

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: 102018-005 Project Number: 2018-04-002
Installation Number: 183-5015

Parent Company: Nike, Inc.

Parent Company Address: One Bowerman Drive, Beaverton, OR 97005

Installation Name: Nike IHM, Inc.

Installation Address: 8 Research Park Dr, St. Charles, MO 63304

Location Information: St. Charles County, S33 & 34, T48N, R3E

Application for Authority to Construct was made for:
Three Schwing Tool Cleaning Systems. 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.



Director or Designee
Department of Natural Resources

OCT 09 2018

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."

Nike IHM, Inc.

St. Charles County, S33 & 34, T48N, R3E

1. Operational Requirements of Schwing VacuClean 154 (EP-22), Schwing InnovaClean ECO-3 (EP-23), and Schwing InnovaClean ECO-3 (EP-24)
 - A. Nike IHM, Inc.. shall only remove non-chlorinated plastics from tools/metal parts.

2. Control Device Requirement-Catalytic Converter
 - A. Nike IHM, Inc. shall control emissions from the Schwing VacuClean 154 (EP-22) using a catalytic converter as specified in the permit application.

 - B. The catalytic converter shall be operated and maintained in accordance with the manufacturer's specifications.

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

Project Number: 2018-04-002
Installation ID Number: 183-5015
Permit Number: 102018-005

Installation Address:
Nike IHM, Inc.
8 Research Park Dr
St. Charles, MO 63304

Parent Company:
Nike, Inc.
One Bowerman Drive
Beaverton, OR 97005

St. Charles County, S33 & 34, T48N, R3E

REVIEW SUMMARY

- Nike IHM, Inc. has applied to permit three Schwing Tool Cleaning Systems.
- The application was deemed complete on May 14, 2018.
- HAP emissions are expected from combustion of natural gas and coating decomposition.
- None of the New Source Performance Standards (NSPS) apply to the Schwing VacuClean 154 or the two InnovaClean ECO-3 machines.
 - Subpart E, *Standards of Performance for Incinerators*, does not apply because the machines do not burn solid wastes as defined in this subpart.
 - Subpart CCCC, *Standards of Performance for Commercial and Industrial Solid Waste Incineration Units for Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction is Commenced After June 1, 2001*, does not apply because the machines are not considered incinerators in this subpart.
 - Subpart EEEE, *Standards for Performance for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006*, does not apply to the machines because they are not considered an “other solid waste incineration unit” as defined in this subpart.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- A catalytic converter is being used to control the emissions from the Schwing VacuClean 154.

- 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. However, the Schwing VacuClean 154 and two InnovaClean ECO-3 are considered incinerators for CSR purposes only and is required to obtain a construction permit in accordance with 10 CSR 10-6.060(1)(B).
- This installation is located in St. Charles County, a marginal nonattainment area for the 2008 8-hr ozone standard, a moderate nonattainment area for the 1997 PM_{2.5} standard and an attainment area for all other 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.
- Emissions testing is not required for the equipment as a part of this permit. Testing may be required as part of other state, federal or applicable rules.
- A revision to Basic Operating Permit 2016-11-058 is required for this installation within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Nike IHM, Inc., located in St. Charles County, manufactures extruded plastic products. This installation submitted a basic operating permit application on June 13, 2002 and the most recent renewal application on November 28, 2016. The following construction permits have been issued to NIKE IHM, Inc. from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
052002-008	Installation of a heat cleaning oven
092004-018.	Installation of a Steelman Heat Cleaning Oven.
122005-011.	Installation of industrial dry filter spray paint booth.
022007-002	Installation of a parts cleaning system.
072009-006	Permit Corrections

PROJECT DESCRIPTION

Nike IHM, Inc. plans to install a Schwing VacuClean 154 (EP-22) and two Schwing InnovaClean ECO-3 machines to clean small tools and parts used during the extrusion process. Most of the parts being cleaned consist of small metal screens and plates.

The Schwing VacuClean replaces the three Pyro-clean ovens (EP-17, EP-18, and EP-19). The new Schwing VacuClean 154 results in 100% removal of thermoplastic polyurethane plastic from extrusion components. Plastic is melted off components and removed via a container and placed in a trash receptacle. According to the manufacturer, the process is based on the principle of vacuum pyrolysis, a decomposing process under vacuum, at temperatures between 430°C and 450°C. Pyrolysis gases are cleaned by an integrated catalytic off-gas converter. Organic residues (polymer, carbon, etc.) are completely removed by an automated oxidation phase after pyrolysis. The system operates only with electrical heating and water for cooling the vacuum pump, located behind the catalytic converter.

The two InnovaClean ECO-3 systems will be used at the facility to clean small tools and parts used during the extrusion process. Most of the parts being cleaned will consist of small metal screens and plates. The systems are a fluidized bed with hot sand for high quality and fast cleaning of polymer contaminated parts. The process is based on fluidized bed technology and heats the sand up to temperatures of 450-480 degrees C. The ECO-3 is designed to meet German emission rules for thermal post-combustion. The InnovaClean ECO-3 system operates only with electrical heating and does not create any emissions when it is running empty with only hot air. The ECO-3 is designed to meet the same German emission limits as the VacuClean 154.

Since the plastics from tools and metal parts are removed by pyrolysis where the emissions are treated by oxidation, the units are classified as incinerators for purposes of 10 CSR 10-6.020. Per 10 CSR 10-6.060 (1) (B) all incinerators need construction permits. It is also a department practice to permit burn off ovens as incinerators. Therefore, a construction permit is required for the new units.

EMISSIONS/CONTROLS EVALUATION

The facility submitted emissions data from the manufacturer for the VacuClean 154 for NO_x, VOC and PM. All of the PM emissions were considered PM₁₀ and PM_{2.5}. Since the InnovaClean ECO-3 systems operate only with electrical heating and do not create any emissions while running empty with only hot air, NO_x emissions were calculated assuming a cleaning cycle time of 3 hours and a polymer loading of 4 pounds per cycle. Conservatively, all the polymer burned off was considered to be NO_x giving an emission rate of 1.3 lbs/hr of NO_x for each system. VOC and PM emissions from the two the InnovaClean ECO-3 systems were calculated using the emission data from the manufacturer for the VacuClean 154 since it meets the same German emission limits as the VacuClean 154. The following table provides an emissions summary for this project. Existing potential emissions were taken from permit number 072009-006. Existing actual emissions were taken from the installation's 2017 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tpy)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2017 EIQ)	Potential Emissions of the Project
PM	25.0	N/D	N/D	5.79
PM ₁₀	15.0	0.012	0.002	5.79
PM _{2.5}	10.0	N/D	0.002	5.79
SO _x	40.0	N/D	N/D	N/D
NO _x	40.0	N/D	N/D	29.06
VOC	40.0	0.066	0.0539	2.90
CO	100.0	0.0075	N/D	N/D
GHG (CO ₂ e)	N/A	N/D	N/D	N/D
GHG (mass)	N/A	N/D	N/D	N/D
HAPs	10.0/25.0	N/D	0.0089	N/D

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

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 conditioned below de minimis levels. However, the Schwing VacuClean 154 (EP-22) and the two Schwing InnovaClean ECO-3 are considered incinerators and required to obtain a construction permit in accordance with 10 CSR 10-6.060(1)(B).

APPLICABLE REQUIREMENTS

Nike IHM, 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

- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Operating Permits*, 10 CSR 10-6.065
- *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

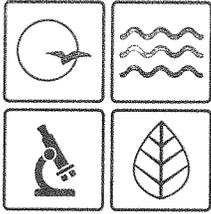
The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated March 23, 2018, received April 3, 2018, designating Nike, Inc. as the owner and operator of the installation.
- The addendum to the project, received via email from Nike, Inc., June 13, 2018, and June 22, 2018 adding two InnovaClean ECO-3 systems to the project.

APPENDIX A

Abbreviations and Acronyms

%	percent	Mgal	1,000 gallons
°F	degrees Fahrenheit	MW	megawatt
acfm	actual cubic feet per minute	MHDR	maximum hourly design rate
BACT	Best Available Control Technology	MMBtu	Million British thermal units
BMPs	Best Management Practices	MMCF	million cubic feet
Btu	British thermal unit	MSDS	Material Safety Data Sheet
CAM	Compliance Assurance Monitoring	NAAQS	National Ambient Air Quality Standards
CAS	Chemical Abstracts Service	NESHAPs	National Emissions Standards for Hazardous Air Pollutants
CEMS	Continuous Emission Monitor System	NO_x	nitrogen oxides
CFR	Code of Federal Regulations	NSPS	New Source Performance Standards
CO	carbon monoxide	NSR	New Source Review
CO₂	carbon dioxide	PM	particulate matter
CO_{2e}	carbon dioxide equivalent	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
COMS	Continuous Opacity Monitoring System	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
CSR	Code of State Regulations	ppm	parts per million
dscf	dry standard cubic feet	PSD	Prevention of Significant Deterioration
EIQ	Emission Inventory Questionnaire	PTE	potential to emit
EP	Emission Point	RACT	Reasonable Available Control Technology
EPA	Environmental Protection Agency	RAL	Risk Assessment Level
EU	Emission Unit	SCC	Source Classification Code
fps	feet per second	scfm	standard cubic feet per minute
ft	feet	SDS	Safety Data Sheet
GACT	Generally Available Control Technology	SIC	Standard Industrial Classification
GHG	Greenhouse Gas	SIP	State Implementation Plan
gpm	gallons per minute	SMAL	Screening Model Action Levels
gr	grains	SO_x	sulfur oxides
GWP	Global Warming Potential	SO₂	sulfur dioxide
HAP	Hazardous Air Pollutant	SSM	Startup, Shutdown & Malfunction
hr	hour	tph	tons per hour
hp	horsepower	tpy	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		
m/s	meters per second		



Missouri Department of

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NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

OCT 09 2018

Ms. Joan DeMeyer
Sr. EHS Specialist
Nike IHM, Inc.
8 Research Park Dr
St. Charles, MO 63304

RE: New Source Review Permit - Project Number: 2018-04-002

Dear Ms. DeMeyer:

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 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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Ms. Joan DeMeyer
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If you have any questions regarding this permit, please do not hesitate to contact Chad Stephenson, 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:csj

Enclosures

c: St. Louis Regional Office
PAMS File: 2018-04-002

Permit Number: 102018-005

Project Number 2018-04-002
 Project Name Nike IHM, Inc.

Emission Rates provided by manufacturer. Manufacturer provided max values for any polymer as well as specific values for Polyethylene (PE). Max values were used for VOC, NOx, PM/PM10/PM2.5. PE values used for formaldehyde and acetaldehyde as no max values

PTE Schwing VacuClean 154		lbs/hr	tpy	Conversions		
VOC	0.1 kg/hr	0.220462 lbs/hr	0.96562356 tpy	1 mg	equal	2.2046E-06 lbs
PM assumes all is PM2.5 and PM1	0.2 Kg/hr	0.440924 lbs/hr	1.93124712 tpy	1 kg	equal	2.20462 lbs
NOx	1.8 Kg/hr	3.968316 lbs/hr	17.38122408 tpy	1 g	equal	0.00220462 lbs
Formaldehyde	0.01 g/hr	2.20462E-05 lbs/hr	9.65624E-05 tpy			
Acetaldehyde	0.02 g/hr	4.40924E-05 lbs/hr	0.000193125 tpy			

PTE Two InnovaClean ECO-3		lbs/hr	tpy	
VOC	0.2 kg/hr	0.440924 lbs/hr	1.93124712 tpy	Nox for the two InnovaClean ECO-3 systems was calculated assuming a cleaning cycle of 3 hours and a maximum polymer loading of 4 pounds all of which was
PM assumes all is PM2.5 and PM1	0.4 Kg/hr	0.881848 lbs/hr	3.86249424 tpy	
NOx		2.66667 lbs/hr	11.68 tpy	

PTE TOTAL		tpy
VOC		2.89687068 tpy
PM assumes all is PM2.5 and PM10 as well		5.79374136 tpy
NOx		29.06122408 tpy
Formaldehyde		9.65624E-05 tpy
Acetaldehyde		0.000193125 tpy