas	<b>SIP</b> .....	State Implementation Plan
<b>gpm</b> .....	gallons per minute	<b>SMAL</b> .....	Screening Model Action Levels
<b>gr</b> .....	grains	<b>SO<sub>x</sub></b> .....	sulfur oxides
<b>GWP</b> .....	Global Warming Potential	<b>SO<sub>2</sub></b> .....	sulfur dioxide
<b>HAP</b> .....	Hazardous Air Pollutant	<b>tph</b> .....	tons per hour
<b>hr</b> .....	hour	<b>tpy</b> .....	tons per year
<b>hp</b> .....	horsepower	<b>VMT</b> .....	vehicle miles traveled
<b>lb</b> .....	pound	<b>VOC</b> .....	Volatile Organic Compound
<b>lbs/hr</b> .....	pounds per hour		
<b>MACT</b> .....	Maximum Achievable Control Technology		
<b>µg/m<sup>3</sup></b> .....	micrograms per cubic meter		

## Appendix B: Table of Hazardous Air Pollutants and Screening Model Action Levels (May 3, 2012 Revision 10)

Chemical	CAS #	SMAL (tons/yr)	Group ID	VOC	PM	Chemical	CAS #	SMAL (tons/yr)	Group ID	VOC	PM	Chemical	CAS #	SMAL (tons/yr)	Group ID	VOC	PM
ACETALDEHYDE	75-07-0	9		Y	N	CARBARYL	63-25-2	10	V	Y	Y	DICHLOROPROPANE, [1,2-]	78-87-5	1		Y	N
ACETAMIDE	60-35-5	1		Y	N	CARBON DISULFIDE	75-15-0	1		Y	N	DICHLOROPROPENE, [1,3-]	542-75-6	1		Y	N
ACETONITRILE	75-05-8	4		Y	N	CARBON TETRACHLORIDE	56-23-5	1		Y	N	DICHLORVOS	62-73-7	0.2		Y	N
ACETOPHENONE	98-86-2	1		Y	N	CARBONYL SULFIDE	463-58-1	5		Y	N	DIETHANOLAMINE	111-42-2	5		Y	N
ACETYLAMINOFLUORINE, [2-]	53-96-3	0.005	V	Y	Y	CATECHOL	120-80-9	5		Y	N	DIETHYL SULFATE	64-67-5	1		Y	N
ACROLEIN	107-02-8	0.04		Y	N	CHLORAMBEN	133-90-4	1		Y	Y	DIETHYLENE GLYCOL MONOBUTYL ETHER	112-34-5	5	P	Y	N
ACRYLAMIDE	79-06-1	0.02		Y	N	CHLORDANE	57-74-9	0.01		Y	Y	DIMETHOXYBENZIDINE, [3,3-]	119-90-4	0.1	V	Y	Y
ACRYLIC ACID	79-10-7	0.6		Y	N	CHLORINE	7782-50-5	0.1	N	N	N	DIMETHYL BENZIDINE, [3,3-]	119-93-7	0.008	V	Y	Y
ACRYLONITRILE	107-13-1	0.3		Y	N	CHLOROACETIC ACID	79-11-8	0.1		Y	N	DIMETHYL CARBAMOYL CHLORIDE	79-44-7	0.02		Y	N
ALLYL CHLORIDE	107-05-1	1		Y	N	CHLOROACETOPHENONE, [2-]	532-27-4	0.06		Y	N	DIMETHYL FORMAMIDE	68-12-2	1		Y	N
AMINOBIHENYL, [4-]	92-67-1	1	V	Y	N	CHLOROBENZENE	108-90-7	10		Y	N	DIMETHYL HYDRAZINE, [1,1-]	57-14-7	0.008		Y	N
ANILINE	62-53-3	1		Y	N	CHLOROBENZILATE	510-15-6	0.4	V	Y	Y	DIMETHYL PHTHALATE	131-11-3	10		Y	N
ANISIDINE, [ORTHO-]	90-04-0	1		Y	N	CHLOROFORM	67-66-3	0.9		Y	N	DIMETHYL SULFATE	77-78-1	0.1		Y	N
ANTHRACENE	120-12-7	0.01	V	Y	N	CHLOROMETHYL METHYL ETHER	107-30-2	0.1		Y	N	DIMETHYLAMINOAZOBENZENE, [4-]	60-11-7	1		Y	N
ANTIMONY COMPOUNDS		5	H	N	Y	CHLOROPRENE	126-99-8	1		Y	N	DIMETHYLANILINE, [N-N]	121-69-7	1		Y	N
ANTIMONY PENTAFLUORIDE	7783-70-2	0.1	H	N	Y	CHROMIUM (VI) COMPOUNDS		0.002	L	N	Y	DINITRO-O-CRESOL, [4,6-] (Note 6)	534-52-1	0.1	E	Y	Y
ANTIMONY POTASSIUM TARTRATE	28300-74-5	1	H	N	Y	CHROMIUM COMPOUNDS		5	L	N	Y	DINITROPHENOL, [2,4-]	51-28-5	1		Y	N
ANTIMONY TRIOXIDE	1309-64-4	1	H	N	Y	CHRYSENE	218-01-9	0.01	V	Y	N	DINITROTOLUENE, [2,4-]	121-14-2	0.02		Y	N
ANTIMONY TRISULFIDE	1345-04-6	0.1	H	N	Y	COBALT COMPOUNDS		0.1	M	N	Y	DIOXANE, [1,4-]	123-91-1	6		Y	N
ARSENIC COMPOUNDS		0.005	I	N	Y	COKE OVEN EMISSIONS	8007-45-2	0.03	N	Y	N	DIPHENYLHYDRAZINE, [1,2-]	122-66-7	0.09	V	Y	Y
ASBESTOS	1332-21-4	0	A	N	Y	CRESOL, [META-]	108-39-4	1	B	Y	N	DIPHENYLMETHANE DIISOCYANATE, [4,4-]	101-68-8	0.1	V	Y	N
BENZ(A)ANTHRACENE	56-55-3	0.01	V	Y	N	CRESOL, [ORTHO-]	95-48-7	1	B	Y	N	EPICHLOROHYDRIN	106-89-8	2		Y	N
BENZENE	71-43-2	2		Y	N	CRESOL, [PARA-]	106-44-5	1	B	Y	N	ETHOXYETHANOL, [2-]	110-80-5	10	P	Y	N
BENZIDINE	92-87-5	0.0003	V	Y	N	CRESOLS (MIXED ISOMERS)	1319-77-3	1	B	Y	N	ETHOXYETHYL ACETATE, [2-]	111-15-9	5	P	Y	N
BENZO(A)PYRENE	50-32-8	0.01	V	Y	N	CUMENE	98-82-8	10		Y	N	ETHYL ACRYLATE	140-88-5	1		Y	N
BENZO(B)FLUORANTHENE	205-99-2	0.01	V	Y	N	CYANIDE COMPOUNDS		0.1	O	Y	N	ETHYL BENZENE	100-41-4	10		Y	N
BENZO(K)FLUORANTHENE	207-08-9	0.01	V	Y	N	DDE	72-55-9	0.01	V	Y	Y	ETHYL CHLORIDE	75-00-3	10		Y	N
BENZOTRICHLORIDE	98-07-7	0.006		Y	N	DI(2-ETHYLHEXYL) PHTHALATE, (DEHP)	117-81-7	5		Y	N	ETHYLENE GLYCOL	107-21-1	10		Y	N
BENZYL CHLORIDE	100-44-7	0.1		Y	N	DIAMINOTOLUENE, [2,4-]	95-80-7	0.02		Y	N	ETHYLENE GLYCOL MONOBUTYL ETHER (Delisted)	111-76-2				
BERYLLIUM COMPOUNDS		0.008	J	N	Y	DIAZOMETHANE	334-88-3	1		Y	N	ETHYLENE GLYCOL MONOHEXYL ETHER	112-25-4	5	P	Y	N
BERYLLIUM SALTS		2E-05	J	N	Y	DIBENZ(A,H)ANTHRACENE	53-70-3	0.01	V	Y	N	ETHYLENE IMINE [AZIRIDINE]	151-56-4	0.003		Y	N
BIPHENYL, [1,1-]	92-52-4	10	V	Y	N	DIOXINS/FURANS		6E-07	D,V	Y	N	ETHYLENE OXIDE	75-21-8	0.1		Y	N
BIS(CHLOROETHYL)ETHER	111-44-4	0.06		Y	N	DIBENZOFURAN	132-64-9	5	V	Y	N	ETHYLENE THIOUREA	96-45-7	0.6		Y	Y
BIS(CHLOROMETHYL)ETHER	542-88-1	0.0003		Y	N	DIBROMO-3-CHLOROPROPANE, [1,2-]	96-12-8	0.01		Y	N	FORMALDEHYDE	50-00-0	2		Y	N
BROMOFORM	75-25-2	10		Y	N	DIBROMOETHANE, [1,2-]	106-93-4	0.1		Y	N	GLYCOL ETHER (ETHYLENE GLYCOL ETHERS)		5	P	Y	N
BROMOMETHANE	74-83-9	10		Y	N	DIBUTYL PHTHALATE	84-74-2	10		Y	Y	GLYCOL ETHER (DIETHYLENE GLYCOL ETHERS)		5	P	Y	N
BUTADIENE, [1,3-]	106-99-0	0.07		Y	N	DICHLOROBENZENE, [1,4-]	106-46-7	3		Y	N	HEPTACHLOR	76-44-8	0.02		Y	N
BUTOXYETHANOL ACETATE, [2-]	112-07-2	5	P	Y	N	DICHLOROBENZIDENE, [3,3-]	91-94-1	0.2	V	Y	Y	HEXACHLOROBENZENE	118-74-1	0.01		Y	N
BUTYLENE OXIDE, [1,2-]	106-88-7	1		Y	N	DICHLOROETHANE, [1,1-]	75-34-3	1		Y	N	HEXACHLOROBUTADIENE	87-68-3	0.9		Y	N
CADMIUM COMPOUNDS		0.01	K	N	Y	DICHLOROETHANE, [1,2-]	107-06-2	0.8		Y	N	HEXACHLOROCYCLOHEXANE, [ALPHA-]	319-84-6	0.01	F	Y	N
CALCIUM CYANAMIDE	156-62-7	10		Y	Y	DICHLOROETHYLENE, [1,1-]	75-35-4	0.4		Y	N	HEXACHLOROCYCLOHEXANE, [BETA-]	319-85-7	0.01	F	Y	N
CAPROLACTAM (Delisted)	105-60-2					DICHLOROMETHANE	75-09-2	10		N	N	HEXACHLOROCYCLOHEXANE, [DELTA-]	319-86-8	0.01	F	Y	N
CAPTAN	133-06-2	10		Y	Y	DICHLOROPHENOXY ACETIC ACID, [2,4-]	94-75-7	10	C	Y	Y	HEXACHLOROCYCLOHEXANE, [TECHNICAL]	608-73-1	0.01	F	Y	N

## Appendix B: Table of Hazardous Air Pollutants and Screening Model Action Levels (May 3, 2012 Revision 10)

Chemical	CAS #	SMAL (tons/yr)	Group ID	VOC	PM	Chemical	CAS #	SMAL (tons/yr)	Group ID	VOC	PM	Chemical	CAS #	SMAL (tons/yr)	Group ID	VOC	PM
HEXACHLOROCYCLOPENTADIENE	77-47-4	0.1		Y	N	NITROSODIMETHYLAMINE, [N-]	62-75-9	0.001		Y	N	TRIMETHYLPENTANE, [2,2,4-]	540-84-1	5		Y	N
HEXACHLOROETHANE	67-72-1	5		Y	N	NITROSOMORPHOLINE, [N-]	59-89-2	1		Y	N	URETHANE [ETHYL CARBAMATE]	51-79-6	0.8		Y	N
HEXAMETHYLENE,-1,6-DIISOCYANATE	822-06-0	0.02		Y	N	NITROSO-N-METHYLUREA, [N-]	684-93-5	0.0002		Y	N	VINYL ACETATE	108-05-4	1		Y	N
HEXAMETHYLPHOSPHORAMIDE	680-31-9	0.01		Y	N	OCTACHLORONAPHTHALENE	2234-13-1	0.01	V	Y	N	VINYL BROMIDE	593-60-2	0.6		Y	N
HEXANE, [N-]	110-54-3	10		Y	N	PARATHION	56-38-2	0.1		Y	Y	VINYL CHLORIDE	75-01-4	0.2		Y	N
HYDRAZINE	302-01-2	0.004		N	N	PCB [POLYCHLORINATED BIPHENYLS]	1336-36-3	0.009	X	Y	Y	XYLENE, [META-]	108-38-3	10	G	Y	N
HYDROGEN CHLORIDE	7647-01-0	10		N	N	PENTACHLORONITROBENZENE	82-68-8	0.3		Y	N	XYLENE, [ORTHO-]	95-47-6	10	G	Y	N
HYDROGEN FLUORIDE	7664-39-3	0.1		N	N	PENTACHLOROPHENOL	87-86-5	0.7		Y	N	XYLENE, [PARA-]	106-42-3	10	G	Y	N
HYDROQUINONE	123-31-9	1		Y	N	PHENOL	108-95-2	0.1		Y	N	XYLENES (MIXED ISOMERS)	1330-20-7	10	G	Y	N
INDENO(1,2,3CD)PYRENE	193-39-5	0.01	V	Y	N	PHENYLENEDIAMINE, [PARA-]	106-50-3	10		Y	N						
ISOPHORONE	78-59-1	10		Y	N	PHOSGENE	75-44-5	0.1		Y	N						
LEAD COMPOUNDS		0.01	Q	N	Y	PHOSPHINE	7803-51-2	5		N	N						
LINDANE [GAMMA-HEXACHLOROCYCLOHEXANE]	58-89-9	0.01	F	Y	N	PHOSPHOROUS (YELLOW OR WHITE)	7723-14-0	0.1		N	N	Legend					
MALEIC ANHYDRIDE	108-31-6	1		Y	N	PHTHALIC ANHYDRIDE	85-44-9	5		Y	N	Group ID	Aggregate Group Name				
MANGANESE COMPOUNDS		0.8	R	N	Y	POLYCYCLIC ORGANIC MATTER		0.01	V	Y	N	A	Asbestos				
MERCURY COMPOUNDS		0.01	S	N	N	PROPANE SULTONE, [1,3-]	1120-71-4	0.03		Y	Y	B	Cresols/Cresylic Acid (isomers and mixtures)				
METHANOL	67-56-1	10		Y	N	PROPIOLACTONE, [BETA-]	57-57-8	0.1		Y	N	C	2,4 - D, Salts and Esters				
METHOXYCHLOR	72-43-5	10	V	Y	Y	PROPIONALDEHYDE	123-38-6	5		Y	N	D	Dibenzofurans, Dibenzodioxins				
METHOXYETHANOL, [2-]	109-86-4	10	P	Y	N	PROPOXUR [BAYGON]	114-26-1	10		Y	Y	E	4, 6 Dinitro-o-cresol, and Salts				
METHYL CHLORIDE	74-87-3	10		Y	N	PROPYLENE OXIDE	75-56-9	5		Y	N	F	Lindane (all isomers)				
METHYL ETHYL KETONE (Delisted)	78-93-3					PROPYLENEIMINE, [1,2-]	75-55-8	0.003		Y	N	G	Xylenes (all isomers and mixtures)				
METHYL HYDRAZINE	60-34-4	0.06		Y	N	QUINOLINE	91-22-5	0.006		Y	N	H	Antimony Compounds				
METHYL IODIDE	74-88-4	1		Y	N	QUINONE	106-51-4	5		Y	N	I	Arsenic Compounds				
METHYL ISOBUTYL KETONE	108-10-1	10		Y	N	RADIONUCLIDES		Note 1	Y	N	Y	J	Beryllium Compounds				
METHYL ISOCYANATE	624-83-9	0.1		Y	N	SELENIUM COMPOUNDS		0.1	W	N	Y	K	Cadmium Compounds				
METHYL METHACRYLATE	80-62-6	10		Y	N	STYRENE	100-42-5	1		Y	N	L	Chromium Compounds				
METHYL TERT-BUTYL ETHER	1634-04-4	10		Y	N	STYRENE OXIDE	96-09-3	1		Y	N	M	Cobalt Compounds				
METHYLCYCLOPENTADIENYL MANGANESE	12108-13-3	0.1	R	N	Y	TETRACHLORODIBENZO-P-DIOXIN,[2,3,7,8]	1746-01-6	6E-07	D,V	Y	Y	N	Coke Oven Emissions				
METHYLENE BIS(2-CHLOROANILINE), [4,4-]	101-14-4	0.2	V	Y	Y	TETRACHLOROETHANE, [1,1,2,2-]	79-34-5	0.3		Y	N	O	Cyanide Compounds				
METHYLENEDIANILINE, [4,4-]	101-77-9	1	V	Y	N	TETRACHLOROETHYLENE	127-18-4	10		N	N	P	Glycol Ethers				
METHYLNAPHTHALENE, [2-]	91-57-6	0.01	V	Y	N	TITANIUM TETRACHLORIDE	7550-45-0	0.1		N	N	Q	Lead Compounds (except elemental Lead)				
MINERAL FIBERS		0	T	N	Y	TOLUENE	108-88-3	10		Y	N	R	Manganese Compounds				
NAPHTHALENE	91-20-3	10	V	Y	N	TOLUENE DIISOCYANATE, [2,4-]	584-84-9	0.1		Y	N	S	Mercury Compounds				
NAPHTHYLAMINE, [ALPHA-]	134-32-7	0.01	V	Y	N	TOLUIDINE, [ORTHO-]	95-53-4	4		Y	N	T	Fine Mineral Fibers				
NAPHTHYLAMINE, [BETA-]	91-59-8	0.01	V	Y	N	TOXAPHENE	8001-35-2	0.01		Y	N	U	Nickel Compounds				
NICKEL CARBONYL	13463-39-3	0.1	U	N	Y	TRICHLOROETHANE, [1,2,4-]	120-82-1	10		Y	N	V	Polycyclic Organic Matter				
NICKEL COMPOUNDS		1	U	N	Y	TRICHLOROETHANE, [1,1,1-]	71-55-6	10		N	N	W	Selenium Compounds				
NICKEL REFINERY DUST		0.08	U	N	Y	TRICHLOROETHANE, [1,1,2-]	79-00-5	1		Y	N	X	Polychlorinated Biphenyls (Aroclors)				
NICKEL SUBSULFIDE	12035-72-2	0.04	U	N	Y	TRICHLOROETHYLENE	79-01-6	10		Y	N	Y	Radionuclides				
NITROBENZENE	98-95-3	1		Y	N	TRICHLOROPHENOL, [2,4,5-]	95-95-4	1		Y	N						
NITROBIPHENYL, [4-]	92-93-3	1	V	Y	N	TRICHLOROPHENOL, [2,4,6-]	88-06-2	6		Y	N						
NITROPHENOL, [4-]	100-02-7	5		Y	N	TRITHYLAMINE	121-44-8	10		Y	N	Note 1	The SMAL for radionuclides is defined as the effective dose equivalent to 0.3 millirems per year for 7 years exposure associated with a cancer risk of 1 in 1 million				
NITROPROPANE, [2-]	79-46-9	1		Y	N	TRIFLURALIN	1582-09-8	9		Y	Y						

Ms. Reta Schwab  
Buyer/Safety Director  
Mar-Bal, Inc.  
101 Commerce Dr  
Cuba, MO 65453

RE: New Source Review Permit - Project Number: 2013-01-054

Dear Ms. Schwab:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions and your new source review permit application is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact David Little, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp  
New Source Review Unit Chief

SH:dll

Enclosures

c: Southeast Regional Office  
PAMS File: 2013-01-054

Permit Number: