

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 2017 - 009**

Project Number: 2017-02-066
Installation Number: 161-0063

Parent Company: Prock Operations

Parent Company Address: P.O. Box 1892, Rolla, MO 65402

Installation Name: Ecotec Surfaces

Installation Address: 230 East Hardy, St. James, MO 65559

Location Information: Phelps County, S20, T38N, R6W

Application for Authority to Construct was made for:

The installation of resin storage, handling and curing operations. 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.

Hans Robinson

Prepared by
Hans Robinson
New Source Review Unit

Kendall B. Hale

Director or Designee
Department of Natural Resources

JUL 17 2017

Effective Date

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 Enforcement and Compliance Section of 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 Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's 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 the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's 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 using the contact information below.

Contact Information:
Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:
<http://dnr.mo.gov/regions/>

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."

Ecotec Surfaces

Phelps County, S20, T38N, R6W

1. **Styrene Emission Limitations**
 - A. Ecotec Surfaces shall emit less than 1.0 ton of Styrene in any consecutive 12-month period from EU-10 and EU-12 (see Table 2, Emission Points and Pollutants).
 - B. Attachment A or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 1.A.
2. **Operational Requirement - Solvent/Resins**
 - A. Ecotec Surfaces shall keep all resins, solvents, and cleaning solutions in sealed containers whenever the materials are not in use. Ecotec Surfaces shall provide and maintain suitable, easily read, permanent markings on all resin, solvent and cleaning solution containers used with this equipment.
3. **Record Keeping and Reporting Requirements**
 - A. Ecotec Surfaces 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 SDS for all materials used.
 - B. Ecotec Surfaces 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: 2017-02-066
Installation ID Number: 161-0063
Permit Number: 07 2 0 1 7 - 0 0 9

Installation Address:

Ecotec Surfaces
230 East Hardy
St. James, MO 65559

Parent Company:

Prock Operations
P.O. Box 1892
Rolla, MO 65402

Phelps County, S20, T38N, R6W

REVIEW SUMMARY

- Ecotec Surfaces has applied for authority to construct resin slabs for countertop and general home construction.
- The application was deemed complete on 4/18/2017.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are Styrene emitted from the Resin.
- None of the New Source Performance Standards (NSPS) apply to the resin slab manufacturing process.
- None of the NESHAPs apply to this resin slab manufacturing process.
- None of the MACTS apply to the Ecotec facility. 40 CFR 63 Subpart WWWW, *National Emission Standard for Hazardous Air Pollutants: Reinforced Plastic Composites Production*, does not apply to the resin slab manufacturing process because it is an area HAP source.
- No control device will be used to control emissions from the Ecotec facility.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels. Emissions of Styrene were conditioned below the SMAL.
- This installation is located in Phelps 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 de minimis levels and SMAL.
- Emissions testing is not required for the equipment as a part of this permit.
- A Basic Operating Permit application is required for this installation within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Currently Ecotec Surfaces operates a resin slab manufacturing process for producing marbled countertops in St. James, MO. Ecotec is located next to a commercial cabinetry fabrication facilities; For Your Conveniences and Snowman Coolers. Ecotec, For Your Convenience, and Snowman Coolers are owned by the same parent company, Prock Operations, Inc. and all three facilities are considered one installation for emissions reporting, major source applicability, and permitting. Therefore all three facilities fall under Installation Number 161-0063.

The following New Source Review permits have been issued to Prock Operations in St. James, MO from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
022011-006	Commercial Cabinetry manufacturing installation

PROJECT DESCRIPTION

Ecotec Surfaces operates a resin slab manufacturing process that involves adding DuraStone or PolyStone solid mix to Polaris SS7132-19 Resin which contains 36.77 % Styrene and 1.02 % Methylmethacrylate (by mass, assuming remaining 62.21% of mass is dissolved solids). The combined solid-resin mix is poured into a form (essentially a closed mold) and then cured. The form is moved to a curing box (a conveyor enclosed within a small electrically heated space) to allow the solid mix and resin to cure. Most Styrene emissions will occur while solid-resin mixture is curing. When the mixture finishes curing, it is taken out of the curing oven and the form is opened up, producing 30 inch wide x 12 foot long by ½ inch deep solid slab. The slabs are sanded using a table sander and then stacked to completely cure. Slabs are loaded on pallets and shipped off-site. Conditioned potential emissions account for a 1 tpy limit on Styrene to avoid modeling. Table 2 below lists relevant emission points and pollutants.

Table 2: Emissions Points and Pollutants

General Process Steps	EP #	Emissions ¹
55 gallon resin drum - working/breathing	EU-10	VOC, HAP, Styrene, Methyl methacrylate
Pouring bag mix and resin mixing	EU-11	PM/PM ₁₀ /PM _{2.5}
Mixing pot emptied into form	N/A	N/A
Form put into curing box/oven	EU-12	Styrene, Methyl methacrylate
Form removed from oven	N/A	N/A
Material removed from form	N/A	N/A
Sand/Cut/Grind Material	EU-13	PM/PM ₁₀ /PM _{2.5}
Stack material to cure in air	N/A	N/A

N/A = Not Applicable

¹Resin emissions will primarily evolve from the resin curing box. Once the bag mix is added to the resin, the resin mixture is soon added to a closed form. The purpose of the oven is to chemically arrange and sustain an exothermic reaction within the closed form resin mixture. Once the resin exits the oven most potential styrene and methyl methacrylate emissions will be bound within the resin unable to escape.

EMISSIONS/CONTROLS EVALUATION

The Styrene content within the resin material used at Ecotec is approximately 37% and will be cured within a heated closed mold/form. AP-42 Section 4.4 *Polyester Resin Plastic Products Fabrication Table 2 Closed Molding Resin (SCC 30800736)* was used to calculate Styrene emissions. The emission factor is calculated such that between 1% to 3% of the total Styrene content within the resin (37%) is actually emitted. In order to consider the worst case emission rate (3% emissions) the resulting emission factor is 22.2 lbs Styrene per ton of resin cured. Resin will be stored at the facility in a 55 gallon drum. Currently resin is hand pumped from the drum into the mixing pot where solid bag mix is added. Breathing and working losses for the 55 gallon drum were calculated used equations developed in AP-42 Section 7.1 *Organic Liquid Storage Tanks*. Tank volume, diameter, and height are approximately 55 gal, 2.00 ft, and 2.92 feet, respectively. To conservatively estimate losses, it was assumed 100% of the vapor space is Styrene (though some methyl methacrylate will be present, it will exist in much smaller quantities). All loss calculations assumed the barrel would operate at near ambient conditions (71 °F, 14.7 psia).

Solid binders, DuraStone and Polystone, will be mixed into the resin by hand. DuraStone and Polystone won't be mixed into the resin together (only one is generally used depending on the product). No known emission factor exists for adding these types of solid bag mix and pouring them into a container full of resin. Therefore the AP-42 Section 11.12 *Concrete Batching Table 11.12-1 Cement unloading to elevated storage silo (pneumatic) (SCC 3-05-011-07)* emission factor was used as a reasonable estimation. Potential particulate matter emissions from sanding were calculated using SCC 30503811. This is a controlled emission factor with an estimated 99.5% particulate control efficiency. To account for the site specific capture efficiency, the controlled emission factor was back-calculated into an uncontrolled emission factor.

With the combined emissions of both companies owned by Prock Operations, the total potential VOC emissions of the facility is 41.5 tpy. Since this value is greater than de minimis (40 tpy), Prock Operations will need to apply for a basic operating permit. The basic operating permit will need to summarize all emission points located at Ecotec, For Your Convenience, and Snowman Coolers.

The following table provides an emissions summary for this project. Existing potential emissions were taken from Construction Permit No. 022011-006 issued to For Your Convenience. Existing actual emissions were taken from For Your Convenience's 2015 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year).

Table 3: Emissions Summary (tpy)

Pollutant	Regulatory De Minimis Levels or SMAL	Existing Potential Emissions	Existing Actual Emissions (2015 EIQ)	Potential Emissions of the Project	New Installation Conditioned Potential
PM	25.0	N/D	0.01	1.6	N/D
PM ₁₀	15.0	12.94	0.01	1.3	14.28
PM _{2.5}	10.0	N/D	0.01	0.5	N/D
SO _x	40.0	0.00	0.00	N/A	1.55E-03
NO _x	40.0	0.26	0.00	N/A	0.26
VOC	40.0	39.56	0.08	1.9	41.5
CO	40.0	0.22	0.00	N/A	0.22
HAPs	10.0/25.0	8.14	0.00	1.9	10.04
Styrene	1.0	N/A	N/A	< 1.0	1.0
Methyl Methacrylate	10.0	0.72	N/A	0.9	1.64
Formaldehyde	³ 2.0	0.11	N/A	N/A	0.11
Vinyl Acetate	³ 1.0	1.52E-05	N/A	N/A	1.52E-05
Methanol	10.0	3.24	N/A	N/A	3.24
Toluene	10.0	4.07	N/A	N/A	4.07

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

¹Existing PM_{2.5} emissions were not calculated as a part of Construction Permit No. 022010-006.

²The same emission guidelines for styrene do not exist for methyl methacrylate; therefore a conservative 100% VOC evaporation rate was used to calculate methyl methacrylate emissions.

³Screen Model Action Level (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 emissions of all pollutants are below de minimis levels. Potential emissions of styrene are conditioned below the SMAL.

APPLICABLE REQUIREMENTS

Ecotec Surfaces 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

- *Operating Permits*, 10 CSR 10-6.065
- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
 - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- *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

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*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated 1/15/2017, received 2/28/2017, designating Prock Operations as the owner and operator of the installation.

APPENDIX A

Abbreviations and Acronyms

%percent	Mgal1,000 gallons
°Fdegrees Fahrenheit	MWmegawatt
acfmactual cubic feet per minute	MHDRmaximum hourly design rate
BACTBest Available Control Technology	MMBtuMillion British thermal units
BMPsBest Management Practices	MMCFmillion cubic feet
BtuBritish thermal unit	MSDSMaterial Safety Data Sheet
CAMCompliance Assurance Monitoring	NAAQSNational Ambient Air Quality Standards
CASChemical Abstracts Service	NESHAPs National Emissions Standards for Hazardous Air Pollutants
CEMSContinuous Emission Monitor System	NO_xnitrogen oxides
CFRCode of Federal Regulations	NSPSNew Source Performance Standards
COcarbon monoxide	NSRNew Source Review
CO₂carbon dioxide	PMparticulate matter
CO_{2e}carbon dioxide equivalent	PM_{2.5}particulate matter less than 2.5 microns in aerodynamic diameter
COMSContinuous Opacity Monitoring System	PM₁₀particulate matter less than 10 microns in aerodynamic diameter
CSRCode of State Regulations	ppmparts per million
dscfdry standard cubic feet	PSDPrevention of Significant Deterioration
EIQEmission Inventory Questionnaire	PTEpotential to emit
EPEmission Point	RACTReasonable Available Control Technology
EPAEnvironmental Protection Agency	RALRisk Assessment Level
EUEmission Unit	SCCSource Classification Code
fpsfeet per second	scfmstandard cubic feet per minute
ftfeet	SDSSafety Data Sheet
GACTGenerally Available Control Technology	SICStandard Industrial Classification
GHGGreenhouse Gas	SIPState Implementation Plan
gpmgallons per minute	SMALScreening Model Action Levels
grgrains	SO_xsulfur oxides
GWPGlobal Warming Potential	SO₂sulfur dioxide
HAPHazardous Air Pollutant	tphtons per hour
hrhour	tpytons per year
hphorsepower	VMTvehicle miles traveled
lbpound	VOCVolatile Organic Compound
lbs/hrpounds per hour	
MACTMaximum Achievable Control Technology	
µg/m³micrograms per cubic meter	
m/smeters per second	

Attachment A – Styrene Resin Compliance Worksheet

Prock Operations - Ecotec Surfaces
 Phelps County, S20, T38N, R6W
 Project Number: 2017-02-066
 Installation ID Number: 161-0063
 Permit Number: **07 2017 - 009**

This sheet covers the period from _____ to _____.
 (month, year) (month, year)

Column A	Column B	Column C	Column D	Column E
Date (month/year)	Gallons of Resin used (gal) (Note 1)	Styrene Emission Factor (lb/gal) (Note 2)	Monthly Styrene Emissions (pounds) (Note 3)	Cumulative Styrene Emissions (pounds) (Note 4)
		0.10		
		0.10		
		0.10		
		0.10		
		0.10		
		0.10		
		0.10		
		0.10		
		0.10		
		0.10		
		0.10		
		0.10		
		0.10		
		0.10		
		0.10		
Total Styrene Emissions (pounds) (Note 5)				
Total Styrene Emissions (tons) (Note 6)				

Instructions:

- Note 1: Gallons of Resin used during this month.
- Note 2: Styrene Emissions will be based upon 0.1 lbs Styrene/gallon resin used
- Note 3: Column D = (Column B) * (Column C) + 0.13 lbs. The 0.13 lbs accounts for the monthly working and breathing losses from the 55 gallon Styrene holding barrel.
- Note 4: Column E is the running total (sum) of the most recent 12-month emissions reported in Column D.
- Note 5: Sum of the most recent consecutive 12-month period (lbs, pounds)
- Note 6: (Amount reported in the blank for Note 5) / (2000 lb/ton). **A value of less than 1.0 tons of styrene implies compliance with Special Condition 1.A.**

Resin Emissions

HAP (styrene)	36.77%	CAS 100-42-5
Styrene Emission Factor	22.2	lb styrene/ton resin
HAP (methylmethacrylate)	1.02%	CAS 80-62-6
Non-HAP solid content	62.21%	
Resin Density (From SDS)	9.0	lbs/gallons
Gallons of Resin per Slab	2.815	gallons/slab
lbs Styrene emitted/slab	0.2812	lbs/slab
methylmethacrylate emissions	9.19	tons/year

<--- From Resin SDS sheet
 <--- Emission factor from AP-42 Section 4.4 Polyester Resin Plastic Products Fabrication Table 2 Closed Molding Resin (SCC 30800736)
 <--- From Resin SDS sheet, emissions may need to be determined as well, SMAL of 10.0 tpy so modeling very unlikely
 <--- From Resin SDS sheet
 <--- 5.63 gallons for two slabs = 2.815 gallons/slab

In order for the facility to remain below the SMAL of 1 tons/year of Styrene, a permit limit will need to be imposed that limits the number of slabs or the number of gallons of Resin produced/used per year.

Permit limit ->

Scrubber Capture Efficiency	0.0%	(0% without, 95% with)
Daily Slabs (24/7/365)	19.48	slabs per day
Reduced slabs per year	7112	slabs per year
Reduced Styrene Emissions	1.00	tons/year
Gallons of Resin per year	20020.02	gal/year
Methylmethacrylate emissions	0.92	tons/year
Estimated Individual Slab Weight	105.34	lbs/slab

(compare)

Current Actual Production Rate	
Current Slab Production Rate	14 slab/day
Days per week	5 days
Weeks per year	52 weeks
Slabs per year	3640 slabs/year
Current Styrene emissions	0.51 Tons/year
Gallons of Resin per year	827.1801 gal/year

> 1 ton per year Styrene SMAL, did not pass AERSCREEN RAL limits

Note: Some facilities emit more than 1 ton per year either by modeling or by constructing additional Styrene emission sources over time.
 (while never exceeding 10 tpy of Styrene, unless the facility wants to be a major source for Styrene, not advised)

DuraStone % Solid (particulate)	100.0%
Maximum usage rate	80 lbs/slab

Polystone % Solid (particulate)	100.0%
Maximum usage rate	80 lbs/slab

Particulate Emission Estimation From Pouring Bag Mix

PM Emission factor	0.73	lbs/ton
PM10 Emission Factor	0.47	lbs/ton
PM Emissions	0.104	tons/year
PM10 Emissions	0.067	tons/year

Table 11.12-2 Cement unloading to elevated storage silo (pneumatic) (best emissions estimate I could find)
 Table 11.12-2 Cement unloading to elevated storage silo (pneumatic)

Note: Particulate emissions from trimming/cutting slabs was not calculated. In the future an emission factor of 0.2 lbs particulate/ton of resin slab may be used to calculate trimming emissions

Note: For Your Convenience has a potential to emit for PM10 of 12.94 tons per year. If slab trimming/cutting emissions plus bag mix/resin mixing emissions plus the existing 12.94 tons per year yields a value greater than 15.0 tpy, the facility will be minor source for PM10 as well as VOC.

Particulate Emissions for Sanding/cutting Resin Slabs

PM Emission Factor	8.08	lbs/ton slab
PM10 Emission Factor	6.78	lbs/ton slab
PM2.5 Emission factor	2.42	lbs/ton slab
PM Emissions	1.51	tons/year
PM10 Emissions	1.27	tons/year
PM2.5 Emissions	0.45	tons/year

assumed

SCC 3-05-038-11, see below
 Solid surface material like on a countertop, rectangular slabs
 (1) 30 inch wide x 12 foot x 1/4 inch slab will take (2) 40 pound bags of filler (Durastone or Polystone) and 5.63 gallons of resin

Notes:

MHDR calculated as the sum of gel coat and resin, catalysts, etc.
 SCC 3-05-038-11 is a controlled emission factor using fabric filter. An uncontrolled factor was back-calculated assuming 100% capture and 99.5% overall control for the controlled emission factor.
 Sander capture device is pick-up at the sander, routed to cyclone w/ bags on the exhaust. Assumed control efficiency for fabric filter 99% from AP-42 Table B.2.3 AIRS code 018.
 Capture efficiency estimated using "Industrial Ventilation, A Manual of Recommended Practice" from American Conference of Governmental Industrial Hygienists, 23rd edition, 1998.
 However, air velocity wasn't known so pickup/hood isn't certified, therefore didn't assume 80% capture, instead 70%.

Notes:

Grinding capture device is 3 sided room with plastic curtain on 4th side, routed to cyclone CD-2.
 Emission factors, capture efficiency, and control efficiency assumed the same as EU-3 sanding.

General Process Steps	EF #	Emissions
Resin Tank	EU-10	P, Styrene, Methylmethacrylate

Pouring bag mix and resin mixing	EU-11	PM/PM ₁₀ /PM _{2.5}
mixing pot emptied into form	N/A	N/A
form put into curing box/oven	EU-12	ene, Methylmethacrylate
form removed from oven	N/A	N/A
Material removed from form	N/A	N/A
Sand/Cut/Grind Material	EU-13	PM/PM ₁₀ /PM _{2.5}

7.1 Organic Liquid Storage Tanks - Fixed Roof Tank - Verticle Tank/Drum

Vapor Pressure Equation Constants

A 7.14 dimensionless
 B 1574.51 °C
 C 224.09 °C

Vapor Pressure (styrene) 0.096684 psia - wiki
 Approx. Styrene weight Fraction 100.0% (Vapor Fraction)
 37.0% (Liquid Fraction, for Calculations assumed to be 100%)

Tank Volume 55.0 gal
 Tank Diameter 2.00 ft
 Tank Height 2.92 ft

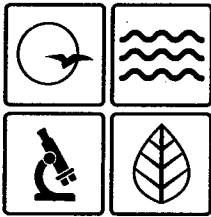
 Tank Shell Height 2.92 ft (H_S)
 Liquid Height 1.46 ft (H_L)
 Roof outage 0.00 ft (H_{RO}) (no dome or cone roof)
 Vapor Space Outage 1.46 ft (H_{VO})
 Vapor Space Volume 4.58 ft³ V_V

Molecular weight 104.15 lb/lb-mole M_V (vapor only)
 Total Vapor Pressure 0.0967 psia P_{VA}
 Ideal gas Constant 10.731 psia ft³ / lb-mole °R
 Avg Surface Temp 530.67 °R
 Vapor Density 0.0018 lb/ft³ W_V

Vapor Temp Range 0 °R
 Tank paint solar abs 0 α
 Vapor Space Expand 0.04 (dimension K_E) (default value)
 Vented Vapor Sat. 0.9926 K_S

Maximum liquid Height 2.92 ft H_{LX}
 Number Turnover Per Year 364.00 1/year N
 Working Loss Turnover 0.25 dimensionl K_N
 Working Loss Product Factor 1 K_P
 Vent Setting Correction Factor 1 K_B

Working loss	1.469 lb/year	L _W
Standing Storage Loss	0.117 lb/year	L _S
Total losses	1.586 lb/year	L _T



Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

JUL 17 2017

Mr. Mark Barnes
Environmental Health and Safety Manager
Ecotec Surfaces
P.O. Box 1892
Rolla, MO 65402

RE: New Source Review Permit - Project Number: 2017-02-066

Dear Mr. Barnes:

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 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.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty 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 administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.



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Mr. Mark Barnes
Page Two

If you have any questions regarding this permit, please do not hesitate to contact Hans Robinson 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:hrj

Enclosures

c: Southeast Regional Office
PAMS File: 2017-02-066

Permit Number: **07 2017 - 009**