

STATE OF MISSOURI



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: 07 2008 - 011      Project Number: 2008-04-084

Parent Company:              Saleaumua Enterprises, LLC

Parent Company Address: 6232 Nieman Road, Shawnee, KS 66203

Installation Name:              New Surface

Installation Address:          401 North Action Road, Odessa, MO 64076

Location Information:          Lafayette County, S35, T49, R28

Application for Authority to Construct was made for:  
The relocation of a synthetic marble sink production facility from Kansas City, Missouri to Odessa, Missouri. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

JUL 28 2008

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 departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. 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 this (these) air contaminant source(s).

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 source(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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Project No.	2008-04-084

### 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."*

#### New Surface

Lafayette County, S35, T49, R28

1. Emission Limitation
  - A. New Surface shall emit less than 40 tons of Volatile Organic Compounds (VOCs) from the installation in any consecutive 12-month period.
  - B. New Surface shall emit less than ten (10) tons of Styrene from the installation in any consecutive 12-month period.
  - C. Attachment A and Attachment B or equivalent forms approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 1(A) and 1(B). New Surface shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials processed on this equipment.
  - D. New Surface shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the end of the month during which the records from Special Condition Number 1(C) indicate that the source exceeds the limitation of Special Conditions Number 1(A) & 1(B).
2. Since the gelcoat (EP-2) spray booth exhaust is considered the exhaust for the gelcoat (EP-2) process and the polymer casting (EP-3) process, New Surface shall keep the exhaust fan for the gelcoat spray booth on at all times while the gelcoat (EP-2) and the polymer casting (EP-3) process steps are being performed.
3. Control Device Requirements  
New Surface shall control emissions from the grinding operation (EP-4) using a grind booth equipped with filters as specified in the permit application. The grind booth and filters shall be maintained in accordance with the manufacturer's specifications.

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

Project Number: 2008-04-084  
Installation ID Number: 107-0063  
Permit Number:

New Surface  
401 North Action Road  
Odessa, MO 64076

Complete: 4-23-08

Parent Company:  
Saleaumua Enterprises, LLC  
6232 Nieman Road  
Shawnee, KS 66203

Lafayette County, S35, T49, R28

REVIEW SUMMARY

- New Surface has applied for the authority to move its synthetic marble sink production operation from their facility in Kansas City, Missouri to a new facility in Odessa, Missouri. Although all the existing process equipment will be moved from the previous location to the new location and no new equipment will be added, the new facility is considered a new source for permitting purposes.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from this process are styrene (CAS # 100-42-5) and methyl methacrylate (MMA) (CAS # 80-62-6) emissions due to the fabrication of synthetic marble. HAPs are also expected due to the combustion of natural gas.
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment.
- The Maximum Achievable Control Technology (MACT) standard, 40 CFR Part 63, WWW, *National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production*, does not apply to the proposed equipment because the facility is limited to less than 10 tons per year of any individual HAP and has a potential of less than 25 tons per year of combined HAPs. None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to the proposed equipment.
- Fabric filters are being used to control the Particulate Matter less than 10 microns in diameter (PM<sub>10</sub>) emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of styrene and VOCs are limited to less than de minimis levels.

- This installation is located in Lafayette County, an attainment area for all criteria air pollutants.
- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].
- Ambient air quality modeling was performed to determine the ambient impact of styrene.
- Emissions testing is not required for the equipment.
- An Intermediate Operating Permit is required for this installation within 90 days of equipment startup.
- Approval of this permit is recommended with special conditions.

#### INSTALLATION/ PROJECT DESCRIPTION

This is a relocated plant with a new facility identification number. The old facility was located at 7400 E. 12<sup>th</sup> Street in Kansas City, Missouri and was assigned the county-plant id number, 095-2224. The new facility is located at 401 N. Action Road in Odessa, Missouri. All the equipment used in production will be relocated to the new facility; no additional process equipment will be purchased for this new location. As this is a new facility, no prior construction permits have been issued to New Surface from the Air Pollution Control Program.

Synthetic marble casting involves the production of molded counter sinks, basins, and vanity tops using filled resins that have the look of natural marble. The resin used to make synthetic marble is a thermosetting, unsaturated polyester resin which is crosslinked by monomers of styrene and MMA. The crosslinking reaction is catalyzed with a peroxide to occur at room temperature. The pollutants of concern for this project are the HAPs, styrene and MMA, which evaporate from the molded surface during the fabrication process.

The first step in the process involves cleaning and preparing the mold for use. VOCs are emitted during the mold prep (EP-1) step from the use of solvents to clean the molds and other tools. After cleaning, the mold is sprayed with a gel coat (EP-2) which is a resin mix that forms the smooth outer surface of the product. The gel coat resin is mixed inline with a peroxide catalyst during the spray application. After the gel coat has cured, more resin is mixed with a peroxide catalyst and poured into the open mold in a polymer casting process (EP-3). This forms the bulk of the finished product. After the product is cured, the mold is removed and the unfinished edges of the product are ground and polished. The grinding step (EP-4) generates a large amount of particulate matter which is controlled by filters.

The maximum hourly design rate (MHDR) for the polymer casting process (EP-3) was determined by the facility to be 6.5 sinks per hour. This determination was based on a study where 52 sinks were made with 800 pounds resin and 8 pounds catalyst in an 8 hour time period. During this time period, employees worked as quickly as possible with no breaks. The casting process (EP-3) is considered the bottleneck operation for the project because this one step limits the production capacity for the entire facility. Therefore, 6.5 sinks per hour is assumed to be the MHDR for the mold prep (EP-1), gel coat (EP-2), and grinding (EP-4) processes.

In addition to the process equipment, the facility has 5 small natural gas fired space heaters (EP-5) to provide comfort heating during cold weather. Four of the space heaters are rated at 0.15 MMBtu per hour; and the fifth space heater is rated at 0.24 MMBtu per hour.

### EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, AP 42, Section 4.4 *Polyester Resin Plastic Products Fabrication (02/07)* and Section 1.4 *Natural Gas Combustion (07/98)*, the *Unified Emission Factors for Open Molding of Composites (07/01)*, and mass balance using information in the Material Safety Data Sheets (MSDS). Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year.) Table 1 provides an emissions summary for this project.

The particulate matter emissions from the grinding process (EP-4) are controlled by a high efficiency particulate air (HEPA) filter with a 97.14% control efficiency. The grinding process occurs inside a booth with a capture efficiency estimated at 95%.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory De Minimis Levels	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Application	New Installation Conditioned Potential
PM <sub>10</sub>	15.0	N/A	N/A	2.765	N/A
SO <sub>x</sub>	40.0	N/A	N/A	0.002	N/A
NO <sub>x</sub>	40.0	N/A	N/A	0.318	N/A
VOC	40.0	N/A	N/A	46.198	<40
CO	100.0	N/A	N/A	0.135	N/A
Styrene	10.0	N/A	N/A	11.661	<10
MMA	10.0	N/A	N/A	5.632	N/A
HAPs Total	25.0	N/A	N/A	17.299	N/A

N/A = Not Applicable

### 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 emissions of VOCs and Styrene are limited to below de minimis levels.

## APPLICABLE REQUIREMENTS

New Surface 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. For a complete list of applicable requirements for your installation, please consult your operating permit.

## GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110  
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *Operating Permits*, 10 CSR 10-6.065
- *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 10-3.090

## SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- *Maximum Allowable Emissions of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating*, 10 CSR 10-3.060

## AMBIENT AIR QUALITY IMPACT ANALYSIS

Ambient air quality modeling was performed to determine the ambient impact of the hazardous air pollutant, styrene. The screening model action level for styrene is 1 ton per year.

There are two sources of styrene emissions for the facility: the gelcoat process (EP-2) and the polymer casting process (EP-3). The gelcoat process (EP-2) occurs in an exhausted spray booth that has three sides and a roof. The polymer casting process (EP-3) occurs in the same room as the gelcoat spray booth, and the emissions from the polymer casting process (EP-3) are expected to be exhausted through the spray booth stack. There is no other ventilation system for the room.

Table 2: Screen3 Input Parameters for Point Source Model

<b>Source Type</b>	Point
<b>Emission Rate (lb/hr)</b>	2.662
<b>Stack Height (ft)</b>	25
<b>Stack Inside Diameter (ft)</b>	3
<b>Stack Exit Flow Rate (ACFM)</b>	11,590
<b>Stack Gas Exit Temperature (°F)</b>	67
<b>Ambient Air Temperature (°F)</b>	67
<b>Receptor Height (m)</b>	0
<b>Urban/Rural Option</b>	Rural

Table 3: Screen3 Model Results

<b>Pollutant</b>	<b>Modeled Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>RAL (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Time Period</b>
Styrene (CAS # 100-42-5)	97.13	N/A	1 hour
Styrene (CAS # 100-42-5)	38.85	2240	24 hour
Styrene (CAS # 100-42-5)	7.77	333	Annual

N/A = Not Applicable

## 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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Kathi Jantz  
Environmental Engineer

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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 April 9, 2008, received April 23, 2008, designating Saleaumua Enterprises, LLC as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated June 13, 2008.





Mr. Don Bialczak  
Operations Manager  
New Surface  
401 N. Action Road  
Odessa, MO 64076

RE: New Source Review Permit - Project Number: 2008-04-084

Dear Mr. Don Bialczak:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, 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, your new source review permit application and with your operating permit 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 Kathi Jantz, at the departments' 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**

Kendall B. Hale  
New Source Review Unit Chief

KBH:kjl

Enclosures

c: Kansas City Regional Office  
PAMS File: 2008-04-084

Permit Number: